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Performance Evaluation of the New Alliance Information and Communication Technologies Agriculture Extension Challenge Fund

Final Report

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List of acronyms

AGRA	Alliance for a Green Revolution in Africa
AOR	Agreement Officer Representative
B2BC	Business to business to consumer model
BMGF	The Bill and Melinda Gates Foundation
CAADP	Comprehensive African Agriculture Development Programme
CABI	Centre for Agriculture and Biosciences International
CADECOM	Catholic Development Commission in Malawi
CF	Challenge Fund
COR	Contracting Officer Representative
CRS	Catholic Relief Services
DFID	Department for International Development
DG	Digital Green
DQA	Data Quality Audit
EM	Evaluation Matrix
EMM	Extensão Multimédia
EQ	Evaluation Question
ET	Evaluation Team
FAO	Food and Agriculture Organisation
FRI	Farm Radio International
GDD	Gender Disaggregated Data
GSMA	Global System for Mobile Communications
HNI	Human Networks International
IBTCI	International Business & Technical Consultants, Inc.
ICT	Information and Communication Technology
ICT4D	ICT for Development
IDRC	International Development Research Council
IFAD	International Fund for Agricultural Development
IFPRI	International Food Policy Research Institute
IP	Impact Pathway
IVR	Interactive Voice Response

M&E	Monitoring and Evaluation
MEL	Monitoring, Evaluation and Learning
MIVARF	Marketing Infrastructure, Value Addition and Rural Finance Support Programme
MODES	Modernisation of Demand-driven Extension Services
NA	New Alliance for Food Security and Nutrition
NA-ICT CF	New Alliance ICT Challenge Fund
NGOs	Non-governmental Organisations
OECD	Organisation for Economic Co-operation and Development's
PASS	Program for Africa's Seed System
PIRS	Performance Indicators Reference Sheets
PPP	Public-private partnership
PS	Private Sector
RAS	Rural Advisory Service
SHA	Self Help Africa
SMS	Short Message Service
SSA	Sub-Saharan Africa
SSTP	Scaling Seeds and other Technologies Partnership
TICmbay	TIC is the French acronym for information and communication technologies (ICT in English) and "mbay" is the word for agriculture in Wolof
ТоС	Theory of Change
ToRs	Terms of Reference
UPTAKE	Upscaling Technologies in Agriculture through Knowledge Extension
UCSC	University of California, Santa Cruz
USAID	United States Agency for International Development
USD	United States Dollars
USSD	Unstructured supplementary service data
VfM	Value for Money

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Through the grantees, the ET would like to thank all the other stakeholders in-country who took time out for interviews and focus group discussions. In addition to donors, grantees and other stakeholders in-country, the ET would like to thank others connected with the NA-ICT CF who also allowed time for being interviewed, including the Chief of Party for the Scaling Seeds and Technologies Programme (SSTP), former DFID and USAID staff that were involved in the Challenge Fund during its design/early days, and those involved with implementing and evaluating DFID's mNutrition programme. Last but not least the ET would like to thank the Monitoring, Evaluation and Learning (MEL) contractor not only for taking time to be interviewed several times, but also for compiling and sharing with the ET many relevant documents for the evaluation.

Executive summary

This report is an output of the *Performance Evaluation of the New Alliance Information and Communication Technologies Agriculture Extension Challenge Fund (NA-ICT CF).* Landell Mills is carrying out this evaluation, commissioned by the United Kingdom's Department for International Development (DFID), under contract PO 8151.

The NA-ICT CF aimed, at impact level, to improve agricultural productivity in selected food crops by smallholder farmers in six countries: Ethiopia, Ghana, Malawi, Mozambique, Senegal and Tanzania. The programme's envisaged outcome was that new knowledge and practices be applied by one million smallholder men and women farmers with access to financially sustainable ICT-enabled extension in the six countries. It coordinated within the wider context of the Scaling Seeds and Technologies Programme (SSTP) – a five-year, USD 47 million partnership between USAID and Alliance for a Green Revolution in Africa (AGRA) which aimed, in part, to increase the availability of new varieties of key food crops and technologies in the same six targeted countries. The NA-ICT CF design involved the development of a results framework (by the United States Agency for International Development, USAID) and a Theory of Change (ToC) (by DFID). Implementation grants were awarded on a country-by-country basis through a competitive process to consortia that were mostly made up of non-governmental organisations (NGOs). An independent monitoring and learning (MEL) provider was appointed to provide MEL services to the programme. The NA-ICT CF involved promotion of the use of ICT-enabled channels that complement non-ICT-based agricultural extension delivered by public and private sectors.

The purpose of the evaluation was twofold. For accountability purposes, the evaluation assessed the progress of the NA-ICT CF (or "programme") with respect to its two outcomes: (a) increased use of quality inputs and improved technologies by smallholder farmers, and (b) increased financially sustainable ICT-enabled services to complement other extension services. For learning purposes, the evaluation sought to gain insights, within the context of the NA-ICT CF, on what does and does not work in scaling up ICT-enabled extension approaches through working with the public and private sectors.

Target audiences for the evaluation include the four donors of the NA-ICT CF (USAID, DFID, International Fund for Agricultural Development or IFAD, and the Bill and Melinda Gates Foundation or BMGF) and a wider audience, including governments, private sector bodies, ICT industry stakeholders, and NGOs that were either involved in the NA-ICT CF itself, or that might have an interest in supporting and/or providing ICT-enabled extension services in the future.

The evaluation ran from September 2017 until February 2019, with a further dissemination phase to be completed by early May 2019. The evaluation team (ET) had five core members who had no previous connection with the Challenge Fund (CF) and, overall, the Terms of Reference (ToRs) were followed.

The evaluation approach, methodology and limitations are covered in Section 2. Eighteen evaluation questions (EQs) and an evaluation matrix (EM) guided the evaluation, using a theorybased approach. To this end a ToC workshop was held in the inception phase with donors and the MEL contractor to develop a ToC as a basis for the evaluation. This ToC had three impact pathways (IPs): IP1 concerns application of new technologies by farmers; IP2 financial sustainability; and IP3 evidence. A mixed methods approach was used for data collection, which drew largely on secondary data. Eight qualitative methods were used, including document review, data quality audit (DQA), key informant interviews, focus group discussions, ToC approaches including assessment of causal pathways using contribution analysis, country case studies, and comparative analysis. Quantitative methods included analysis of all data reported against indicators, and available data for the Value for Money (VfM) analysis. Visits were made to three of the six countries. The main cross-cutting issue addressed was gender.

The evaluation faced some limitations, but most did not affect the quality of the evaluation. Those that did were the variable quality and consistency of the data gathered by the grantees and the lack of monitoring data on costs related to outputs and outcomes, which limited the viable scope of the VfM analysis. The evaluation team mitigated these challenges by conducting a DQA, triangulating data from multiple sources, and maximising the use and analysis of available data.

The evaluation provides findings related to each of the following criteria: relevance, outputs, VfM, progress towards outcomes and impact, and sustainability,¹ as summarised below and detailed in Section 3.

Relevance. As noted in section 3.1, the ET assesses the NA-ICT CF as being relevant on several grounds. The programme was well aligned with both donor and country-level agricultural development policies. The programme was in keeping with the type of agricultural extension provision in each of the six countries and was in line with the ICT context at national levels. Demand for radio was high across all countries compared with demand for mobile-based services, although the latter has potential to grow as mobile phone ownership and use increase. Five key findings on the design of the CF were identified:

- 1. The selected varieties and technologies that were being promoted by the SSTP were based on national priorities and were all key crops for each country.
- 2. There were management challenges due to the set-up of the consortium, which involved an alliance of four donors (responding to calls at a 2012 G8 summit, leading to the establishment of the New Alliance for Food Security and Nutrition (NA)).
- 3. Governance arrangements for the CF were satisfactory, though weakened when the initial contracting officer representative (COR) left USAID and management responsibilities were dispersed across eight USAID staff.
- 4. Design did allow for good collaboration with key stakeholders at country level, although the collaboration between SSTP and the MEL contractor in terms of monitoring was weak, and linkages with other similar programmes occurred only when the NA-ICT grantees were also working on these other programmes.
- 5. In terms of design, findings are that gender was not seen as a priority. Grantees did not perceive it as a priority for the donors, SSTP was not focused on gender, and most of the crops being promoted by SSTP were "men's" crops.

The multi-donor nature of the programme also led to some challenges in relation to the different reporting requirements and cycles of each donor. Other negative factors were the late appointment of the MEL contractor, and the overall challenge of running the CF as a separate "add-on" project to SSTP, all of which had implications for the efficient running of the CF.

Outputs (discussed in section 3.2). Three of the four outputs in the ToC are covered here: **Output 1**: Agronomic extension provided to smallholder farmers via ICT-enabled services; **Output 2** (which in practice precedes Output 1): Improved content adapted to specific needs, context and available ICT channels; and **Output 4**: Development of high-quality evidence on cost-effectiveness and impact of ICT-enabled services.² There were Performance Indicator Reference Sheet (PIRS)³

¹ These are derived from the Organisation for Economic Co-operation and Development's (OECD) Development Assistance Committee (DAC) criteria.

² Output 3: Financially sustainable ICT enabled extension services operating and integrated with non-ICT extension services, is covered under the Sustainability evaluation criterion.

³ The PIRS constitute the programme's main monitoring tool.

indicators for Output 1 only. All grantees were able to achieve Output 1: Agronomic extension provided to smallholder farmers via ICT-enabled services. The NA-ICT CF exceeded its targets in relation to this Output, both in terms of access to ICT-enabled extension (measured by PIRS indicator 1.1) and use of ICT-enabled extension (measured by PIRS indicator 1.2) across the programme as a whole. The actual achievement of indicator 1.1 (*access to ICT-enabled extension*) was 173% of the target of 5.2 million farmers and, for *use of ICT-enabled extension* (indicator 1.2), it was 134% of the target of 2.6 million farmers. The evaluation anticipates an increase in these figures as the programme draws to a close in December 2018 (Tanzania), February 2019 (Mozambique) and March 2019 (Senegal). However, this high attainment could have been caused in part by low target setting. Men had more access to ICT-enabled extension than women: 67% of the farmers with access were men and 33% were women. This was similar for the use of ICT-enabled extension. Two of the grantees, EMM and TICmbay, were able to reach more women compared to others.

The evaluation also found that the content development process (Output 2) was well developed in all countries. Content was aligned with SSTP and government policies, adapted to local needs and channels, and followed a participatory process. The findings at output level are confirmed for impact pathway 1 (IP1) by the re-evaluation of the ToC as detailed in Annex 6, and by the contribution stories from three of the six countries (Annex 7).

The CF did less well in terms of development of high-quality evidence (Output 4). The MEL contractor was contracted late, while monitoring and evaluation (M&E) processes were already (partly) developed by grantees. The focus was on developing PIRS to report on results to USAID, and less time was invested in establishing a conducive learning environment to share experiences beyond basic learning. Evidence regarding cost-effectiveness and impact was minimal, despite IP3's output (4) being high-quality evidence on (cost) effectiveness and impact of ICT-enabled services. It should also be noted that, even if efforts had been made to collect evidence on impact, this may not have been strong given the short time period (2–3 years) that the CF ran in each country.

Value for Money. The ET has mixed findings for VfM concerning the CF's economy, efficiency, effectiveness and equity, and as per the DFID business case VfM proposition. The M&E systems and the financial accounting systems of the grantees were not aligned with each other. The financial data provided was incomplete, with insufficient detail to link cost data to outputs and outcomes. VfM as an approach was not embedded within the design of the programme and was thus difficult to measure retrospectively. This limitation was discussed with DFID mid-2018 and it was agreed that the ET would endeavour to carry out a limited and partial VfM at country level for those countries where sufficient information exists. VfM is covered in section 3.3 and, in Annex 9, a more detailed analysis is presented, based on data gathered by the ET from grantees. The NA-ICT CF programme developed a results framework with PIRS indicators. These indicators were developed as comparative measurements of programme achievements between grantees internally. The ET assessed that the countries used their funding well in terms of efficiency in achieving outputs and effectiveness in achieving outcomes because, at programme level, all targets of the PIRS indicators were met with the funds received. There were no cost-effectiveness nor impact indicators measured by the grantees. Findings on economy, however, revealed weaknesses. Grantees were selected using a competitive process, but accountability and VfM were not prominent considerations in finalising agreements. Therefore, data on competitive procurement, cost savings and actual expenditure were not available to assess how the grantees considered and managed costs. Where economy measures may have been taken by grantees, this was not captured in reporting. The ET assessed equity findings to be weaker as well, with women having more limited access to ICT-enabled services than men, as a result of socioeconomic factors and choice of crops and technologies under SSTP.

Progress towards outcomes and impact criterion (covered in section 3.4). The NA-ICT CF has achieved Outcome 1: "Increased use of quality inputs and improved technologies by men and women smallholder farmers". It has exceeded its targets at the outcome level, as per the findings for application of new technologies and best practices (indicators 1.3) and number of hectares under improved technologies (indicator 1.4) across the programme as a whole. While, there was in fact a great deal of variation between grantees in relation to actuals versus targets for hectares (1.4), with four out of the six grantees underachieving to date, the ET considers indicator application of technologies and best practices (1.3) to be stronger. Actual achievement of indicator 1.3 was 183%⁴ and will increase as the programme nears its completion. Application of technologies and best practices by women as compared to men was good in four of the six countries, given existing gender constraints and the focus of the SSTP-supported crops. The evaluation found that key factors contributing to application are trust, availability of inputs, the market context including the market for outputs, and the promise of either or both better yields or better climate resilience. Annex 9 contains more detailed country-level discussion of outcome indicators 1.3 and 1.4. With regard to the NA-ICT CF impact "Improved agricultural productivity in targeted food crops by smallholder farmers in 6 NA-ICT countries in Africa", neither the NA-ICT CF nor SSTP measured this. While case-based examples and indirect evidence of higher yields exist, there is no robust evidence on this. The findings at outcome and impact level are confirmed by the evaluation of the ToC for impact pathway 1 (IP1) as detailed in Annex 6 section 1.3, and by the contribution stories from three of the six countries (Annex 7). The articulation of the ToC for IP1 is assessed as being accurate. Although the contribution stories for all three countries are strong at the output level (as discussed in the section 3.2), they are medium at outcome level and weak at impact level. This is due not only to the lack of evidence at impact level, but because many other factors influence productivity aside from the ICT-enabled extension channels. Last, findings on which ICT-enabled extension channels, and combinations of ICT-enabled extension channels, were the most effective in achieving results across the grantees, were that, while radio is the most cost-effective ICT-enabled extension channel, video (in particular) followed by mobile-based extension led to greater application rates by those using these channels. The key findings are that ICT-enabled channels can work together and reinforce each other, and that these work best in combination with traditional extension.

Sustainability (see section 3.5) The NA-ICT CF looked at sustainability from the viewpoint of financial sustainability and operational sustainability. Financial sustainability⁵ is likely to remain a challenge once the CF stops, at least in some of the countries. The ET is confident that operational sustainability⁶ will be achieved by the grantees. In terms of financial sustainability, the grantees did commit to leveraging of NA-ICT funding with non-donor sources, although the ET did not have sufficient data on actual contributions from all grantees to assess if all commitments were achieved. The grantees were all NGOs, they focused on delivering the service and building government/radio station capacities first to replicate, scale up⁷ and achieve operational sustainability. Most grantees did not secure buy-in from government or a company as a scale-up agent from the start of NA-ICT CF, except for Digital Integration in Ethiopia, who secured government buy-in and could scale up with additional BMGF funding. AgroTech in Ghana managed to secure funding from another donor to scale up AgroTech to more extension agents and to fine tune their business model. EMM,

⁴ Even if indicator 1.3 is corrected for MODES and EMM the performance was still at 144% of target (see 2.5 for more details on outlier data).

⁵ Financial sustainability is defined by the ET as the ability to cover all cost of the ICT enabled service without donor-support after the end of the contract.

⁶ Operational sustainability is defined by the ET as the capacity to continue to operate the ICT enabled services to farmers after the end of the contract.

⁷ Scale up is seen by the ET the ability to grow the ICT enabled extension service beyond the population reached during the NA-ICT CF.

TICmbay and UPTAKE are still in implementation. Jokalante, the social enterprise established by the grantees in Senegal, is able to attract contracts for their services, but still needs time to become fully financially sustainable. In the long run, post-CF, the ET sees a challenge regarding ongoing supply of relevant messages where there are no ongoing funds to support the content development process.

From the findings, the evaluation team drew out, in Section 4, key lessons relevant to donors, MEL contractors and practitioners, related to seven topics: 1) programme design; 2) monitoring, evaluation and learning (MEL); 3) content development for ICT-enabled extension; 4) combining ICT channels with traditional extension; 5) gender; 6) sustainability and; 7) the need for capacity building. The findings and lessons derived from these informed the recommendations of this evaluation.

The recommendations (as discussed in Section 5) are as follows:

For donors to strengthen design and implementation of new agriculture programmes, the following are recommended:

- Mainstream ICT-enabled extension into programme design.
- Contract the MEL provider at the same time as the implementation partner/s.
- If donors agree at the design stage that they will be requiring VfM and/or impact evidence, then build that into the design, budget and ToRs of the MEL contractor.
- Tailor invitations for bids to ensure the best combination of partners for future sustainability of the programme.
- When designing agricultural programmes that will be mainly implemented in rain-fed areas, seek to fund these for a minimum of five years, to allow for capacity building, impact and sustainability.
- Be more specific about how implementation partners are expected to address cross-cutting issues, for example gender, within the context of the specific focus of the programme and its cultural context/s.

For MEL contractors to ensure an efficient and effective MEL system to report on performance and support lesson learning, the following recommendations are proposed:

- Where contracted to provide MEL for a multi-country programme, establish common indicators at the beginning of the programme, with shared definitions, and create data collection tools in collaboration with the implementation partners in the countries concerned.
- If the donor requires measurement of VfM, impact or specific cross-cutting issues, this should be built into the MEL plan, results framework and indicators, in collaboration with the implementation partners. Related to VfM, ensure a good alignment between the MEL framework and the programme's financial systems which will need to capture expenditure data related to outputs and outcomes.
- Assess level of M&E capacity of implementation partners at the beginning of the programme and build in space to build capacity if needed, e.g., in monitoring VfM and/or impact.
- Regarding the learning component of MEL, for knowledge sharing and learning to take place, invest in building trust and communication between implementation partners right from the start of implementation, ideally in a face-to-face context.

For implementation partners (practitioners) to strengthen impact and sustainability, the following are recommended:

• When supporting ICT-enabled extension content development and validation processes, ensure that these involve all relevant stakeholders, and ensure space for development of dynamic

content (to respond to sudden information needs in response for example to particular pest and disease infestations).

- When using ICT-enabled channels, use local languages and ensure that the content is developed in a timely manner and is tailored to, and tested for, each ICT channel in use. When considering which ICT channels to use, identify the costs of each, the strengths of each, and how they can complement each other and reinforce extension communication.
- During both design and ongoing implementation, consider how best ICT-enabled extension and any existing traditional extension can be synchronised to reinforce messages, build trust and create synergy. Engage with extension agents in the locality, whether they are government, private sector and/or NGO, inform them of the ICT-enabled extension component of the project and build ongoing communication with them.
- Ensure that ICT-enabled extension draws on "trusted" voices (e.g. of cooperative leaders, researchers, extension staff, lead farmers) and takes gender into account by carrying out landscape analysis to find out which ICT channels women have access to, using women's (farmers, broadcasters) voices; and, where female smallholders have limited access to certain ICT channels, draw on community/radio listening clubs.
- When bidding to engage in an ICT-enabled extension programme, build in a sustainability plan, particularly if the organisation bidding is an NGO, although sustainability may require long-term ownership by the private sector or social enterprise.

The evaluation concludes that the programme did reach its targets in terms of increased use of quality inputs and improved technology use by smallholder farmers but is less likely, in terms of increased financially sustainable ICT-enabled services, to complement other extension services. Performance was rated as fair to good overall, with the greatest achievements relating to reaching access and application targets, and lowest achievement in terms of the availability of high-quality evidence, and no evidence on impact level (i.e. increased productivity) as this was not measured. Learning and best practice arising from this evaluation regarding (a) content development for ICT-enabled channels; and (b) use of ICT-enabled channels either alone, in combination with other ICT-enabled channel, and combined with traditional extension services, can provide useful guidance for donors and practitioners interested in supporting, designing and using ICT-enabled channels.

1 Introduction

This report is an output of the *Performance Evaluation of the New Alliance Information and Communication Technologies Agriculture Extension Challenge Fund (NA-ICT CF).* Landell Mills is carrying out this evaluation, which was commissioned by the UK's Department for International Development (DFID). The report has five sections. Section 1 introduces the NA-ICT CF and discusses its context. It also discusses the purpose, scope and objectives of the evaluation, and describes the evaluation phases and the team composition. Section 2 addresses the evaluation approach, methodology and limitations. Section 3 presents findings against each of **relevance**, **outputs, VfM, progress towards outcomes and impact, and sustainability. Findings for lessons and linkages** have been integrated into different sections of the report. Those for linkages are incorporated into the findings on relevance in Section 3. Those for lessons are included in Section 4 which covers lessons learned. The final Section provides conclusions and recommendations. The flow chart below indicates the level of analysis in each of Sections 3 to 5 and how each feeds into the next.

Figure 1: Level and flow of analysis from Section 3 to 5

S	Section 3: Findings				
ET's findings		Section 4: Lessons Learned			
-	regarding each EQ and its sub- questions, drawn	•	Extent to which grantees, donors and	Se ar	ection 5: Conclusions nd recommendations:
fro so • E th	from a variety of sources ET's assessment of the findings in brief	•	shared and adopted lessons Lessons learned by		Conclusions drawing from sections 3 and 4 ET's recommendations
		•	grantees ET's lessons learned based on analysis of findings		based on findings and lessons learned

1.1 Introduction to the NA-ICT CF

At the 2012 Group of Eight (G8) industrialised nations meeting at Camp David, G8 and African leaders launched the New Alliance for Food Security and Nutrition to accelerate agricultural growth and productivity. The New Alliance agreed to support four integrated enabling actions aimed at significantly improving agricultural productivity. One of these was the Information and Communication Technologies (ICT) Extension Challenge Fund (NA-ICT CF) and a second, related, one was the Scaling Seeds and Technologies Programme (SSTP). The NA-ICT CF was launched at the Second Global Conference on Agricultural Research for Development meeting in Punta del Este, Uruguay at the end of October 2012.⁸

The NA-ICT CF aimed, at impact level, to improve agricultural productivity in selected food crops by smallholder farmers in the six countries. The programme's envisaged outcome was that new knowledge and practices be applied by one million smallholder men and women farmers with access to financially sustainable ICT-enabled extension in the six countries. Gender was the main

⁸ CABI working paper 10, Mobile landscape analysis: Tanzania. December 2017, p. 10.

cross-cutting issue given attention to by the NA-ICT CF. The NA-ICT CF design involved the development of a results framework (by USAID with the MEL contractor and grantees) and an outline Theory of Change (ToC) (by DFID).⁹

Implementation grants were awarded on a country-by-country basis through a competitive process to consortia that were mostly made up of NGOs. An independent monitoring and learning provider (International Business & Technical Consultants, Inc or IBTCI),¹⁰ was appointed to provide monitoring and learning services to the programme. Table 1 below provides details of the grantees, main activities, budget and start and end dates. Note that, for ease of understanding, where grantees in specific countries are referred to in this report, they are referred to by their project name rather than by the name of the lead grantee. Project names are listed in Table 1.

Country and project	Grantees/sub- grantees	Main activities	Budget	Start and end date
Ethiopia "Digital integration"	Digital Green, Farm Radio International, Awaaz, De DiMagi	A combination of participatory radio; low-cost video; interactive voice response (IVR) with short message service (SMS option) extension services integrated with government extension services	\$1,700,000	30/09/14 to 31/12/17
Ghana "AgroTech"	Grameen Foundation, Digital Green (DG), Farm Radio International (FRI)	Services are a mix of a digital application (Grameen Foundation) for extension agents connected to farm aggregators in North Ghana, participatory radio (FRI) and low-cost video (DG) on extension agents' devices and a savings option for inputs linked to agents and financial institution (InterPay)	\$1,699,951	30/09/14 to 31/01/17
Malawi "MODES"	Catholic Relief Services (CRS), Self Help Africa (SHA), Human Networks International (HNI), Mzuzu Catholic Development Commission in Malawi CADECOM (Airtel is partner of HNI, but no funding from grantee, nor HNI)	A mix of IVR, SMS (with Airtel) services and participatory radio extension services	\$1,682,838	30/09/14 to 30/09/17
Mozambique "Extensão Multimédia" (EMM)	National Cooperative Business Association: Cooperative League of the USA (CLUSA) with HNI and FRI	Offering a mix of IVR (with Vodafone) (voice and SMS) + FRI's participatory radio programmes	\$1,700,000	12/02/16 to 30/02/19

Table 1: Summary of grants supported by the NA-ICT CF

¹⁰ Henceforth referred to as the MEL contractor.

⁹ The DFID outline ToC can be found in Annex 1 (Performance Evaluation ToRs) page 20. The USAID Results Framework had two objectives: (1) Increased use of quality inputs and improved technologies by smallholder farmers; and (2) Increased financially sustainable ICT-enabled services to complement other extension services. These equate to the two outcomes in the ToC developed for the evaluation and discussed in Chapter 2.

Country and project	Grantees/sub- grantees	Main activities	Budget	Start and end date
Senegal "TICmbay"	Concern Universal (now United Purpose) with SB Conseil, Practical Action, UC Davis, Aide au Développement Gembloux (ADG)	Uses mix of radio programmes and related mobile services (IVR / SMS) (with Orange / Sonatel) managed by a social enterprise (Jokolante) and provided via cooperatives and radio stations as customers	\$1,698,019	25/03/15 to 25/03/19
Tanzania "Upscaling Technologies in Agriculture through Knowledge Extension" (UPTAKE)	FRI and Centre for Agriculture and Biosciences International (CABI)	A mix of participatory radio extension service and an integration of mobile tools to tie farmers to radio stations	\$1,500,000	01/11/15 to 31/12/18
MEL contractor	IBTCI	Monitoring and learning (MEL) services	\$804,347	08/03/15 to 30/09/18

Source: Adapted from Annex 1, ToR

Monitoring indicators developed by the MEL contractor in collaboration with USAID and the grantees, are listed in Annex 1, pages 18–19, and summarised below:¹¹

- Indicator 1.1: Numbers of smallholder famers with access to the ICT-enabled services.
- Indicator 1.2: Numbers of smallholder farmers using ICT-enabled services.
- Indicator 1.3: Number of smallholder farmers and others who have applied improved technologies or management practices as a result of United States government (in this case NA-ICT CF) assistance.
- Indicator 1.4: Number of hectares under improved technologies or management practices as a result of United States government (in this case NA-ICT CF) assistance.
- Indicator 2.1: Percentage of costs of ICT-enabled services covered by non-donor sources.

How these indicators (commonly referred to as the Performance Indicator Reference Sheets (PIRS) indicators), relate to the ToC developed for the evaluation, is explained in Section 2, section 2.2.1.

The NA-ICT CF involved promotion of the use of different ICT tools and channels that complement non-ICT-based agricultural extension approaches delivered by public and private sectors. It was intended that this support to the improvement and expansion of ICT-enabled extension services to large numbers of farmers would be provided through sustainable business models. Hence, services were meant to be sustainable to the greatest extent possible without ongoing NA-ICT CF funding, and remain operational beyond the three-year grant period. Figure 2 below shows the different channels deployed by grantees in each of the countries.

¹¹ Indicators 1.1–1.4 relate to Objective 1 in the USAID Results Framework. Indicator 2.1 relates to Objective 2 in the USAID Results Framework.

Figure 2: Overview of channel use

Grantee	Radio	SMS	IVR	USSD	Video	Арр
Digital Integration (Ethiopia)	\checkmark		\checkmark		\checkmark	
AgroTech (Ghana)	\checkmark		\checkmark		\checkmark	\checkmark
MODES (Malawi)	\checkmark	\checkmark	\checkmark		\checkmark	
EMM (Mozambique)	\checkmark	\checkmark	\checkmark	\checkmark		
TICmbay (Senegal)	\checkmark		\checkmark			
UPTAKE (Tanzania)	\checkmark	\checkmark	\checkmark			

1.2 Context

There is an increasing need for smallholder farmers to access information in a context in which traditional extension services are stretched, and climate change is already impacting on farmers' livelihoods. At the same time, there are increasing opportunities and efforts to reach smallholder farmers through ICT-enabled extension.¹² All six countries have made commitments under the Comprehensive African Agriculture Development Programme (CAADP), which the Alliance for a Green Revolution in Africa (AGRA) sought to support through the SSTP. The latter was a five-year, USD 47 million partnership between USAID and AGRA. SSTP aimed, in part, to increase the availability of new varieties of key food crops and technologies in the same six countries targeted by the NA-ICT CF.¹³ The multi-donor, USD 12 million NA-ICT CF was designed to assist in disseminating information on these to the SSTP-targeted smallholder farmers.

Evaluation question (EQ) 1 looked specifically at how well the programme was aligned with DFID and other donor policies, country-level agricultural development policy and extension provision, as well as with the national ICT context. Findings regarding the global (donor), regional and national agriculture policy, extension and ICT context can be found in section 3.1.

As noted in the evaluation ToRs (Annex 1), ICT offers great potential to address some of the problems of inefficient agriculture advisory systems because of the huge improvements worldwide in affordable and accessible telecom services. ICT-enabled solutions have become important in improving services due to the poor infrastructure and services in place. Over the past years, there have been several efforts to design and implement ICT-enabled advisory services by NGOs, businesses, governments and public-private partnerships. Most of these have not yet gone to scale¹⁴ and tend to focus on one particular type of ICT such as mobile phone-based messages or low-cost video. There is an increased interest in combining various ICT-enabled channels to support more effective information delivery and exchange by using a wider range of communication channels best suited to different target audiences and by packaging information in various ways depending on content, purpose and audience.

¹² For example, DFID is funding the £20 million mNutrition programme which seeks to avail mobile-phone based information health, nutrition and agricultural-based information services to poor farmers.

¹³ The term "scaling" in the context of SSTP, means increasing the availability of crops and technologies, not scaling out their use.

¹⁴ The ET defines scale within the context of NA-ICT as the ability to continue ICT enabled services beyond NA-ICT CF to a population beyond the population reached during NA-ICT CF.

1.3 Purpose, scope and objectives of the evaluation

The specific focus of the evaluation was, according to the ToRs (see Annex 1), to provide a rigorous and independent assessment of the quality and relevance of the range of interventions undertaken by the programme and the extent to which it has helped smallholder farmers improve agricultural productivity. The purpose of the evaluation was twofold. For accountability purposes, the evaluation assessed the progress of the New Alliance ICT Agricultural Extension Challenge Fund (NA-ICT CF or "programme") with respect to its two outcomes: (a) increased use of quality inputs and improved technologies by smallholder farmers;¹⁵ and (b) increased financially sustainable ICT-enabled services to complement other extension services. For learning purposes, the evaluation sought to gain insights, within the context of the NA-ICT countries in sub-Saharan Africa (SSA), on what does and does not work in scaling up ICT-enabled extension approaches, through working with both the public and private sectors. It also sought to learn lessons on how ICT-enabled extension services can be financially sustainable.

Target audiences for the evaluation, as per the ToRs, include the four donors of the NA-ICT CF (USAID, DFID, IFAD and the Bill and Melinda Gates Foundation or BMGF), and a wider audience, including those governments, private sector bodies, ICT industry stakeholders, and NGOs that engaged in the project, or would in future be interested in considering providing support to, and/or designing and implementing, ICT-enabled extension services.

The evaluation was comparative in that it assessed progress across all six NA-ICT CF countries: Ethiopia, Ghana, Malawi, Mozambique, Senegal and Tanzania. The NA-ICT CF, while being assessed as a separate programme, was in fact an "add-on" programme to the NA's SSTP and was therefore evaluated within this context. The temporal scope of this evaluation was from July 2014, when the NA-ICT CF started, to the end of June 2018.¹⁶ Nonetheless, where information is available about those countries that are still implementing the project beyond June 2018 (Mozambique, Tanzania and Senegal), that information is also taken into account.

1.4 Evaluation phases

The inception phase ran from September to December 2017. The implementation phase started in January 2018 and will run through to early February 2019. An interim presentation of preliminary findings was given to the donor group in June 2018. Data collection ceased in September this same year, after the April to June 2018 reports were made available to the ET. A data quality audit was conducted in September and October 2018, and the draft final report prepared between August and November 2018. Revisions to the report were made in January and February 2019 based on feedback from DFID, DFID's quality assurance provider, and BMGF. The dissemination phase is due to take place in April to early-May 2019 with an internal seminar in DFID and a virtual presentation to, and discussion with, the donors and grantees.

The team composition is indicated in the box below.

¹⁵ DFID set a target of 1 million for this objective/outcome, as indicated in the TORs and in 2016 and 2017 donor coordination committee PowerPoint presentations. However, the NA-ICT CF did not explicitly define what was intended for scaling up either in relation to this objective or the second objective; increased financially sustainable ICT-enabled services to complement other extension services. In terms of ambitions for scaling up and reach for both objectives, the relatively low level of funding and short time-frame of the CF should be kept in mind.

¹⁶ To coincide with the availability of April to June 2018 quarterly reports from grantees (the next quarter reports being too late for the ET to include).

Box 1 – Evaluation team composition

Landell Mills appointed a core team of five experts: Dr Rachel Percy (Team Leader and agricultural extension expert), Martine Koopman (ICT for Agriculture or ICT4Ag expert), and Dr David Toomey (VfM expert) with support from Landell Mills' in-house staff, Eunica Aure (Senior Evaluation Expert who also served as Project Manager), Diletta Carmi (Junior Evaluation Expert and Project Coordinator) and Ellie McGovern (Research Assistant) who provided support to the DQA. Two national consultants joined the team for two country visits: Dr Bezabih Emana in Ethiopia, and Elisabetta Demartis in Senegal. Additional technical support was provided by Valerie McDonnell-Lenoach, an independent MEL expert. During implementation, the allocation of tasks pertaining to the VfM analysis were changed in that the VfM expert engaged with the initial communications with grantees regarding VfM, data gathering and preliminary assessment of the data available for the VfM analysis, and the drafting of a VfM guidance to donors for future programming, while the VfM analysis itself was performed by the ICT4Agr expert. This was due to time constraints and efficiency reasons, linked to the temporary unavailability of the VfM expert to work on the VfM analysis for personal reasons. The evaluation team were able to work independently and without interference or bias. The report is presented with the unanimous support of the entire team.

2 Evaluation approach, methodology and limitations

2.1 Evaluation questions (EQs) and matrix (EM)

Six evaluation criteria were used, in line with the ToR requirements. The first five are similar to the standard Organisation for Economic Co-operation and Development (OECD) criteria and were: relevance, outputs and results, VfM, progress towards outcomes, and impact and sustainability. The sixth criterion proposed by the ToR, and included in the evaluation matrix (EM), was lessons and linkages.

Eighteen evaluation questions (EQs) were developed, with a number of indicative areas to explore (or sub-questions) under each. A full and comprehensive EM was developed in the inception phase and is included in this report as Annex 5. The EM served as a guide to the team throughout the implementation phase. The first part of Annex 4, which outlines the methodology, discusses how the EQs were refined from those in the ToRs and how the EM was developed.

2.2 Evaluation design

2.2.1 Theory-based evaluation

The following, taken from guidelines on using ToC for impact evaluations, explains in part how the ET used the ToC for this evaluation: "*The evaluation team should review and revise the ToC as part of an inception report for the evaluation, including using it as a source for reviewing the evaluation questions and developing or reviewing the planned research design and methods of data collection and analysis – and then use it a conceptual framework for analysing and reporting the data*" (Rogers, 2014:5).¹⁷ To take a theory-based approach it was necessary for the ET to comprehend the donor, MEL contractor, and grantees' understanding of the programme's ToC. A ToC "*takes a wide view of desired change, carefully probing the assumptions behind each step in what may be a long and complex process. Articulating a ToC often entails thinking through all the steps along a path towards a desired change, identifying the preconditions that will enable (and possibly inhibit) each step, listing the activities that will produce these conditions, and explaining why those activities are likely to work*" (Grantcraft, n. d.)¹⁸

A theory-based approach underpinned the methods used (see section 1.2 of Annex 6). This was chosen for the following reasons:

- There were multiple assumptions and contextual underpinnings to test.
- The evidence base on which the relationship between the ICT-enabled service and improved uptake of technology, and between the latter and improved agricultural productivity in SSA was limited. A ToC approach could unpack the complexities surrounding this relationship, ensuring that the contribution of the NA-ICT CF could be assessed.
- The changes that occurred among small-scale farmers' agricultural practices may or may not have resulted from the NA-ICT CF, and ruling out alternative explanations to establish contribution is important.

¹⁷ Rogers, P. (2014). Theory of Change, Methodological Briefs: Impact Evaluation 2, UNICEF Office of Research, Florence. ¹⁸ Grant Craft, Manping change, Using a ToC to guide planning and evaluation.

- There may have been unintended consequences, positive and negative, and the explanatory causes for such an unexpected turn in the trajectory of change must be taken account of.
- There were innovative features to the NA-ICT CF, and a theory-based evaluation allowed for the validity of the links supporting the ToC to be tested to see if they hold on the ground and whether other determining or causal factors contribute to or undermine the achievement of the intended objectives.

At the time of starting this evaluation, USAID had already developed a Results Framework and DFID an outline ToC. During the inception phase the ET pulled together a draft ToC from these and other sources and held a three-hour workshop with the donor group and the MEL contractor to discuss and validate the ToC for the programme as a whole. This served as a springboard for the country-level ToC workshops that were held in the three countries visited. Furthermore, it informed the development of checklists for key informant interviews with stakeholders in all six countries (as well as for higher-level interviews), and the application of contribution analysis to assess performance in the visited countries. Annex 6 on the elaborated ToC and its use in the evaluation provides: (a) the elaborated ToC including a detailed description of each of the three impact pathways and the assumptions behind them; (b) a description of how it was used; and (c) a re-examination of output to outcome, and outcome to impact assumptions for each of the three impact pathways (IPs) in the ToC in the light of evaluation findings. Figure 3 below provides the overall ToC that was developed with the donor group and the MEL contractor during the inception phase. The ToC recognises three problems that are related to three IPs, which lead to four outputs, two outcomes and one impact, derived from the USAID Results Framework and the original DFID ToC (See Annex 1). The first pathway concerns increasing smallholder farmer application of new technologies and best practices. The second pathway concerns seeking financially sustainable means of providing ICT-enabled extension services, and the third pathway concerns the building of the evidence base. The CF indicators correspond with the ToC as follows:

- Indicators 1.1 (number of farmers with access to ICT-enabled services) and 1.2 (number of farmers using ICT-enabled services) are output level indicators and relate to Impact pathway (IP) 1, Output 1.
- Indicators 1.3 (*number of farmers who have applied improved technologies or management practices*) and 1.4 (*number of hectares of land under improved technologies or management practices*), relate to IP1, Outcome 1.
- Indicator 2.1 (*percentage of costs of ICT-enabled services covered by non-donor sources*) relates to IP2, Output 2 and Outcome 2.

Overall, Indicators 1.1–1.4 relate to Outcome 1 in the ToC below, which is equivalent to Objective 1 in the USAID Results Framework. Indicator 2.1 relates to Outcome 2 in the ToC below, which is equivalent to Objective 2 in the USAID Results Framework. At the output level in the ToC diagram, there was no formal PIRS monitoring required of the grantees of Output 2 which concerns content development, or Output 4 which concerns development of high-quality evidence.

Figure 3: Programme Theory of Change



2.2.2 Communications protocol

The ET has sought to cultivate a relationship with all stakeholders based on respect and collaboration. Key stakeholders with which the ET has engaged have been DFID (as contractor of the evaluation), the other three donors (USAID, IFAD and BMGF), the NA-ICT CF grantees, the MEL contractor, SSTP and mNutrition¹⁹. Values that have underpinned the evaluators' engagement with these stakeholders include consultation, respect, transparency, ethics and open communication. Communication channels with DFID have been open and used on the occasions needed. All four donors had the opportunity to engage with the ET and review its work at key stages during the evaluation. These included a ToC workshop held with the donors and the MEL contractor during the inception phase, the opportunity to comment on the inception report, participation in the interim presentation of findings in June 2018, and now the opportunity to review and provide feedback on the draft final report. Grantees had the opportunity to introduce their projects to the ET during introductory calls. They further commented and advised on the country visit schedules, itineraries and interviewees. They had the opportunity to engage not only through key informant interviews but also through workshops at the start and end of each country visit. They also had the opportunity to review and comment on the contribution stories developed by the ET, based on learning in the three countries visited. All interviewees had the right to withhold information or to request that the ET not take notes on particular responses, and no interviewee is quoted directly in the report.

The dissemination plan, developed during the inception phase and fine-tuned in November 2018, is included in Annex 11. Detailed communication steps will be agreed in consultation with DFID once the evaluation report is finalised and they are expected to include presentation and discussion of findings with the donors and, potentially, grantees.

2.2.3 Ethical considerations

Common ethical evaluation principles are: obligations to participants, confidentiality and privacy, honesty and integrity, quality of methods and data, independence, conflict of interest, competence, transparency, impartiality, ensuring participation from women and socially excluded groups, utility and accountability.²⁰ The evaluation sought to fulfil these principles, for example, through ensuring confidentiality and anonymity of results, honesty and transparency in communications and during country visits, being sensitive to gender, being independent and giving careful consideration to quality of methods and data. While the team did not explicitly seek ethical approval during interviews and focus group meetings, they made it clear that, if any interviewee stated that they did not want particular points reported, then the team would not do so. On a wider level, the NA-ICT CF was promoting SSTP-supported technologies and best practices, which in turn were aligned with national policy.

The evaluation has been implemented in accordance with the Paris Declaration principles,²¹ in particular, Harmonisation, Alignment, Results and Ownership. Alignment of the CF with country-

Mutual accountability: Donors and partners are accountable for development results.

¹⁹ mNutrition is a DFID programme focusing on business models for mobile phone based delivery of nutrition services in Africa and South Asia. The evaluation team were in touch with the lead of the implementation agency: GSMA and with the lead of the consortium carrying out M&E of mNutrition.

²⁰ DFID Review of ethics principles, and guidance in evaluation and research, Williams, L.G, January 2016 Pages 9-10. See: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/524635/Ethics-principlesreport-2016.pdf

²¹ The OECD Paris Declaration Principles are as follows: Ownership: Developing countries set their own strategies for poverty reduction, improve their institutions and tackle corruption; Alignment: Donor countries align behind these objectives and use local systems; Harmonisation: Donor countries coordinate, simplify procedures and share information to avoid duplication; Results: Developing countries and donors shift focus to development results and results get measured and;

level policies in the six countries concerned is evident by the support lent to those countries through SSTPs (and therefore NA-ICT CFs), recognition of national and CAADP identified key crops, and of the NA's commitments made in this regard. In relation to the evaluation specifically, it was aligned behind the objectives and monitoring system of the NA-ICT CF and sought to assess and measure results based on the existing data. Harmonisation is addressed within the NA-ICT CF at the donor level through the harmonisation of donor approaches necessitated by this being a multi-donor-funded project. Further, the design of the CF provided space for grantees to manage their NA-ICT-funded projects at country level. The MEL was also harmonised across the six countries. In terms of the evaluation specifically, as the evaluation was of a multi-donor-funded project, procedures for DFID to share information with the donor group at key stages were in place. Further, ownership and alignment were enhanced through the grantees working together with the evaluation team during country visits.

2.3 Mixed methods data collection

A mixed methods approach was taken by the ET, combining qualitative and quantitative approaches and methods which allowed for more comprehensive findings, better triangulation and greater rigour. Qualitative methods included document review; a data quality audit; key informant interviews; focus group discussions; ToC-based approaches, including contribution analysis; country case studies; and comparative analysis. Quantitative methods included analysis of all quantitative data related to both costs (where available) and outputs, including the key indicators that all grantees reported on. It also included a limited and partial VfM analysis. Annex 4 provides more details on methods.

The evaluation drew mainly on the extensive available existing secondary data (see Annex 2 for the full bibliography). This included grantee quarterly and annual reports, baselines, surveys, and evaluations the grantees carried out, and grantee-reporting under the PIRS against the five indicators agreed upon between USAID and its MEL contractor. It also included, where available, higher-level (donor, the MEL contractor, SSTP and SSTP evaluation) reports. The aim of country visits was to fill gaps, triangulate and gain a greater depth of insight into processes and results.

As grantees had not at any time been asked to record costs and expenditure in relation to VfM criteria, new (hence primary) data based on retrospective analyses by the grantees was requested of them, but with very limited results (as further explained in section 2.5 below and in Annex 9: VfM analysis).

2.4 Data analysis

Cross-cutting areas listed in the ToRs were poverty, gender, climate and environment issues, and disability and other dimensions of social inclusion. During the inception phase it became clear that no measures of poverty had been taken into consideration either by the NA-ICT CF grantees or the SSTP project itself. Gender, disability, youth and other dimensions of social inclusion were not key areas of priority for SSTP, but SSTP reporting was gender disaggregated. The NA-ICT CF did focus on gender to some extent and, subsequently, this was the cross-cutting area that the evaluation primarily addressed.²² Climate and environmental issues were indirectly taken into consideration by SSTP, AGRA and the relevant national agriculture research institutions, when selecting which key food crops and varieties of these to support. However, the ET was of the view that assessment of whether the SSTP technologies being promoted by the NA-ICT CF are

²² However, gender disaggregated data did not distinguish between women who were wives in male -headed households, or were classed as female heads of households.

benefiting the environment goes beyond the scope of this performance evaluation and was (a) not possible with the available data, and (b) more appropriate for SSTP to carry out.

The multiple lines of inquiry and analysis, and the use of mixed methods, allowed for a good degree of triangulation of findings and also served to prevent any unintended biases that a single collection method may have created. Annex 4 provides details of how the EQs were refined and the EM elaborated, how mixed data collection and analysis methods were used and how country case studies were selected. Within the qualitative methods used, contribution stories/analysis was a key method used to analyse results related to IP1, and, within the quantitative methods, a degree of VfM analysis was applied (see Annex 9) based on the four EQs concerning economy, efficiency, effectiveness and equity.

Figure 4 below visually illustrates the data management and analysis process followed by the team. The team drew on the sources in the top row to fill in excel spreadsheets gathering evidence for each of the six countries (referred to as country frameworks in the diagram) and a seventh spreadsheet for higher-level (donor, the MEL contractor, SSTP, mNutrition) findings. The templates each included the 18 EQs and 92 sub-questions under these (second row). The data was then sorted to provide findings for each of the 18 EQs (third row down). These were then filtered and analysed (fourth row down) and fed into the evaluation findings (bottom row) against the evaluation criteria.





2.5 Limitations

There were six main limitations to the evaluation, two of which had an impact on the extent of evidence that the evaluation could draw on. The first concerned VfM. Despite VfM being given consideration in the DFID business case, VfM was not built into the design of the NA-ICT CF. Despite the team's effort in guiding grantees through the production of data that could be used for the VfM analysis, data provided by grantees was incomplete for most countries, without actual expenditures. Most data did not provide enough detail to provide insight on how the grant was converted along the result chain to outputs and outcome. These limitations were discussed with DFID in mid-2018 and it was agreed that the ET would endeavour to carry out limited and partial

VfM at country level for those grantees for which there was enough information. Overall, the data available did not allow the ET to conduct a comparative financial analysis across countries, channels or crops. More details about the limitations to carrying out VfM analysis can be found in Annex 10.

The second limitation, which stems from the set-up of the CF itself (rather than directly having arisen from the evaluation) relates to the lack of strong monitoring data. Specifically, while the MEL contractor developed a common definition for indicator 1.3 as being *the number of smallholder farmers and others who have applied improved technologies or management practices*, not all grantees interpreted this in the same way. For example, Senegal only counted farmers who were applying the technique or best practice for the first time. UPTAKE (Tanzania) only counted farmers who applied at least two technologies or practices. And in the case of video-based extension in Ethiopia, only those farmers who applied a set of "non-negotiable" practices²³ were counted. Data in particular from two grantees – MODES in Malawi and EMM in Mozambique – for indicator 1.3 appear high. The ET did check the validity of these data with MEL contractor and were assured that it is accurate. However, given that these data may be seen as "outlier" data, in the relevant section of the report (section 3.4), comparisons are provided including the original and recalculated data from MODES (Malawi) and EMM (Mozambique) (according to the average of data from grantees in Ethiopia, Ghana, Senegal and Tanzania).

With regard to indicator 1.4 – Number of hectares of land under improved technologies or management practices – in most countries this indicator was calculated based on the number of farmers that applied technologies (as reported by indicator 1.3) multiplied by a proxy for average hectares under improvement per farmer. In such cases, therefore, 1.4 data are derived, not actual, and are susceptible to incorrect estimation of the average hectares on which farmers are applying the new techniques or practices.

The remaining four were as follows. First, the national consultant in Tanzania was eventually unavailable, at short notice, to join the team during the first country visit. This meant that the ET conducting the field visit (specifically the Team Leader and the ICT4Ag expert) could not benefit from the experience and contextual understanding of the national consultant. However, this did mean that the ET had more time, in-country, to develop and refine the tools and approaches to be used throughout the three country visits.

Second, there was a national state of emergency in place when the ET visited Ethiopia. While the team could and did travel to Amhara and Tigray regions, the consultants could not travel to Oromia, where the project had significant operations, particularly in earlier years. However, the national consultant for Ethiopia, having worked throughout the visit with the ET, was fully conversant with the interview requirements and process, and was able to visit the area a few weeks later, conduct and record all required complementary interviews, and integrate those into the existing findings.

Third, the evaluation was challenged in determining attribution of the CF to the outcome and impact levels. However, contribution analysis, as well as review of context and other factors at play, were used to address this issue to the extent possible.

Fourth, the evaluation took place while the programme is still running, with grantees in three of the countries not completing their projects until the end of 2018 or first quarter of 2019. This meant that it was not possible to assess final performance, although it was still possible to assess performance to date and give some consideration to prospects for future performance.

²³ These were sets of practices that needed to be applied to achieve a result (e.g. row planting, correct spacing, correct fertiliser application, etc.).

3 Findings

Findings are provided for each evaluation criterion in turn. For each criterion, the related EQs are listed in a box, followed by an overall summary of the findings. Thereafter, findings per EQ are provided and then summarised in a box which is colour coded based on the following categories:

	0
Colour	Description
Excellent	NA-ICT CF achievement against this EQ exceeded targets and/or expectations
Good	NA-ICT CF achievement against this EQ met expectations
Fair	NA-ICT CF achievement against this EQ was fair. There were some shortcomings
Unsatisfactory	NA-ICT CF achievement against this EQ was unsatisfactory, with many short comings
Not applicable / available	Not applicable / available

Table 2 Evaluation team's rating of achievement of the NA-ICT CF per EQ

3.1 Relevance

There were three EQs under "relevance" as indicated in the box below. In the following text, EQ3 is addressed along with EQ1 in section 3.1.1, followed by findings related to "design" (EQ2) in section 3.1.2. Findings for EQ2 incorporate those from EQ18 also concerning linkages.

EQ1: How well was the programme aligned with DFID and other donor policies, as well as countrylevel agricultural development policy and extension provision, and with the national ICT context? (Alignment). EQ1 addressed along with EQ3.

EQ3: Is the NA-ICT CF filling a market gap? (Demand)

EQ2: How well designed was the NA-ICT CF to achieve its objectives? (Design).

EQ18: What effective linkages did the programme make with other similar initiatives/organisations providing ICT-enabled extension services, and what lessons did they learn? EQ18 has been incorporated into EQ2 findings.

Summary of findings regarding relevance: The extent of the relevance of the NA-ICT CF was assessed by the ET as high. It is well aligned with both donor and country-level agricultural development policies (EQ1); and is in keeping with the type of agricultural extension provision in each of the six countries, as well as the ICT context in all countries. Demand (EQ3) for radio was high across all countries compared with demand for mobile-based services, but the latter has potential to grow as mobile phone ownership and use increase.

There were five findings on the design of the CF (EQ2).

- 1. Despite the varieties and technologies promoted being specified by SSTP, their choice was based on national priorities and were all key crops for each country.
- 2. The set-up of the consortium, which involved an alliance of four donors (responding to calls at a 2012 G8 summit that led to the establishment of the New Alliance for Food Security and Nutrition (NA)) created its own management challenges.
- 3. Governance arrangements for the CF were satisfactory, but management underwent a significant shift when the Contracting Officer Representative (COR) involved from the start left USAID and management responsibilities were dispersed across eight USAID staff.

- 4. Design allowed for good collaboration with key stakeholders at country level, although the collaboration between SSTP and the MEL contractor in terms of monitoring was weak, and linkages with other similar programmes primarily occurred when the NA-ICT grantees were also working on these other programmes.
- 5. In terms of design, findings are that gender was not seen as a priority grantees did not perceive it as a priority to the donors, and SSTP was "gender-neutral" with most of the crops being promoted being "men's" crops.

There were some challenges faced, mostly related to the CF being a multi-donor programme, with each donor having their own reporting requirements and cycles. Other challenges were the late appointment of the MEL contractor, and an overall challenge of running the CF as a separate "add-on" project to SSTP, all of which had implications for the efficient running of the CF.

3.1.1 Alignment (EQ1) and demand (EQ3)

The programme is consistent with donor-level policies on support to agricultural production. This is exemplified by the donor commitments made at the 2012 G8 summit at Camp David to the NA. This was a "shared commitment and partnership between African leaders, donors and private sector partners to achieve sustained and inclusive agricultural growth and raise 50 million people out of poverty over the next ten years".²⁴ The New Alliance built on the CAADP country investment plans. Four integrated actions were determined under the NA and two of these were SSTP and the NA-ICT CF.²⁵ The USA was charged with starting the New Alliance for Food Security to accelerate new proven agriculture techniques to improve productivity.

At the level of the individual donors supporting the NA-ICT CF, the programme is consistent with their policies on support to agricultural production as illustrated in Table 3 below.

Donor	Policies/strategies related to agricultural productivity
USAID	2017 Global Food Security Strategy ²⁶ Feed-the-Future Strategy and the USAID 2011-2014 Policy Framework ²⁷
BMGF	Vision, which aims to transform agri-food systems from subsistence-oriented and farm-centred, to commercialised, productive farming ultimately lifting farmers and their families out of poverty and BMGF Digital Rural Advisory Services (RAS) strategy. ²⁸
DFID	Fit with DFID's Economic Development Strategy, ²⁹ DFID's Conceptual Framework on Agriculture (2015) ³⁰ and the 2017 DFID research review. ³¹
IFAD	Strategic Objectives (SOs) 2 and 3 of the 2016–2021 Country Strategic Opportunities Programme (COSOP) for Tanzania. ³² SO2: More inclusive and resilient value chains of priority commodities. SO3:

Table 3: Donor policies/strategies related to agricultural productivity

²⁴ 2016-2017 SSTP Annual Report, p. 1.

²⁵ USAID NA-ICT CF project concept note.

- $^{\rm 27}$ USAID ICT extension CF concept note cleared for sharing, 14 March 2014, p. 4.
- ²⁸ BMGF Transforming rural advisory services in a digital world, 18 August 2017.

²⁹ DFID Economic Development Strategy: Prosperity, poverty and meeting global challenges. (January 2017).

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/587374/DFID-Economic-Development-Strategy-2017.pdf

³⁰ DFID's Conceptual Framework on Agriculture (November 2015)

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/472999/Conceptual-Framework-Agriculture2.pdf

³¹ DFID Research Review (October 2017).

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/564075/Researchreview4.pdf

³² IFAD United Republic of Tanzania. Country Strategic Opportunities Programme, 23 March 2016. <u>https://webapps.ifad.org/members/eb/117/docs/EB-2016-117-R-11.pdf</u>

²⁶ https://www.usaid.gov/sites/default/files/documents/1867/USG-Global-Food-Security-Strategy-2016.pdf

Improved climate-resilient, productivity increasing technologies in priority crop-livestock-fishery commodities.

All four donors are interested in the use of ICTs in extension. In particular, BMFG's Rural Advisory Services (RAS) include the use of radio, TV, call-centres, video, mobile, web portals and other ICT channels to reach farmers. BMGF seeks to address capacity, content and cost issues through focusing their strategy around digital solutions to customise content, drive down costs at scale, and build human and institutional capacity. The DFID business case for the project states that DFID is committed to promoting the use of ICT for development (ICT4D) as set out in its 2012-2015 Digital Strategy and its subsequent 2018-2020 Digital Strategy.³³ It notes that there is strategic fit between the NA-ICT CF and DFID's interests in ICT4D. Interviews confirmed that research into use of ICTs in agriculture is particularly of interest to DFID's Research and Evidence Division, in order to inform future potential support to ICT-enabled extension. Turning to country-level findings, those regarding agricultural development policy are discussed first, followed by findings related to extension provision, and last, findings about national ICT context are provided.

First, regarding **agricultural development policy**, the priority crops and practices for each SSTP country programme were identified along with the national agricultural research institutions and were in line with each of the six country's CAADP commitments. Hence, the NA-ICT CF programme was also aligned with CAADP commitments of each country.

There was a strong alignment with government agricultural policy in all six countries. The way in which there was consistency varied according to the type of agricultural development policy in place. Hence, in Ethiopia, the project was well aligned with the Growth and Transformation Plan³⁴ and, in fact, earlier Digital Green video pilots had influenced government extension strategy. In Malawi, Modernization of Demand-driven Extension Services (MODES) is aligned with the Malawi Growth and Development Strategy (MGDS) II³⁵ and, in Mozambique, policy is to grow and transform the agriculture sector, shifting production away from mainly subsistence activities and promoting access to international markets.³⁶ In Senegal, the Accelerated Programme for Agriculture 2014³⁷ places emphasis on rice and groundnuts, which are key SSTP-supported crops.

In Tanzania, the programme was aligned with agricultural policy, but this itself was not being strongly implemented as noted in IFAD's 2016–2021 Country Strategic Opportunities Programme (Tanzania) (COSOP): "The new Government elected in October 2015 intends to continue on this pathway towards achieving inclusive agricultural transformation. Despite this commitment, constraints remain, such as limited institutional capacities, performance, coordination and weak governance at central and local levels. These, along with tensions between national and local priorities, result in weak delivery of agricultural support services to IFAD target groups". 38 UPTAKE did however work closely with District Agriculture Irrigation and Cooperative Officers (DAICOs). In Ghana the government policy is towards pluralistic extension provision. AgroTech mirrored this, in that while content development was done in collaboration with the Ministry of Food and Agriculture, ongoing ICT-enabled extension provision by AgroTech was done in collaboration with private

https://www.gov.uk/government/publications/dfid-digital-strategy-2018-to-2020-doing-development-in-a-digital-world

³⁷ FAO (2015) Country Fact Sheet on Food and Agriculture Policy Trends Senegal, page 2. http://www.fao.org/3/a-i4841e.pdf

³³ DFID Digital Strategy 2018-2020: Doing development in a digital world: January 2018

³⁴ Federal Democratic Republic of Ethiopia, Growth and Transformation Plan II, 2015–2016 to 2019-2020, National Planning Commission, May 2016, Addis Ababa.

³⁵ http://www.mw.one.un.org/wp-content/uploads/2014/04/Malawi-Growth-and-Dedvelopment-Strategy-MGDS-II.pdf

³⁶ FAO (2016) Country Fact Sheet on Food and Agriculture Policy Trends, Malawi page 2. <u>http://www.fao.org/3/a-i5931e.pdf</u>

³⁸ United Republic of Tanzania. Country Strategic Opportunities Programme, 2016-2021, p. 4.

sector extension within an outgrower³⁹ scheme and through collaboration with a large USAID Agricultural Development and Value Chain Enhancement II (ADVANCE II) Project.

Second, regarding agricultural extension provision, NA-ICT CF implementation in each of Ethiopia, Malawi, Mozambique and Senegal was consistent with country-level extension provision, although the way extension was provided varies between countries. Of the four countries, public sector extension provision was strongest in Ethiopia and the project worked closely with the government at all levels. The government has mainstreamed both video- and mobile-based extension into the public sector extension provision and is looking to expand the training in videobased extension to more Agricultural Technical and Vocational Education and Training centres. ICT-enabled extension is embedded in the system at woreda (local level), district and regional levels and is included in the performance management system as a core task. The other three countries have pluralistic extension. In Malawi, the government extension workers are still the major sources of information for farmers, and MODES worked very closely with the Ministry of Agriculture, Irrigation and Water Development's Department of Agricultural Extension Services from the start. In Mozambigue, the extension services are decentralised to district level with multiple providers: government, private sector and NGOs. Given that EMM is working closely with the National Directorate for Agrarian Extension, and also working through its own NGO extension staff and agro-dealers, the project is consistent with the country-level extension approach. Last, in Senegal, extension provision is left to cooperatives, NGOs and the private sector on the whole, so TICmbay's working with these stakeholders is consistent with extension policy. It was difficult to judge whether NA-ICT implementation in Ghana and Tanzania was consistent with country-level extension provision as the latter is very weak in both countries.

Third, findings about **national ICT context** (EQ1) were that, in all countries, radio station reach is high and access generally good. Farmers also listen to the radio on their mobiles. Many radio stations, particularly community ones, but also commercial and government regional and national-level stations, run programmes in local languages. The emphasis on the use of interactive radio in all six countries is in line with levels of literacy, accessibility and language challenges. Further, in all countries, ownership of mobiles and access to internet is increasing year by year. In Table 4 an overview is given of all countries participating in the NA-ICT CF. Countries with a higher urbanisation level have a higher level of access to the internet and to mobile phones. The majority of people who are offline, however, are from underserved population groups (rural, women, low income, youth and other marginalised groups).⁴⁰

Country	Internet access	Mobile phone access	Urbanisation
Ethiopia	15%	50%	21%
Ghana	35%	119%	56%
Malawi	10%	41%	17%
Mozambique	18%	65%	33%
Senegal	61%	98%	45%
Tanzania	15%	72%	33%

Table 4: Access to internet and mobile phone access⁴¹

⁴⁰ Mobile Economy Sub Sahara Africa 2018.

³⁹ Outgrower schemes are binding arrangements through which agri-businesses ensure their supply of agricultural products by individual or groups of farmers. Outgrower schemes are commonly referred to as contract farming.

⁴¹ <u>Global Digital Report 2018</u>, mobile phone access is measured by the number of simcards. In Ghana people often own more than one simcard.

In Ethiopia and Ghana there was existing provision of mobile phone ICT4Ag service provision (in Ethiopia by the Agricultural Transformation Agency with Ethio Telecom, and in Ghana by many different ICT4Ag service providers). Ethiopia, Mozambique, Senegal and Tanzania have government policies concerning use of ICTs to communicate with rural populations. For all six countries, there was sufficient demand by smallholder farmers for ICT-enabled agricultural extension services (EQ3), particularly participatory radio-based services (and, in Ethiopia, video-based extension). ICT-based extension was also in demand among extension workers. These included app-based services (in Mozambique, Ghana and Malawi), as well as the radio and mobile-based services was relatively low in all countries as compared with demand for radio. Despite the relatively lower demand for mobile-based services, ownership of mobiles is increasing rapidly, and there remains further potential over time for the use of mobiles for ICT-based extension.

Good: The ET considers that the NA-ICT CF aligned well with the agricultural development policy, extension and ICT contexts of the countries concerned, and that it was appropriate for the project to be utilising a variety of ICT-enabled channels, albeit the potential for mobile-based agricultural extension is still emerging.

3.1.2 Design of, and linkages made by, the NA-ICT CF (EQ2, including EQ18)

A number of areas were explored under this question, and findings are organised under four subheadings.

• The extent to which the programme responds to men and women smallholder farmers' livelihood needs and knowledge demands

High-level findings (from IFAD, SSTP, SSTP evaluation documents and interviews) indicate that the choice of crops that SSTP supported was made in consultation with national agricultural research institutions and were in line with country CAADP priorities. While 17 crops were supported by the grantees across the six countries, maize was the most widely featured crop in all countries, followed by cassava (in four countries) and rice and soybeans (in three countries). Figure 5 indicates the crops supported in SSTP countries.



Figure 5: Crops supported in SSTP countries⁴²

Major technologies promoted in all countries were the appropriate use of fertiliser and improved seeds/planting materials (falling in the categories of crop genetics and cultural practices). At least one nutritious crop (e.g. soybean, cow pea, chickpeas, beans) was promoted in each country. Both

⁴² SSTP AGRA-SSTP outcome indicators annual assessment 2017 (January 2018, final survey report)) Project Alternatives Ltd for AGRA, p. 31.

IFAD and the SSTP evaluation commented on the emphasis on maize and considered that appropriate (as it is a highly important key staple, it has good potential for increased yields, and there were more private sector seed suppliers of maize than of the other crops). The SSTP evaluation noted that more emphasis was given to seeds and varieties, as compared to complementary technologies such as fertiliser, crop protection and mechanisation.

Turning to country-level findings, there were two common findings from across all six countries. First, as learned at the higher level, the SSTP crops are, for every country, key ones that most smallholders produce. Therefore, while SSTP was inherently supply driven, the crops the programme focused on are those which farmers are engaged in and are relevant to their livelihood needs. Second, neither gender nor age were concerns of SSTP and this carried through to NA-ICT. Maize, a crop commonly managed by men, was the predominant crop that SSTP focused on, with the others being other cereals, or legumes. SSTP assumed that women are more involved in the production of legumes. In practice, this meant a higher percentage of SSTP crops were those that men have responsibility for, rather than women.

Some grantees sought to make the ICT-enabled extension respond better to livelihood needs. For example, in Tanzania, the grantees extended the NA-ICT extension provision beyond the early stages of the value chain (which was the focus of SSTP), to the whole value chain. In Ethiopia, Malawi and Mozambique, the grantees complemented the narrow focus of the SSTP messages with other messages related to other crops and also livestock, so that the ICT-enabled extension service was more broadly relevant to farmers' livelihood needs. In Ethiopia, this was possible as there was BMGF funding for all the woredas covered by NA-ICT so that other topics could be covered (e.g. poultry) through video-based extension. In Malawi, other projects complemented farmers' ICT-based extension needs (e.g. Oxfam covered dairy and chicken). In Mozambique, EMM broadened the range of topics covered, and the appeal of the mobile 321 services, by opening out to the private sector (and others) for sharing "dynamic" information on various topics related to agriculture and also providing market information (drawn from the government funded agricultural marketing information system operated by the Ministry of Agriculture).

• How the NA-ICT CF was set up, governed and managed

Findings from both document review and interviews with donors, the MEL contractor and SSTP were consistent. Findings related to NA-ICT CF set-up, governance and management of the programme-level consortium are reported below, followed by a discussion of the key challenges faced. A short discussion of the design of country-level consortia follows.

Set-up of the NA-ICT CF consortium. Membership of the NA-ICT CF consortium arose from the commitments by each of USAID, DFID, IFAD and BMGF to the New Alliance for Food Security and Nutrition, following the G8 Nutrition for Growth event on 8 June 2013. Initially a small task force was established, involving DFID, BMGF and USAID, to consider how best to set up the CF. Various fund management options were considered, with a final joint decision being made that USAID would oversee the CF on behalf of the other G8 donors. As the DFID business case⁴³ noted: "The establishment of a joint fund managed by USAID will support project activities through harmonisation and alignment of donors around outputs, outcomes and mechanisms for delivery and through reduced transaction costs as USAID will take on all project management costs and fiduciary responsibilities".

Due to the specific nature of each donor, separate letters of agreement or commitment were established between USAID and each of the three donors in 2014. These spelled out the financial, governance and management arrangements. Each of DFID, USAID and BMGF contributed funding towards the CF for all countries aside from Tanzania, which IFAD funded. USAID further

bore the management costs of the CF; and DFID further funded the monitoring and evaluation components.

None of the four donors recognised this project as a challenge fund, but rather saw it as a regular process of assessing and awarding grants. All the donors felt that for this to have been a true CF, there needed to have been more space for innovation and that it should not have been as fixed as it was (with the need to promote only SSTP technologies and the need to use a combination of ICT channels both already defined from the start). Further, CFs are often used to encourage private sector innovation and financially sustainable solutions but, in this case, as one interviewee put it: "*The project had a smorgasbord of public and private solutions*" and a true CF may not have been the appropriate mechanism where public sector providers were important channels. Finally, given that CFs are often used to stimulate private sector (PS) innovation, the time frame was a concern to one interviewee who stated "*If you want to work with the PS and test out different models it will take time for PS to get a return. Similarly, if you are focusing on (rain-fed) crops for which there is only one season a year, then a three-year funding period is limiting and less attractive to PS players*".

Governance of the NA-ICT CF. At the start, formal governance arrangements were established. A Coordination Committee made up of a named person and alternate from each donor was established. Quarterly and annual remote meetings were held. These arrangements were relaxed following a change of leadership within USAID (see the section on management below). USAID shared grantees' and the MEL contractor's reports with donors, usually with some added commentary to begin with. However, there was no process of consolidated reporting of the programme as a whole across the six countries, other than at two donor coordination meetings through a PowerPoint presentation (July 2016 and January 2017). USAID did prepare formal reports for BMGF annually, however, as that was a requirement of this donor. Also, USAID prepared feedback each year for DFID on the project and on the recommendations made by DFID in prior Annual Reviews.

A technical committee made up of USAID, DFID and BMGF for all but Tanzania, and IFAD and USAID for Tanzania, reviewed the bids from all grantees. The template for bid assessment included five criteria: program strategy; collaboration and synchronisation with SSTP; results planning, feedback process, sustainability and scalability; implementation and management capacity; and staffing and resource leveraging. Each had sub-questions and asked for assessments against strengths and weaknesses. Interviews indicated that the process of selection was transparent and collaborative. While USAID had greater representation on the committee than the other donors, other donors felt that their views, including reservations about particular bids, were heard. Where bids were considered unsatisfactory, as in Mozambique, a second invitation was made.

Management of the NA-ICT CF. The CF was managed by one person within USAID from the start, up until April 2017 when that person left the organisation. No replacement could be found with the same combination of expertise. Then, different Agreement Officer Representatives (AORs) were appointed to each country, and a COR was appointed to manage the MEL contractor, with a "light-touch" Fund Manager also appointed to have general oversight. Many of these posts have seen some turnover since April 2017. At this stage the regularity of Coordination Committee meetings became more ad hoc, with the most recent Fund Manager, appointed in January 2018, no longer convening them.

USAID was the primary body communicating with the SSTP and the MEL contractor. When the project was managed by just one person, communication with SSTP was good and, in 2015, a joint USAID, DFID and SSTP mission was held in Malawi linking SSTP with NA-ICT. USAID also participated in the first face-to-face learning workshop organised by the MEL contractor in Ethiopia

in August 2016. Other than this mission, the only donor that directly visited the grantees was IFAD. Two supervision missions were made to Tanzania, one in 2016 and a second in 2018, reports of which were shared with USAID.

Design and management challenges. Five key challenges were noted from both the document review and interviews related to design. First, ideally, NA-ICT CF should have been an integral part of SSTP, not a separate project. This would have allowed for a joined-up approach to both implementation and M&E. The second challenge was the nature of the consortium and its members' reporting requirements. Timing of NA-ICT and SSTP reporting was not synchronised. DFID's reporting year is on a different cycle to that of USAID. USAID was required to report to donors (DFID and BMGF) at different times and in different formats. In the later years, this was quite a cumbersome process, as the NA-ICT CF manager needed to access and collate inputs from six AORs and one COR, all of whom were working on a number of projects other than the NA-ICT CF. Third, the extent of staff turnover in each of DFID, BMGF, IFAD and USAID meant that institutional memory about the project suffered. Fourth, the MEL contractor was appointed late, by which time most grantees had already started to implement and had set up their own M&E systems. Last, expecting the models to be self-sustaining in just a few years, as per the CF design was considered by both grantees and the MEL contractor to be too ambitious in practice.

Country-level consortia. The NA-ICT consortia in all six countries had several different organisations as members, each bringing specific skills. Only one project, TICmbay in Senegal, had a consortium member specifically dedicated to M&E. In all countries the consortia set up appropriate management arrangements including advisory or steering committees. All grantees arranged for regular meetings of the consortium, either remotely or face to face. Consortium leads were in all cases organisations that already had a presence in the country and previous experience in agricultural extension (and, in the cases of Ethiopia, Ghana and Tanzania, in ICT-enabled extension). Grantees in Ethiopia, Ghana, Malawi and Mozambique engaged national-level Ministry of Agriculture staff in their Steering or Advisory Committees. None of the grantees followed the principles of digital development⁴⁴ as such, but most grantees applied elements of the principles like design with the user (the user-centric approach of Ghana), design for scale (Senegal), use of open source (Senegal, Ghana), design for sustainability (Digital Integration, Ethiopia, EMM, Mozambique; and TICmbay, Senegal), re-use of existing solutions (Senegal, Ghana, FRI's Uliza platform), and Digital Green's Connect Online Connect Offline (COCO)⁴⁵ (Ethiopia). With regard to radio programmes/campaigns, in the four countries where FRI was supporting this (Ethiopia, Ghana, Mozambique and Tanzania) FRI's VOICE standards and formative audience research reflects a user centred design and re-use of an existing platform.

• How the design allowed for collaboration and linkages with SSTP and other key stakeholders

The NA-ICT CF falls under one of the three objectives of the SSTP Results Framework, namely Objective 2 which is to increase the use of quality seeds and other technologies by smallholder farmers, with one of the outcomes being: "Increased use of ICT-enabled extension services by smallholder farmers". All three objectives contribute towards the SSTP goal which is to "improve food security and reduce poverty among smallholder farmers in targeted areas within selected SSA countries". To this end the NA-ICT CF was nested in the SSTP programme and the technologies and best practices to be disseminated through ICT-enabled extension were those arising from the SSTP.

44 https://digitalprinciples.org/

⁴⁵ Connect Online | Connect Offline (COCO) is an Android-based mobile application built on Dimagi's CommCare and integrated with Digital Green's monitoring system.

The collaboration between NA-ICT CF and SSTP at the programme level was good in the early years of the NA-ICT project and included a joint USAID, SSTP and DFID mission to Malawi. However, communication tailed off once the responsibility for NA-ICT CF oversight was dispersed among a number of USAID staff. The Chief of Party of SSTP visited USAID in November 2015 and gave a presentation on SSTP progress and its links to country grantees. SSTP grantees had to report on collaboration with NA-ICT in their reports. DFID and BMGF documentation indicate that USAID acted as the conduit for communication with SSTP regarding the NA-ICT CF.

In terms of M&E collaboration between NA-ICT CF and SSTP, SSTP baselines did not focus on ICT, neither did NA-ICT CF grantees budget for their own baselines. SSTP M&E focused on SSTPtargeted farmers and agro-dealers who provided the service, not on ICT service providers who delivered the message. The MEL contractor tried to align data collection between SSTP and NA-ICT for the NA-ICT CF indicators 1.3 and 1.4 (which SSTP also reported on) but SSTP data collection and reporting deadlines were not in line with those of the NA-ICT CF. To address some of these challenges, the MEL contractor involved SSTP representatives in the workshop they ran in Arusha, Tanzania, in January 2017, so as to create greater collaboration at country level.

There were, however, quite positive findings regarding collaboration between SSTP and NA-ICT CF at the country level for all six grantees. In Ethiopia, Malawi, Mozambique, Senegal and Tanzania, it was clear to the grantees that their main role was to disseminate SSTP technologies. These grantees sought to have SSTP on their steering committees and either the SSTP office or grantees contributing to content development. The grantees had a good working relationship with SSTP, and when the SSTP project ceased prematurely and unexpectedly, it did not mean the end of cooperation – for all three grantees that are still operating (Mozambique, Senegal and Tanzania) the SSTP grantees and NA-ICT continue to collaborate. In Ghana, at the start, content was developed on all the SSTP target crops (cassava, cowpea, maize, rice, soybean and yam) for distribution in SSTP target geographic areas.⁴⁶ Later, AgroTech remained aligned with SSTP's roadmap during project implementation and continued to work in three of SSTP's target regions with a focus on two of SSTP's target crops.⁴⁷

The selection of districts where NA-ICT should operate was done in collaboration with SSTP in Ethiopia, Mozambique, Tanzania and Senegal, but there is less evidence of this in each of Malawi and Ghana. While MODES in Malawi operated in just three of the 22 SSTP districts, in Ethiopia, Tanzania and Senegal the NA-ICT CF was far more scattered, in line with SSTP.

Both programme and country-level document review and interviews revealed a major design issue. This was the need for synchronising and integrating service delivery between the two projects, particularly the need to ensure that SSTP grantees and sub-grantees (e.g. seed multipliers and equipment distributors) synchronised the availability of improved technologies from SSTP with the ICT-enabled extension related to this. On occasion, in all countries, SSTP technologies were not available, or not available in sufficient quantities. This was frustrating for farmers. In Senegal there was a sense that there should have been a phased approach, particularly as some of the SSTP grantees that TICmbay approached were not ready for ICT-enabled extension as they had not yet built up a sufficient supply of seeds.

How the design allowed for collaboration with other key stakeholders. There were strong and consistent findings for all six countries on this question. Key stakeholders were identified and involved appropriately. These included both public and private sector entities. Public sector bodies included extension services in all countries apart from Senegal, and agricultural research institutions, as well as Ministry of Agriculture specialists contributing to content development (in

⁴⁶ Cooperative Agreement Ghana.

⁴⁷ ICTC Final Report Ghana.

the cases of Tanzania, Ethiopia, Mozambique, Malawi and Ghana). Private sector entities included SSTP grantees, agro-dealers and other seed and fertiliser suppliers. In addition, apart from in Ethiopia, the telecoms companies were privately owned and the radio stations (again aside from Ethiopia) were mostly private, NGO or civil society based.

Public and private entities are both contributing to the effective delivery of ICT-enabled extension services, but across a spectrum. Thus, implementation of Digital Integration in Ethiopia was much more public sector oriented (aside from the private sector SSTP grantees themselves). TICmbay in Senegal was at the other end of the spectrum, being the only country without active involvement of government extension staff. However, in line with government policy that extension be contracted out to the private sector, civil society and NGOs, the project did collaborate closely with cooperatives (which have their own extension advisers), NGOs employing extension staff, and agro-dealers that also provide extension advice. EMM in Mozambique, MODES in Malawi, AgroTech in Ghana and UPTAKE in Tanzania were in the middle of the spectrum with a mix of public and private sector players. This spectrum reflects the wider development (including agricultural development policy and extension approach) of the different countries. In the case of Tanzania, IFAD would have preferred to have seen more collaboration between UPTAKE and their USD 169.46 million Marketing Infrastructure, Value Addition and Rural Finance Support Programme (MIVARF).⁴⁸ They had anticipated that such collaboration would create a synergy between the two projects and considered it a missed opportunity when this did not occur.

Linkages the programme made with other similar initiatives/organisations providing ICTenabled services. Grantees, particularly the Grameen Foundation, Digital Green, FRI, CABI and HNI are major leaders in ICT-enabled extension in their own right, with previous and current donorfunded ICT extension projects under way. They had previous experience in the countries concerned and had completed and/or were currently running other donor-funded ICT extension related projects. Examples include the large BMGF funding to DG in Ethiopia over a period of seven years which includes video-based extension, and CABI's work with the African Soil Health Consortium. In such cases, the NA-ICT grantees were already connected with the other existing programmes through being implementing agencies for other donor-funded projects.

Grantees also built on their existing (non-ICT agriculture extension work) for added value. For example, in Mozambigue, NBCA Clusa (the lead grantee in EMM) was already operating in the project areas and had a network of its own extension staff; consortium members for MODES in Malawi – CRS and SHA – were already on the ground running projects to which the ICT component was then added; and in Senegal, TICmbay built on its consortium lead – United Purpose's – work as an SSTP grantee. There was evidence of connections made, and collaboration sought, with USAID in each of Ethiopia, Senegal and Ghana. In particular, in Senegal there were two large agricultural projects with ICT components with which connections were made, although actual collaboration was minimal. In the case of Tanzania, (IFAD-funded) linkages were made with the much larger IFAD MIVARF project although there was little active collaboration. SSTP provided a few grants for ICT-enabled services, in countries where SSTP started long before NA-ICT (e.g. story telling workshop in Malawi, radio programmes with Animata in Tanzania). These either merged with NA-ICT when it started (as was the case for the radio programmes in Tanzania) or complemented other ICT-enabled extension services supported by NA-ICT (as was the case in Malawi). The degree to which smaller NGO-supported ICT-enabled extension services existed varied between countries. In both Senegal and Malawi such initiatives exist, but the evaluation did not learn of examples in the other countries. There was minimal evidence of linkages being made at the programme level of NA-ICT CF with other similar initiatives, aside from IFAD seeking to link

⁴⁸ <u>https://www.ifad.org/web/operations/project/id/1553/country/tanzania</u>
the CF with their larger MIVARF project, and an early attempt in Malawi to link the CF with both mNutrition and SSTP.

Linkages/overlaps between NA-ICT CF and mNutrition. mNutrition is a £20 million DFID project running in 14 countries in Africa and Asia from August 2013 to December 2019.⁴⁹ It is operating in three of the six NA-ICT CF countries: Ghana, Malawi and Tanzania. It is being led by Global System for Mobile Communications (GSMA)⁵⁰ and has two components: mHealth and mAgri. Its focus in Tanzania was just on health but in Ghana and Malawi both agriculture and health were covered. There are clear overlaps in terms of the objectives and activities of the two projects, as the mAgri services (in Ghana and Malawi) intended to both increase the nutritional intake and diet diversity for rural families via a more diversified crop production for family consumption, *and* increase production and income through better practices and techniques, and access to the latest information on agronomy, market and climate.⁵¹ Each grantee received between £250,000 and £300,000 from mAgri for up to two years between 2014 and 2016.⁵²

In terms of linkages at the programme level, a joint USAID, DFID and SSTP mission visited Malawi in 2015 to encourage linkages between mNutrition, NA-ICT CF and SSTP. Interviews with SSTP and USAID, however, revealed that there was no high-level follow-up on this. A review of the DFID annual reviews for each of NA-ICT CF and mNutrition found that, while the NA-ICT CF annual reviews do make mention of mNutrition, the mNutrition annual reviews do not make mention of the NA-ICT CF. The 2017 DFID NA-ICT CF Annual Review states that both mNutrition and NA-ICT CF work closely with SSTP, and that coordination with the mNutrition project allowed key nutrition experts to develop the SSTP nutrition messages. However, an interview with the GSMA Malawi team found that they had no awareness of any collaboration between mNutrition and SSTP in Malawi. Finally, at the programme level, the interview with the mNutrition to link with the NA-ICT CF.

In both Ghana and Malawi, however, NA-ICT CF and mNutrition had common implementation partners. In Ghana, the Grameen Foundation led the NA-ICT CF and also developed content for mNutrition. However, there was no evidence of formal connections or joint learning developing, despite there being a common implementation partner. In Malawi, both SHA and HNI were involved in both mNutrition and NA-ICT CF. Evidence from MODES annual and quarterly reports, as well as interviews with MODES grantees and the GSMA Malawi coordinator, all confirmed that there were benefits from the fact that two implementation partners were involved with both programmes. SHA indicated that MODES learned much from mNutrition in terms of content development. mNutrition had templates for content development which allowed the process to be carried out in an organised manner and MODES benefited from learning how to use them. mNutrition, with HNI, helped develop an Airtel branded 212 service called M'chikumbe which was dedicated to agricultural messages. Meanwhile MODES was using an existing government-supported, HNI branded, 321 service, run also by HNI but broader than 212 and covering infant healthcare, pregnancy advice and agriculture.⁵³ There were mixed findings on whether having these two services, both containing the same agricultural content (developed by MODES through SHA) but on different numbers and with different tariffs where farmers wanted to use more than the free allocation, was beneficial or not.

⁴⁹ <u>https://devtracker.dfid.gov.uk/projects/GB-1-203638</u>

⁵⁰ <u>https://www.gsma.com/mobilefordevelopment/mhealth/mnutrition/</u>

⁵¹ DFID mNutrition Annual Review 2017.

⁵² GSMA (July 2017). Creating scalable engaging mobile solutions for agriculture. A study of six content services in the mNutrition portfolio.

⁵³ "321" and "212" are the mobile numbers farmers use to dial in for the service

How gender equality/equity was considered in programme design⁵⁴

Findings were consistent across all six grantees. They noted that gender was not a concern of SSTP and indeed that, with the selection of crops being male oriented, it was harder to consider gender equality. They also did not sense that gender was of great interest for the donors, with a perception among grantees that it was more important to meet targets than to try to reach more women and get more female adoption, particularly where many of the SSTP crops were ones that men grow. Despite this, all grantees made efforts to ensure that ICT-enabled extension reached women, as discussed in section 3.3.6.

At the higher level, findings were that gender was important to all the donors and to the MEL contractor. DFID annual reviews often had recommendations on gender, and USAID emphasised the need for gender disaggregated data (GDD) and reaching women. IFAD have a self-evaluation checklist for analysing gender equality and women's empowerment and youth inclusion in project implementation arrangements. The MEL contractor was guided by USAID in the development of a gender plan, and they conducted various activities related to gender and how to improve the gender sensitivity of grantee projects. The face-to-face workshop in Ethiopia had a gender session ("world café"), and also a webinar on the topic. However, the MEL contractor, too, observed that at the donor level, while gender was an important topic as an overarching issue, the ICT "bundle" being tested was the real issue. They noted that all grantees were aware of the challenges of addressing the issue, but that disaggregating data, though important, was not enough to ensure that the programme embedded a gender lens. They further noted that use of GDD, in terms of seeking to adjust/address the differences in access between men and women, did not really occur. Overall, feedback was that the gender component could have been designed better from the start.

Fair: The ET's overall assessment of this question is that the design did allow for farmers' livelihoods needs in relation to key staples to be met. Collaboration with SSTP, and engagement with other key stakeholders, was satisfactory, although collaboration with mNutrition was minimal. The set-up and governance of the NA-ICT CF consortium and of the country-level consortia was good, especially given that at the programme level there were several donors involved. There were some design and management related challenges, and ideally the MEL contract, and country grants would have been synchronised, as would reporting requirements. Given the purpose and objective of the NA-ICT CF, a longer implementation period would have been appropriate and the scope for gender equality, given the nature of SSTP and the crops being supported by it, could have been given more consideration at the design phase.

3.2 Outputs

There were three EQs for this evaluation criterion each of which has several sub-questions. This section of the findings is concerned with Output 1: "Agronomic extension provided to smallholder farmers via ICT-enabled services" (EQ 4); Output 2: "Improved content adapted to specific needs, context and available ICT channels" (EQ 5); and Output 4: "High-quality evidence on (cost) effectiveness and impact of ICT-enabled services" (EQ 6). Output 3: "Financially sustainable ICT-enabled extension services operating and integrated with non-ICT extension services" is addressed under EQ 16 Sustainability. While this section reports mainly on findings at the programme level, there is also some discussion of variations between grantees. Annex 10 contains more detailed country-level discussion of output indicators 1.1 and 1.2.

⁵⁴ In addition to section 3.3.6 (VfM Equity), gender is also discussed in section 3.4.1 in the Progress Towards Outcomes and Impact section, including the factors influencing the participation of women and their application of improved agricultural technologies, and whether men and women smallholder farmers have an equal opportunity to make an active decision to use quality inputs and improved technologies.

EQ4: How was access by male and female farmers to ICT-enabled extension services achieved in the different countries? (Output)

EQ5: How was content adapted to specific needs, context and available ICT channels? (Content)

EQ6: Was high-quality evidence on (cost) effectiveness and impact of ICT-enabled services produced and how? (Evidence)

Summary of findings regarding outputs. There were PIRS indicators for Output 1 only. All grantees were able to achieve Output 1: Agronomic extension provided to smallholder farmers via ICT-enabled services. The NA-ICT CF exceeded its targets in relation to this Output, both in terms of access to ICT-enabled extension (measured by PIRS indicator 1.1) and use of ICT-enabled extension (measured by PIRS indicator 1.2) across the programme as a whole. The actual achievement of indicator 1.1 (access to ICT-enabled extension) was 173% of the target of 5.2 million farmers, and for use of ICT-enabled extension (indicator 1.2) it was 134% of the target of 2.6 million farmers. This will increase as the programme draws to a close in December 2018 (Tanzania), February 2019 (Mozambique) and March 2019 (Senegal). The high attainment reflected in these figures, however, could have been caused in part by low target setting. Men had more access to ICT-enabled extension than women: 67% of the farmers with access were men and 33% were women. This was similar for the use of ICT-enabled extension. EMM and TICmbay were able to reach more women compared to the other grantees. The evaluation also has strong findings that the content development process (Output 2) was well developed in all countries. Content was aligned with SSTP and government policies, adapted to local needs and channels, and followed a participatory process. The findings at output level are confirmed for impact pathway 1 (IP1) by the re-evaluation of the ToC as detailed in Annex 6, and by the contribution stories from three of the six countries (Annex 7). The CF did less well in terms of development of high-quality evidence (Output 4). The MEL contractor was contracted late, while M&E processes were already (partly) developed by grantees. The focus was on developing PIRS to report on results to USAID, and less time was invested in establishing a conducive learning environment to share experiences beyond basic learning. Evidence regarding cost-effectiveness and impact was minimal, despite IP3's output (4) being high-quality evidence on (cost) effectiveness and impact of ICT-enabled services. It should be noted that, even if efforts had been made to collect evidence on impact, it may not have been strong given the short time period (2-3 years) that the CF ran in each country.

3.2.1 Outputs: access by male and female farmers to ICT-enabled extension services

This question (EQ4) relates to Output 1 in the ToC "Agronomic extension provided to smallholder farmers via ICT-enabled services". Figure 6 shows the pathway for Output 1 in the ToC. The section presents findings regarding Output 1. Findings from document review and interviews with grantees were consistent. Annexes 6, 7 and 9 provide more detail on the country-level findings.



Figure 6: Output <u>1 "Agronomic extension provided to smallholder farmers via IC</u>T-enabled services"

The PIRS measured two output indicators, 1.1 and 1.2. 1.1: *The number of farmers with access to ICT-enabled services* was optional but all grantees measured it.⁵⁵ It relates to farmers that either own a mobile phone or radio, have access through a radio or network coverage, or are based in a village that has been selected for video coverage by an extension agent. Farmers need access to a channel first, before they are be able to listen, watch or read a message. The second output indicator (1.2) was compulsory to measure and more important as a proxy that measures if output 1 is achieved. Indicator 1.2 *The number of farmers using ICT-enabled services*, measured the actual use of the ICT-enabled services. All grantees provided disaggregated information for male and female farmers, but not all grantees provided target and actual data for all years (some grantees agreed with USAID to lower targets after the inception phase, but their actuals are sometimes closer to the original targets, i.e. in the case of TICmbay). PIRS were validated by the MEL contractor and approved by USAID.

In Table 5 the project level and overall performance of the NA-ICT CF programme is provided.⁵⁶ The programme overachieved on the targets for the two output indicators.⁵⁷ All grantees (far) exceeded indicator 1.1, and most grantees except those in Mozambique and Tanzania (far) exceeded their targets for indicator 1.2. MODES in Malawi overachieved mainly because they were using national radio stations with a higher than planned coverage. TICmbay overachieved more on indicator 1.2 than indicator 1.1, mainly because they did not measure indicator 1.1 for radio stations in 2016. They also had reduced their targets in consultation with USAID. The new targets appear to be set too low. In 2017 they used the FRI radio coverage tool to measure access for radio stations, which was much higher than expected. EMM, TICmbay and UPTAKE are still in implementation and still have to report the PIRS for 2018 and 2019 (Q3 2018 and Q1 2019) in the Feed-The-Future System.

⁵⁵ All grantees reported on indicator 1.1 in their annual PIRS reports, although for Ghana, in 2016, the actual data for 2016 was not in the PIRS, but just in the Annual report 2016.

⁵⁶ Source PIRS 2016 and 2017, annual report 2016 Ghana and Q3 report 2018 of TICmbay and EMM.

⁵⁷ This could also be because grantees had set low targets due to calculations based on incorrect assumptions, for example the radio coverage was not measured by some grantees at start of project.

	1.1. Number o (the provided (potential read	f farmers wit ICT-enabled :h)	h access to services)	1.2. Number of farmers using ICT- enabled services		
	Target	Actual	% achieved of target	Target	Actual	% of target
Digital Integration (Ethiopia)	1,750,000	3,470,023	198%	1,026,000	1,147,839	112%
AgroTech (Ghana)	800,000	1,614,675	202%	500,000	637,519	128%
MODES (Malawi) 58	172,967	844,980	489%	162,611	869,352	535%
EMM (Mozambique)59	925,000	1,223,624	132%	325,500	166,908	51%
TICmbay (Senegal)	457,731	596,353	130%	91,546	235,536	257%
UPTAKE (Tanzania)	1,102,883	1,273,766	115%	508,000	453,202	89%
NA-ICT CF total	5,208,581	9,023,421	173%	2,613,657	3,510,356	134%

Table 5: Overall performance of NA-ICT CF grantees on output indicators 1.1 (access) and 1.2 (use)

In Figure 7 the results of indicator 1.1 *Number of farmers with access to (the provided ICT-enabled services) (potential reach)* are presented over time, including the differences between males and females. In 2016 this indicator was around the level of intended targets. In 2017 it was overachieved by far. An explanation for this could be the introduction of the radio coverage tool that was better able to determine the audience of a radio station; increased ownership of radio and mobile phones could also be a reason. However, low target setting by grantees was also a factor.⁶⁰

Men had more access to ICT-enabled extension than women: 67% of the farmers with access were men and 33% were women. This was similar for the use of ICT-enabled extension. The access of women in all countries is lower than for men except for Mozambique (52% of women have access and 48% of men).⁶¹ Senegal (42% women), Tanzania (40% women), Ghana (36% women), Malawi (31% women) and Ethiopia (20% women) follow. Note that, for charts related to the PIRS indicators, the PIRS data for 2018 was not available at the time of writing, which is one reason why such low achievement is indicated for 2018 (the other reason being that only some countries are still active).

⁵⁸ Indicator 1.1 Access was measured for farmers that owns the radio or mobile phone. Indicator 1.2 counted also users that did not own the radio / mobile phone, but listened in community listening groups.

⁵⁹ EMM did not report their actuals for 2016.

⁶⁰ AgroTech (Ghana) did not set targets for 2017 but reported actuals and MODES (Malawi) and EMM (Mozambique) had set very low targets for 2017. The actuals for MODES (Malawi) included an additional district according to the MEL provider where a SSTP started to work in 2017. This may have contributed to the big increase in achievements for indicators 1.1 and 1.2.
⁶¹ The ET was not able to determine why EMM (Mozambique) was able to reach more women than the other grantees.



Figure 7: The number of farmers with access to ICT-enabled services (indicator 1.1) target vs actual⁶²

For indicator 1.2 *Number of farmers using ICT-enabled services* the overall target is overachieved, but less so than for indicator 1.1. Some grantees had over-estimated the number of women they could reach in their target setting especially in 2017.⁶³



Figure 8: Number of farmers using ICT-enabled services (indicator 1.2)

For the results relating to *use of technologies/practices* (indicator 1.2) Digital Integration (Ethiopia) is the largest contributor, although MODES in Malawi far overachieved their target 1.2 and is not far behind. EMM in Mozambique and TICmbay in Senegal reached fewer farmers with their ICT-enabled services than the other grantees. However, they well exceeded their target, and are still running until March 2019. Again, these high achievements could be the result of low target setting by grantees.

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⁶² Source PIRS 2016 and 2017, annual report 2016 Ghana and Q3 report 2018 of Senegal and Mozambique.

⁶³ MODES (Malawi) had set a target of 30% female farmers of 88,000 targeted farmers for indicator 1.2 in 2017 and achieved 25% of 573,000 farmers). AgroTech (Ghana) had set a target of 64% female farmers for 2017 and achieved 40% female farmers. Other grantees had achieved their target for female SHFs, but for the whole indicator more males were reached than females.

The number of users, in all countries, is lower for women than for men. For Mozambique, 46% of users are women, Senegal 45%, Tanzania 39%, Ghana 32%, Ethiopia 28% and Malawi 25%. In the DFID business case, one of the outputs was "improved access for 3 million smallholder farmers". This amount was far overachieved for access (1.1) by 301%, but even for the number of actual users of the ICT-enabled services (1.2) by 117% of this target. Disaggregation was also done for the different channels, although not all target and actual data was disaggregated.⁶⁴ Figure 9 still provides a good insight into the use of the different channels and the dominance of radio to reach out to the majority of the users. The grantees broadcasted interactive radio programmes where the SSTP technologies and practices were explained by local farm leaders with authority. Most grantees had also established or worked with existing radio listening groups. In Senegal, for example, farmers listened to a radio programme about ApronStar⁶⁵ in villages that could not be reached by cars. They discussed the radio programme in their groups, decided to try it and collected money to buy it in a nearby village. They were not in contact with an extension agent and would otherwise not hear about it. In Ethiopia the farmers watched videos in groups. They discussed the content afterwards and committed to each other that they would apply the practice shown in the video.



As noted in Section 2, the ET used ToC and, as part of that, contribution analysis, to explore IP1 in more depth in the three countries visited. The full contribution analysis is available in Annex 7 and the overall assessment of IP1 based on all findings including those from the contribution analysis, is available in Annex 6 pages 90–94. In relation to the part of the IP that concerns Output 1: The provision of agricultural extension to smallholder farmers via ICT-enabled services, the contribution analysis involved in-country examination of the specific steps taken to achieve the output, the assumptions behind these and reflection on whether these were appropriate. Findings were that that the strength of evidence on the contribution of the NA-ICT CF to planned outputs at this step of IP1 was strong. The causal pathways at this level of IP1 had greater granularity but were well aligned with the programme-level ToC IP1 and assumptions held. This was the case for all three countries. The re-examination of the ToC for IP1 in Annex 6 also confirmed that the ToC for this pathway was strong.

Excellent: The ET's overall assessment is that the NA-ICT CF did enable smallholder men and women to both access, and use, ICT-enabled extension. Grantees far overachieved the output indicators. Women have less access than men. Digital Integration in Ethiopia reached the most farmers to use the ICT-enabled services with MODES in Malawi close behind. Radio is the main channel for reaching a high number of farmers. Three grantees (in Mozambique, Senegal and Tanzania) are still implementing. They have to submit the PIRS for FY 2018 and FY 2019 (for Q4)

⁶⁴ The numbers in figure 9 don't add up to the total number of users in figure 8, because grantees did not provide all data disaggregated to channel.

⁶⁵ Apronstar is a seed treatment made up of both (fungicides and-insecticides). It protects both the seed and the young seedling.

2018 and Q1 2019). This will increase the overall result on output indicators. Contribution analysis confirmed that this (activities to output) stage of IP1 of the ToC was strong, i.e. that there was strong evidence of contribution of the CF to the planned output at this step of IP1.

3.2.2 Content development (IP1, and Output 2 in the ToC) (EQ 5)

This question relates to Output 2 in the ToC "Improved content adapted to specific needs, context and available ICT channels". Sequentially, in the ToC, Output 2 should be completed before Output 1 in order to provide agronomic extension to smallholder farmers using ICT-enabled extension. The overall content development process was described in the ToC (see Annex 6 for more detail). A number of areas were explored under this question, and findings are organised under six subheadings.

• Were content committees set up and which stakeholders were actively involved?

Findings from the document review and in-country interviews were consistent. Content committees were set up in countries where government approval was needed of content, before it could be disseminated to farmers (Ethiopia, Malawi, Mozambique and Tanzania). In all countries, stakeholders were involved in developing content for campaigns in a participatory way. In the three countries the ET visited (Ethiopia, Senegal and Tanzania), the team developed contribution stories (see Annex 7). These are more detailed versions of the IP1 ToC, based on the actual implementation in the country context. Figure 10 is an illustration based on the Tanzanian content development process.



Figure 10: Content development process Tanzania

All grantees involved SSTP grantees and farmer groups in the content development process. All grantees trained those involved in content development to deliver the message consistently, especially radio staff. All grantees have (some) alignment in content between channels. There were also differences between grantees. Not all grantees had content committees (e.g. AgroTech and TICmbay because no government approval was needed) and not all grantees involved research institutes and government extension directly in content development (e.g. in Senegal, where content was specifically developed to promote SSTP technologies in line with SSTP grantee needs).

• How did grantees use best knowledge available for content development (including through collaboration with SSTP and others)?

The grantees developed their programmes independently from each other, but the ET found many similarities. Localisation was key for all grantees. All grantees used localised content in local language. Most localisation was done at district level to create locally relevant content (although in Senegal this was only done later in the implementation phase). All grantees followed the crop calendar for content creation and delivery. Content development was a well-planned process in all countries, which made it less flexible in terms of covering emerging, and sometimes urgent issues especially in case of government-approved content (e.g. fall army worm in Tanzania and Malawi). All grantees developed content around SSTP priority crops and technologies. The differences were mainly in how they implemented the content development process. Some grantees (Digital Integration in Ethiopia, MODES in Malawi and UPTAKE in Tanzania) describe a government validation process to create government certified content that could be disseminated. In Senegal, SSTP grantees first worked together to develop content in French. The regions then chose the content that was useful in that location and translated it into local languages. The SSTP grantees then validated the localised content from farmer groups and radio stations before dissemination. In general, grantees used well-sourced and moderated knowledge for the content development process.

• Were the contents needs-driven, credible, relevant, trusted and actionable?

The starting point for content development for most grantees was information about the SSTP technology. This is therefore supply driven and/or extension driven. However, participatory design of content with relevant stakeholders, including farmers, tweaked this into demand-driven information. Most grantees used trusted voices (in Senegal, for example, they used the presidents of farmer cooperatives to record messages) or credible research institutes to improve trust in content message (Tanzania) (the importance of trust is further described under section 3.4 in relation to Outcomes). The programme mostly used actionable messages with, for example, contact details of local dealers or calls to visit a demonstration plot or a seed market in the neighbourhood of the farmer. There were also differences between country programmes. Some grantees developed campaigns and content around crops (as in Tanzania, Mozambigue, Ghana, Malawi), others more around the SSTP technologies (e.g. the Aybar broad bed maker in Ethiopia and use of ApronStar in Senegal), although in Ethiopia and Senegal some good agronomic practices were also addressed. The crop-centred content seems to be more relevant for farmers, because it addressed all questions around a certain crop and not only the SSTP technology. Some grantees start content development with a government-approved extension package (Tanzania, Ethiopia) to make it more relevant and trusted for the farmers. In-country interviewees perceived the CF as being driven in a more "top-down" manner, e.g. SSTP grantees driven (Senegal) or extension agent-driven (Ethiopia), which is not always demand-driven from the farmers perspective. In the case of potassium fertilisers (Ethiopia), this was not seen as relevant and proven by extension agents and farmers. However, overall, content was assessed as being needsdriven, credible, relevant, trusted and actionable.

Are the grantees reporting back farmers' feedback to SSTP to improve content creation?

In all cases feedback mechanisms for content development were built in from the design phase, as is the norm, and seen as best practice, among the grantee organisations. There were good feedback mechanisms designed to test relevance for farmers. The grantees were all working with farmer groups to test relevance, which was essential to have locally relevant content. In general, the ET found strong findings regarding feedback mechanisms from farmers in all countries to inform the content development of the next campaign/crop cycle. All grantees used outcome research (including farmer focus groups) after each campaign (at least for radio campaigns) to get

feedback to use in the design of the next campaign. There were also differences: some grantees have real time feedback mechanisms (IVR), phone-based surveys or mid-campaign focus groups; others get feedback through SSTP grantees (Senegal) or research institutes (Tanzania).

Is the content of advisory services appropriate and delivered in a timely manner?

Content was appropriate for farmers (only in one case in Ethiopia on potassium fertiliser there were doubts about relevance of this SSTP technology). Most information was delivered in a timely manner, following the local crop calendar, but delays in some campaigns (Malawi, Senegal, Ethiopia) due to delayed government approval were mentioned by some interviewees. In some countries (Senegal, Ethiopia, Tanzania) content is appropriate, but due to non-availabilities of the seeds being promoted, this was not relevant at that moment or delivered too late. In these (minority of) cases, farmers tended to lose interest in those varieties.

Contribution analysis results for Output 2: Content development

Annex 7 provides the full contribution analysis carried out in the three countries visited. The contribution analysis focused on IP1 and included the content development process as illustrated in Figure 10 above, relating to Output 2 in the ToC. At country level much more detail was gained on the steps taken in content development, including validation and revision of content. Assumptions were also explored. For all three countries the assumptions did, on the whole, hold true and, where they did not, the grantees made adjustments to the process. Given the correlation (albeit with much greater granularity) between the content development steps in the causal pathway in the three countries with the programme-level equivalent, and given that most assumptions held, it is concluded that the strength of evidence on the contribution of the NA-ICT CF to planned outputs at this step of IP1 was high. The re-examination of the ToC for IP1 in Annex 6 also confirmed that the ToC for this pathway was strong.

Good: In sum, the ET has strong findings that countries adapted the content to specific needs, context and available ICT channels. Content committees were set up in countries where government approval of content was needed before it could be disseminated to farmers (Ethiopia, Malawi, Mozambique and Tanzania). A participatory content development process was developed, and stakeholders were involved in all countries. Good feedback mechanisms were in place to adapt content for the next cycle/campaign. Content is seen as appropriate for farmers. Most information was delivered in a timely manner, following the local crop calendar, but several grantees mentioned delays in some campaigns (as in Malawi, Senegal, Ethiopia) due to delayed government approval. In some countries (Senegal, Ethiopia, Tanzania) content was appropriate, but seeds were not available at the right time or in sufficient quantities. Contribution analysis in the three countries visited evidenced the strong contribution of the CF at the activities to output (2: content development) level of IP1 of the ToC.

3.2.3 Whether and how high-quality evidence was produced

This question (EQ6) relates to IP3 and within that Output 4: "High-quality evidence on (cost) effectiveness and impact of ICT-enabled services". A number of areas were explored under this question, and findings are organised under seven sub-headings. The ToC IP3 relates specifically to EQ6 so is included below in Figure 11. This IP was re-assessed in the light of evaluation findings in Annex 6 and summarised in the last bullet point in this section as a seventh point. The ET carried out a thorough DQA to inform the findings in this section (see Annex 8). These are discussed further under the fourth bullet below: How accurate and valid are the results reported by the grantees, both individually and in total; similarly, how accurate and valid is the disaggregation?



Figure 11: Theory of Change Impact Pathway 3

 How effective was the MEL contractor in providing technical support to grantees to strengthen monitoring capacities and in coordinating with them in the process of developing country-level framework?

The ET found mixed findings from the six countries, the MEL contractor and the donors. The grantees that started first (Digital Integration in Ethiopia, AgroTech in Ghana, MODES in Malawi

and TICmbay in Senegal) had already developed their own M&E systems before the contractor was appointed. While MODES and AgroTech appreciated the MEL contractor's guidance and worked well (it appears from the documentation) with the MEL contractor, for Digital Integration, and particularly for TICmbay, significant adjustments had to be made and these grantees were not satisfied with the support they received. Finally, it appears that the grantees that started later – EMM and UPTAKE – were more satisfied with the MEL contractor's support (presumably because they had their guidance from the start, the PIRS indicators were developed and the MEL contractor was already running).

The MEL contractor confirmed in the interviews that the start was difficult. It did not coincide with the start of the grantees and there was MEL contractor staff turnover at that time. However, the contractor effectiveness improved over time. The MEL contractor discussed data collection methodologies in individual calls with all grantees for each of the six indicators for reporting, using the PIRS as reference. This was also discussed face-to-face during the two learning events in Ethiopia and Tanzania. Where the MEL contractor found data inconsistencies, it did follow-ups with grantees before it completed the data submission into USAID's Feed-the-Future System. The MEL contractor was itself not satisfied about the support it had provided. The MEL contractor could not visit individual grantees in the field and was not allowed to do a full data quality audit, due to budget constraints.

The MEL contractor did develop tools, e.g. the PIRS and a template for an M&E plan, and built the capacity of the grantees to provide better quality data in their reports. It also built the capacity of the finance staff to measure and report on indicator 2.1: *Percentage of costs of ICT-enabled services covered by non-donor sources*. Analysis of data did not go beyond compiling aggregated data. There was consensus among the donors that the MEL contractor was not adequately positioned for their assignment. They considered it weak in both M&E (including use of PIRS), and in its knowledge of ICT4Ag. Second, there was consensus among donors and the MEL contractor alike, that the grantees needed a lot more support to grasp the use of the PIRS than expected (particularly those in Malawi, who had to have a great deal of support from the MEL contractor). There was variable capacity among the grantees in terms of monitoring/using the PIRS. The MEL contractor was supported at the start by the USAID M&E specialist working on NA programmes, who worked closely with the contractor to finalise the cross-country results framework and indicators consistent with SSTPs. Within the donor group, however, IFAD did express satisfaction with the support that the MEL contractor gave and the indicators that were set. The MEL contractor's performance improved over time according to both DFID and USAID.

How effective was the MEL contractor in facilitating learning and monitoring within the grantee network?

In general, the MEL contractor was not very effective in facilitating learning between grantees, even according to themselves. It was not able to develop a learning culture where participants shared lessons. Adobe connect, which was used for virtual learning events, did not work well for grantees with low bandwidth, such as in Malawi. The MEL contractor was not able to create a trusted environment where grantees would like to share their lessons and experiences, instead of seeing each other as competitors.⁶⁶ Webinars were conducted, but with not much interaction, and learning tended to be at a basic level. Two face-to-face meetings took place. The ET had mixed findings on these. Some participants were satisfied with them, but others mentioned that the face-to-face meetings could have been more interactive, with more opportunities to share and to

⁶⁶ This was, according to the MEL contractor, partly caused by their being appointed late which meant that there was a lack of face-to-face meetings between themselves and the grantees at the start of the NA-ICT CF to establish personal relationships and trust, and partly due to a lack of commitment of grantees, because learning and lesson sharing was not budgeted for in their contracts.

address common challenges. There were mixed views about the virtual learning events as well, from all of those interviewed. Shortcomings were the difficulties of communication faced by bringing so many people from different countries together on one platform for a number of hours (and across different time zones); insufficient time to present and discuss; and the "lecturing" style taken by the MEL contractor. Participants did appreciate the chat room run by the first USAID COR/AOR for the CF, considering it useful and well run. There was some lack of clarity among the grantees regarding the need for them to budget for PIRS-related M&E and to attend the face-to-face workshop. TICmbay, for example, had not budgeted for travel to workshops or to spend time working on PIRS and joining virtual workshops.

• To what extent did the grantees provide proper resources (expertise, budget, etc.) to their monitoring and learning function?

The ET found that grantees provided resources for monitoring, but less for learning. All six grantees had allocated resources to M&E, although for grantees that started later (EMM, UPTAKE) M&E was more focused on the collection of PIRS data. There were also differences. Four of the six grantees - those from Ethiopia, Ghana, Malawi and Senegal - gave careful consideration to M&E, planning their M&E prior to the MEL contractor coming on board and had fairly rigorous measures in place, although MODES needed more support than the other grantees to set this up. Three grantees did some kind of baseline (those in Ghana, Malawi and Senegal). Radio campaigns had baseline, mid-term and end (outcome) surveys. MODES and AgroTech contracted an end evaluation and Digital Integration managed to leverage funding to contract the International Food Policy Research Institute (IFPRI) to carry out a randomised control trial (in progress). TICmbay (Senegal) included a MEL provider in the consortium (UCSC) and developed a strong MEL strategy and budget to support this, listing in-depth surveys, short indicator-focused surveys, phone-based surveys and user experience focus groups as the four main M&E methods. UCSC also conducted a longitudinal field survey, used the user data of the TICmbay platform and built the capacity of Jokalante⁶⁷ in M&E skills.⁶⁸ The two grantees that started later – EMM in Mozambique and UPTAKE in Tanzania - did not develop separate M&E plans (apart from FRI's standard good practices). EMM is monitoring the PIRS, whereas UPTAKE had assumed that the MEL contractor would do most of the M&E. FRI (lead grantee of UPTAKE) developed their own M&E plan for the radio campaigns with baseline, mid-term and end-term participatory radio campaign surveys. CABI (sub-grantee, UPTAKE) had not budgeted for M&E of the SMS service and had to source funding from another donor through the Africa Soil Health Consortium to carry out some deep dive research (to supplement the quantitative PIRS measures with more qualitative evaluation findings). CABI, in Tanzania, acknowledged that the process evaluation undertaken to inform itself was unstructured and poorly managed/filed, and had understood that it did not have the responsibility for M&E, which lay with the lead of UPTAKE: FRI). The extent to which grantees prioritised learning is discussed in Ch. 4.

• How accurate and valid are the results reported by the grantees, both individually and in total; similarly, how accurate and valid is the disaggregation?

The MEL contractor could not do a proper DQA due to budget constraints. USAID considered it optional. They developed templates and data reporting protocols and guidance to make it easier for grantees to submit their reports. Indicators were reported to FTMS. The MEL contractor had an after-action review in place after every data collection cycle. The ET carried out a DQA (Annex 8), examining a number of criteria. Grantees performed well overall in the reliability of data. They performed fairly well in the timeliness, validity/relevance and completeness of data. Evidence of

⁶⁷ Jokalante is the social enterprise set up by the TICmbay consortium to operate and develop the TICmbay platform.

⁶⁸ TICmbay is the ICT platform that is developed by the TICmbay consortium to disseminate messages by SMS and IVR to farmers. User data consist for example on number of users, number of calls in and out, number of SMS.

unsatisfactory practice was mostly in the setting of a clear methodology for data analysis, and the highlighting of concerns/limitations of the research process (though grantees were not required to do these). AgroTech, TICmbay and Digital Integration came out as the strongest performers, while MODES and UPTAKE performed fairly well with some shortcomings. EMM's performance appeared fair, although it was unsatisfactory in terms of timeliness and completeness. Grantees' relatively good performance as assessed in the DQA occurred despite the limited support and guidance in the collection and analysis of data at the start of the NA-ICT programme, lack of quality review by the MEL contractor, budgetary constraints, and the start of the MEL contract when the programme was already in its implementation. The results of the DQA are in line with the findings of the ET overall.

• To what extent are the other public outputs of the programme (e.g. webinars, press releases etc.) suitable and of good quality?

Public outputs of the programme were minimal. Some of the MEL contractor deliverables (i.e. the landscape analysis) were not approved by USAID to be published due to quality issues. USAID published two blogs on the USAID Learning Lab⁶⁹ about the programme. The MEL contractor was working on a gender infographic and a cross-country case study prior to completion of its contract at the end of September 2018. Both document review and interviews have indicated that producing public outputs has not been a priority in any of the six NA-ICT countries; internal learning lab briefs were presented well (though there are some inaccuracies in the one about EMM, Mozambique) but it is not clear if they have been made public; and case studies⁷⁰ are of good quality, although it is unclear how and to whom they were disseminated outside the NA-ICT community on the USAID Learning Lab. At country level, some documents were published. For example, CABI (Tanzania) has been uploading the technical briefs developed under UPTAKE on to the publicly accessible African Soil Health Consortium database. These technical briefs are clear and comprehensive according to the ET. This is illustrated in a technical brief of cassava, a 35 message SMS campaign from UPTAKE in the African Soil Health Consortium database:

<u>http://africasoilhealth.cabi.org/materials/cassava-35-message-sms-campaign/</u>. FRI published several blogs on their Barzawire platform about the projects in Ethiopia, Ghana, Mozambique and Tanzania.

 What lessons can be learned about the challenges in establishing common indicators and collection of data?

The idea of having common PIRS indicators across all six countries was rather new, both for the MEL contractor and the grantees, but not for USAID. It took time to make grantees aware of the benefits of common indicators and of shared definitions and to train them to use them accordingly. All grantees agreed that more time should have been allocated for face-to-face capacity building. Clear tools, such as data collection sheets and definition guidelines, are helpful to grantees. Common indicators are hard to create but are necessary to compare countries with each other. SSTP had many more indicators than NA-ICT, and assistance to grantees in reporting was provided by M&E experts in each SSTP country office, which worked well. USAID was not satisfied with the MEL contractor's ability to implement, or support, the use of common indicators across countries. It did not help that the MEL contractor was contracted late. However, the face-to-face workshop run by the MEL contractor in Tanzania had a day dedicated to data collection practices and plans, monitoring techniques and a discussion of the challenges grantees face in collecting and reporting quality data. The FRI contact responsible for three of the countries where FRI was

⁶⁹ <u>USAID's Learning Lab</u> is an interactive community where members can access and contribute to a growing collection of tools and resources on integrating collaborating, learning, and adapting (CLA). USAID established for NA-ICT CF a closed subcommunity to collaborate and learn from each other.

⁷⁰ Four-page briefs about NA-ICT CF implementation in five of the six countries, produced by the MEL contractor.

involved (Ethiopia, Mozambique and Tanzania) thought that the PIRS indicators were sufficient, clear, focused and useful and appreciated the consistency across countries. TICmbay faced particular difficulties adjusting to the PIRS indicators, which were heightened by the fact that they had not budgeted time or resources to work on the PIRS, to cover the costs of travelling to the annual workshops or the time to join in on the virtual learning events. TICmbay would have preferred to adhere to their MEL approach and to develop a logframe (which was not encouraged by the MEL contractor).

• Theory of Change Impact Pathway 3

Impact pathway 3 of the Theory of Change focused on achieving high-quality evidence on (cost) effectiveness and impact of ICT-enabled services. The full flow is shown in Figure 11 at the start of this section. A full description of IP 3 is given in Annex 6. One of the three assumptions between activity and output did not hold and one only held partially. This had implications for the achievement of Output 4 "High-quality evidence on (cost) effectiveness and impact of ICT-enabled services". High-quality evidence was collected at output and outcome level, but not at the impact level. Output 4 could have been better formulated as "High-quality evidence on output and outcome of ICT-enabled services". All three assumptions at output to outcome and outcome to impact levels held and outcomes were achieved or anticipated. The proposed revised Output 4 contributed to the achievement of Outcome 1 and Outcome 2. To this extent the articulated ToC for IP3 was strong and the assumptions were critical to performance and the articulated causal pathways on how the outputs lead to outcomes. However, in relation to the original Output 4, this was not achieved. If the CF was continuing, then IP3 and its one output (Output 4) would need to be reconsidered, unless the continued project included measures of cost-effectiveness and impact.

Unsatisfactory: The overall findings for this EQ is that the MEL contractor was, for various reasons, unable to provide effective support to the grantees from the start of the programme. This included both technical support to grantees to strengthen monitoring capacities, and learning. This was partly due to late contracting of the MEL contractor, but also staff turnover and a lack of experience in ICT4Ag. The budget constraints that the MEL contractor faced were also a contributing factor. The support provided by the MEL contractor did improve over time and was certainly needed as the monitoring capacity of some grantees was lower than expected. The faceto-face meetings were seen as most valuable, although those meetings could have been more interactive. A learning culture was never established, and therefore learning did not go beyond basic. Deep learning on topics such as effectiveness of channels and monitoring of adoption and sustainability never took place. M&E was mostly concentrated on collecting PIRS data. Analysis of data did not go beyond compiling aggregated data. However, good evidence was created at output ⁷¹ and outcome ⁷² level that ICT-enabled extension services are effective. Output 4 "Highquality evidence on (cost) effectiveness and impact of ICT-enabled services" could have been better formulated as "High-quality evidence on output and outcome of ICT-enabled services". Overall, if a strong MEL partner had been contracted from the start of the programme, a baseline conducted, and impact indicators measured in the PIRS, much stronger evidence would have been generated.

⁷¹ Farmers watched videos, listened to interactive radio in radio listening groups, received voice or text message and received content that was seen as relevant and timely.

⁷² See section 3.4 Progress towards outcome to impact for more details.

3.3 Value for money

EQ 7 Economy: To what extent has the programme considered and managed costs?

EQ 8 Efficiency: How well are programme resources used by grantees to deliver programme outputs?

EQ 9 Effectiveness: To what extent has the programme enabled grantees to achieve outputs and outcomes?

EQ 10 Equity: Are the services and benefits equally accessible across gender, region, or socioeconomic background?

Summary of findings regarding VfM

The ET has mixed findings for Value for Money along the 4Es and the VfM measurements in the DFID's business case proposition. The M&E systems and the financial accounting systems of the grantees were not aligned with each other. The financial data provided to the ET was unfortunately incomplete, with insufficient detail to link cost data to outputs and outcome. VfM as an approach was not embedded from the design of the programme and difficult to measure retrospectively. This limitation was discussed with DFID in mid-2018 and it was agreed that the ET would endeavour to carry out a limited and partial VfM at country level for those countries for which there was enough information. In Annex 9 a detailed analysis is conducted based on the data the ET gathered from grantees. The NA-ICT CF programme developed a results framework with PIRS indicators. These indicators were developed as comparative measurements to compare programme achievements between grantees internally. The ET assessed that the grantees did use their funding well in terms of efficiency in achieving outputs, and effectiveness in achieving outcomes, because at programme level all targets of PIRS indicators were measured by the grantees.

Findings on economy were less strong. Grantees were selected using a competitive process, but accountability and VfM were not at the forefront when finalising agreements. In addition, while grantees may have taken measures to ensure economy, e.g. through competitive procurement, cost savings and actual expenditure, this was not part of the required reporting and, therefore, was impossible to assess by the ET through lack of data. The ET assessed "equity" findings also as less strong. Women have more limited access to ICT-enabled services than men, as a result of socio-economic factors and the choice of crops and technologies under SSTP.

3.3.1 Introduction

The ToR requires VfM measures that assess four key factors at country and programme levels:

In this section the ET will present the key findings.⁷³ Measurements relate directly to the four VfM factors, the questions above, and the VfM measurement process as depicted in Figure 12.



3.3.2 DFID business case

The ET also assessed the VfM proposition described in the DFID business case.⁷⁴ The ET has the following findings on the six sub-headings mentioned in the business case.

• Most of DFID's funds will be pooled with other donors and managed directly by USAID. USAID will not charge any project management staff time or overhead costs to the fund.

The programme is delivered by USAID. The UK is providing GBP 2,800,000 over four years. Grants are fully operational in all six countries,⁷⁵ and 89% is pooled with the other donors. DFID have contracted the service providers for the evaluation function on behalf of the NA-ICT Agriculture Extension Fund Steering Committee. Some 11% of DFID's funds are spent directly on the evaluation contract. The total fund is around USD 12 million over four years. The other donors are USAID (USD 3 million plus USD 1.6 million in-kind for managing the fund and grantees); the Bill and Melinda Gates Foundation (BMFG) (USD 3 million) and the International Fund for Agricultural Development (IFAD; USD 1.5 million). This criterion is met.

• Grantees will be selected through a competitive process with VfM and amount of cofunding as important selection criteria.

A technical committee (made up of USAID, DFID and BMGF for all but Tanzania, and IFAD and USAID for Tanzania) reviewed the bids from all applicants. The template for bid assessment included five criteria: programme strategy; collaboration and synchronisation with SSTP; results planning, feedback process, sustainability and scalability; implementation and management capacity; and, staffing and resource leveraging. Each had sub-questions and asked for assessments against strengths and weaknesses. VfM was not explicitly mentioned in the bid assessment template. Only under Program Strategy is a referral made to a cost-effective approach. This criterion is partly met.

• Accountability and VfM will be at the forefront when finalising the funding agreement with the individual grantees.

In the Cooperative Agreement between USAID and the grantees VfM is not part of the agreement. This criterion is not met.

• DFID's investment will complement funding provided by USAID, BMGF and IFAD which may attract additional resources from other sources. In addition, grantees are expected

⁷³ In Annex 9, VfM detailed findings are presented at programme and country level.

⁷⁴ Business Case and Intervention Summary. Title: The NA-ICT agricultural extension CF.

⁷⁵ Source: 8.3 NA ICT CF Annual Review 2017.

to bring in their own investments, which would gradually increase during the project implementation.

No additional resources from other donors were attracted outside the initial four donors. Grantees have an amount of USD 5,048,732 as commitment for cost share/leverage in their contracts. The actual amounts of leverage funds are unclear at programme level, because the ET did not receive all expenditure information.⁷⁶ This criterion could not be assessed due to limited expenditure data.

• The project includes incentives for stimulating innovations and good performance by providing additional 'good' performance awards.

An adaptation fund was awarded mid-term in the project. In the original budget the adaptation fund was USD 800,000. A competition between the six countries resulted in an award of USD 67,500 each for Tanzania, Ethiopia and Mozambique.⁷⁷ The initial adaptation fund had to be reduced due to the lower than expected exchange rate of the GBP for the full DFID contribution. This criterion was met, although the amount was lower than initially anticipated.

• Opportunities for ensuring quality, robust evidence generated of relevance for the wider sector.

No public documents are published so far, but the evaluation will publish lessons learned that are relevant for the wider sector. This criterion was not yet fully met.

Fair: In the DFID business case, criteria were stated regarding the VfM proposition of the programme. Not all these expectations were met. Funds were pooled and efficiently managed by USAID. Grantees were selected using a competitive process. They have committed funds for over USD 5 million (although actual expenditure is not yet at that level) and a good performance award was provided to TICmbay in Tanzania, Digital Integration in Ethiopia and EMM Mozambique, although with lower funds than initially foreseen. VfM was not part of the Cooperative Agreement which made it difficult to do a fully-fledged VfM assessment during the performance evaluation and evidence on VfM is not yet published to share with the wider sector, although this evaluation will provide these wider lessons. Overall, the expectations in the business case were not fully achieved with regard to VfM. However, it does not mean that money was not well spent.⁷⁸

3.3.3 Economy

A number of areas were explored under this question, and findings are organised under three subquestions. For a fourth question, "What are the grantee and sub-grantee staffing plans and actual costs, compared across six target countries?", insufficient data are available to provide a meaningful comparison between the six countries. Some expenditure information was available from only four grantees. Budget lines for sub-grantee staffing plans were described under "personnel" by some grantees, and under "contracts" by others.

• What is the evidence of due diligence in selection of grantees and sub-grantees?

All country grantees were selected using an open competition with Fund donors.⁷⁹ The normal USAID procedures were followed to select grantees. In Mozambique a second round was needed and undertaken to identify a suitable grantee. All donors participated in the selection process. The

⁷⁸ But it does explain why the ET could not conduct a full VfM analysis.

⁷⁹ Interview USAID.

⁷⁶ In Annex 9 a more detailed description at country level is provided.

⁷⁷ USAID reduced, the amount to be awarded for the adaptation grants significantly to USD 67,500 each, rather than more than USD 200,000 each after consultation with the other donors. The reason for this was the drop in the exchange rate between USD and GBP between the planning of the fund in 2014 and the actual disbursement. The contribution of DFID was estimated at USD 4.2 million. The actual average exchange rate dropped with 14%. This resulted in an estimated contribution of DFID of USD 3.6 million (- USD 600,000).

donors used a bid assessment sheet to evaluate each proposal.⁸⁰ Five main criteria were used for scoring: program strategy; collaboration and synchronisation with SSTP roadmap for the country; results planning, feedback process, sustainability and scalability; implementation and management capacity; and staffing and resource leveraging.

Each grantee is leading a consortium to ensure they meet the grant requirement of offering a mix of ICT-enabled extension services. Sub-grantees were brought together organically, meaning that the selected sub-grantees had prior experience in ICT services, were already working with other consortium partners or were selected because they were the best of a limited pool of service providers.

• Is there evidence of competitive procurement among grantees and sub-grantees; is the supplier market constrained, thus limiting competition?

In terms of competitive procurement or selection of sub-grantees by lead grantees, no crosscountry analysis is possible due to a lack of required data. There is no evidence of competitive procurement processes among grantees, as it is not described in the cooperative agreements nor the annual reports. Only UPTAKE described that they used FRI procurement procedures. Other grantees might have used good procurement processes, but they are not reported. There is also no information available on competition to recruit highly qualified staff in the subject or subcontractors.

• Is there evidence of cost-sharing or in-kind support from national extension services or other stakeholders yet?

There is clear evidence of cost-sharing or in-kind support from national extension services and other stakeholders, but there is insufficient information on actual expenditure to determine the extent of the contribution.⁸¹ This is a key part of the NA-ICT programme, as indicated by the outcome level indicator 2.1 *Percentage of costs of ICT-enabled services covered by non-donor sources.*

The budget for the country grantees was USD 9,981,048 (from the donors) and USD 5,048,732 (cost share/leverage from (sub) grantees), for a total of USD 15,029,780.⁸² This shows that 33.6% was required by grantees to contribute to the overall programme budget. There was a difference between grantees for which amounts they committed in the Cooperative Agreement. See Figure 13 for an overview:

⁸¹ Contributions were measured against the on-going cost of disseminating messages, but content development cost and other cost like overhead cost were not included in the indicator.

⁸⁰ Shared by DFID.

⁸² This is the sum of all budgets in the six cooperative agreements.



Figure 13: Grant budget vs committed cost share / leverage for all grantees

A good example of contributions of national extension service is Ethiopia, which had a cash contribution of USD 598,599 for equipment and in year three alone a contribution of USD 491,310 of in-kind based on staff time and meeting rooms. A good example of private sector contribution is Mozambique, where Vodacom contributed USD 189,246 in promotion cost and free calls.⁸³

Fair: All country grantees were selected using an open competition based on USAID procedures with donors participating in the selection process. The ET had insufficient data on expenditure to provide a detailed VfM analysis between grantees. The focus of the programme has been on establishing the ICT-enabled services for SSTP technology and achieving targets and less on setting up VfM measures from the start. NA-ICT is a challenge fund and more attention could have been given to competitive procedures to ensure cost are managed well and to report on the actual contributions in cash and in-kind of grantees.

3.3.4 Efficiency

A number of areas were explored under this question, and findings are organised under five subheadings:

• What are the trends, over time, of programmable budgets vs. actual expenditures?

There is insufficient detailed expenditure information to provide a meaningful overview at programme level. There was some level of inefficiency at donor level, however, because the different donors required different reporting formats with different reporting deadlines. The budgets

⁸³ More detail is provided under effectiveness (paragraph 3.35 and Annex 9VfM analysis).

are also not broken down into cost drivers for ICT-based extension.⁸⁴ A harmonised reporting structure with one reporting deadline would have been more efficient.⁸⁵

• How do financial data correlate with planned results and actual achieved results when compared to logframe results indicators, at programme level?

The DFID logframe aimed to reach 3,000,000 farmers to use ICT-enabled extension services. The planned total target was 2,613,657, but, according to the ET, target setting might have been too low. The actual achieved results were 3,510,356 farmers that used the ICT-enabled extension services (while the programme is still in its implementation). This is 117% of the intended 3,000,000 farmers. Most of the budget has been disbursed, but grantees in Mozambique, Senegal and Tanzania are still in implementation and will still receive last disbursement.

• What are the cost-efficiency ratios for key results at the programme level?

Actual output indicators compared to total direct cost could be used as comparative measurement between grantees to measure cost-efficiency. The PIRS output indicators are overachieved by far, within the given budget. The ET concludes that the programme was cost-efficient in using the disbursed funds and converting them into outputs, although it was not possible to tie cost data to each output indicator. Grantees used the funds well to create relevant content and disseminated this to the farmers through different ICT channels. EMM is confident that they are still able to achieve their target for output indicator 1.2.

• What are the unit costs across key indicators at programme level?

While the lack of detailed, disaggregated financial data meant that a VfM comparison was not possible across the programme, unit costs for four grantees' (AgroTech, MODES, TICmbay and UPTAKE) allowed actual cost of users, and farmers that applied SSTP technologies and number of hectares under improvement, to be calculated. For example, MODES had a cost per user reached of USD 1.78, AgroTech of USD 2.02, UPTAKE of <u>USD 2.42</u> and TICmbay of <u>USD 3.38</u>. The differences in cost per farmer that applied SSTP technologies were larger: MODES had a cost per farmer of USD 3.37, AgroTech of USD 4.34, UPTAKE of USD 8.81 and TICmbay of USD 26.9.⁸⁶

• Disaggregation into ICT channels

For channels, a cross-country analysis is more complicated because the disaggregation into channels was not done consistently over time by some grantees. Radio is the only channel used by all six grantees. The average application rate⁸⁷ for radio is 21%.⁸⁸ SMS⁸⁹ is well used in Tanzania by UPTAKE with an application rate of 22%. IVR is often used by grantees as a

implementation and could reduce their cost per user / farmer applied in the remaining period of their contract.

⁸⁹ SMS is only used by UPTAKE (Tanzania) as a real dissemination channel in Swahili with an application rate of 22%, the other countries sometimes used SMS for extension agents or as an option for reminders, but it was not popular due to illiteracy of some farmers.

⁸⁴ like cost of content development, the cost of content curation, the cost of disseminating messages, the cost of personnel providing ICT-based extension services, the cost of promotion ICT-based extension services, the profiling cost, the investment cost to develop a digital extension platform or a mobile app).

⁸⁵ In Annex 9 VfM analysis, more details are provided in some of the country sections regarding country level findings.
⁸⁶ This is described in more detail in annex 9 VfM Analysis for the different grantees. UPTAKE and TICmbay are still in

⁸⁷ The percentage of farmers that used the ICT-enabled extension service that actually applied the SSTP technologies and practices on their farms

⁸⁸ Big differences between countries were reported for the radio channel: EMM (Mozambique) reported a 92% application rate for radio listeners without providing an outcome survey to proof this high number, MODES (Malawi) reported an application rate of 50% for radio listeners. Ethiopia (22%) and Ghana (25%) presented reasonable application rates. TICmbay (Senegal) reported only an application rate for radio of 6%. This could be caused by the fact that in TICmbay (Senegal) the focus of message was to promote SSTP technologies only, while certified seeds as such were not new for Senegal.

supporting channel for radio (to call in) and not separately measured. Video was very well used in Digital Integration (Ethiopia) with an application ratio of 43%.⁹⁰

Good: The programme resources were well used at grantee level. While targets may have been set rather low, outputs were overachieved, particularly for indicator 1.1, which far exceeded its target at programme level. The programme is still in implementation in three of six countries and actuals will increase further when data are collected for the PIRS 2018 and PIRS 2019. At donor level, due to different reporting formats and different reporting deadlines, time and resources could have been used more efficiently with a harmonised reporting structure with one reporting deadline.

3.3.5 Effectiveness

A number of areas were explored under this question, and findings are organised under three subheadings:⁹¹

• The percentage of ICT channel users that applied SSTP technologies

A good measure for effectiveness is the percentage of farmers that used the ICT-enabled extension service that actually applied the SSTP technologies and practices on their farms (the application rate).. Actual application rates are slightly above the targeted application rates in most countries.

Figure 14: Percentage of farmers that use ICT-enabled extension (1.2) that applied SSTP technologies or practices (1.3)



The highest application rate is reported by EMM (Mozambique), with 69%. The lowest is reported by TICmbay (Senegal), with 13%. MODES (Malawi) and EMM (Mozambique) have reported the highest application rates, but the ET has doubts about the accuracy of the numbers reported. The

⁹⁰ MODES (Malawi) and AgroTech (Ghana) also used video-based extension, but only at small scale.

⁹¹ A more detailed analysis could be found in Annex 9 VfM analysis.

average conversion rate of the other four grantees is 28%.⁹² Senegal is the only country with an actual conversion rate that is lower than planned especially for radio (see next paragraph). With a new technology like ApronStar, which addressed an urgent problem for farmers, the application rate appears higher, but not all data are yet available.

• Is there evidence of increased investment in ICT by stakeholders other than donors?

The grantees have, in their proposals, committed cost-sharing and leverage. They have reported on investments done by the government and private sector. The target for the programme was to reach 54% non-donor funding. This was achieved, with a 55% rate. However, a detailed break-down of actual income/cost-sharing other than reporting for the PIRS was not available from all grantees.

• Business model financial sustainability

The grantees have chosen different business models. None of them is yet fully financial sustainable,⁹³ although some grantees are able to contribute substantially to the running cost of the programme, and in some others the programme is still under way.

Fair: The programme was well enabled to achieve all targets. All outcomes were (over) achieved at programme level. The percentage of farmers that used the ICT-enabled extension service that actually applied the SSTP technologies and practices on their farms was good. Grantees are not yet fully financially sustainable. There was insufficient financial data to make a cost-effectiveness analysis. There is evidence of overall programme cost-sharing commitment, but no clear evidence that actual cost-sharing was at level of commitments. That is the main reason this criterion scores fair.

3.3.6 Equity

The focus of the programme was on smallholder farmers in general, whether male or female (note that gender issues are also discussed in section 3.1: Relevance, in terms of how gender was taken into consideration in programme design; and 3.4: Progress towards outcomes and impact, in terms of women and men applying the technologies).

• Are services accessible to women and men?

There is strong evidence that women have less access to ICT-enabled services due to social economic constraints. The grantees were, however, proactive in including measures to reach more women despite SSTP itself not having a clear gender focus. These measures included use of radio (to overcome higher levels of illiteracy among women), finding out when women are free to listen to the radio and seeking to have broadcasting at those times, having female voices on the radio and IVRs (including female broadcasters, lead farmers), setting up community listening groups to which women were encouraged to go to, and having women only groups (e.g. in Tigray). As can be seen in Figure 15 below, women were able to access the ICT-enabled services (indicator 1.2), although to a lesser extent than men.

⁹² The ET did double-check the accuracy of the data from MODES (Malawi) and EMM (Mozambique) with the MEL contractor and were assured that it was valid. Both grantees were not able to provide a good explanation about why their application rate was so much higher than the other grantees. The ET therefore assessed the data for indicator 1.3 for both grantees as outlier data. With the two grantees the average application rate is 39%; without the two grantees the application rate is 28%. ⁹³ This will be discussed further in Section 3.5.

Indicators gender disaggregated. Despite all actions undertaken by the grantees, the percentage of women for all indicators is still not above one third. Nevertheless, all targets for women were overachieved, although by less than the targets for men.



Figure 15: Gender disaggregated achievements for access (indicator 11), use (1.2), application (1.3) and hectarage (1.4)

Fair: Women have more limited access to ICT-enabled services than men as a result of cultural and socio-economic factors and the choice of crops and technologies under SSTP. Within that context, grantees have taken measures to ensure more access for women. These include several measures to address women's needs such as the use of audio-visual channels to overcome illiteracy, female trusted voices, and female reporters. The targets for women for all indicators were around 33%. This was similar for the actuals, but due to overachievement of all indicators for men and women farmers, more women were reached than targeted.

3.4 Progress towards outcomes and impact

There were five EQs for this criterion, all of which has several sub-questions. There was some overlap in the findings of some questions. Hence findings for EQ12 have been incorporated in part under EQ11 and in part under EQ14. Findings on unintended outcomes and impacts (part of EQ15) were minimal and are not included. Hence the discussion in this section will cover EQ11, EQ13 and EQ14. This section of the findings is concerned with IP1, Outcome 1: "Increased use of quality inputs and improved technologies by men and women smallholder farmers", and the NA-ICT CF anticipated impact: "Improved agricultural productivity in targeted food crops by smallholder farmers in 6 NA-ICT countries". Outcome level findings are discussed under 3.4.1 below, and impact level findings under 3.4.2. There were two gender-related questions under EQ13 but, as they relate more to application (EQ11), not impact (EQ13), findings are reported under EQ11. While the section mainly reports findings at the programme level, there is also some discussion of variations between countries. Annex 9 contains more detailed country-level discussion of outcome indicators 1.3 and 1.4.

EQ11: What evidence exists to show that adoption of technologies is enhanced through the ICTenabled advisory services? How and why? (Application)

EQ12: Which knowledges and practices have been adopted in what numbers, by whom, and why? (Knowledge)

EQ13: What evidence exists to show that integrated ICT-enabled advisory services are contributing to improving agricultural productivity of smallholder farmers, especially women? (Impact)

EQ14: Which ICT-enabled extension channels, and combinations of ICT-enabled extension channels, are the most effective in achieving results across the grantees, while taking into account the specific country context? (Channels)

EQ15: What are the intended and unintended, positive and negative outcomes and impacts that can be observed? (Unintended)

Summary of findings regarding the progress towards outcomes and impact criterion: The NA-ICT CF has achieved Outcome 1 "Increased use of quality inputs and improved technologies by men and women smallholder farmers". It has exceeded its targets at the outcome level, as per the findings for application of new technologies and best practices (indicators 1.3) and number of hectares under improved technologies (indicator 1.4) across the programme as a whole. While, in fact, there was a great deal of variation between grantees in relation to actuals versus targets for hectares (1.4), with four out of the six grantees actually underachieving to date, the evaluation team considers the application of technologies and best practices indicator (1.3) to be a stronger indicator. Actual achievement of indicator 1.3 is 183%⁹⁴ and is expected to increase as the programme runs till March 2019). Application by women as compared to men was good in four of the six countries, given existing gender constraints and the focus of the SSTP-supported crops. The evaluation found that key factors contributing to application are trust, availability of inputs, the market context including the market for outputs and the promise of either or both of better yields or better climate resilience. With regard to the NA-ICT CF impact: "Improved agricultural productivity in targeted food crops by smallholder farmers in six NA-ICT countries in Africa" (EQ13), neither the NA-ICT CF nor SSTP measured this. While there is some, mainly case-based and indirect evidence of higher yields, there is no robust evidence. The findings at outcome and impact level are confirmed by the evaluation of the ToC for impact pathway 1 (IP1) as detailed in Annex 6 section 1.3, and by the contribution stories from three of the six countries (Annex 7). The articulation of the ToC for IP1 is assessed as being accurate. While the contribution stories for all three countries are strong at the output level (as discussed in the section 3.2), they are medium at outcome level and weak at impact level. This is not only due to the lack of evidence at impact level, but also due to the many other factors influencing productivity, apart from the ICT-enabled extension channels. Last, findings in relation to EQ14 were that, while radio is the most costeffective ICT-enabled extension channel, video (in particular) followed by mobile-based extension led to greater application rates by those using these channels. Key findings are that ICT-enabled channels can work together and reinforce each other, and that they work best in combination with traditional extension.

3.4.1 Evidence of application (adoption) of technologies as a result of ICTenabled extension (EQ11 and part of EQ12)

This section focuses on the output to outcome step of IP1 of the ToC as indicated in Figure 16 below:

Figure 16: Step 3 Output > Outcome level: Increased application of SSTP technologies and management practices

⁹⁴ Even if indicator 1.3 is corrected for MODES and EMM the performance is still at 144% of target (see 2.5 for more details on outlier data).



Performance against indicators 1.3 (application of technologies/best practices) and 1.4 (hectarage)

The programme has four outcome indicators:

- Number of farmers and others who have applied improved technologies or management practices as a result of donor assistance (indicator 1.3);
- Number of hectares under improved technologies or management practices as a result of United States government assistance (indicator 1.4);
- Number of farmers who have received donor-supported short-term agricultural sector productivity training or food security training (indicator 1.5). This was an optional indicator and is not discussed in the report;
- Percentage of costs of ICT-enabled services covered by non-donor sources (indicator 2.1).
 Findings in relation to this are discussed in section 3.5 Sustainability).

As noted in section 2.3, although the MEL contractor developed a common definition for 1.3 as being the number of smallholder farmers and others who have applied improved technologies or management practices, not all grantees interpreted this in the same way. In addition, targets for indicator 1.4 were derived, rather than based on actual data for most grantees, and thus susceptible to incorrect estimation of the average hectares on which farmers are applying the new techniques or practices.⁹⁵ Findings on indicators 1.3 and 1.4 are provided below and are based on the only data available to the ET. However, the comparability between countries of data regarding application (1.3) and hectarage is somewhat affected due to the caveats above and as outlined in section 2.3 (limitations).

⁹⁵ Most grantees did not perform baseline surveys to calculate targets for indicator 1.4; they used an estimate. The actuals were more accurate and were mostly based on outcome surveys to calculate the average hectares under improvement times the number of farmers that applied SSTP technologies and practices. Hence the occasional big differences between targets and actuals for indicator 1.4.

Table 6 provides information on the performance of each country, and for the overall programme, as compared to targets, for each of indicators 1.3 and 1.4.

	1.3. Number of farmers who have applied improved technologies			1.4 Number of hectares under improved technologies		
	Target	Actual	% achieved of target	Target	Actual	% achieved of target
Digital Integration (Ethiopia)	247,500	285,674	115%	371,250	148,676	40%
AgroTech (Ghana)	100,000	296,763	297%	51,100	659,807	1291%
MODES (Malawi)	145,408	457,579	315%	523,470	579,961	111%
EMM (Mozambique)	90,000	115,299	128%	200,925	116,459	58%
TICmbay (Senegal)	30,515	29,583	97%	55,235	36,713	66%
UPTAKE (Tanzania)	101,600	124,300	122%	179,172	168,270	94%
NA-ICT CF	715,023	1,309,198	183%	1,381,152	1,709,886	124%

Table 6: Performance of grantees on outcome indicators 1.3 (application of technology/practice) and 1.4 (hectarage)⁹⁶

This table does not reflect the PIRS data from October 2017 to September 2018. EMM, TICmbay and UPTAKE are still implementing the programme and will report further on actuals. Despite the fact that some grantees are still operating, the overall programme has already overachieved the overall programme level target for indicator 1.3 by 183% and indicator 1.4 *number of hectares under improved technologies* by 124%. Based on the assessment in the DQA,⁹⁷ the ET has recalculated the results assuming that MODES and EMM achieved the same application rate (the percentage of users that will apply SSTP technology) as the average of the other four grantees (28%).⁹⁸ Overall, indicator 1.3 would still achieve 144% of the target.

⁹⁶ Source PIRS 2016 and 2017, annual report 2016 for Ghana and quarterly report Q3 2018 for Senegal and Mozambique. ⁹⁷ In paragraph 3.4 the ET reported that the data from MODES (Malawi) and EMM (Mozambique) for indicator 1.3 number of farmers who have applied improved technologies based on the number of users of ICT enabled services (indicator 1.2) is too high.

⁹⁸ The data for MODES and EMM are treated as outlier data The average conversion rate (28%) from indicator 1.2 to indicator 1.3 of the other 4 grantees is used to re-calculate results of MODES and EMM. MODES would than achieve 243,419 farmers and not 457,579 farmers, and EMM would than achieve 46,734 farmers and not 115,299 farmers. If so, Malawi would still overachieve on indicator 1.3 with 167% of the target, but Mozambique would underperform, with a result of 52% of the target for indicator 1.3.



Figure 17: Target vs actual indicator 1.3: Number of farmers and others who have applied improved technologies or management practices⁹⁹

At the country level, five of the six grantees greatly overachieved their targets in terms of farmers applying improved technologies. Only TICmbay has not yet reached their target, but they are close, and are still operating until March 2019. The DFID business case aimed at achieving 1,000,000 farmers applying SSTP technologies. The targets set by the grantees were below this number, but the programme already overachieved the 1,000,000 farmers, even after the ET corrected indicator 1.3 figures for EMM and MODES. Overall, indicator 1.3 would still achieve 1,026,473, which is still above the 1,000,000 farmers. From all farmers that applied, 29% were women.

The SSTP final survey, which was based on random selection from a list of famers in each country who had benefited from SSTP interventions, whether or not they were reached by ICT-enabled extension channels through the NA-ICT CF, also measured application. Total application for all technologies across the six countries increased from 36% in 2015 to 42% in 2017.¹⁰⁰ Application rate depended on type of SSTP technology or practice and was highest for crop genetics (new varieties) at 72% of all farmers benefiting from SSTP interventions followed by cultural practices at 55%. The SSTP survey considered that application was higher against these categories because they were linked directly to services promoted by grantees (training, demonstration plots and provision of improved planting materials).¹⁰¹ While the findings from the SSTP final survey and its evaluation do not reflect the impact of ICT-enabled extension, they indicate a wider picture of quite high percentages of application, and these increasing over time.

Application rates varied by gender within the NA-ICT CF. While the performance of actual against targeted numbers of farmers applying technologies was 183%, men performed better with +213% of the target than women +144%. Of all farmers who applied SSTP technology, 29% were women and 71% men. This percentage varied between countries. This is mainly due to the total percentage of females reached in the first place. In Mozambique, 46% of all farmers that applied SSTP technologies are women, and in Senegal it is 43%. So, in these two countries, application

¹⁰⁰ SSTP, AGRA SSTP Outcome – Indicators Annual Assessment 2017, AGRA, p. 47.

⁹⁹ Source PIRS 2016 and 2017 and Q3 2018 report TICmbay and EMM.

¹⁰¹ SSTP technologies and management practices were categorised into eleven categories: Crop genetics, Cultural practices, Pest management, Disease management, Soil-related fertility and conservation, Irrigation, Water management, Climate mitigation or adaptation, Post-harvest handling and storage, Value added processing, and Marketing and distribution.



was almost equal to that by men. Tanzania is not far behind, at 38%, but the percentage of women applying compared to men in Malawi was lower at only 23% and in Ethiopia at 22%.¹⁰²

The programme exceeded the programme target and reached 1,707,344 hectares under improvement. This is mainly due to achievements in Ghana and Malawi. The country with the highest number of hectares under improvement (indicator 1.4) is Ghana with 659,807 and the lowest is Senegal with 36,714. Only two of the six grantees, AgroTech in Ghana and MODES in Malawi, reached the target, as illustrated in Table 5. AgroTech exceeded their target by 1291% due to an underestimation by the grantees in Ghana of hectares per farmer and an overachievement of number of farmers that applied SSTP technology.¹⁰⁴ Digital Integration in Ethiopia only achieved 40% of their target.¹⁰⁵ The target in Ethiopia was set assuming a land size of 1.5 ha per technology user. However, in reality, it is 0.25/0.5 ha of land depending on the technology applied. Further, farmers tried out SSTP technologies on just part of their land. EMM reached 58% of their target but is still implementing. In Senegal, this indicator has not yet been met due to underachievement against 1.3 and, at the same time, overestimation of the hectares per farmer (see Annex 10 for more country-level details).

In terms of gender variation in relation to 1.4, in general men have more hectares under improved technologies. There was not much difference in terms of actual performance against targets. Women achieved 129% of the targeted number of improved hectares and men 122%. Further findings related to gender (drawn from EQ13 but more relevant to EQ11) are provided below:

• Gender

Factors influencing the participation of women and their application of improved agricultural technologies. Across all six countries, long-standing and common gender constraints still exist, with women having less access than men to extension services (with extension often targeted at mostly male heads of households, or cooperatives which have a higher

¹⁰² Data drawn from country level PIRS reports for indicator 1.3.

¹⁰³ Source PIRS 2016 and 2017 and Q3 2018 report TICmbay and EMM.

¹⁰⁴ The assumption was that farmer would apply SSTP technologies on 0.5 hectares per farm. The actual farms of farmers that applied were larger (around 2.6 hectares). The number of farmers that applied SSTP technologies was also much higher than targeted (almost 3 times as high). The combination lead to a very high over achievement, but clearly based on low target setting.

¹⁰⁵ If Digital Integration in Ethiopia prepares a 2018 PIRS report (October 2017-September 2018), that will provide additional results on this indicator for the last quarter of 2017 when the grantees were still operating under an NCE.

male than female membership), finance and inputs; lower levels of literacy; less time due to higher levels of domestic work than men; and less decision-making powers. In some, but not all of the countries, women had less access to radios and mobile phones (e.g. in Tanzania where men may take the radio with them to the field, or in Malawi where women are seen as lazy if listening to the radio, and also in Tanzania where men may prevent their wives from giving their mobile numbers so as to receive messages). A further factor influencing the participation of women was that many of the SSTP-supported crops are ones that men tend to grow. SSTP itself did not have a gender focus. Further, in some countries (e.g. Ethiopia and Senegal) the focus of the ICT-enabled extension was on the stages in the value chain at which men are predominantly engaged, for example land preparation and planting, whereas women are more likely to be involved in some of the cereal crops, for example at the post-harvest handling and storage stage, which is less of a focus of the ICT-enabled extension. However, all six grantees considered gender at the design phase as discussed in the findings on relevance. The following are common examples of measures taken: targeting 30-50% women, having community listening groups where women could more easily access radio broadcasts, and running programmes at the time of day when women could listen.

Overall, compared to the other countries, Mozambique and Senegal were found to have the highest level of female application compared to men. Interestingly, the SSTP final survey, which considered all "SSTP" smallholders (whether they were reached by ICT-enabled extension or not), confirmed that adoption (application) rates of male farmers for all technologies were higher than those of the females in West African countries, but there was a different trend in East Africa where females did as well, or slightly better, than their male counterparts.¹⁰⁶

• Whether men and women smallholder farmers have an equal opportunity to make an active decision to use quality inputs and improved technologies.

In the case of this particular project, the SSTP technologies tended to be male oriented, although beans and cowpeas are often grown by women and sometimes cassava and rice. It is clear from both SSTP itself and the evaluation of SSTP that maize was given a great deal of emphasis compared to the other crops supported by both SSTP and, therefore, NA-ICT CF. In all three countries visited, women have fewer decision-making powers than men, although a few interviewees argued that, in some households (particularly of the younger generation) men and women do discuss and share the decisions regarding adoption of technologies. The situation is similar in the remaining three countries; for example, a document review for Malawi indicates that gender roles entrenched in culture affected the usage of various ICT channels. Findings from stakeholder interviews at country level revealed that:

Trust was an important factor that came out strongly across all countries. In both Ethiopia and Ghana, farmers trusted their extension agents more when they were using ICT-enabled extension such as video-based or app-based extension. The fact that these agents were drawing on ICT-enabled extension sources gave them more status and empowered them. Lead farmers are usually trusted by other farmers and the NA-ICT CF took advantage of this in Ethiopia, Senegal and Ghana, where lead farmer voices were used on the radio, and lead farmers were featured in videos, for example. In Tanzania, farmers hold researchers in high regard, and knowing (through farmer participation in content development alongside researchers, extension agents and others) that researchers were involved in developing content greatly increased their trust in the subsequent ICT-enabled extension messages. Another finding that came out strongly was that farmers prefer to have the opportunity to cross-check and validate what they learn from one extension source. In Senegal, for example, if they heard something on the radio they would want to first check with their

¹⁰⁶ SSTP. AGRA SSTP Outcome – Indicators Annual Assessment 2017 (January 2018), p. 51.

cooperative or with an extension agent if what they learned was true, and the same was the case in Tanzania. Extension advice that can be confirmed in these ways is trusted more, as is advice that is reinforced through the use of several complementary ICT-enabled channels.

Timely provision of good quality seeds and equipment was a critical factor that was not guaranteed. Where seeds being promoted by the programme's ICT-based channels were not available, or were insufficiently available, then that clearly constrained application and, at times, led to farmers being frustrated by the lack of availability of the varieties being promoted and losing interest in them. SSTP grantees were at varying stages in their own development and exhibited varying abilities to supply their technologies and provide technical support to customers. SSTP noted that, in Tanzania, the breeder seed that was needed by SSTP grantees was not always available from the research stations. Close coordination between SSTP grantees and NA-ICT grantees was important to find alternative solutions, for example through SSTP grantees setting up sales outlets in districts where there was high demand, or to select alternative seed producers if SSTP grantees were not present.

The market context also affected the application by farmers of SSTP technologies. In some countries the market was disturbed through provision of free or subsidised seeds by the government, NGOs or cooperatives. In these cases, farmers would prefer to use those seeds, even where the quality and likely productivity of the subsidised or free seed/cuttings was lower. In Senegal, for example, only 22% farmers who had applied improved seeds mentioned that they had to buy them, with the majority of farmers accessing them through schemes with NGOs, cooperatives or the government. This hinders investments in good quality seed and input supply. Similarly, in Tanzania it was learned that the government closed the border to maize sales and this led to lower market prices, to the disadvantage of farmers. Also, in Tanzania, some of the potato varieties being promoted through SSTP (and therefore NA-ICT) were not ones that traders wanted to buy.

• Some evidence of application of SSTP technologies and practices

The ET encountered several good examples of how farmers applied ICT-based extension information. Farmers from Njombe in Tanzania started potato seed production. They applied all good practices they received from the radio and SMS¹⁰⁷ and were able to double the production. The ET physically could see the difference between the old and the new varieties. In Ethiopia, farmers watched videos in their village groups. They discussed the videos in their groups and committed to apply them. The lead farmer later checked if they really applied. The fact that they could see the new practices being implemented by similar farmers was very powerful and, in the case of the fall army worm, it saved their entire harvest. Even farmers who did not participate in a video group were informed by the farmers that did watch the video on how to protect their crop.

Factors motivating application or presenting barriers to application were explored with farmers, grantees and other stakeholders. The table below sums up the main factors that farmers listed as motivating them to apply a new technology or preventing them from applying it.

Reasons to apply new technologies	Reasons for not applying new technologies			
 Better yields Better nutrition Drought resistance / climate resilience / shorter cycles characteristics Seen that it worked Tried it already on a small portion of land 	 No access to supply No access to finance Too much risk or perceived risk Lack of trust Misuse of inputs 			

Table 7: Reasons farmers gave for whether they chose to apply or not apply new technologies and best practices.

¹⁰⁷ Radio and SMS messages reinforced each other.

Reasons to apply new technologies	Reasons for not applying new technologies			
Inputs are availableThere is a market for the product	 Insufficient knowledge / Lack of expert guidance on how to apply Lack of access to water Lack of adequate labour 			

The SSTP evaluation also looked at reasons for farmers to adopt or discontinue using a particular variety and found that this relates to particular varietal characteristics such as yield, often in combination with weather-related conditions; issues of taste, storability, and other factors; the presence or absence of output markets; and the cost and availability of seed. The evaluation did not find a correlation between decisions to adopt/discontinue particular varieties and either the strategies used to promote them, or the way the farmers acquired the seed. Affordability, availability, and the absence of output markets emerge from both the qualitative and quantitative data as key barriers to improved variety adoption.¹⁰⁸

• Contribution analysis of the outputs to outcome level of IP1

Figure 16 above shows the steps in the ToC in the causal pathway between Output 1: Agronomic extension provided to smallholder farmers via ICT-enabled services; and Outcome 1: Increased use of quality inputs and improved technologies by men and women smallholder farmers. As noted in Section 2, the ET carried out contribution analysis of IP1 in all three countries visited. Evidence was that, overall, the NA-ICT CF contributed positively towards change at the outcome level. The contribution was assessed as "fairly strong" as compared to being "strong" at the activity to output level of the IP (see sections 3.2.1 and 3.2.2 and Annex 7). The country-level findings confirmed the anticipated causal pathway for this step from output to outcome (i.e. from receiving information to adoption/non-adoption). Alternative pathways were not in evidence, but, while information dissemination contributed to adoption, this was not the only factor. Various figures in Annex 7,¹⁰⁹ which depict the understanding gained in-country of how adoption is reached based on ICT-based extension, indicate that farmers also need to understand the technology, trust it, be willing to apply it, and that it has to be both affordable and available. The re-examination of the ToC for IP1 in Annex 6 also confirmed that the ToC for this pathway as a whole was strong.

Excellent: In sum, given that the targets for both 1.3 and 1.4 were overachieved by the programme as a whole, the level of application of new technologies and best practices by smallholder farmers as a result of the NA-ICT CF ICT-enabled extension channels is rated as excellent, particularly as the programme is still ongoing in three of the six countries. Application by women as compared to men, was good in four of the six countries, given existing gender constraints and the focus of the SSTP-supported crops. The NA-ICT CF was proactive in encouraging women to apply the technologies. Evidence from interviews and focus groups confirmed the contribution of the ICT-enabled extension information towards application, while contribution analysis shows also that at this higher level of the causal pathway other factors such as trust and availability of inputs influenced the likelihood of application.

3.4.2 Impact: improved agricultural productivity (EQ13)

In this section evidence of increased productivity in targeted food crops for smallholder farmers in six NA-ICT countries in Africa is discussed. Figure 19 indicates the outcome to impact step of IP1.

Figure 19: Outcome level > impact

¹⁰⁸ Feed the Future, EVALUATION MID-TERM PERFORMANCE EVALUATION OF THE SCALING S(EEDS AND TECHNOLOGIES PARTNERSHIP IN AFRICA, October 26, 2017, p. 36.

¹⁰⁹ See Figures 13 and 14 for Ethiopia, Figure 19 for Senegal, and Figures 24 and 25 for Tanzania (Annex 7)



SSTP itself did not measure whether the new varieties led to improved productivity or higher yields. It was intended that the planned SSTP and PASS Phase 2 combined impact evaluation, and the follow-up report to the SSTP mid-term review, both commissioned by AGRA, look at productivity. ¹¹⁰ The NA-ICT CF also did not measure productivity, although the original MEL plan for TICmbay had included this prior to streamlining their M&E in accordance with the common indicators for all six countries. It should be noted that the varieties being promoted by SSTP were not all bred primarily for yield, as other factors were also important, for instance greater resilience to drought and floods, and breeding shorter-cycle (quicker maturing) varieties.

The Ghana programme, AgroTech, however, did a baseline and an end line, and measured yields of maize in both. The average yield during the baseline was 1,355 kg per hectare, and this increased slightly to 1,568 kg per hectare – a 16% increase over the project period (there was a 230% increase in production also, but this was mainly due to planting larger hectarages). Interviews in Ethiopia and Senegal, and the evaluation of MODES, all provide anecdotal evidence of increased yields. Some examples were provided in Senegal with one cooperative, the Federation of Farmers Association noting that new varieties of cowpeas had four times higher yields than those that had previously been in use, and further, that they matured quicker, in just 45 days. Male farmers in Mow village also noted a four-fold increase in millet yields subsequent to their starting to use ApronStar seed treatment. The SSTP-CU trials in Senegal indicated increases of 70–80% yield with new varieties combined with good soil treatment.

In Tanzania some interviewees looked at increased seed sales as a proxy for higher yields. Potential yields from improved varieties compared with those commonly in use were noted for potatoes, beans and cassava. For each, the differences were as follows: 15–20 tonnes of potatoes per hectare compared with 5–9 tonnes per hectare for those commonly grown; up to 8 bags per acre of beans for improved varieties under best practices compared to 2–3 bags per acre for traditional varieties and practices, and, for cassava, up to 32 tonnes per acre of improved varieties as compared to 6 tonnes per acre for traditional varieties under traditional practices.¹¹¹

Contribution analysis was carried out at the outcome to impact level of IP1 (see Figure 19 above) during the three country visits (see Annex 7). This contribution analysis fed into a re-examination

¹¹⁰ It is understood that draft versions of both reports were produced in February 2019

¹¹¹ This information was gained from farmers, agro-dealers and/or agricultural scientists interviewed.

of the ToC (see Figure 2 in Section 2, and Annex 6, pages 91-94). There were no indicators to measure yield/productivity and grantees were not required to measure this. The contribution story at the outcome to impact level of IP1 is weak compared to the activity to output, and output to outcome levels. (See Annex 7). The re-examination of the ToC for IP1 in Annex 6 (page 94) at the outcome to impact level found that the one assumption at outcome to impact level (Assumption 13¹¹²) held, based on limited evidence only and, to that extent, the impact was achieved, hence the articulation of the ToC/IP was strong. However, other external factors could affect whether the use of quality inputs and improved farming technologies lead to improved productivity, for example for smallholders to be able to farm in peace and are not displaced by instability or conflict.

Not available: In summary there is some evidence that use of improved varieties increased productivity, but this is largely proxy, case-based and anecdotal evidence. A range of issues prevent women's equal participation and decision-making, although in a couple of countries application by women is not too dissimilar to that by men. There is not enough evidence to gauge whether the NA-ICT CF's ICT-enabled extension services did or did not lead to higher productivity (the NA-ICT CF's anticipated impact).

3.4.3 Effectiveness of ICT-enabled channels and choices of channels (EQ14)

This question looked at reasons for choice of channels, differences between channels in uptake, knowledge, try out and adoption of new technologies, and linkages with traditional extension. Findings are mainly drawn from grantee level documents and interviews, though findings from the SSTP evaluation and from the MEL contractor are also included.

• The reasons for choice of channels

Figure 2 in Section 1 indicates the channels used by each of the six grantees. Five grantees have used IVR, three used SMS, three used video, two used a mobile app and one used USSD (unstructured supplementary service data) as a dissemination channel. In general, radio was selected because of its reach and because it is oral and could be broadcasted in local languages. In Tanzania, where one language prevails, texts (SMS) were used, but in Senegal, where there are many languages (that are not actually written languages) voice messages were preferred. There was little difference between the percentages of women or men applying what they learned through each particular ICT-enabled channel, except for SMS, where the percentage of men applying what they learned was much higher than that of women, most likely due to differences in education level and literacy between men and women.

Application (adoption) related to ICT-enabled channels and combinations of ICT-enabled channels

Overall, video had the highest application rate (44%),¹¹³ followed by IVR (38%), SMS (33%) and Radio (21%).¹¹⁴ In terms of absolute numbers, however, radio is the most effective channel in that it can reach far larger numbers at lower cost.¹¹⁵ There was variation in the extent to which radio listeners applied new varieties and technologies promoted by NA-ICT per country in Mozambique and Senegal, radio led to greater adoption than mobile (321 in Mozambique, You Talk in Senegal) although the messages sent out to farmers' mobiles in Senegal (mAlerts) were well received and acted on. In Tanzania, participatory radio campaigns were reinforced by SMS messaging and vice

¹¹² Assumption 13 of IP1: Increased use of quality inputs and improved farming techniques lead to improved productivity. ¹¹³ 44% of the farmers that watched video applied SSTP technologies or practices (application rate), while 38% of the farmers that received a voice message, 33% of the farmers that received a SMS and 21% of the radio listeners applied SSTP technologies and practices.

¹¹⁴ Figures are based on the PIRS. Not all countries disaggregate all figures consequently for channels over time.

¹¹⁵ Video has a larger application rate (44%) than radio (21%), but 2,500,000 listen to the radio whereas only 183,000 farmers watched the video.

versa, and both were informed by the same content. In Ethiopia, the combination of video-based extension and mobiles (calling in to Uliza, and IVR messages) was complementary, each reinforcing the other. This was very effective with 43% of those exposed to both video and mobile-based extension applying what they heard and watched). Also, in Ethiopia, there was government (Ministry of Agriculture) buy-in to, and ownership of, both video and mobile-based extension (whereas presently the radio extension falls under a different ministry). Both the MEL contractor and grantees in Mozambique and Malawi noted that farmers accessed radio programmes through their mobiles.

Findings regarding combining ICT-enabled extension with traditional extension channels

A consistent finding was that the ICT-enabled extension reinforced and enhanced traditional extension. This was the case both where traditional extension was strong, as in Ethiopia, and where it was low, for example, in Tanzania. In both instances, the enhancement of existing extension services by ICT-enabled extension imparted greater respect for, and status of, existing extension providers (this was found in Tanzania, Ethiopia, Senegal, Mozambique and was most likely the case in Ghana and Malawi also). This finding held across the spectrum of public to private led extension, that is, from the case of Ethiopia where extension is a government service, right through to Mozambique and Senegal where private sector, civil society and NGO players have a primary role in extension provision.

Some ICT channels only work well when combined with traditional extension channels (presence of extension workers). For example, video-enabled extension requires a strong presence of extension workers as it is human mediated, often in small groups, unlike radio and mobile-based extension. Even ICT channels that can be effective without human mediation, like radio, can have greater impact when run together with extension staff. For example, where an extension agent is present for a radio listening group, in which case s/he can mediate discussion and respond to any questions/verify any facts provided over the radio. Radio and video (in combination with extension) are still the preferred channels to offer inclusive ICT-based extension. While the ownership of mobile phones is rapidly increasing, farmers lack the literacy levels to access SMS or the willingness/skills to talk to computers (IVR). The SSTP evaluation concluded that SSTP should expand support to technology promotion by experienced and specialised communication organisations (such as HNI, FRI and Digital Green), which use an integrated set of mutually reinforcing methods and communication channels to a powerful effect.

Good: Overall, while the radio had higher reach and was cost-effective, there is no clear cut "best" channel, as the use of SMS or IVR was also effective and they often worked well together. Video was particularly effective in Ethiopia. All channels benefited from the existence of traditional extension as well, and each (ICT and traditional) reinforced each other.

3.5 Sustainability

This section relates to IP2, including Output 3: Financially sustainable ICT-enabled extension services operating and integrated with non-IC extension services, and Outcome 2: Increased financially sustainable ICT-enabled services to complement other extension services. The PIRS indicator related to sustainability is indicator 2.1: *The percentage of costs of ICT-enabled services covered by non-donor sources.* There was only one EQ under this criterion. A number of areas were explored under this question, and findings are organised under these four sub-headings, which are: business models, scaling up towards sustainability, strategic partnerships, and ToC Impact Pathway 2: from financially sustainable ICT-enabled extension services to increased

agricultural productivity. The NA-ICT CF looked at sustainability from the viewpoint of financial sustainability¹¹⁶ and operational sustainability.¹¹⁷

EQ16: What evidence is there to demonstrate that mechanisms are in place to enable continued delivery of ICT-enabled advisory services after grant funding?

Note that, in this case, no summary of findings is provided here as there was only one EQ. See the end of section 3.5 for the summary of findings.

Business models

Findings that grantees have developed business models that address financial sustainability towards Outcome 3: *Increased financially sustainable ICT-enabled services to complement other extension services* were strong. The six grantees have tried different business models depending on their country context, with four different routes towards financial sustainability.

- TICmbay pursued a social enterprise model (Jokalante) with a dissemination platform. This platform is agnostic with regard to content. Their revenue model is based on contracts with NGOs, input dealers and cooperatives, who want to disseminate messages to farmers¹¹⁸ ((Business2business2consumer or B2BC).
- The opposite business model is that of Digital Integration in Ethiopia. Digital Green, the lead grantee of Digital Integration, has a long-term bilateral agreement with the Government of Ethiopia beyond the NA-ICT CF contract. The video-based extension is fully integrated in the government extension service. This is formalised in the Growth and Transformation Plan of Ethiopia.
- MODES (Malawi), EMM (Mozambique) and UPTAKE (Tanzania) have a mixed model. MODES and UPTAKE work closely with government and agricultural research institutions on institutionalisation of the content development process, but also on a B2BC¹¹⁹ model.
- In Malawi HNI works with Airtel and in Mozambique with Vodacom. They collaborate to disseminate government-approved content to farmers. The revenue model is partly based on farmer contribution, but also as a loyalty model for the Telco's to keep their clients. HNI's revenue model is based on selling space to NGOs to disseminate messages.
- In Tanzania, CABI works with Esoko for dissemination of message to farmers. Esoko's revenue model is similar of that of TICmbay in Senegal. They sell contracts to other NGOs to disseminate messages based on their farmer profile database.
- AgroTech originally intended that government takes over after the contract, but this did not work out. Instead, they started a partnership with ACDI/VOCA to focus on private sector agents in outgrower schemes with contract farmers. AgroTech agents combined the dissemination of agricultural extension information as a free service with the sales of farmer inputs, financial and insurance services to contract farmers. Their revenue model is based on a commission that is paid from the sales of farmer inputs and financial services through AgroTech. AgroTech also secured additional donor funding from IDRC to scale up and improve this business model.

¹¹⁶ Financial sustainability is defined by the ET as the ability to cover all cost of the ICT-enabled service without donor support after the end of the contract.

¹¹⁷ Operational sustainability is defined by the ET as the skills to continue to operate the ICT-enabled services to farmers after the end of the contract.

¹¹⁸ The contracts that Jokalante was able to acquire generated in April 2018 40% of the ongoing cost of the TICmbay platform.

¹¹⁹ A Business to Business to Consumer model is a collaboration with a Telco (in this case Airtel and Vodacom) and a valueadded reseller (HNI) who develops a service to consumers (in this case to farmers) on the infrastructure of the Telco. Vodacom and Airtel pay the value-added reseller for the services, but use also their own marketing channels to attract more customers. Together they are able to create higher loyalty to the Telco network.
Figure 20 below shows the various revenue streams across the countries. All grantees agree that models just focusing on farmer contribution only cannot yet be sustainable. The chosen business models address different sources of income. Services to government (by Digital Integration in Ethiopia); service fees and commission through contracts to private sector clients such as outgrower schemes, seed companies, input companies, NGOs (by TICmbay in Senegal, AgroTech in Ghana and UPTAKE in Tanzania); value-added services to telecoms (MODES in Malawi, EMM in Mozambique); advertising (AgroTech, MODES; data sales (AgroTech and UPTAKE); farmers to pay: (MODES and EMM).

Figure 20: Various revenue streams across countries



Embedding in Government: Digital Integration UPTAKE

Farmer revenue: MODES EMM



UPTAKE





EMM

Advertising revenue: AgroTech







revenue from transactions: AgroTech

Contract farming Services revenue (contracts to clients to disseminate messages): TICmbay UPTAKE

AgroTech

Operational sustainability differs for each channel. The radio capacity building focused on creating interactive radio with sufficiently high listenership to attract advertisers like agro-dealers, fertiliser companies and seed suppliers to cover the cost of the programme. But this was difficult, especially for community radio stations. Dissemination of promotional information from technology providers could more easily become sustainable than rigorous content development based on new research, that requires a vetting process. Quality content development could be better embedded within the government extension process. The video capacity building by Digital Integration in Ethiopia of development agents and subject matter specialists is integrated in the Agricultural Technical and Vocational Education and Training curricula; TICmbay consortium partners in Senegal built the capacity of Jokalante to operate independently at the end of the project. The Ethiopian experience demonstrated that is aligning with formal government agricultural extension services promotes a higher chance of sustainability and adoption by other stakeholders. The Senegal experience focused on establishing a for-profit social enterprise that would continue to fill a much-needed gap in the local development market. This model is not yet fully financial sustainable, but the project still runs until March 2019.

The NA-ICT CF used only one indicator for financial sustainability. Indicator 2.1 measures the percentage of costs of ICT-enabled services covered by non-donor sources. This is a rather limited indicator that does not measure financial sustainability according to the ET. It covers only the ongoing cost of the ICT-enabled services. It does not cover content development cost, neither the overhead cost or product development investments. All grantees measured this indicator except UPTAKE (for whom the indicator was optional). At first, grantees struggled with this indicator.¹²⁰ Measuring this was new for most of the grantees and therefore it took time to understand the

¹²⁰ "Non-donor sources" may include: National or regional governments, NGOs, telecoms, tech companies, social enterprises (such as co-working spaces that may contribute to the projects), and others (PIRS).

indicator and how to report on it. The MEL contractor built their understanding of it and more pressure was put on them to report against it. Grantees had first focused on building the ICT-enabled services, before they addressed financial sustainability fully. This indicator is a proxy measure for financial sustainability of the ICT services and potential for scaling up through private sector initiatives.¹²¹ The more the costs of ICT services are covered by non-donor sources (for example, from revenues from subscribers or advertisers), the more likely the ICT service operations will be able to take off through self-sustaining local processes.¹²² In their contract, grantees committed to cost-sharing and leveraging funds. Actual contributions of cost-sharing could not be matched with commitments due to a lack of data.

The ET has mixed findings for this indicator, partly because the indicator was not measured consistently over time,¹²³ which makes comparing difficult. Target setting was unclear. Not all grantees reached their target. Digital Integration in Ethiopia (66% versus target of 42%) and EMM in Mozambique (96% vs 62%) scored higher than the target. EMM had the highest result with 96% of the running cost covered (of 2017) due to a higher than expected contribution of Vodacom. AgroTech, Ghana had the lowest, with 20%. AgroTech had a shorter contract of two years rather than three. All were below 100% at the end of contract, although EMM, TICmbay and UPTAKE are still implementing.

All grantees expect/expected to be operationally and financially sustainable as required by the end of their contract. The ET found clear evidence for operational sustainability, but has not seen proof that all grantees could continue the ICT-enabled extension services without donor support.



Figure 21: Targets v actual percentages of operational costs covered by non-donor source

• Scaling up towards sustainability

Scale has different dimensions. Within NA-ICT CF the focus is on using ICT-enabled technology to reach far more farmers than through traditional extension alone. Scaling towards sustainability is seen as the ability to continue the ICT-enabled services beyond NA-ICT to reach farmers beyond the NA-ICT population. Outcome 2 is concerned with ensuring that ICT-enabled extension set up during the CF are financially sustainable, and, as seen above in Figure 21, targets were set by the CF for this.

¹²² PIRS.

¹²¹ Scaling up is seen as growing the ICT enabled serviced beyond the population reached under the NA-ICT CF.

¹²³ There were no data from Tanzania, only data of 2016 for Mozambique and Senegal (but Senegal did raise their target from 40% to 80% for 2018), of 2017 for Ghana and of 2016 and 2017 for Ethiopia and Malawi.

Some (sub) grantees focused on the development of their dissemination platform.¹²⁴ The number of farmer profiles in the database is key to attracting new contracts to disseminate messages to the farmers. Digital Integration (Ethiopia) and TICmbay (Senegal) could already scale up to new regions in their country and to different crops to create a larger farmer profile database in order to continue services after NA-ICT CF, but this needs to grow further before full financial sustainability is achieved.

Some grantees, like AgroTech (Ghana) also broadened their services to farmers. They added additional services such as financial services. Some grantees like MODES (Malawi) and EMM (Mozambique) reach scaling up through a collaboration with telecom companies. MODES (Malawi) worked with national radio stations, which reached beyond the SSTP districts, and far beyond the NA-ICT CF districts, hence this approach was helpful for scaling up.

Capacity building for community radio stations, government extension, SSTP grantees and farmer organisations in content development and ICT-enabled extension services will last and will make future potential projects (funded by other donors or government) more efficient and effective.

Grantees with a more rigorous content development processes like MODES (Malawi), UPTAKE (Tanzania), and Digital Integration (Ethiopia) will need to secure donor or government support to continue. More detailed findings per grantee are provided in the country sections of the VfM Analysis Annex 9.

Grantees were able to move towards financial sustainability of the dissemination cost at the end of their contract, but the ET could not prove that financial sustainability is achieved without any donor support for all the costs of continuing the ICT-enabled extension service.

• Strategic partnerships for sustainability

The ET has limited findings for this sub-question. All grantees have designed the project based on informal public-private partnership (PPP) constructions with government involved in design stage (through SSTP crop and technology choices, TICmbay), implementation stage (UPTAKE, MODES, AgroTech, Digital Integration, EMM) or sustainability stage (Digital Integration and AgroTech), and the private sector was involved in all stages. The grantees did not set up formal PPP constructions for content creation and delivery. AgroTech in Ghana mentioned that, with hindsight, they should have been looking from the start for a business owner or a scaling agent who could operate the service after the contract, and that they had focused too much on government as the long-term owner. The grantees were all NGOs, which made it perhaps more complicated to set up PPPs. It is challenging to drive the pilot phase of a project and hand it over to another entity who can take long-term ownership (government, private company or social enterprise) without involving them from the start.¹²⁵ Some grantees focused purely on government (as in Ethiopia) with some private sector input in the case of new technologies, whereas others have purely focused on the private sector without government input (as in Senegal). Most have established a mixed model with government input in the content creation (as in Tanzania, Malawi, Mozambique and Ghana) but with private sector involvement in content delivery (Mozambique, Malawi, Tanzania). Most grantees chose strategic partnership with their governments (Ethiopia, Ghana, Malawi, Mozambigue and Tanzania) at least for content development. Digital Green in Ethiopia had a six-year bilateral agreement with the government to formalise video-based extension. AgroTech in Ghana mentioned that they used a strategic partnership model to become sustainable, e.g. with Cocobod (cocoa union), but this was not really successful. TICmbay established MOUs with farmer cooperatives to reach out to more farmers. HNI in Mozambique had

¹²⁴ Before sustainability could be reached the dissemination platform itself should be well developed.

¹²⁵ Design for scale is one of the principles of Digital Development. Good practice can be found at

https://digitalprinciples.org/resource/principle-4-build-for-sustainability/

a strategic partnership with Vodacom and in Malawi with Airtel. CABI closed a strategic partnership with Esoko to have long-term access to a dissemination platform. Most grantees also worked closely with SSTP grantees even after SSTP closed.

• Theory of Change Impact Pathway 2

Impact pathway 2 of the ToC focused on achieving financially sustainable ICT-enabled extension services.



Figure 22: ToC Impact Pathway 2: Financial sustainability

The full analysis of Impact pathway 2: Financial Sustainability, is shown in Annex 6. The ET has mixed findings for this impact pathway.¹²⁶ At the activity to output level just two of the four assumptions were valid. Assumption 1 partially held,¹²⁷ the third (assumption 3) did hold.¹²⁸ Therefore, Output 3: Financially sustainable ICT-enabled extension services operating and

¹²⁶ The ET noticed that the difference between Output 3 and Outcome 3 is not very clear. Outcome 3 could be reached before Output 3. It would have been better to formulate Output 3 more at the level of "Sustainable business model of ICT-enabled extension services operational".

¹²⁷ Not all grantees created a business plan to address financial and operational sustainability.

¹²⁸ If financial sustainability is defined as the ability to continue without further donor funding than the assumption did not hold. But if sustainable flows of grants were included this assumption holds.

integrated with non-ICT extension services, was not fully achieved. The three assumptions from output to outcome held, but with only partially achieved performance at the activity and output level, the outcome level was affected negatively for some countries (Ghana and Senegal). The anticipated outcome 3 was not fully achieved by all grantees, indicating that the articulation of the ToC for IP2 was of medium strength. Some assumptions were missing. For example, this was the case for the assumptions for different channels (radio channels have a different business model than platforms or video extension). In the long run, post-project, the ET sees a challenge regarding ongoing supply of relevant messages.

Fair: The NA-ICT CF looked at sustainability from the viewpoint of financial sustainability¹²⁹ and operational sustainability.¹³⁰ Financial sustainability is likely to remain a challenge once the CF stops, at least in some of the countries. The ET is confident that operational sustainability will be achieved by the grantees. In terms of financial sustainability, the grantees did commit to leveraging the NA-ICT funding with non-donor sources, although the ET did not have sufficient data on actual contributions from all grantees to assess if all commitments were achieved. The grantees were all NGOs, they focused on delivering the service and building government/radio station capacities first to replicate, scale up¹³¹ and achieve operational sustainability. Most grantees did not secure buyin from government or a company as a scale-up agent from the start of NA-ICT CF except for Digital Integration in Ethiopia who secured government buy-in and could scale up with additional BMGF funding. AgroTech in Ghana managed to secure funding from another donor to scale up AgroTech to more extension agents and to fine tune their business model. EMM, TICmbay and UPTAKE are still in implementation. Jokalante, the social enterprise established by the grantees in Senegal, is able to attract contracts for their services, but still needs time to become fully financially sustainable. IFAD are considering funding a second phase of UPTAKE. In the long run, post-CF, the ET sees a challenge regarding ongoing supply of relevant messages where there are no ongoing funds to support the content development process.

¹²⁹ Financial sustainability is defined by the ET as the ability to cover all cost of the ICT enabled service without donor-support after the end of the contract.

¹³¹ Scale up is seen by the ET the ability to grow the ICT enabled extension service beyond the population reached during the NA-ICT CF.

¹³⁰ Operational sustainability is defined by the ET as the capacity to continue to operate the ICT enabled services to farmers after the end of the contract.

4 Lessons learned

This Section first provides a summary of lessons learned by grantees. Next, the extent to which lesson learning and sharing was prioritised by the grantees and at the programme level is discussed, along with findings on whether any action has been taken, or is intended, by partners and donors, based on lessons shared. These two sections (4.1. and 4.2) respond to EQ17: To what extent have lessons learned (and which lessons) been shared and adopted by project partners? Third, lessons learned by the ET, based on findings in Section 3, are explored, with the intention that these then lead into the conclusions and recommendations Section as illustrated in Section 1, Figure 1. Fourth, a summary pulling together the ET's reflections on the key challenges that the NA-ICT CF process faced at both design and implementation phases is provided.

4.1 Summary of lessons learned by grantees (EQ17)

Table 8 collates and summarises the main lessons learned by the grantees across the six countries, drawing on a review of the lesson learning content of their final, and most recent annual and quarterly reports as well as five country briefs collated by the MEL contractor.¹³² In total, 18 documents were reviewed and a total of 65 lessons identified in the country-level reports. Lessons learned are sorted into eight topics based on thematic areas that emerged during the process of analysis and consolidation of the lessons.

Table 8: Lessons learned by grantees

Topic and main lessons learned

Topic 1: Added value of combining traditional extension with ICT-enabled extension

- Video-enabled extension in Ethiopia is human-mediated and this enhances participation in traditional extension system and feedback on the videos. Video-based extension is not a substitute for face-to-face communication – the two need to be paired together and work in complementary ways.
- Paying regular visits to farmers by the radio stations and grantee was appreciated by communities and can increase radio listenership (Ghana).
- Lessons from the MODES project in Malawi indicate that combining ICT channels and local activities enhance listenership and usage. RLCs increased radio listenership and, when facilitating these, local institutions can help track progress, enhance feedback and provide entry points for future projects to build on.
- Traditional channels (instruction cards, community theatres, posters and demonstrations) were useful in raising farmers' awareness of the 321 service and illustrating how to access it (Mozambique).
- In Senegal it was learned that combining human interaction with the ICT-enabled services increased trust in the ICT-enabled extension messages. Complementing radio broadcasts with face-to-face meetings is ideal. "By comparing rates of application of SSTP technologies among farmers exposed to ICT services, SSTP programmes (demonstrations), both projects or neither, it was shown that neither the ICT project nor the SSTP project on its own had a significant impact on the rate of application of new technologies. However, in combination, ICT

¹³² No brief was prepared for Ghana as the project there had already closed.

and SSTP (demonstration) programmes significantly increase rates of technology application".¹³³

Topic 2: Combining different ICT-enabled extension services

- A lesson learned in Ethiopia was that some ICTs are better at certain things; e.g. mobiles are useful for exchanging small pieces of information that fluctuate often, such as information on market prices or the weather. Video-enabled extension provides richer information, which can motivate viewers.
- In Malawi it was learned that most farmers have access to various ICT services and that a single message delivered through multiple channels has a better chance of reaching more farmers and improving uptake.
- In Mozambique it was concluded that SMS alerts do work in alerting farmers to the existence of agricultural content on 321 and thus encourage farmers to engage with the 321 service.
- Additional value addition to an SMS information service is obtained by linking it to sought-after services like money transfers, loans to purchase inputs and other value-added services (Tanzania).

Topic 3: Interactive radio-based extension

- In Ghana the radio landscape changed over time and, with the addition of multiple local radio stations, farmers preferred to listen to these rather than the regional stations.
- Reports from three countries confirmed that the use of radio is very cost-effective compared to
 other channels (Tanzania, Malawi and Mozambique) but a lesson learned in Mozambique was
 that the high level of farmer interactivity (through Uliza) could result in costs that were not
 sustainable by radio stations, and it was recommended to farmers that they combine Uliza with
 other local alternative methods of interaction (e.g. free phone numbers).
- Both TICmbay and EMM learned the importance of having farmer leaders and local extension speak on the radio. In Mozambique the radio stations experienced weak collaboration from local technicians, this was because they had been approaching them informally. They were advised to send technicians formal invitations to speak on the radio.

Topic 4: ICT platform design

 TICmbay in Senegal and MODES in Malawi learned that platform design needed to be flexible. In Malawi, the design was not flexible enough to take on emerging, dynamic content such as advice on fall army worm, when needed. In Senegal, demands from different clients of Jokalante made it very clear that all functionalities of the platform needed to be agile, so as to quickly adapt to new requirements.

Topic 5: Availability of inputs

 One lesson learned noted by reports in five countries (Ghana, Malawi, Mozambique, Senegal and Tanzania), was to consider availability of inputs and equipment before promoting it through ICT-enabled channels. Sometimes SSTP-supported inputs, particularly seeds, were not available, or they were available but only in limited quantities, in distant locations and/or at the wrong time. In Senegal TICmbay sought to link farmers directly with seed providers/warehouses and in Tanzania UPTAKE engaged closely with private sector suppliers

¹³³ TICmbay Annual Report October 2016-September 2017, p. 24.

and sought their buy-in towards future ICT-enabled extension, which could then be linked to what they actually had available.

Topic 6: External factors affecting ICT-enabled extension

- A lesson learned (but not solved) in both Ethiopia and Senegal was that government subsidy or free provision of inputs affected farmers' willingness to buy the varieties being promoted (which were often available for sale from private sector SSTP grantees).
- In Mozambique, while EMM was promoting good practice on how to reduce aflatoxin levels in groundnuts, farmers were unwilling to do this as the market did not discriminate between seed that had been dried properly (to reduce aflatoxin) and regular seed.
- ICT-enabled messaging in Mozambique, which sought to be dynamic and respond to farmers' needs, included market price information. However, the government-supported system sometimes had technical difficulties which meant that EMM could not source up-to-date market information.

Topic 7: Gender concerns and ways forward

- Gender concerns included women having lower literacy levels than men (raised by grantees in Ethiopia, Mozambique and Tanzania) and lower decision-making powers (Tanzania), as well as lower ownership of mobiles than men (Malawi). With regard to radio listenership, in Malawi it was noted that women were seen as being lazy if they listened to the radio. In Senegal it was noted that women were less likely to call in to the radio station than men and, further, the messages were less relevant to them than to men.
- Grantees found several ways to address these gender disparities as reported in their "Lessons learned". In Senegal grantees sought to have more women voices in the broadcasts (including female broadcasters, female experts if available, and female smallholders) and to have specific programmes on crops and related nutritional messages for women. Similarly, in Ethiopia, grantees thought having ICT-enabled extension focused on women's concerns and seeking to reduce their labour burden would be good. As in Senegal, they sought to include women's voices in participatory radio campaigns and videos and to have either women's only, or mixed, video viewing groups, depending on women's wishes. Further, scheduling of video screening and participatory radio campaign (PRC) listening groups was best scheduled at times and places convenient to women.

Topic 8: Monitoring and evaluation

 Lessons learned related to M&E were few and disparate. UPTAKE in Tanzania and MODES in Malawi mentioned the benefits of getting feedback from farmers, with MODES noting the potential of 321 services for this. Digital Integration noted that the external quality assurance (QA) they arranged for needed to be aligned with the seasons. EMM realised that they needed to advise farmers in advance (through extension agents, SMS and radio) that they would be carrying out an outcome survey of the PRCs. As it was, farmers were not aware that this outcome survey was going to take place and some were unwilling to respond.

While the above are all key areas for learning, lessons learned are scattered in different reports. They were not at any stage collated together and analysed further in joint grantee/MEL contractor learning events. The MEL contractor focused on the monitoring aspect of their role in the face-to-

face and virtual webinars, with an emphasis on building grantee capacity in how to use the PIRS indicators (see findings for EQ6).

The majority of lessons learned reported by the MEL contractor (rather than those learned by the grantees as per the table above) concerned process issues. The only lessons learned on the ground by the MEL contractor are documented in a report on a field trip taken to Senegal and Ethiopia in June-July 2018.¹³⁴ In brief, the MEL contractor learned then that the majority of farmers appreciated accessing information from multiple sources (radio, IVR push and pull, video) but that many farmers had difficulties with IVR and even more so with SMS: "We have documented instances where technologies that are accessible (radio) and entertaining (video) have a better chance of being picked up by farmers versus other ICTs such as IVR, which have proven to be hard to understand both in function and process".¹³⁵

4.2 Extent of lesson learning and sharing (EQ17)

4.2.1 Lesson learning and sharing

At the country level, lesson learning and sharing has not been and is not, a priority among grantees, particularly beyond the in-country consortia. There was a commonly held view among the grantees that lesson learning and sharing is something that happens towards, or at the end, of the project. While there are case studies and success stories in grantee reports, it is not known if these were disseminated. A few examples of the members sharing lessons from the project more widely were found, for example, SB Conseil (a TICmbay consortium member) sharing with CTA, Practical Action (also a TICmbay consortium member) sharing lessons with the wider Practical Action organisation, and FRI grantees/sub-grantees sharing with the wider FRI. All grantees did, however, share information if requested at the MEL contractor's learning events. In Senegal, an annual review workshop is organised involving stakeholders in and beyond the consortium and it does involve lesson learning and sharing. Annual and quarterly reporting cover lessons learned to a variable extent (these are drawn out in section 4.1 above). The Malawi end report has careful consideration of lessons learned.

The donor group had intended for a higher level of sophistication in lesson learning than that illustrated in Table 8 in section 4.1 above. It was intended that the lesson learning events facilitated by the MEL contractor focus on topics such as: the effective combination of ICT-enabled agricultural extension channels; the combination of ICT-enabled agricultural extension; consistent multi-channel content development; and sustainable business models. However, in-depth reflection on such questions did not take place to the level anticipated. Section 3.2.3 discusses how effective the MEL contractor was in facilitating learning within the grantee network.

DFID's annual reviews include a section on lessons learned. Beyond this, there was minimal lesson sharing at programme level, that is, between and beyond the donor group. At the donor level, DFID is arranging for a donor presentation in the form of a webinar involving the evaluators, all four donors and grantees from the six countries, which will provide the opportunity not only to present and discuss evaluation findings but also to have a roundtable discussion on wider issues related to the use of ICTs in agricultural extension.

¹³⁴ TDY Post-trip report NA-ICT CF M&L Services Task Order July 2018, the MEL contractor.
 ¹³⁵ Ibid, p. 2.

4.2.2 Action taken based on lessons learned and shared

As noted in 4.2.1 above, little attention has been paid to the sharing and discussing of lessons learned between the CF donors. Nevertheless, there is interest for this. BMGF, based on their rural advisory services, are looking further at content, platform and cost. They wish to look at content development across the value chain, and they recognise that digital platforms are necessary because of the cost implications of relying on traditional extension means. They have a lot of interest in learning more about the challenges in getting messages out, what capacity building is needed, how content can be refreshed and who should be responsible for this. On the digital side, they are interested in learning about why women have been harder to reach. Furthermore, they would like to learn more about costs, that is, dollar per person to drive out information. Questions such as which channels drove behaviour change are of interest to them. USAID and BMGF are participating in multi-donor discussions and events related to advancing the cost-effectiveness, accountability and impact of agricultural extension services. It is recognised that insights from the NA-ICT CF experience could inform these discussions.

It is understood by the ET, that NA-ICT CF findings could be of interest to the World Bank, GIZ, IFPRI, DG and USAID (e.g. in relation to USAID's Feed-the-Future "Developing Local Extension Capacity" project). Findings could also be of interest to the larger project that AGRA has started on completion of SSTP: Partnership for Inclusive Agricultural Transformation in Africa. DFID also hopes to learn from the evaluation, in order to inform the design of new digital/ICT-based programmes. In sum, while available evidence indicates that partners have not actioned lessons from the NA-ICT CF thus far, going forward the lessons distilled from this evaluation will be useful to inform the design of new digital programmes. While project partners have not taken action yet based on lessons learned and shared from the project, there is interest in evaluation findings that could inform decision-making about future design of ICT-enabled extension among the donors.

Fair: While lessons were being generated by grantees, an opportunity was missed in terms of sharing these lessons across the grantees. The NA-ICT CF could have given greater priority to lesson learning and sharing. It could have sought to reflect in-depth on factors such as combinations of ICT-enabled extension channels, content development, and sustainable business models; and to develop informed learning briefs on such analyses for those interested in supporting or applying ICT-enabled extension. Donors are interested in lessons so as to inform the design of new programmes having an ICT component.

4.3 Lessons learned by the evaluation team

Reviewing the findings presented in Section 3, the ET identified seven main topics around which lessons have been learned. Most of these topics are informed by findings arising from several of the evaluation criteria presented in Section 3.

4.3.1 Programme design

Key lessons concerning programme design, relevant to donors, were that the ICT-enabled extension services should have been better built into the SSTP programme, and that MEL be considered for both together, to enhance joined-up planning, implementation and MEL and increase the likelihood that the MEL contractor be appointed at the start of the programme. Further, donors entering into a multi-donor-funded arrangement need to recognise the challenges related to different reporting cycles, different understandings of the programme, and different expectations, for example in relation to VfM and MEL requirements. Although the programme was termed a "Challenge Fund" (which implies the involvement of private sector bodies rather than, or as well as NGOs, as grantees, as a potential solution to sustainability concerns), grantees were

NGOs. This impacted on their approach to financial and operational sustainability. Last, the two to three-year timeline of the programme was too short given that the focus of the CF was on rain-fed crops.

4.3.2 Monitoring, evaluation and learning

Evidence was not gathered regarding donor-relevant MEL lessons learned because the need to gather high-quality evidence of cost-effectiveness and impact level was not included in the ToRs for the MEL contractor. This relates back to the point made under programme design which notes how important it is for good understanding between the donors at that stage regarding what was required. Secondly, ideally a MEL contractor with extensive experience in establishing common cross-country indicators and ICT-enabled extension services would be appointed. This, combined with the late contracting of the MEL contractor, when grantees already had established their own M&E plan, was not a good basis to create common indicators with clear procedures, shared definitions, quality assurance methods and tools for high-quality, standardised data collection. A lesson learned that is relevant to MEL contractors themselves is that, whether appointed at the start of a programme, or at a later stage, both the monitoring and learning components of MEL are important, and that specific attention needed to be given to building a culture of learning knowledge sharing between grantees.

4.3.3 Content development for ICT-enabled extension

The ET identified best practices, related to content development. First (relevant for donors and practitioners) a participative, well-organised, content development process with feedback loops, enabled the development of dynamic content. The involvement of all relevant stakeholders (research, input-suppliers, extension, ICT service providers and farmer organisations) made content needs-driven, credible, relevant, trusted and actionable, which in turn increased the chance of uptake by farmers. Second (for practitioners), delivering content at the right time according to the local crop calendar, tailored for the right channel and in the local language increased the chance that farmers will act based on the message received and apply the technology or practice promoted. And third (for sustainability of the content development process), embedding this in government processes made a difference, because it added to credibility and helped in ensuring a continuous and dynamic flow of relevant content.

4.3.4 Combining ICT channels, and combining these with traditional extension

Drawing from findings regarding outputs, and particularly progress towards outcomes and impacts, there were lessons learned regarding best practice in relation to both combining ICT-enabled channels, and the synergy created from the use of both ICT-enabled and traditional extension channels (all of which are particularly relevant to practitioners). Use of multiple channels simultaneously reinforced messages shared. Each channel had its own strength. At the same time, the ICT-enabled extension channels complemented each other. The ET learned that farmers trusted extension messages more when they were reinforced through several channels. This went beyond ICT-enabled extension, in that farmers may learn of a new practice or variety, for example through the radio, video or mobile phones, but then double-check it with their extension agent (if available). ICT-enabled extension actually reinforced and enhanced traditional extension, because ICT-enabled extension imparted greater respect for, trust in, and status of, existing extension providers. These are useful lessons for donors in designing future programmes.

4.3.5 Gender

Drawing from findings regarding relevance, VfM and progress towards outcomes and impact, the ET learned that donor requirements of grantees in relation to gender in the design phase needed to be more explicit, specific and contextualised given that NA-ICT CF was supporting SSTP. The

extent to which gender was a priority or not, was not clear, neither were any specific expectations the donors had of grantees in this regard. This, combined with the lack of recognition during programme design of the focus of SSTP on, largely, "men's" crops, meant that the grantees lacked sufficient guidance on what was expected of them in relation to gender.

4.3.6 Sustainability

Drawing from relevance, VfM and sustainability findings, the ET identified five lessons related to sustainability. First (relevant to donors and practitioners), while the programme aimed at financial sustainability of ICT-enabled extension, the grantees were all NGOs, yet NGOs might not the best partner in the long term for the continuity of the service. Second, there is no one clear recipe for a sustainable business model that fits all countries. A business model should fit the local context. This also means that a programme needs more time to test models that really fit the context and have time to make mistakes and to experiment. A three-year period is not long enough to create this sustainability. Third, a big constraint to continued sustainability of ICT-enabled extension channels is ensuring a continuous and dynamic flow of relevant content, which costs money and is difficult to recover from user-fees only. This constraint needs to be considered carefully at the design phase. Fourth, the ET is of the view that assuming at the programme level that non-donor funding is the most sustainable way forward for all contexts (as implied in indicator 2.1 The percentage of costs of ICT-enabled services covered by non-donor sources), is not appropriate. The indicator may have been more realistically worded as "The percentage of costs of ICT-enabled services covered by other sources" which would then recognise that continued sourcing of donor funding is a common route taken by NGOs at least for sustainability. And fifth, if donors want to stimulate financial sustainability, the indicator should include all costs of a service and not just the operational cost of disseminating messages.

4.3.7 Need for capacity building

A key lesson learned was that it should not be assumed that the capacity is already built for some aspects of programme implementation. While existing capacity was variable, and while the MEL contractor put major effort into building the capacity of grantees to understand and measure each of the PIRS indicators, there remained some shortfalls in capacity and understanding. This also led to some different interpretations between grantees on how to measure the PIRS indicators. Second, as discussed under sustainability, the grantees were, on the whole, NGOs which have a modus operandi of seeking donor funding rather than developing business models. A lesson learned here is that the grantees needed support right from when they were awarded the CF grants in how to develop a sustainable business model, which could become financially sustainable and scalable within the two to three-year time period of donor funding.

4.4 Key challenges in the NA-ICT CF process

Table 9 below sums up the reflections of the ET on the key challenges, in terms of process, that the NA-ICT CF faced, at both design and implementation phases.

Challenges	Comment
Design phase	
Lack of VfM measurement integrated from the start	VfM measurement along the 4 Es (economy, efficiency, effectiveness and equity) was not a required aspect of CF proposals. While the lack of VfM analysis may not have been seen as a challenge

Table 9: Challenges in the NA-ICT CF

Challenges	Comment
	by the donors or grantees, it was a challenge for the evaluation
Failure to include indicators to measure impact	USAID did not require grantees to measure agricultural productivity. The assumption that SSTP would do so was incorrect. In addition, the short time frame of the funding meant that impact level change would be unlikely in that time
Different reporting formats and different reporting deadlines at donor level	While this may be unavoidable, it would be advantageous for joint-funded programmes to consider how reporting can be made more consistent in future programmes
Relatively short grantee funding period	The 2–3 year programme for rain-fed crops is too short a time period to achieve financial sustainability
Implementation phase	
Late start-up of MEL support	Benefits were evident among grantees for whom the MEL contractor was already in place when their country programme commenced. Contracting of MEL provider should be prioritised alongside those of the implementing partner(s)
Differences in the way countries measured indicators	The MEL contractors provided continued support, but more guidance is required to ensure that countries do not interpret how to measure indicators differently
Opportunity for shared learning between grantees not fully exploited	An issue related to the MEL contractors and USAID, with more emphasis being placed on monitoring by both the contractors and USAID
High turnover among donor staff	Though sometimes unavoidable, staff changes can reduce institutional memory
No programme-level reporting	Aside from two joint donor virtual meetings, there was no consolidation and analysis of findings from across the countries, which could have led to better guidance of the grantees and better overall understanding of the programme's challenges and successes
Formalised content development approvals and lengthy government regulation processes can reduce the responsiveness of ICT-enabled extension	ICT-enabled extension has the potential to reach many farmers quickly in the case of emerging diseases/pests, but lengthy content approval processes can damage the ability to respond rapidly to the onset of sudden problems, such as fall army worm. Earlier dissemination could have saved harvests for many farmers

Challenges	Comment
Gender equity is difficult to achieve as SSTP crop selection and SSTP technology selection are male oriented	Despite this limiting factor, grantees tried to reach women within the context of SSTP choices
Mismatch of scaling up of supply of SSTP technologies and creating demand through the ICT-enabled extension	This caused frustration and distrust in some countries

5 Recommendations and conclusions

5.1 Recommendations

These recommendations are based on the lessons learned as described in Section 4, particularly the lessons learned by the ET as outlined in section 4.3 (which in turn, were derived from the findings in Section 3).

5.1.1 For donors

To strengthen design and implementation of new agriculture programmes, the following actions are recommended:

- Mainstream ICT-enabled extension into programme design. This will allow for ICT extension to be better synchronised with both traditional extension measures and the wider agricultural programme, including the availability of any advocated use of inputs.
- Contract the MEL provider at the same time as the implementation partner/s. This will ensure that the MEL framework is developed at the start of the programme, that it can be developed in collaboration with partners and be consistent across partners.
- If donors agree at the design stage that they will be requiring VfM¹³⁶ and/or impact evidence, build that into the design, budget and ToRs of the MEL contractor. This will ensure clarity regarding what types of evidence will be gathered and what will not be gathered (unless through other means external to the programme).¹³⁷
- Tailor invitations for bids to ensure the best combination of partners (whether private sector, NGO or government) for future sustainability of the programme. By thinking about this at the design stage, donors can influence the sustainability options at the end of the programme.
- When designing agricultural programmes that will be mainly implemented in rain-fed areas, seek to fund these for a minimum of five years, to allow for capacity building, impact and sustainability.
- For cross-cutting issues, for example gender, be more specific about how implementation partners are expected to address them, within the context of the specific focus of the programme and its cultural context/s. This will increase practitioners' and MEL

¹³⁶ Annex 10 provides guidelines on VfM.

¹³⁷ For example, Digital Green in Ethiopia were successful in leveraging funding for IFPRI to carry out a randomised control trial exploring aspects of the NA-ICT CF project there.

contractors' understanding of what is required and may allow for a more harmonised approach to gender and measurement of gender-related indicators.

5.1.2 For MEL contractors

To ensure an efficient and effective MEL system to report on performance and support lessons learning, the following recommendations are proposed:

- Where contracted to provide MEL for a multi-country programme, establish common indicators at the beginning of the programme, with shared definitions, and create data collection tools in collaboration with the implementation partners in the countries concerned. This will ensure that findings against monitoring indicators can be compared between countries.
- If the donor is requiring measurement of VfM, impact, or specific cross-cutting issues, this should be built into the MEL plan, results framework and indicators, in collaboration with the implementation partners. Related to VfM, ensure a good alignment between the MEL framework and the programme's financial systems which will need to capture expenditure data related to outputs and outcomes. This will enhance the likelihood that sufficient comparative data from across the countries (where a multi-country programme) for each of efficiency, economy, effectiveness and equity will be available, thus allowing for comparative VfM analysis to be carried out. Such an analysis is useful for both donors and practitioners alike.¹³⁸
- Assess level of M&E capacity of implementing partners at the beginning of the programme and build in space to build capacity if needed, e.g. in monitoring VfM and/or impact. Capacitated practitioners can better understand indicators and gather robust evidence against them.
- For the learning component of MEL, for knowledge sharing and learning to take place, invest in building trust and communication between implementation partners right from the start of the component, ideally in a face-to-face context. This will help to create a community of practice where deep learning can take place and trust can be built.

5.1.3 For implementation partners (practitioners)

For implementation partners (practitioners), to strengthen impact and sustainability, the following actions are recommended:

- When supporting ICT-enabled extension content development and validation processes, ensure that these involve all relevant stakeholders, and ensure space for development of dynamic content (to respond to sudden information needs in response for example to particular pest and disease infestations). Following these good practices, as identified through the evaluation of the NA-ICT CF, will greatly enhance the relevance of content to smallholder farmers and to extension agents, which will in turn increase motivation to follow the ICT-enabled extension based on the content developed.
- When using ICT-enabled channels, use local languages and ensure that the content is developed in a timely manner and is tailored to, and tested for, each ICT channel in use. In considering which ICT channels to use, identify the costs and strengths of each, and how they can complement each other and reinforce extension communication. Using a combination of ICT channels reinforces the messages and increases farmer trust in the messages.

¹³⁸ See Annex 11 for specific guidelines on VfM.

- During both design and ongoing implementation, consider how best ICT-enabled extension and any existing traditional extension can be synchronised to reinforce messages, build trust and create synergy. Engage with extension agents in the locality, whether they are government, private sector and/or NGO, inform them of the ICT-enabled extension component of the project and build ongoing communication with them. Added value can be gained through collaboration and through synchronising extension messages through both traditional and ICT-enabled channels.
- Ensure that ICT-enabled extension draws on "trusted" voices (e.g. of cooperative leaders, researchers, extension staff, lead farmers) and takes gender into account by carrying out landscape analysis to find out which ICT channels women have access to, using women (farmers, broadcasters) voices, and, where female smallholders have limited access to certain ICT channels, draw on community/radio listening clubs. This will make a difference to the extent to which farmers are likely to trust, and take action based on, the information provided. It will allow for greater numbers of women to access extension messages, and in a group context in which they can discuss them with each other and any agent present who is facilitating the club.
- When bidding to engage in an ICT-enabled extension programme, build in a sustainability plan, particularly if the organisation bidding is an NGO but where sustainability may require long-term ownership by the private sector or social enterprise. Longer-term sustainability is more likely if this is considered at the start of the programme.

5.2 Conclusions

The evaluation concludes that the programme did reach its targets in terms of increased use of quality inputs and improved technology use by smallholder farmers but is less likely to in terms of increased financially sustainable ICT-enabled services to complement other extension services. Performance was rated as fair to good overall, with the programme's greatest achievements relating to reaching access and application targets. Its lowest achievements, on the other hand, were in measuring results that could help provide evidence on impact, such as increased productivity. Learning and best practice regarding content development for ICT-enabled channels, use of ICT-enabled channels individually or in combination with each other, and alongside traditional extension services, can provide useful guidance for donors and practitioners interested in supporting, designing and using ICT-enabled channels.

Annexes

- 1. Terms of reference
- 2. Bibliography
- 3. List of interviewees
- 4. Evaluation methodology
- 5. Evaluation matrix
- 6. Theory of change
- 7. Contribution stories
- 8. Data quality audit
- 9. VfM analysis
- 10. VfM guidance
- **11. Dissemination plan**

*Please note that all annexes are included in another file due to ease of transfer



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Performance Evaluation of the New Alliance Information and Communication Technologies Agriculture Extension Challenge Fund

Annexes 1-6 February 2019

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List of Acronyms

ADG	Aide au Développement Gembloux
AFAAS	African Forum for Agricultural Advisory Services
AGRA	Alliance for a Green Revolution in Africa
AOR	Agreement Officer Representative
ARI	Agriculture Research Institute
ASHC	Africa Soil Health Consortium
ΑΤΑ	Agricultural Transformation Agency (Ethiopia)
ATVET	Agricultural Technical and Vocational Education and Training
BMGF	The Bill and Melinda Gates Foundation
CAADP	Comprehensive African Agriculture Development Programme
CABI	Centre for Agriculture and Biosciences International
CADECOM	Catholic Development Commission in Malawi
CF	Challenge Fund
CLG	Community Listening Groups
CLUSA	National Cooperative Business Association: Cooperative League of the USA
COP	Chief of Party
COR	Contracting Officer Representative
COSOP	Country Strategic Opportunities Programme (Tanzania)
CRS	Catholic Relief Services
DA	Development Agent
DAES	Department of Agricultural Extension Services (Malawi)
DAICO	District Agriculture Irrigation and Cooperative Officer
DFID	Department for International Development
DG	Digital Green
DLEC	Developing Local Extension Capacity
DNEA	National Directorate for Agrarian Extension (Mozambique)
DQA	Data Quality Audit
EM	Evaluation Matrix
EMM	EXTENSÃO MULTIMÉDIA
EQ	Evaluation Question
ET	Evaluation Team
FAO	Food and Agriculture Organisation
FARA	Forum for Agricultural Research in Africa
FGD	Focus Group Discussion

FRI	Farm Radio International
FTC	Farmer Training Centre
FTFS	Feed-The-Future System
GDD	Gender Disaggregated Data
GDP	Gross Domestic Product
GFAR	Global Forum for Agricultural Research
GFRAR	Global Forum for Rural Advisory Services
GSMA	Global System for Mobile Communications
GTP	Growth and Transformation Plan
HNI	Human Networks International
IBTCI	International Business & Technical Consultants, Inc.
ICT	Information and Communication Technology
ICT4Agr	ICT for Agriculture
ICT4D	ICT for Development
IFAD	International Fund for Agricultural Development
IP	Impact Pathway
IR	Inception Report
ITU	International Telecommunications Union
IVR	Interactive voice response
КІІ	Key informant interviews
M&E	Monitoring and Evaluation
MEAS	Modernising Extension and Rural Advisory Services
MEL	Monitoring, Evaluation and Learning
MGDS	Malawi Growth and Development Strategy
MIVARF	Marketing Infrastructure, Value Addition and Rural Finance Support Programme
MoAIWD	Ministry of Agriculture, Irrigation and Water Development (Malawi)
MOFA	Ministry of Food and Agriculture (Ghana)
MSC	Most Significant Change
NA	New Alliance for Food Security and Nutrition
NA-ICT CF	New Alliance ICT Challenge Fund
NAIPs	National Agriculture Investment Plans
NEPAD	New Partnership for Africa's Development
NGO	Non-governmental organisation
NORAD	Norwegian Agency for Development Cooperation
OECD	Organisation for Economic Co-operation and Development
ΡΙΑΤΑ	Partnership for Inclusive Agricultural Transformation in Africa

PIRS	Performance Indicators Reference Sheets
pMSC	Partial Most Significant Change
PRACAS	Accelerated programme for agriculture (Senegal)
PS	Private Sector
RAS	Rural Agricultural Services
SME	Small and medium-sized enterprises
SMS	Subject Matter Specialists
SMS	Short Message Service
SO	Strategic Objectives
SOFA	State of Food and Agriculture
SRO	Senior Responsible Owner
SSA	Sub-Saharan Africa
SSI	Semi-structured interviews
SSTP	Scaling Seeds and other Technologies Partnership
ТоС	Theory of Change
ToR	Terms of Reference
UP	United Purpose
UPTAKE	Upscaling Technologies in Agriculture through Knowledge Extension
USAID	United States Agency for International Development
USD	United States Dollars
VfM	Value for Money

Annex 1 - Terms of Reference

Terms of Reference

Performance Evaluation of the New Alliance Information and Communication **Technologies Agriculture Extension Challenge Fund**

INTRODUCTION 1.

DFID is seeking an Evaluation Supplier to assess the performance of the New Alliance Information and Communication Technologies Agriculture Extension Challenge Fund (NA ICT) during the period 2014 to 2018.

The specific focus of the evaluation is to provide a rigorous and independent assessment of the quality and relevance of the range of interventions undertaken by the programme and the extent to which it has helped smallholder farmers improve agricultural productivity.

The evaluation will generate high quality evidence on the effectiveness of ICT-enabled agricultural extension services in enhancing farmers' livelihoods through increased adoption and uptake of improved agricultural technologies. It will produce insights in what works and what does not work in scaling up ICT-enabled extension approaches through working with both the public and private sectors.

2. BACKGROUND

2.1 Context

Ensuring that an increasing global population can be fed sustainably and equitably is a challenge that will require the global food system to change more radically in the coming decades than ever before. Meeting the challenges posed by land and water scarcity, climate change, and declining crop yields will need another giant leap in agricultural innovation to bring about sustainable intensification, producing more food with fewer inputs, and wasting less which in turn will require more effective agricultural investments.¹

Current agriculture systems and policies are not meeting global food demands and not supporting agriculture to reach its full potential in contributing to economic growth and poverty reduction, especially in Sub-Saharan Africa (SSA). For agriculture to reach its full potential for contributing to economic growth and meeting Sub-Saharan Africa's food demands, new approaches are required for developing technologies and even more important to get these into the hands of farmers.

Over the past 30 years investment in agricultural research has driven a rapid increase in global crop yields. There is growing evidence of high returns to this investment.² However, although overall impact of the uptake and application of agriculture research is impressive, global figures mask significant regional and social differences. In particular, Sub-Saharan Africa (SSA) has been lagging behind.^{3 4 5}

The transformation of the agriculture sector which characterised rapid growth in Asia has not yet taken place in most SSA countries. In many regions, the slow pace of technological innovation is a critical constraint to productivity gains and ultimately to economic growth and poverty reduction. Easy and timely access to information,

¹ UK Foresight. 2011. The future of food and farming: challenges and choices for global sustainability. UK Government Office for Science.

² Hurley, T.M, Pardey, P.M and Rao, X. 2013. Returns to Food and Agricultural R&D

Investments Worldwide, 1958-2011. InSTePP Brief. St. Paul: International Science and Technology Practice and Policy centre, University of Minnesota, October 2013.

³ Renkow, M. and Byerlee, D. 2010. The impacts of CGIAR research: A review of recent evidence

⁴ Evanson, R.E. 2001. Economic impacts of agricultural research and extension. In: B.L. Gardner and G.C. Rausser (Eds). Handbook of Agricultural Economics. Vol. 1A. Elsevier Science. Amsterdam. Pp.574-625.

⁵ Raitzer, T.A. and Kelley, D.G. 2008. Benefit-cost meta-analysis of investment in the International Agricultural Research Centers of the CGIAR.

knowledge and technologies is one of the key elements of agricultural innovation. Yet too few farmers and public and private advisory agents can easily access all information they need. In SSA, public funded agriculture advisory systems have generally been characterised by inefficiency and have a poor track record of delivery.⁶⁷

Access to the results of agricultural research and development is critical for improving the SSA's agricultural sector's contribution to economic growth and transforming the lives of smallholders and rural communities. ICT offers great potential to address some of the problems of inefficient agriculture advisory systems because of the great improvements worldwide in affordable and accessible telecom services.⁸ ICTs enabled solutions have become important in improving services due to poor infrastructure and services in place. For example mobileenabled banking services have been meeting a real demand with 56.9 million registered mobile money users in SSA by June 2012.⁹ The then Secretary of State's November 2012 speech at the 'Opening Up' Conference highlighted DFID's commitment to supporting ICT-enabled innovation, urging that: "now is the moment when we can really grasp the opportunities that mobile and internet technology offers to change the ways that citizens and governments interact, to generate economic opportunities, and to transform service delivery".¹⁰

Over the past years, there have been several efforts to design and implement ICT- enabled advisory services by NGOs, businesses, governments and public-private partnerships. Most of these have not yet gone to scale and tend to focus on one particular type of ICT such as mobile phone based messages or low-cost video. There is an increased interest to combine various ICT-enabled channels to support a more effective information delivery and exchange by using a wider range of communication channels best suited to different target audiences by packaging information in various ways depending on content, purpose and audience. Despite the wide potential of integrated ICT-enabled services, limited evidence exists of the effectiveness of such services.

2.2 About the programme

The aim of the New Alliance Information and Communication Technologies Agriculture Extension Challenge Fund is to develop and scale up the delivery of agriculture extension services using sustainable information and communication technologies, including radio, mobile phones, video and web-based applications.

The programme is delivered by the United States Agency for International Development (USAID) and aims to reach 3 million users to help improve agricultural productivity and increase food security for smallholders in Sub Saharan Africa. The UK is providing £2.800.000 over 4 years. The total fund is US\$12m over 4 years. The other donors are USAID (\$3 million plus \$1.6m in kind for managing the fund and grantees); the Bill and Melinda Gates Foundation (BMGF) (\$3m) and the International Fund for Agricultural Development (IFAD) (\$1.5 million).

The multi-donor New Alliance ICT Extension Challenge Fund is now in full implementation with six country grantees, namely Ethiopia, Ghana, Malawi, Mozambigue, Senegal, and Tanzania. A full list of grantees, activities and timeframes is provided in Annex 1.

There is also an independent monitoring and learning contractor, International Business and Technical Consultants Inc (the MEL contractor). A summary of the objectives and activities is provided in Annex 2.

This programme is an element of DFID's commitment to the New Alliance (NA) for Food Security and Nutrition, and a follow-up of the G-8 Nutrition for Growth event on 8th June 2013. The NA is a shared commitment to achieving sustained and inclusive agricultural growth and raise 50 million people out of poverty by 2022 in Africa, including Burkina Faso, Cote d'Ivoire, Ethiopia, Ghana, Malawi, Mozambique, Nigeria, and Tanzania (note these were the 6 countries specified in the original Business Case - see point below). The goals of the NA are to increase responsible domestic and foreign private investments in African agriculture, take innovations that can enhance agricultural productivity to scale and reduce the risks borne by vulnerable economies and communities. The NA

Operations Evaluation Study. World Bank. Washington DC. 8 <u>http://mobithinking.com/mobile-marketing-tools/latest-mobile-stats/b</u>

⁶ Anderson, J.R. and Feder, G. 2004 Agricultural Extension. World Bank Observer 19:1. Washington DC.

⁷ Purcell, D.L. and Anderson, J.R. 1997 Agricultural Extension and Research: Achievements and problems in National Systems. A World Bank

⁹ GSMA. 2013. Sub-Saharan Africa Mobile Economy 2013. <u>http://www.gsma.com/newsroom/sub-saharan-africa-leads-world/</u>

¹⁰ https://www.dfid.gov.uk/News/Speeches-and-statements/2012/Justine-Greening-Speech-to-the-DFIDOmidyar-Network-Open-Up-conference/

is one of four integrated actions aimed at improving agricultural productivity through getting science and technology into widespread use. It is closely linked to the Scaling Seeds and Other Technologies Programme (SSTP) and the African Agriculture Technology Platform (AATP) component of the New Alliance.

The scope of the programme does not significantly differ from that envisaged in the original DFID Business Case, with the project goals, partners, timeframe and budget unchanged. The only significant change has been that in the final selection process Senegal and Malawi replaced Burkina Faso and Côte d'Ivoire as target countries.

The main features of the programme are:

Impact	Improved agricultural productivity in selected food crops by smallholder
	farmers in 6 NA countries.
Outcome	New knowledge and practices adopted by at least 1 million smallholder
	women and men farmers with access to financially sustainable ICT-
	enabled extension services in 6 NA countries in Africa.
Outputs	Improved access to ICT-enabled extension services for at least
	3 million smallholder women and men farmers in 6 NA countries with
	particular attention paid to women;
	• Improved content adapted to specific needs, context and
	available ICT channels; and
	• Development of high quality evidence on (cost)-effectiveness
	and impact of ICT-enabled services.

Internally, figures have recently been collated for the reach of services to farmers in 2016 (key output indicator: Number of farmers using ICT-enabled services). These indicate in excess of 1.25 million users, which is ahead of target. However, no individual grantee is on target – Ghana, Malawi, Senegal and Tanzania are all above projections, Ethiopia is well below what is a very large target and in Mozambique service provision commenced only towards the end last year.

The current version of the logframe (Annex 3) and original theory of change (Annex 4) are provided and further programme information may be found in the project documents available on <u>devtracker</u>.

2.3 Lessons so far

The programme has undergone two DFID Annual Reviews. There are a number of key lessons emerging:-

- The type and range of ICT-enabled advisory services varies significantly across different countries depending on service providers available. This will be a good opportunity for learning which ICT channels are the most efficient and effective in achieving results across the grantees while taking into account the specific country context;
- It has been more difficult than expected to agree on detailed definitions for common indicators across countries, but common indicators have been defined with the assistance of the monitoring and learning contractor (see Annex 2). This will enable cross-country comparisons in later years after start up. The key lesson here is to recognise that establishing common indicators for future programmes is necessary from the start but that they need to be reviewed on an ongoing basis;
- On a few occasions, grantees have facilitated the delivery of messages on new seeds before seeds were
 actually available, causing frustration for farmers as well as seed companies. A key lesson has been for
 country grantees to coordinate better their ICT-enabled messages by working with others, especially
 SSTP, to ensure that seeds or other inputs are actually available;
- Despite being in different countries and, in some cases, competitors, the country grantees have strong interest in sharing experience and learning from each other; and

• Given that three years is a relative short time to move to a sustainable approach, grantees need support in learning how they can ensure the service becomes financially and organisationally sustainable relatively quickly, before donor support ends. This can be achieved through sharing lessons across the grantees but could also involve bring in others who have made a financial success out of the same type of service.

The monitoring and learning contractor is facilitating sharing these and other lessons among the grantees themselves in webinars and face-to-face events and will soon find a variety of ways to share them more broadly. The USAID manager of the New Alliance for ICT Extension Challenge Fund is also sharing lessons in blogs on www.agrilinks.org

3. PURPOSE, SCOPE AND EVALUATION QUESTIONS

3.1 Purpose

The primary objective of the evaluation is to assess the progress of the programme in respect of access to and adoption of new technologies which improve agricultural productivity. The evaluation should provide an independent assessment of the extent to which the programme has achieved all of the targets in the logframe (Annex 3).

The main cross cutting issues to be considered by the evaluation are:

- Poverty
- Gender
- Climate and environmental issues
- Disability and other dimensions of social inclusion.

3.2 Scope

The scope of this evaluation covers the period of the NA ICT from July 2014 to the end of data collection for the evaluation (a date in second half of 2018 to be confirmed in inception).

In assessing the overall programme, the evaluation will be expected to encompass all grantees (who will make more or less of a contribution to overall programme targets as set out in the logframe). The evaluation should provide a comparative analysis of the design and performance of the grantees, so that lessons can be learned for this and other interventions. However, an assessment of the performance of each individual grantee (and sub-grantees) is not required. We expect in country evaluation activity in at least three countries.

DFID also funds the mNutrition programme, led by GSMA, which is providing similar mobile phone based services in agriculture and health. Of the 6 NA ICT countries, GSMA has initiatives in Tanzania, Ghana and Malawi. The winning bidder will be expected to set out any overlaps in terms of targeting of beneficiaries between the NA ICT and mNutrition programme and provide an explanatory note and analysis in their inception report.

3.3 Evaluation Questions

On the basis of the core evaluation questions below and other information in the ITT, proposals should present a suitable evaluation framework which would unify the components of the evaluation and help to guide final decisions on the content and conduct of this evaluation.

During the inception phase this framework will be completed, to encompass:

- Evaluation criteria
- Evaluation questions, sub-questions and indicators / judgement criteria, as appropriate
- Data collection and analysis methodologies including the approach to assessing VfM

Proposals should be very clear about the extent to which they will be able to assess value for money and impact (see questions below), with the opportunity to explain proposals in more detail during inception.

The evaluation shall address the following core questions, though we are happy to consider revisions to the exact meaning and/or wording in proposals and during inception.

The key evaluation questions are:-

Relevance

- What evidence exists to show that adoption of technologies is enhanced through ICT-enabled advisory services?
- What levels of quality and appropriateness (inc timeliness) have been achieved by the extension services funded by NA ICT?

Outputs and Results

- How accurate and valid are the results reported by grantees, both individually and in total; similarly how accurate and valid are disaggregations?
- To what extent are the other public outputs of the programme suitable and of good quality?

Value for money (incorporating efficiency and effectiveness)

- Economy To what extent has the programme considered and managed costs?
- Efficiency How well are programme resources used by grantees to deliver programme outputs?
- Effectiveness To what extent has the programme enabled grantees to achieve outputs and outcomes?
- Equity Are services accessible to women and men? Do services meet the needs and preferences of women? Are recipients from a diverse range of social and economic backgrounds?

Progress towards Outcomes and Impact

- Which knowledge and practices have been adopted in what numbers by whom?
- What evidence exists to show that integrated ICT-enabled advisory approaches are contributing to
 - i. reducing poverty amongst targeted farmers and households
 - ii. improving agricultural productivity of smallholder farmers, especially women?
 - iii. improving agricultural productivity and benefiting the environment
- Which ICT channels are the most effective in achieving results across the grantees, while taking into account the specific country context?
- What are the intended and unintended, positive and negative outcomes and impacts that can be observed?

Sustainability

• What evidence is there to demonstrate that mechanisms are in place and are planned to enable continued delivery of ICT-enabled advisory services after grant funding?

Further questions: lessons and linkages

Linked to the lessons learned section, there are a number of further questions which could be considered for inclusion. We list a few below and welcome further suggestions.

- To what extent have lessons learned (and which lessons) been shared and adopted between project partners?
- What effective linkages did the programme make with other similar initiatives/organisations providing ICT-enabled extension services, and what lessons did they learn?

• What lessons can be learned about the challenges in establishing common indicators and collection of data?

4. METHODOLOGY

In bids, tenderers should spell out as fully as possible the evaluation design and methodology they propose to use, the allied potential risks and challenges for the evaluation and how these will be managed. The successful tenderer will then refine this proposal within the first month or so of the contract, in consultation with DFID, USAID and other relevant stakeholders. An inception phase of 6 weeks is expected.

The methods and assessment frameworks employed for this evaluation should facilitate the collection and analysis of data, be relevant to the questions outlined in section 3 above, and make optimal use of existing data. The evaluation may need primarily to use retrospective evaluation methodology techniques. Particular attention should be paid to documenting both quantitative and qualitative progress on the areas identified.

DFID is not prescribing a methodology for the conduct of this evaluation, but would expect a design that takes a multiple methods approach and systematically triangulates evidence. A minimal list follows, but we are open to additional and/or innovative methods. Please note, that we are committed to quality and rigour in line with international good practice in evaluation.

Sources that will be used in the evaluation would, at a minimum, include:

- Document review: Review of key documents. This includes:
 - Quarterly Task Order (Activity) Progress Reports from the Monitoring and Learning Contractor
 - Quarterly Data reports and Annual Data reports results for all indicators for all country grantees, disaggregated by gender from the Monitoring and Learning Contractor
 - Grantee Workplans
 - Grantee Quarterly Reports
 - USAID Quarterly reviews (powerpoint) and Annual Reports to Donors
- Interviews with key partners and users: Interviews with key stakeholders such as national, regional and international level policy makers (governments, donor and civil society), other researchers and practitioners (farmers, agribusiness). Also interviews with key staff members. These interviews may be done in person if feasible, but most likely by telephone or internet based communication.
- *Participation in regional meetings: Face-to-face meetings*: Face-to-face meetings should be held with key stakeholders in Africa and the UK.
- Surveys or other data collection methods: If surveys are used, these should be rigorously designed with appropriate sampling methods and expectation of acceptably high response rates. Alternative or complementary approaches, such as online discussion fora, could be considered.

5. EVALUATION OUTPUTS

The Evaluation Team will be expected to produce the following outputs:

- Inception Report including refinements/amendments of evaluation questions, full methodology, Theory
 of Change, assessment of which evaluation questions can be answered using a credible and robust
 evidence base, identified sources of data and risk management strategy, and a communications plan;
- Interim report
- Draft Final Report;

- Minimum two presentations to Management Group and grantees;
- Final report (50 pages with a maximum 4 page Executive Summary) that incorporates feedback obtained on the draft report; appendices with details on the methodology, informants, etc;
- Two page evaluation brief (well-designed pdf).

Bidders should specify any additional outputs and communication activities, with indicative timelines for these, aimed at all relevant audiences in their proposals.

6. TIMETABLE AND MILESTONES

Please propose a detailed timetable, having regard to the following:

Primary Activity	Deadline
Evaluators selected and contract agreed.	August 2017
Inception Report Submitted to Management Group Approach should be finalised in consultation with donors. This Inception Report should include a Theory of Change, suggestions on refinements/amendments of the evaluation questions, the full methodology, implications for the degree to which the evaluation questions can be answered using a credible and robust evidence base, assessment frameworks, identified sources of data and risk management strategy. Plus a communications plan for the evaluation.	Within 6 weeks of contract starting
Management Group provide feedback and approval.	Within 10 weeks of contract starting
Interim Report	May 2018
 Reports should include (though not necessarily in precisely this structure): Cover page. Table of Contents. Executive Summary: four to six pages. Purpose of Evaluation. Evaluation approach and methodology, with limitations Findings Lessons and recommendations Annexes – additional supporting evidence and detailed methodology. 	
Management Group provide feedback and approval	June 2018
Presentations to Management Group and grantees to discuss draft findings	July 2018 - TBA
Final Report Final report should take into account comments on the draft report from DfID and others	January 2019
Approval from Management Group	March 2019

7. THE RECIPIENTS

The principal recipients of this service will be DFID, USAID and the BMGF.

Grantees of the programme will also benefit from lessons for selected grantees, even though the overall evaluation will look at draw conclusions on the overall design and performance of the programme. Potential future investors in the grantee ventures are also an important audience.

The other audiences for this evaluation include:

- DFID Agricultural Research and Food and Nutrition Security Teams;
- Grantees of the programme and their partners;
- Other donors who may be interested in investing ICT-enabled extension services;
- Research community interested in ICT-enabled extension services; and
- Other organisations undertaking ICT-enabled extension services for development (e.g. GSMA)

Evidence and lessons generated by the evaluation will be made publicly available, in order to contribute to the global evidence base on ICT-enabled extension services.

8. EVALUATION MANAGEMENT ARRANGEMENTS

The evaluator's day to day points of contact in DFID will be the Senior Responsible Owner/Livelihoods Adviser and the Deputy Programme Manager.

The evaluation will be overseen by a Management Group. This group will be responsible for approving the evaluation outputs and commenting on draft reports. DFID will seek to provide unified sets of comments on outputs.

The Group will include the following staff:

- DFID Livelihoods Adviser
- DFID Deputy Programme Manager
- DFID Evaluation Adviser
- USAID Programme Lead
- BMGF Lead Adviser

Draft and Reports will also be shared with the M&L provider to the NA ICT fund. The M&L provider will work closely with the winning bidder by providing reports and data that they have collected and share lessons learnt to date. However, they will not have a role in quality assuring and approving the reports of the independent evaluator. This will be the responsibility of the Management Group

Liaison will include up to three meetings and at least three presentations by the evaluators (one to present and discuss the inception report/evaluation plan; and two presentations of findings). Meetings will be hosted in London, but may involve teleconferencing or video conferencing with Management Group and evaluation team members working elsewhere. The evaluation team may use conferencing for most meetings but must budget for attendance of all core members at a minimum of one meeting and one presentation in London.

9. QUALITY ASSURANCE

Bids should set out how they will ensure quality throughout the evaluation. The Management Group will comment thoroughly on all deliverables, to enable these to be strengthened and finalised. However, the commissioned team is expected to have a process to assure that all first drafts are of a good standard, which do not require the group to identify fundamental weaknesses or omissions.

In line with DFID's Evaluation Policy, DFID will arrange (and pay for) independent quality assurance reviews of the inception report and the final evaluation report. This generally takes 10 working days. These are QA reviews

for DFID, from which DFID may select comments to share with the evaluator. We would not expect to send the interim report for QA, but reserve the right to do so.

10. ETHICS

The evaluation should ensure that it adheres to the ethical evaluation policies of DFID and the evaluation principals of accuracy and credibility. Proposals should include consideration of ethical issues and a statement that the researchers will comply with the ethics principles.

11. RISKS

The main challenge to implementing the Evaluation is evaluating progress across 6 grantees operating in 6 different countries, and the variation between the grantees in terms of the progress they have made, their depth of expertise in delivery and also their abilities to provide timely and relevant data.

The Evaluation team will also be dependent, to some extent, on the quality of data collected by the current M&L provider. However, this should not preclude the independent assessment being able to evaluate overall progress on the intervention towards the intended outcomes.

Some other risks and challenges may face are that the grantees might not survive the length of the programme. This risk is mitigated by covering all grantees at this stage, of which there are only 6, rather than picking a smaller number of running the risk that one of them is unable to carry on the implementation of the programme for reasons outside of USAID or the grantees control.

12. SKILLS AND QUALIFICATIONS OF EVALUATION TEAM

The <u>essential</u> competencies and experience that the Evaluation Team will need to deliver the work are:

- Extensive knowledge of evaluation methods and techniques;
- Strong qualitative and quantitative research skills;
- Good knowledge and understanding of agricultural extension services in Africa;
- Understanding of ICT industries, awareness of the rapid changes in technology and how people are using the services;
- Expertise in gender, social and poverty research and analysis;
- Proven capacity to assess value for money; and
- Strong analysis, report writing and communication skills

Proposals from suitably qualified teams of individuals, organisations and consortia are equally welcome. We would very much welcome proposals from teams led by or including evaluators from NA ICT target countries, though this is not a requirement.

13. BUDGET AND TIMEFRAME

The estimated expenditure for this work is up to £300,000. However, value for money and competitiveness of costs will be closely assessed before contract award.

The contract is expected to begin in August 2017 and run for 20 months with a possible extension of up to 4 months, subject to continued need and satisfactory performance.

The contract will be issued for the full duration; however, there will be a formal break point in the contract following the inception phase. Progression to the implementation phase will be subject to the outcome of the inception report review process, satisfactory performance by the Supplier, continued value for money, and DFID agreement to any revised work plans.

DFID reserves the right to scale back or discontinue the contract at any point (in line with our contractual terms and conditions) if it is not achieving the anticipated results. Conversely, we may also scale up or extend the life of this evaluation, should this be required or should it demonstrate the potential to yield better results.

14. DIGITAL SPENDING

All digital content produced by the Supplier is subject to UK government digital principles as set out by the Government Digital Service (GDS). All digital developments should put the needs of users first, learn from and improve these services over time, and be freely available for other DFID programmes to use. For more information, please visit <u>www.gov.uk/designprinciples</u>

The Supplier should not propose unnecessary bespoke systems or tools to implement, and should instead make use of existing and freely available systems and tools in all aspects of the programme where possible.

15. TRANSPARENCY

DFID has transformed its approach to transparency, reshaping its working practices and pressuring others around the world to do the same. DFID requires all Suppliers receiving and managing funds to release open data on how this money is spent, in a common, standard, reusable format and to require this level of information from immediate sub-contractors, sub-agencies and partners.

It is a contractual requirement that the Supplier registers on the International Aid Transparency Initiative (IATI) Registry and makes the relevant data publicly available. For more information, please visit <u>www.aidtransparency.net</u>

16. DUTY OF CARE

The Supplier is responsible for the safety and well-being of their Personnel (as defined in Section 2 of the Contract) and Third Parties affected by their activities under this contract, including appropriate security arrangements. They will also be responsible for the provision of suitable security arrangements for their domestic and business property.

DFID will share available information with the Supplier on security status and developments in-country where appropriate.

The Supplier is responsible for ensuring appropriate safety and security briefings for all of their Personnel working under this contract and ensuring that their Personnel register and receive briefing as outlined above. Travel advice is also available on the FCO website and the Supplier must ensure they (and their Personnel) are up to date with the latest position.

This Procurement may require the Supplier to operate in a seismically active zone and is considered at high risk of earthquakes. Minor tremors are not uncommon. Earthquakes are impossible to predict and can result in major devastation and loss of life. There are several websites focusing on earthquakes, including http://geology.about.com/library/bl/maps/blworldindex.htm. The Supplier should be comfortable working in such an environment and should be capable of deploying to any areas required within the region in order to deliver the Contract (subject to travel clearance being granted).

This Procurement may require the Supplier to operate in previously conflict-affected areas and/or places where the security situation is volatile and subject to change at short notice. Travel to areas of current conflict or places of very high risk is not anticipated. Travel will be subject to travel clearance from the UK government in advance. The Supplier should be comfortable working in such an environment and should be capable of deploying to any areas required within the region in order to deliver the Contract (subject to travel clearance being granted).

The Supplier is responsible for ensuring that appropriate arrangements, processes and procedures are in place for their Personnel, taking into account the environment they will be working in and the level of risk involved in delivery of the Contract (such as working in dangerous, fragile and hostile environments etc.). The Supplier must ensure their Personnel receive the required level of training prior to deployment.

Tenderers must develop their Tender on the basis of being fully responsible for Duty of Care in line with the details provided above and the initial risk assessment matrix prepared by DFID (see Annex 5).

Tenderers must confirm in their Tender that:

- They fully accept responsibility for security and Duty of Care
- They understand the potential risks and have the knowledge and experience to develop an effective risk plan
- They have the capability to manage their Duty of Care responsibilities throughout the life of the contract

If you are unwilling or unable to accept responsibility for security and Duty of Care as detailed above, your Tender will be viewed as non-compliant and excluded from further evaluation.

Acceptance of responsibility must be supported with evidence of Duty of Care capability and DFID reserves the right to clarify any aspect of this evidence. In providing evidence, Tenderers should consider the following questions:

- a) Have you completed an initial assessment of potential risks that demonstrates your knowledge and understanding, and are you satisfied that you understand the risk management implications (not solely relying on information provided by DFID)?
- b) Have you prepared an outline plan that you consider appropriate to manage these risks at this stage (or will you do so if you are awarded the contract) and are you confident/comfortable that you can implement this effectively?
- c) Have you ensured or will you ensure that your staff are appropriately trained (including specialist training where required) before they are deployed and will you ensure that ongoing training is provided where necessary?
- d) Have you an appropriate mechanism in place to monitor risk on a live/ongoing basis (or will you put one in place if you are awarded the contract)?
- e) Have you ensured or will you ensure that your staff are provided with and have access to suitable equipment and will you ensure that this is reviewed and provided on an ongoing basis?
- f) Have you appropriate systems in place to manage an emergency/incident if one arises?

17. ANNEXES

- 1 Country Grantees
- 2 Monitoring and Learning Contractor
- 3 Logframe
- 4 Theory of Change
- 5 Country Risk Assessments

Annex 1: GRANTEES

See also powerpoint summarising each grantee activities in 2016

Country Grantees	Sub-Grantees	Main activities	Start Date	End Date	ICT Challenge Fund
Ethiopia: Digital Green	Farm Radio International, Awaaz.De, DiMagi	Radio; low cost video; IVR (with SMS option) extension services	9/30/2014	9/29/2017	\$1,700,000
Ghana: Grameen Foundation	Digital Green, Farm Radio International (FRI)	Services are a range of digital application (AgroTech) for agents connected to farm aggregators in north. Includes radio too (FRI) and low cost video (DG) on agents devices	9/30/2014	1/31/2017 ¹¹	\$1,699,951
Malawi: Catholic Relief Services	Self Help Africa, Human Networks International (HNI), Mzuzu CADECOM (Airtel is partner of HNI, but no funding from grantee, nor HNI)	IVR, SMS and radio extension services	9/30/2014	9/29/2017	\$1,682,838
Senegal: Concern Universal	SB Conseil, Practical Action, UC Davis, ADG	Uses mix of radio programs and related mobile services (e.g., IVR) managed by a social enterprise (Jokolante) and provided via cooperatives and radio stations as customers	3/25/2014	3/24/2018	\$1,698,019
Mozambique:	National Cooperative Business Association: Cooperative League of the USA (CLUSA) is the international arm of the (NCBA CLUSA) - 3 years HNI and FRI	Offering mix of IVR (with Vodafone) (voice and SMS) + FRI's participatory radio programs	2/12/2016	2/12/2019	\$1,700,000

¹¹ This grantee opted for a 2-year grant period, not 3 years.

Tanzania	FRI and Centre for Agriculture and Biosciences International (CABI)	Used FRI's approach to designing radio programs including research on listenership and farmer knowledge of crops and integration of mobile tools to tie farmers to radio stations	01/11/2015	01/11/2018	Funded by IFAD not through DFID/USAID and Gates
the MEL contractor	None		8/3/15	8/2/18	\$810,379.60 ¹²

Annex 2: MONITORING AND LEARNING CONTRACTOR IBTCI

The goals that cover the MEL contractor Statement of Work are to:

- Contribute to increasing the impact and cost effectiveness of the ICT Extension Challenge Fund country grantees by tracking their progress and facilitating learning and adaptation; and
- Enable other stakeholders to learn from this work as well.

To achieve these goals, the MEL contractor will design and implement an approach that will meet four objectives related to monitoring and learning as follows:

- Objective 1: Finalise results framework and related documents across ICT Extension Challenge Fund Country grantees, consistent with SSTP Results Framework.
- Objective 2: Collect and report results in a timely manner using good practices.
- Objective 3: Create and facilitate a learning network among grantees.
- Objective 4: Develop and implement a dissemination plan to share learning and results with interested stakeholders.

Under Objective 1, the MEL contractor will next review the Results Framework in May 2017.

Under Objective 2, the MEL contractor works with the grantees to collect annually data from the country grantees related to these common indicators. These are reported to USAID by IBTCI in the ICT Extension Indicator Data table, which summarises results on each indicator, by each country and is disaggregated by gender only (e.g not by disability). No qualitative data is collected.

1.1 Number of farmers with access to (the provided) ICT-enabled services.
1.2 Number of farmers using ICT-enabled services
Male
Female
1.3 Number of farmers and others who have applied improved technologies or management practices as a result of (donor/US government) assistance.
Male
Female

1.4 Number of hectares of land under improved technologies or management practices.
Male
Female
1.5 Number of individuals who have received USG (i.e., donor) supported short-term agricultural sector productivity training or food security training.
Male
Female
2.1 % of costs of ICT-enabled services covered by non-donor sources

The MEL contractor does not collect routinely any additional quantitative data. They work closely with the grantees to develop their indicators and data collections e.g. through learning events falling within Objective 3. Learning Network events include an annual Face-to-Face (F2F) Event; in 2017, this is expected to take place in June. There are four Peer-to-peer Virtual Events per year.

The MEL contractor submits Quarterly Task Order Progress Reports to document work completed and planned, and to address issues and challenges faced and any corrective actions or changes considered. These reports also include a section on learning. For the year ends at 30 September, this becomes an Annual Report which includes a comprehensive narrative summary of the previous year's activities and accomplishments per the annual work plan. The annual report will also include short "success stories" briefly describing examples of how the project has succeeded in achieving its objectives. At least quarterly, the MEL contractor holds briefings and discussions with USAID. They also produce for USAID work plans, a learning plan, a gender plan and a communication and dissemination plan.

They submit quarterly data reports on each indicator to the MEL contractor as outlined above.

All of the documentation will be made available to the all bidders. With regard to the datasets, bidders will receive the summary table of results compiled by the MEL contractor as well as summaries of learning workshops, the MEL contractor's Annual Workplan, Learning, Gender and Dissemination Plans.

Annex 3: LOGFRAME

See separate attachment

Annex 4: THEORY OF CHANGE DIAGRAM



Annex 5: COUNTRY RISK ASSESSMENTS

Country	City	Overall Security	Violent Crime	Civil Disorder	Terrorism
Ethiopia	Addis Ababa (Capital)	3	2	2	3
Ghana	Accra (Capital)	3	3	3	2
Malawi	Lilongwe (Capital)	3	3	3	2
Mozambique	Maputo (Capital)	3	3	3	2
Senegal	Dakar (Capital)	3	2	2	3
Tanzania	Dar es Salaam (Capital)	4	4	4	3

Key:

5 – Very High Risk

4 – High Risk

3 – Medium Risk

2 – Low Risk

1 – Very Low Risk

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Annex 3 - List of interviewees

Donor level

SSTP

SSTP, Chief of Party, 10.05.18

BMGF

BMGF, Program Officer, Agricultural Advisory Services, 27.06.18

DFID

DFID, Nutrition Adviser and earlier SRO for NA ICT CF, 20.07.18

DFID, SRO, 27.06.18

USAID

USAID, Digital Development for Feed the Future, NA ICT CF Fund Manager & Digital Development for Feed the Future, 30.07.18

USAID, Monitoring and Evaluation Specialist, 19.10.18

IFAD

IFAD, 02.07.18

IBTCI

IBTCI, Consultant, Monitoring Specialist, 21.08.18

IBTCI, Learning Specialist, 14.08.18

IBTCI, Senior Program Associate, 14.08.18

IBTCI, Team Leader, 21.08.18

Country level

Ghana

FRI Ghana, Country Director, 31.07.18 Grameen Foundation, Senior Director, West Africa, 20.06.18 Grameen Foundation, Senior Program Manager, 20.06.18 **Ethiopia** Amhara Mass Media Agency, FM. BarirDar 96.9, 01.02.18 Amhara Radio Agriculture, Editor, 01.02.18 Amhara Radio, 01.02.18 ATA, ICT Team Lead, 28.02.18 Awaaz.De, Vice-President of Operations, 26.02.18 Aybar BBM PLC, General Manager, 28.02.18 D. Temben Woreda, Agricultural Extension, 07.03.18 D. Temben Woreda, Irrigation Coordinator, 07.03.18 DA, Adiazmera kebele Livestock, 07.03.18 DA, Adiazmera kebele, Crops, 07.03.18 Dangila Woreda Office Head, 02.03.18 Dangila woreda, Agronomist; 02.03.18 Dangila woreda, Extension Communication Officer and DG focal person, 02.03.18 Dangila Woreda, Extension Leader, 02.03.18 Dangila Woreda, Vice Head, 02.03.18

Digital Green, Project Director, 26.02.18 Digital Green, Senior Program Manager, 07.03.18 Dimste Woyane Radio Station, Journalist, 06.03.18 FRI, Acting Country Director, 28.02.18 FRI, ICT officer, 28.02.18 FRI, Knowledge Management Officer, 28.02.18 FRI, Knowledge Management Team Lead, 28.02.18 FRI, Project Officer, 28.02.18 IFPRI, Markets, Trade and Institutions Division Research Coordinator, 08.03.18 M&E Director, Digital Green, 26.02.18 Manguda Kebele, Dangila woreda, DA – Crop production, 02.03.18 Manguda Kebele, Dangila Woreda, Development Agent - livestock, 02.03.18 MBI PLC, Technical Manager, 28.02.18 RBoA Amhara, Agriculture Extension Project M&E Expert and DG focal person RBoA Amhara, Director of Agriculture Extension, 01.02.18 RBoA Tigray, Director Extension, 06.03.18 RBoA Tigray, Extension Communication Coordinator, 06.03.18 Temben Woreda DG focal person, 07.03.18 Wukro ATVET Instructor, 06.03.18 Wukro ATVET OBT Coordinator, 06.03.18 Wukro ATVET, Vice Dean, 06.03.18 Wukro, ATVET Training 06.03.18 Malawi GSMA, mNutrition Project Lead, Malawi, 01.10.18 (via email) HNI, HNI Director, Malawi, 31.07.18 Muzuzu, Cadecom, Project Officer, 14.06.18 Muzuzu, Cadecom, Research, Monitoring and Evaluation Officer, 14.06.18 Self Help Africa, Senior Project Officer, 12.08.18 Mozambigue FRI, Regional, Senior Program Development Manager, 16.07.18 HNI, Maputo, HNI Director, Mozambique, 18.07.18 NCBA CLUSA, Country Director and Ex EMM Project Manager, 30.07.18 NCBA CLUSA, Nampula, EMM Project Manager, 13.07.18 Senegal ADG, ADG Regional Coordinator for West Africa & TICmbay consortium member, 19.04.18 ANACIM, Director of meteorological information system Anangwa FM, Radio Director, 20.04.18 COORAD, Business Development Advisor, 23.04.18 COORAD, Coordinator Antenne, 23.04.18 COORAD, Coordinator Central, 23.04.18 COPI, Coordinator, 20.04.18 FAPAL, Director, 18.04.18

Fogny FM, Animateur 20.04.18 Fogny FM, Animateur, 20.04.18 Fogny FM, Technician, 20.04.18 ISRA, Scientific Director of Research & Deputy Director General26.04.18 Jokalante, Director, 26.04.18 Reseau des APS, Matam ApronStar distributor, 23.04.18 SB Conseil, Director of SB Conseil and member of management team TICmbay, 16.04.18 Senior Advisor Agriculture and Livelihoods, PAC West Africa, 19.04.18 TICmbay, Project Officer, 20.04.18 Timtimol FM. Director, 24.04.18 Toolbaye, M&E officer for Toolbaye (a SSTP grantee), 18.04.18 United Purpose, Country Director Gambia, Senegal & Guinea Bissau, 20.04.18 University of California Santa Cruz (UCSC), Graduate student researcher for MEL, TICMbay, 16.04.18 USAID, Agriculture Specialist & Activity Manager for TICmbay, 26.04.18 USAID/CINSERE (CCAFS) Evaluation Lead, 24.04.18 USAID/CINSERE (CCAFS), Project Coordinator, 26.04.18 Tanzania AGRA, Tanzania Country Coordinator, 26.01.18 Baraka FM, Mbeya, 28.01.18 Baraka FM, Mbeya, 28.01.18 Baraka FM, Mbeya, Program Manager, 28.01.18 Beula Seed, Managing Director and founder, 01.02.18 CABI (Kenya), Global Director Development, Communications and Extension, 06.02.18 CABI, Nairobi Content Manager, 24.01.18 CABI, Nairobi, Project Coordinator, 24.01.18 Esoko, International Business Adviser, 25.01.18 FIPS, District Coordinator, 30.01.18 FRI Arusha ICT Officer. 24.01.18 FRI Arusha, Radio Volunteer, 24.01.18 FRI, Arusha, Project Manager, 22.01.18 FRI, Regional Programs Manager - East and Southern Africa, 15.01.18 Kibaha ARI, Principal Agriculture Research Officer, 25.01.18 Kings FM, Njombe, Radio Presenter, 31.01.18 Mbeya District Council, District Agriculture Irrigation and Cooperative Officer (DAICO), 29.01.18 Meru Agro, Zonal Coordinator, 29.01.18 MIVARF, Arusha, Marketing Infrastructure Engineer, 24.01.18 Njombe District Council, DAICO, 31.01.18 Njombe District Council, District Crop Officer, 31.01.18 Njombe District Council, Round Potato Expert, 31.01.18 Njombe District Council, Village Extension Officer, 31.01.18 Selian ARI, Arusha, Agricultural Research Officer, 24.01.18 Syngenta, Field Expert, 30.01.18

Syngenta, Sales Manager, 30.01.18 Uhuru FM, Radio Presenter, 26.01.18 Uhuru FM, Senior Radio Presenter, 26.01.18 Uyole ARI, Maize Researcher, 29.01.18 Uyole ARI, soon to join the Potato Centre of Excellence at the time of interview, Ex lead SAGCOT SSTP project, 01.02.18 Uyole ARI, Zonal Director, 29.01.18

Other stakeholders

Freelance (former Contracting Officer Representative for NA ICT CF, USAID), 16.08.18

IDS, Evaluation Manager, mNutrition evaluation, 20.10.18

IDS, Lead Co-Principal Investigator, mNutrition evaluation, 20.10.18

Annex 4 - Evaluation methodology

This annex first describes how the EQs were refined and the EM (see Annex 5) developed. It then describes the qualitative methods used by the evaluation, followed by the quantitative methods. Thereafter the process and criteria for selection of the three countries to visit for case studies is described. The annex ends with a short discussion about how data from different sources was triangulated and synthesised.

1. How the EQs were refined and the EM developed

The ToRs (see Annex 1) proposed a set of core EQs organised under six criteria, these being Relevance; Outputs and Results; Value for Money; Progress towards Outcomes and Impact; Sustainability; and Lessons and linkages. Further, the TORs¹³ stated that DFID were "happy to consider revisions to the exact meaning and/or wording." During the inception phase each of these questions was reviewed carefully in the light of the ET's understanding of the Results Framework, Performance Indicator Reference Sheets (PIRS), DFID ToC and the DFID logframe. In the process some new questions were developed, and some of those that were in the TORs were subsumed under the new questions.

The table below lists the 18 questions that the ET proposes to explore during the evaluation, organised under the criteria identified in the TORs.

Table 1 Evaluation questions

Relevance				
EQ1	How well was the programme aligned with DFID and other donors' policies, as well as country level agricultural development policy and extension provision, and with the national ICT context?			
EQ2	How well designed is the NA ICT CF to achieve its objectives?			
EQ3	Is the NA ICT CF filling a market gap?			
Outputs a	nd Results			
EQ4	How was access by male and female farmers to ICT-enabled extension services achieved in the different countries? (This relates to Output 1 in the DFID ToC)			
EQ5	How was content adapted to specific needs, context and available ICT channels? (This relates to Output 2 in the DFID ToC)			
EQ6	Was high quality evidence on (cost) effectiveness and impact of ICT-enabled services produced and how? (This relates to Output 3 in the DFID ToC)			
Value for	Money			
EQ7	Economy: To what extent has the programme considered and managed costs?			
EQ8	Efficiency: How well are programme resources used by grantees to deliver programme outputs?			
EQ9	Effectiveness: To what extent has the programme enabled grantees to achieve outputs and outcomes?			
EQ10	Equity: Are services accessible to women and men? Do services meet the needs and preferences of women? Are recipients from a diverse range of social and economic backgrounds?			
Progress towards Outcomes and Impact				
EQ11	What evidence exists to show that adoption of technologies is enhanced through the ICT-enabled advisory services? How and why?			
EQ12	Which knowledges and practices have been adopted in what numbers, by whom, and why?			
EQ13	What evidence exists to show that integrated ICT-enabled advisory services are contributing to improving agricultural productivity of smallholder farmers, especially women?			
EQ14	Which ICT-enabled extension channels, and combinations of ICT-enabled extension channels, are the most effective in achieving results across the grantees, while taking into account the specific country context?			

EQ15	What are the intended and unintended, positive and negative outcomes and impacts that can be observed?			
Sustainability				
EQ16	What evidence is there to demonstrate that mechanisms are in place to enable continued delivery of ICT-enabled advisory services after grant funding?			
Lessons and linkages				
EQ17	To what extent have lessons learned (and which lessons) been shared and adopted by project partners?			
EQ18	What effective linkages did the programme make with other similar initiatives/organisations providing ICT-enabled extension services, and what lessons did they learn?			

Details of every change made, and the logic for each change, are available in the table below, which compares the EQs developed by the ET with the core questions put forward in the TOR.

Table 2 NA ICT CF ToR proposed evaluation questions (EQs) compared with the EQs in the TORs.

EQ	Evaluation question (EQ) as per TORs	Revised or new EQ	Logic for change	Note to DFID	
Relev How	Relevance: How relevant is the NA ICT CF to the needs of stakeholders and the contexts within which it has been implemented? How well designed is the NA ICT CF to achieve its objectives?				
[a]	What evidence exists to show that adoption of technologies is enhanced through the ICT-enabled advisory services?	Question has been moved to Progress towards outcomes and impacts and is now EQ11	This relates to outcomes not relevance	Whilst this was listed as a Relevance question in the TORs, it also concerns results and outcomes which is why we have moved it to the Progress towards outcomes and impact criterion. However, the question is also considered under EQ2 below in its wider sense.	
[b]	What levels of quality and appropriateness (including timeliness) have been achieved by the extension services funded by NA ICT?		Question addressed under EQ8 – it is a VfM (efficiency) question not a relevance question.		
1		How well was the programme aligned with DFID and other donor's policies, as well as country level agricultural development policy and extension provision, and with the national ICT context?		EQs 1-3 were drawn from those put forward in our tender against Relevance.	
2		How well designed is the NA ICT CF to achieve its objectives?			
3		Is the programme filling a market gap?			
Outputs and results (where output the intended output and the result is the actual output)					
[c]	How accurate and valid are the results reported by the grantees, both individually and in total; similarly, how accurate and valid are dis-aggregations?		This question is incorporated under EQ6		
[d]	To what extent are the other public outputs of the programme suitable and of good quality?		This question is incorporated under EQ6 & EQ17	We interpret this question in two ways. The first concerns suitability and quality of IBCTI, and IBTCI supported, outputs, which we think fell under [c] and is incorporated in EQ6 below which concerns the third output in the DFID ToC. The second way we interpret it concerns the learning and sharing of learning supported by IBTCI	

				as per DFIDs clarification regarding this question: on 14th June: <i>The other public outputs of the programme", refer to anything that the IBTCI may put out through webinars, press releases from USAID etc</i> and this falls under EQ17.
4		How was access by male and female farmers to ICT-enabled extension services achieved in the different countries?	This relates to output 1 in the DFID ToC	
5		How was content adapted to specific needs, context and available ICT channels?	This relates to output 2 in the DFID ToC	Whilst the grantees have not measured this, the evaluation will still analyse (and gather, in the case of country visits) this question in a qualitative manner.
6		Was high quality evidence on (cost) effectiveness and impact of ICT-enabled services achieved and how?	This relates to output in the DFID ToC and incorporates [c], [d] and [e]	
Value	e for Money (incorporating efficiency and	effectiveness)		
7	Economy: To what extent has the programme considered and managed costs?	No change		
8	Efficiency: How well are programme resources used by grantees to deliver programme outputs?	No change	[b] incorporated under this EQ	
9	Effectiveness: To what extent has the programme enabled grantees to achieve outputs and outcomes?	No change	[a] Incorporated under this EQ	
10	Equity: Are services accessible to women and men? Do services meet the needs and preferences of women? Are recipients from a diverse range of social and economic backgrounds?	No change		

Progress towards Outcomes and Impact: Has the NA ICT CF facilitated adoption of new knowledge and practices and improved agricultural productivity in targeted food crops by smallholder farmers?

11		What evidence exists to show that adoption of technologies is enhanced through the ICT- enabled advisory services? How and why?	This is from [a] and was a Relevance question in the TORs (note that "how and why" is added to the question)	
12	Which knowledge and practices have been adopted in what numbers and by whom?	Which knowledges and practices have been adopted in what numbers, why and by whom?		
13	What evidence exists to show that integrated ICT-enabled advisory services are contributing to reducing poverty amongst targeted farmers and households, improving agricultural productivity of s/h farmers, especially women, and; benefitting the environment?	What evidence exists to show that integrated ICT-enabled advisory services are contributing to improving agricultural productivity of smallholder farmers, especially women?	Reducing poverty is not in the ToC at impact level. In the ToC workshop it was agreed that the evaluation will not be assessing at impact (DFID ToC) or goal (Results Framework) levels, and that assessing whether the SSTP technologies have benefited the environment will also be beyond the scope of the NA ICT evaluation.	
14	Which ICT channels are the most effective in achieving results across the grantees, while taking into account the specific country context?	Which ICT-enabled extension channels, and combinations of ICT-enabled extension channels, are the most effective in achieving results across the grantees, while taking into account the specific country context?	To take into account the programme interest in exploring combined ICT extension channels	
15	What are the intended and unintended, positive and negative outcomes and impacts that can be observed?	No change		
Sustainability: Has the NA ICT CF developed sustainable best practices? Will results that have been achieved through the programme be sustained?				
16	What evidence is there to demonstrate that mechanisms are in place to enable	No change		

	continued delivery of ICT-enabled advisory services after grant funding?			
Furth	er questions: lessons and linkages			
17	To what extent have lessons learned (and which lessons) been shared and adopted by project partners?	No change		
18	What effective linkages did the programme make with other similar initiatives/organisations providing ICT- enabled extension services, and what lessons did they learn?	No change		
[e]	What lessons can be learned about the challenges in establishing common indicators and collection of data?	Moved to EQ6	This falls within EQ6 and has been included as an indicative area to cover.	

Notes

- Numbers are used for proposed evaluation questions, whether or not they are the same as in the TORs or have been revised
- Letters are used for questions that were in the TORs but which we are no longer using as they stand
- Criteria remain the same as in the TORs
- 18 questions are proposed across the criteria
- In the actual EQ there is a column termed "indicative areas to cover" in relation to each question. Relevant questions that were included in the Landell Mills tender were included in this column
- Note that the terms; "the programme" and "the NA ICT CF" are used interchangeably

There are three areas within the original ToRs that are not being addressed. These all fell under the Outcomes to Impact criteria. They asked *What evidence exists to show that integrated ICT-enable advisory approaches are contributing to i) reducing poverty amongst targeted farmers and households, ii) improving agricultural productivity of smallholder farmers, especially women, and iii) improving agricultural productivity and benefitting the environment (DFID, 2017:6).* Reducing poverty was included at goal level in the results framework, but not mentioned in the DFID ToC. As agreed with DFID during the inception kick-off meeting, it is not possible to assess whether the NA ICT CF has led to reduced poverty because of the long time horizon needed for such a result to be evident vis-à-vis the timeframe of the evaluation. Hence, the question was not included in the evaluation questions above. Secondly, whilst the evaluation attempted to assess whether agricultural productivity had improved, this was more through looking at the extent to which farming men and women applied the SSTP technologies being shared through the ICT-enabled extension services. The PIRSI indicators include one on numbers of hectares of land under improved technologies or management practices, but there is no indicator within this programme or the wider SSTP programme that this programme contributes to increased yields. Last, the ET was of the view that assessment of whether the SSTP technologies being promoted by the NA ICT CF are benefitting the environment goes beyond the scope of this performance evaluation.

Following the identification of the 18 EQs above, a full EM was developed (see Annex 5). The purpose of the EM was to help the team work out the details of how each question will be answered. It acted as a guide for the team moving forward and also explains to the readers of this inception report how the ET will go about addressing each question. The team followed an iterative process to develop the EM. This meant that each team member contributed to the EM, that there was much cross-checking of the content by team members during the process and that it gradually evolved. For example, it was not until all indicative areas were identified and the ToC elaborated, that it was possible to identify for which EQs contribution analysis or other methodologies would be applied

For each question in the EM the following were identified: indicative areas to cover; information sources; data collection methodologies; data analysis methodologies; and evaluability. Each of these is defined below.

Indicative areas to cover identify specific areas, related to the question as a whole that the ET will endeavour to examine during the course of the evaluation, in a comparative manner. They were not definitive, but acted as a guide during document review, during preparation of checklists for KIIs and FGDs and when considering precisely which areas are best examined through VFM, contribution analysis or other analytical methods. A version of the EM was developed for team use which separates out the indicative areas to cover into individual rows, to ensure sufficient focus.

Information sources list all the potential anticipated sources of information for the related question. As many sources as possible were drawn upon to allow for triangulation, comprehensiveness and, ultimately, greater rigour.

The **data collection methodologies** section is where the different methodologies are identified, whether they are document review, interviews, etc. Again, the ET has sought to identity a range of methodologies for each question as far as possible.

The **data analysis methodologies** section is where the ET has elaborated on how the data collected from various sources will be analysed. Again, wherever possible and appropriate, several analytical methods were followed, to ensure synergy between qualitative and quantitative data and to increase the robustness of the findings.

The **evaluability** of each question was assessed based on the content of the previous cells, i.e. the indicative areas, number and types of data sources and the data collection and analysis methods. Only two of the 18 EQs were assessed as having low-medium evaluability. These were EQ6 and EQ18.

2. Qualitative methods

Eight qualitative methods were used by the ET: document review, key informant interviews (KIIs), focus group discussions (FGDs), comparative analysis, theory-based methods including general ToC analysis and contribution analysis, and country visits (drawing on a combination of the listed methods). The table below outlines for which EQs each method was used. This is followed by an overview of each method.

Table 3 Methods against EQs

	Method	EQs
1.	Document review	All EQs
2.	Klls	All EQS
3.	FGDs	5 EQs: 3,4,11,12,13
4.	Comparative analysis	All EQs
5.	ToC analysis	3 EQs: 1,2,4
6.	ToC based contribution analysis	8 EQs: 5,6,11,12,13,14,15,16
7.	Country visits	12 EQs: 3,4,5,6,9,10,11,12,13,14,15,16
8.	Data quality audit	EQ 6

Document Review

During the implementation phase, the team conducted a thorough review of all the available documents (see Annex 2 for the full bibliography). To ensure that the review process was focused and efficient, templates to record key findings were used. Six country level templates were created, and two higher level templates (one for inputting document review findings from donors, SSTP and mNutrition, and the second to input document review findings from the MEL contractor). In each template, each indicative area to cover per EQ was separated out to aid the team in drawing out findings from the documents, wherever available, against each area. The process of filling in the templates enabled the ET to identify where there were information gaps that were, where possible, addressed through follow-up interviews, or requests for further information.

Key informant interviews (KIIs)

KIIs were an important method used in the evaluation. Indicative semi-structured interview (SSI) checklists were developed and tested for each stakeholder category drawing on the relevant questions, and their indicative areas to cover, in the EM. These checklists were then tailored for the actual interviewee, based on the information already gained from document review and prior interviews. The ET had introductory discussions with the donors, IBTCI and grantees. Thereafter it focused on country level interviews. Higher level interviews were conducted after the interim presentation was given in June 2018.

Annex 3 provides the full list of interviewees. In total, 103 people were interviewed at country level. Interviewees included NA ICT CF grantees, SSTP Country Coordinators (where available), SSTP grantees, government, private sector and NGO partners, and male and female smallholder farmers. Fourteen people were interviewed at programme/higher level, including two each from USAID, DFID and the mNutrition evaluation team leads; one each from SSTP, IFAD and BMGF and one from the MEL contractor. In addition, an interview was held with the ex USAID COR for NA ICT CF. All interview notes were coded and sorted against EQs and sub-questions in the relevant templates alongside document review findings.

Focus Group Discussions (FGDs)

Focus group discussions were held with particular stakeholder groups during country visits. Most focused on specific questions drawn from the EM. The majority of FGDs held were with (usually separate) groups of male and female farmers. FGDs were also held at radio stations. As for the KIIs, findings were sorted against the relevant EQ/sub-question in the respective country level templates.

Comparative analysis

Comparative analysis across the six grantees was necessary so as to synthesise evidence and lesson learning. It has already been referred to above in terms of how document review and interview findings for each EQ in each of the six countries were collated and analysed as a whole. The analysis was located within the programme
theory of change, with a focus on the assumptions behind, and characteristics, of the design. The unit of analysis was the country level.

ToC-based analysis

There are two ways in which the ToC were used as an analytical tool:

General ToC based analysis, was relevant to several of the EQs. In this more general use of the ToC the evaluation team examined the key ToC assumptions related to country-level context and reviewed the evidence base for these assumptions. The analysis was useful for EQ1. Similarly, for EQ2 which concerns the design of the NA ICT CF, the evidence base underlying the ToC and validation of the ToC, including assumptions and causal pathways related to design, was analysed. Rather differently, for EQ4, which falls under the "Outputs and Results" criterion, whilst it was not possible to take a contribution analysis approach during FGDs themselves, the design of the FGDs was guided by the different ICT-enabled channels in the ToC.

Theory-based methods including partial contribution analysis (CA). The ToC was developed in an iterative and consultative manner as can be seen in Annex 6. The ToC contributed to methodology in several ways. First, it helped inform the design and running of the ToC workshops in the three case study countries. Second, specific causal pathways and sets of assumptions in each of the three impact pathways helped inform the content of SSI checklists for use in KIIs. Third, findings were tested against the ToC to assess if assumptions and pathways were valid. Fourth, contribution analysis was used during country visits when discussing with key stakeholders, to explore particular causal pathways and the assumptions behind them. Particular focus was given to IP1. The table below lists the normative steps of CA and how and when these were deployed by the ET

Table 4 Steps in contribution analysis process

Step	Description of step	How the step was deployed by the ET
1	Set out an attribution problem/cause-effect issue to be addressed	Carried out in inception phase based on available evidence
2	Develop the postulated ToC and risks to it, including rival explanations	Carried out in inception phase drawing on existing results framework and ToC and involving a consultative workshop with donors
3	Gather existing evidence on the ToC	Through document review and interviews
4	Assemble and assess the contribution story	In country, drawing on findings from the in-country ToC workshop and further findings from other stakeholders
5	Seek out additional evidence to reinforce the credibility of the contribution story	In all three cases the contribution story was sufficiently strong. Where there were areas for clarification these were addressed in the de- brief/validation workshop held at the end of each visit
6	Revise and strengthen the contribution story	The contribution story for each country was finalised based on the feedback gained in the end of country de-brief/validation workshop

CA was usefully applied to assess IP1, and used evidence gathered from three country visits. Evidence for IP2 and 3 was drawn from document review and interviews. Time limitations meant that it could only be applied in the countries visited. Further, the ET applied the use of contribution analysis to just one of the three impact pathways: IP1. Learning about IP2 at country level was gained through the more general document review and interview process. Learning about IP3 required higher level document review and interviews as well as country level, so again what was learned about IP3 at country level was through document review and interviews. Annex 7 contains the contribution analysis for the three countries visited.

Country visits

Logic and criteria for selection of countries to visit are discussed in Section 4 of this annex. This section outlines the purpose and structure of each visit. Field visits served to triangulate data reported by the grantees. They allowed the ET to assess the strength of evidence of the ToC, and meet with project beneficiaries as well as other stakeholders.

Each country visit lasted two weeks. Tanzania was visited first, from late January to February 2018. Next, Ethiopia was visited from late February to March. Finally, Senegal was visited in April. National consultants joined the team in each of Senegal and Ethiopia. The structure of the visit in each of Tanzania and Ethiopia was the same. On the first day the grantees gave a presentation of the project to the ET and, where joining the team, the ET met and briefed the national consultant. The second day was taken up with a full day ToC workshop. Thereafter the ET

conducted KIIs and FGDs in various locations around each country. Due to a state of emergency in Ethiopia at the time of visiting, it was not possible for the ET to travel to Oromia region, where a significant amount of work had been done by the project. However, the national consultant was able to visit the area and carry out interviews at a later stage. Prior to leaving the country, the ET met again with the grantees to share, discuss, clarify and validate findings.

In Senegal the process was similar, but the ET also had the opportunity to attend the project's two-day Annual Review meeting, during which they learned more about project progress and plans for sustainability and had the chance to meet a range of NA ICT and SSTP stakeholders from across the country.

Whilst in country further documents were availed to the team. All document review and interview findings were sorted against EQs/sub-questions in the respective templates as discussed above.

Data quality audit

Based on the USAID standard for DQA, a data quality audit was performed to assess how *accurate and valid* are PIRS results reported by the grantees, both individually and in total, including for disaggregation by gender, technology and crop.

In conducting the DQA, the evaluators assessed the quality of PIRS under the criteria of timeliness, reliability, validity/relevance and completeness. In order to consider the existence of enabling conditions towards the production of sound and robust data, the DQA framework considered data planning, design of tools, data collection, data cleaning, data analysis, disaggregation, reporting and data quality review.

Due to the extensive body of literature produced by grantees, the ET used a 20% sampling approach to the selection of documents to be reviewed in great detail. The exercise started by mapping all the relevant documents for all grantees for the review of PIRS, for a total of 118 documents. These included, but were not limited to, quarter reports, annual report, baselines, midline and endline reports, MEL/performance monitoring plans and workplans. The team then purposively selected a 20% sample of documents for detailed review, in a way that considered the extent of the reporting for each country and the variety of types of documents read. In addition, all country reference sheets for the six key performance indicators, as well as all raw data, have been reviewed. Finally, all relevant documents have been analysed against each grantee's workplan to check for the completeness and timeliness of reporting.

Based on the findings, assessments were drawn at both country level, programme level and for each criterion (see Annex 8 for the DQA detailed methodology, overview and results).

3. Quantitative methods and tools

3.1 Quantitative data analysis

A quantitative analysis was conducted by the ET of all PIRS data to provide overall results for each of the indicators at programme and country level. The quantitative data was used to create graphs for each indicator (at programme and country level) and to make a comparative analysis between countries.

3.2 Value for Money analysis

The VfM assessment includes both quantitative and qualitative metrics summarised below.

- **Economy** measures the use of funds to acquire and provide the goods and services required by the programme at the highest quality and lowest cost.
- **Efficiency** measures the cost-efficient translation of programme goods and services into planned outputs and interim or assumed benefits for the target population.
- **Effectiveness** measures the sustained outcomes and benefits derived by programme interventions, and the potential longer-term sustainability of the outputs and outcomes achieved.
- Equity measures the distribution of, and access to, programme benefits across specific socio-economies by disaggregating results across one or more distributional categories, such as gender, region, age, ethnicity or religion, and wealth quintile.

See Annex 9: VfM Analysis for details on this.

4. Countries selected for case study visits and criteria for their selection

Three countries were selected for country visits: Ethiopia, Senegal and Tanzania. The selection process was carried out by the team in an iterative manner. First a long-list of potential criteria were put forward and interrogated by other team members. From this process, seven criteria were selected. The seven criteria and the reason/s for selection of each criterion are provided in the table below:

Table 5 Criteria employed for selection of which three NA ICT CF countries to visit

#	Criteria	Reason for criteria
1	Good availability of documents	The more data and documents that there are to date for each country, the more informed the team will be prior to visiting the selected countries. Good availability of documents should allow for better preparation and better use of time in-country, and most importantly for having a good basis for performance assessments.
2	End-date and availability of key stakeholders	If the grantees have already ceased work on NA ICT CF, particularly if some time ago, stakeholders including programme staff and partners are less likely to be available and/or to have time to link the team to other key stakeholders in country.
3	Represent a diversity of sustainability models	Greater learning is possible if a variety of sustainability models are explored in more depth during country visits, rather than visiting countries with similar models.
4	Represent diversity in ICT- enabled extension services	The evaluation is asked to explore what combinations of ICT-enabled channels work best, where and why, and how they are combined with traditional extension, hence it would be good to visit countries where there have been different approaches to their use and combination.
5	Represent a variety of grantees and sub-grantees	Each grantee and sub-grantee has their own approach, so more can be learned by selecting countries with varied grantees
6	Represent a variety of project start dates	The start date is relevant to the first criterion (C1) good availability of documents. But, more generally, by selecting countries which have started both earlier and later it may be possible to assess the extent to which those that have started later have learned from the other country experiences. But the later the start date, the less country experience to date.
7	Represent a variety of agro ecology and cultures (geographical diversity)	Technologies and inputs being promoted will vary according to agro-ecology. ICT preferences will vary according to language and culture. Greater lessons learning can be achieved by visiting a diverse range of countries.

The first two criteria listed above were most critical. Whilst we assessed all six grantees against all seven criteria, we decided that MODES in Malawi would be excluded on the basis of the first criterion in that documentation has not been available, and Agrotech in Ghana would be excluded on the basis of the second criterion in that the implementation finished there in January 2018. Thus, in our final shortlisting of countries against each criterion we excluded these two countries. Of the remaining four, TICmbay in Senegal, UPTAKE in Tanzania and Digital Integration in Ethiopia scored highest and were thus selected as case study countries.

Table 6 Fit of grantees against each criterion

#	Criteria	TICmbay Senegal	Digital Integration Ethiopia	UPTAKE Tanzania	EMM Mozambique
1	Good availability of documents	Yes	Yes	Yes	No
2	End-date and availability of key stakeholders	Yes	Yes	Yes	Yes
3	Represent a diversity of sustainability models	Yes	Yes	Yes, or Mozambique	Yes, or Tanzania
4	Represent diversity in ICT-enabled extension services	Yes	Yes	Yes or Mozambique	Yes, or Tanzania
5	Represent a variety of grantees and sub-grantees	Yes	Yes	No	Yes
6	Represent a variety of project start dates	Yes	Yes	Yes	No
7	Represent a variety of agro ecology and cultures (geographical diversity)	Yes	Yes, or Tanzania	Yes, or Ethiopia	Yes
Total		7	7	6	5

5. Approach to the consolidation, triangulation and synthesis of data from different sources

The ET drew on a range of sources, and combined several analytical qualitative and quantitative methodologies, in carrying out the evaluation. Whilst visits were only made to three of the six countries, the evaluation was a performance evaluation of the NA ICT CF as a whole, across all six countries. Document review, KIIs, and quantitative data analysis including, where possible, elements of VFM analysis, were vital sources of information for all countries, with all contributing to the comparative nature of the evaluation.

Data was synthesised in an iterative and cumulative process. For example, as outlined under the discussion of document review and KIIs, findings from each were organised against the EQs at country and programme levels. Further, tables were drawn up bringing together any available VfM and any other quantitative findings alongside qualitative findings, which enabled the team to cross-check findings and identify any need for further clarification if any findings were contradictory.

For the interim presentation in June 2018, the ET collated and reviewed findings per EQ (and indicative areas/subquestions under each EQ) for all six countries. Following this the ET carried out higher level interviews (and, where made available, further higher-level document review). Both before and after the interim presentation, the sorting of findings against EQs/sub questions including interview as well as document review findings took place (at both country and higher levels).

A final round of collation and review took place between August and November which brought in, not just the country level findings but also the donor and MEL contractor level findings. Here both qualitative and quantitative data were brought together (including the limited amount of partial VfM analysis that was possible). This involved a thorough comparative analysis across the countries for each EQ and its sub-questions, drawing on all data sources, to inform the final report.

This entire process allowed for a) consolidation of both quantitative and qualitative findings for every sub-question (where available) based on both interviews and document review, b) identification of gaps, and c) triangulation. It further provides an (excel based) "paper trail" so that sources of evidence for each finding can be traced back to the source.

The figure below illustrates visually the data management and analysis process followed by the team. The team drew on the sources in the top row to fill in excel spreadsheets for each of the six countries (referred to as country frameworks in the diagram) and a seventh spreadsheet for higher-level (donor, MEL contractor, SSTP, mNutrition) findings. The templates each included the eighteen EQs and 92 sub questions under these (second row). The data was then sorted to provide findings for each of the eighteen EQs (third row down). These were then filtered and analysed (fourth row down) and fed into the evaluation findings (bottom row) against the evaluation criteria.

Figure 1: Data management and analysis process



Annex 5 - Evaluation Matrix

EQ	Evaluation question	Indicative areas to cover	Information sources	Data collection	Data analysis methods	Evaluability				
No	(EQ)			methods						
Relevan	elevance: How relevant is the NA ICT CF to the needs of stakeholders and the contexts within which it has been implemented?									
How we	II designed is the NA ICT	CF to achieve its objectives?								
EQ1	How well was the programme aligned with DFID and other donors' policies, as well as country level agricultural development policy and extension provision, and with the national ICT context?	 To what extent is the programme consistent for the six countries with the following: Donor-level policies on support to agricultural production and use of ICTs in this in SSA? Country-level agricultural development policy for each of the six countries? Country-level extension provision (government/PS/NGO)? Country-level national ICT context (six countries)? 	USAID, DFID, BMGF and IFAD policy and strategy documents; Grantee documents SSTP documents Any available reviews (e.g. DFID annual reviews, mid- term performance evaluation SSTP); Wider material on country level policy, extension provision and national ICT context; Grantees; Donors; and SSTP.	Document review. Interviews with donors, grantees and SSTP.	Comparative Analysis of donor and country level policy, extension and ICT context and interview findings related to this. Listing of key ToC assumptions related to country level context and review of evidence base for these assumptions. From the above, assessment of alignment at donor and country level.	HIGH There should be good secondary data for this question and analysis can be triangulated through interviews with grantees and, if need be, donors.				
EQ2	How well designed is the NA ICT CF to achieve its objectives?	 To what extent does the programme appropriately respond to men and women smallholder farmers' livelihood needs and knowledge demands? How has the NA ICT CF consortium been set up, managed and governed? 	Literature on effective means to reach farmers through traditional and ICT-enabled extension combined; DFID review of CFs. SSTP design/RF;	Document review. Interviews with SSTP at programme and country level. Interviews with grantees. Interviews with farmers (for	Comparative Analysis. Analysis of evidence base underlying ToC. Validation of ToC including assumptions and causal pathways. Assessment of fit between design and objectives based	HIGH There is a good combination of sources to allow for triangulation.				

EQ No	Evaluation question (EQ)	Indicative areas to cover	Information sources	Data collection methods	Data analysis methods	Evaluability
		 How appropriate was it to set up the programme as a challenge fund and how has this influenced appropriate and efficient service delivery? How does the design allow for the programme to draw on, use and scale out SSTP technologies? How are private and public entities contributing to the effective delivery of ICT-enabled extension services? How were (sub)grantees selected? To what extent did the grantees follow the principles of digital design (http://digitalprinciples.org/)? How were key stakeholders involved in the design and implementation of the ICT-enabled extension services? To what extent did the grantees and sub-grantees consider gender equality /equity in the programme design? 	Integrated (New Alliance) RF for SSTP and NA ICT programmes. Grantee reports; Grantees; SSTP; Farmers/beneficiaries; and Quantitative data, where available.	triangulation purposes).	on document review and interviews with SSTP and grantees. Where documentary evidence exists related to the selection of grantees and sub-grantees, these data may be used to support/contrast with quantitative VFM findings.	
EQ3	Is the NA ICT CF filling a market gap?	 Is there sufficient demand for ICT- enabled agriculture extension services in the market? Is there sufficient competition in the 6 NA ICT countries? 	Literature Review. Programme Market Research. GSMA (if available) Baseline Report regarding mNutrition). Relevant quantitative data if available (prior to, and during country visits).	Document Review. Field Visits to grantees and service providers. Focus Group Interviews with (sub) grantees	Comparative analysis. VFM quantitative analysis may be used to triangulate qualitative findings here.	MEDIUM Based on secondary data from grantees. No primary market research to establish market gap.

Outputs and results (where output the intended output and the result is the actual output)

EQ No	Evaluation question (EQ)	Indicative areas to cover	Information sources	Data collection methods	Data analysis methods	Evaluability
EQ4	How was access by male and female farmers to ICT- enabled extension services achieved in the different countries? (This relates to Output 1 in the DFID ToC)	To what extent are ICT-enabled extension services accessible to farmers, by channel type, gender, crop, and SSTP technology?	Country data / country reports. Gender Plans. Project beneficiaries.	Document Review. Field visit. Interviews. Focus group discussions.	Quantitative analyses of volume of access and adoption against targets. Qualitative, descriptive analyses. KIIs and FGDs with grantees, partners and beneficiary groups will explore the extent to which the different channels in the ToC Impact Pathway 1, pathways to outputs, Diagram 7 were accessible	MEDIUM Not all grantees have differentiated all indicators between male and female, and disaggregation is often done based on estimated beneficiaries
EQ5	How was content adapted to specific needs, context and available ICT channels? (This relates to Output 2 in the DFID ToC)	 Were content committees set up and which stakeholders were actively involved? How did grantees use best knowledge available for content development (including through collaboration with SSTP and others)? Were the contents needs-driven, credible, relevant, trusted and actionable (as per the MEAS Rapid Appraisal of the ICT for Agricultural Extension Landscape)? Are the grantees reporting back farmers' feedback to SSTP to improve content creation? Is the content of advisory services appropriate and timely delivered? 	Content committees. Content development and QA processes. (Sub) grantees	Document review. Interviews with grantees. Country visits.	Qualitative analysis of documents. Potentially, contribution analysis in country against the causal pathway and assumptions in the ToC impact pathway 1 (particularly the level which concerns activities to output which is presently Diagram 6). VFM analysis of programme agility to changing needs may be possible from review of documentary evidence of programming changes and resulting changes in performance.	MEDIUM IBTCI did not have an indicator related to this so there will be less possibility of triangulating evidence found from other sources.
EQ6	Was high quality evidence on (cost) effectiveness and	 How effective was IBTCI in providing technical support to grantees to strengthen monitoring capacities and 	Grantee and IBTCI reports.	Document review. Field visits.	Qualitative, descriptive analysis.	LOW to MEDIUM The question specifically seeks an

EQ No	Evaluation question (EQ)	Indicative areas to cover	Information sources	Data collection methods	Data analysis methods	Evaluability
	impact of ICT-enabled services produced and how? (This relates to Output 3 in the DFID ToC)	 in coordinating with them in the process of developing country-level framework? How effective was IBTCI in facilitating learning and monitoring within the grantee network? To what extent did the grantees provide proper resources (expertise, budget, etc.) to its monitoring and learning function? How accurate and valid are the results reported by the grantees, both individually and in total; similarly, how accurate and valid is the disaggregation? To what extent are the other public outputs of the programme (e.g. webinars, press releases etc.) suitable and of good quality? What lessons can be learned about the challenges in establishing common indicators and collection of data? 	Any available raw data on costs of ICT-enabled services. IBTCI. Grantees.	Interviews. Satisfaction survey with (sub) grantees.	Quantitative analysis of survey data. Quantitative analysis related to unit costing of improved productivity (if available) and increased hectares benefitting from ICT-enabled technologies. Data quality audit to test accuracy and validity of monitoring data and relevant outputs such as periodic reports at the programme and country levels. Comparative analysis will be used in this, with a traffic light system. Steps and assumptions between activity and output levels for impact pathway 3 (diagrams 13 and 14) will be tested through contribution analysis.	assessment of cost effectiveness. We expect to have sufficient results data to evaluate the progress toward targets, and the eventual uptake of results as reported by IBTCI. However, IBTCI has indicated that they have not received or reviewed any grantee financial data to date, nor has the evaluation team, though requests for such data have been made. Until we receive and review financial data, we are cautious about the evaluability of cost- effectiveness in that much of the assessment here will be on the basis of review of grantee and IBTCI reporting. Assessment of other public outputs will be qualitative only.
Value fo	or Money (incorporating	efficiency and effectiveness)				
EQ7	Economy: To what extent has the programme	Key evidence points of economy are:	a) Interviews, Minutes of selection meetings.	a) Requests of country programmes;	a) Qualitative review of due diligence notes by country.	MEDIUM With reference to a) to d) under the indicative areas to cover

EQ No	Evaluation question (EQ)	Ir	ndicative areas to cover	Information sources	Data collection methods	Data analysis methods	Evaluability
	considered and managed costs?	a) \ (What is the evidence of due diligence in selection of grantees and sub grantees?		interviews, field visits		column, a) hard copy due diligence may not be available.
		b) \ (t	What are the grantee and sub grantee staffing plans and actual costs, compared across six target countries?	b) Grantee country programme data.	b) Grantee reports; programme management reports; field visits	b) Cross country quantitative analysis of planned vs actual staffing, fee rate, and total costs of implementation, fees and costs.	b), c), d) are expected be evaluable across countries.
		C) 	Is there evidence of competitive procurement among grantees and sub grantees; is the supplier market constrained, thus limiting competition?	c) Procurement planning and grantee selection-selected countries as possible.	 c) Country programme procurement plans and execution documentation; Country programme data 	c) Cross country analysis of procurement of grantees and sub grantees.	
		d) ((Is there evidence of cost sharing or in-kind support from national extension services or other stakeholders yet?	d) Additional data may be gathered from govt. extension services, national statistics, SSTP, and service providers	d) Country programme data	d) Cross country leverage analysis of in kind or other support from stakeholders.	

EQ No	Evaluation question (EQ)	Indicative areas to cover	Information sources	Data collection methods	Data analysis methods	Evaluability
EQ8	Efficiency: How well are programme resources used by grantees to deliver programme outputs?	Key evidence points of efficiency are:	Information sources for each of the indicative areas:	Data collection methods for each of the key evidence points:	Data analysis methods for each of the key evidence points:	MEDIUM
		a) What are the trends, over time, of programmable budgets vs. actual expenditures? How do financial data correlate with planned results and actual achieved results when compared to logframe results indicators, at programme and country level?	a) IBTCI results data, donor provided financial data; at programme, country, and grantee level.	a) Documentary reports, IBTCI, donor, grantee and sub grantee level results and financial data.	a) Annual and LOP financial budgets and expenditures for all indicators: budget vs. actual expenditure; trend all indicator targets vs. results.	a) Results data appear to be available; access to financial data in process at donor and country level. Lack of detailed financial data limits VFM analysis
		b) Are cross country comparisons of the above informative?	b) Above data	b) As above	b) Cost efficiency ratios	b) As above
		c) What are cost-efficiency ratios for key results at the programme, country and grantee levels?	c) Above data and as possible for sub grantees	c) As above	c) Unit costs per indicator and beneficiary results	c) As above
		d) What are the unit costs across key indicators at programme, country, and grantee levels?	d) Above data aligned and linked to quantitative outputs, outcomes	d) Qualitative data from surveys, interviews, etc.	d) <u>Verified results vs.</u> estimated or assumed results will be highlighted	d) As above
		e) Is user satisfaction data useful to triangulate with quantitative results?	e) Interviews	e) Conversion data at country/ intervention level	e) As above at programme level, country level, grantee and sub grantee level. Unit costs to be analysed for IBTCI Performance Indicators: 1.1, 1.2, 1.3.1.4, 1.5, and 2.1 ¹⁴	e) Qualitative triangulation dependent upon interviews, etc.

¹⁴ Indicators are as follows:

1.1 Number of smallholder farmers with access to the ICT-enabled services (Note: this is an optional performance indicator in the IBTCI results framework)
1.2 Number of smallholder farmers using ICT-enabled services
1.3 Number of smallholder farmers and others who have applied improved technologies or management practices as a result of USG assistance
1.4 Number of hectares under improved technologies or management practices as a result of USG assistance

EQ No	Evaluation question (EQ)	Indicative areas to cover	Information sources	Data collection methods	Data analysis methods	Evaluability
		f) What are the user conversion/adoption rates?			f) Unit cost analysis	
EQ9 E w gr or or	Effectiveness: To what extent has the programme enabled grantees to achieve outputs and outcomes?	Key evidence points of effectiveness are: a) Specific to each IBTCI Performance Indicator, what is the evidence of achieved outputs and outcomes? What is the evidence of sustained results by indicator?	a) Duration and trend over time of results	a) Previously obtained results data by indicator, triangulated with interview and user satisfaction data	a) Unit cost of sustained results; additional life-cycle costs to sustain results (if data permit)	MEDIUM Effectiveness is a function of outcomes and Impact, which requires more operational time to determine. "Indications" that lead (or do not) toward eventual effectiveness are more likely to be found.
		b) Is there evidence of increased investment in ICT by stakeholders other than donors? Leverage factor	b) Where results sustained, identify additional funding	b) If sustained result over time, identify additional investment required; country programme data of stakeholder investment	b) Funds leveraged by donors' investment ratios, country and programme level	
		c) Business model financial sustainability	c) Country level interviews	c) Country programme and sub- grantee business model documents reports and interviews	c) Conduct sustainability analysis if additional funds needed to sustain gainsc) Qualitative cross- country assessment of business models	

1.5 Number of farmers who have received donor supported short-term agricultural sector productivity training or food security training 2.1. Percentage of costs of ICT-enabled services covered by non-donor sources.

EQ	Evaluation question	Indicative areas to cover	Information sources	Data collection	Data analysis methods	Evaluability
Νο				metrious		
		d) Service provider and user feedback		d) Reports, additional request for business model summaries, interviews with grantees, and users	d) Qualitative assessment of country grantee(s) agility to adapt interventions to meet beneficiary preference	
EQ10	Equity: Are services accessible to women and men? Do services meet the needs and preferences of women? Are recipients from a diverse range of social and economic backgrounds?	Key evidence points of equity are: a) gender spread of benefits; and	a, b) Programme and IBTCI reports a, b) Existing beneficiary data IBCTI. Grantees. SSTP Survey.	Document review including for a) programme and country level results reports.	a) Verified actual, estimated beneficiaries disaggregated by gender.	MEDIUM It is not clear that all data is gathered in a gender disaggregated way, and whether there is any available data to quantify gender spread of benefits.
		b) Differences in terms of channel use or dissemination modality (and if data is available on crops / SSTP technologies) between men and women	a, b) Programme and IBTCI reports a, b) Existing beneficiary data IBCTI. Grantees. SSTP Survey.	b) Gender disaggregation reports.Interviews.Country visits.	 b) Disaggregate quantitative indicator results by gender. Comparative analysis (to complement the VFM quantitative analysis). 	
Progress smallho	s towards Outcomes an Ider farmers?	d Impact: Has the NA ICT CF facilitated ac	loption of new knowledge and p	practices and improve	d agricultural productivity in ta	argeted food crops by
EQ11	What evidence exists to show that adoption of technologies is enhanced through the ICT-enabled advisory services? How and why?	 Were there differences between adoption of SSTP technologies, related to: Crops; Sex; Age; Type of ICT-enabled advisory service; v. Public/private service; 	Country data / country reports. Business case. SSTP reports. Interviews with grantees / farmer groups / extension agents / input dealers.	Documents. Interviews. Focus Group. Document review. Country visits	Most Significant Change stories. Quantitative analysis of data (combination of multiple data sources). Content Analysis.	HIGH There should be good secondary data for this question and analysis can be triangulated through interviews with

EQ No	Evaluation question (EQ)	Indicative areas to cover	Information sources	Data collection methods	Data analysis methods	Evaluability
		 vi. In combination with traditional extension service or ICT only? vii. For SMS/Voice in-active/active/power users? viii. Tech-literacy Y/N ix. Business Sense (farming as business Y/N) What level of trust did farmers have in the new technologies and seeds? Were seeds/technologies available and in a timely manner? What were the main motivation factors to adopt and what were the main reasons not to adopt? Were other enabling factors are in place such as access to finance/credit? 			Qualitative, descriptive analyses. Contribution Analysis testing progress / contribution steps of ToC and its underlying assumptions between outputs and outcome in impact pathway 1 (presently diagram 8) related to trust, availability of inputs and finance.	grantees (and, if need be, donors).
EQ12	Which knowledges and practices have been adopted in what numbers, by whom, and why?	 Are the ICT-enabled extension services able to stand on their own or is it more effective as an enhancement of the traditional extension services? Are there differences in adoption rate for different crops / SSTP technologies between channels, between gender and between countries? 	Country data / country reports. Baseline reports. Evaluation reports. SSTP surveys. Interviews with grantees and farmer organisations / extension workers. Group discussion with farmers / extension agents.	Document Review. Data sheets. Field visits. Focus groups. Interviews.	Quantitative analysis of data (of adoption disaggregation). Case based analysis (qualitative). Test progress / contribution steps of ToC and its underlying assumptions between output 1 and 2 towards outcome 1 (presently diagrams 7 and 8)	MEDIUM There should be good secondary data for this question and analysis can be triangulated through interviews with grantees (and, if need be, donors), but it is unclear if all data is disaggregated for each adopted knowledge and practice
EQ13	What evidence exists to show that integrated ICT- enabled advisory services are contributing to improving agricultural	 What are the factors influencing the participation of women and their adoption of improved agricultural technologies? Knowledge uptake (understanding) 	Country data / country reports. Baseline reports. Evaluation reports. SSTP Reports.	Document review. Field visit. Interviews. Focus Group.	Most Significant Change Stories. Content Analyses.	MEDIUM for contribution to improved productivity (SSTP should provide good secondary data)

EQ No	Evaluation question (EQ)	Indicative areas to cover	Information sources	Data collection methods	Data analysis methods	Evaluability
	productivity of smallholder farmers, especially women?	 Were there differences between channels in uptake, knowledge, trying out and adoption of new technologies (in combination with Q14)? What is the link between adoption of new technologies and improved productivity? Are there differences between crops and adopted SSTP technologies and practices? Do men and women smallholder farmers have an equal opportunity to make an active decision to use quality inputs and improved technologies? Do SSTP farmers who are benefiting from ICT-enabled extension channels have access to relevant inputs markets; and are they gaining greater access to markets? 	Interviews with grantees, extension agents and farmer groups		Qualitative, descriptive analyses. Quantitative analysis. Case based analysis. Contribution Analysis - test progress / contribution steps of ToC and its underlying assumptions between outcome 1 towards impact (presently Diagrams 8 and 9) of the ToC, plus also assumptions at outcome to impact level in D2 the overall impact pathway 1); testing of alternative causal pathways.	
EQ14	Which ICT-enabled extension channels, and combinations of ICT-enabled extension channels, are the most effective in achieving results across the grantees, while taking into account the specific country context?	 What were there differences between channels in uptake, knowledge, try out and adoption of new technologies (in combination with Q13), considering also the link with traditional channels (if not included in main question)? What are the reasons for choice of channels? 	Country data / country reports. Baseline reports. Evaluation reports. Grantees.	Interviews. Field visits. User generated data.	Quantitative analysis of data (combination of multiple data sources and – if expenditure aligned with different ICT channels then cost- performance ratio analysis). Contribution analyses related to the pathways between output 2 and output 1 in Diagram 7 which covers impact pathway 1. Qualitative, descriptive analyses.	HIGH There should be good secondary data for this question and analysis can be triangulated through interviews with grantees.

EQ No	Evaluation question (EQ)	Indicative areas to cover	Information sources	Data collection methods	Data analysis methods	Evaluability
EQ15	What are the intended and unintended, positive and negative outcomes and impacts that can be observed?	 Which of the recorded outcomes were unintended? Were they positive or negative? How did these outcomes come about? 	Country data / country reports. Evaluation reports. IBTCI. Grantees. USAID.	Document review. Field visit. Interviews.	Qualitative, descriptive analyses. Contribution analysis carried out during country visits in relation to EQs 11-14 will cover exploration of these intended, unintended, positive and negative outcomes.	MEDIUM Due to the emphasis IBTCI has placed on learning, plus the opportunity to explore in more detail in country visits.
Sustaina	ability: Has the NA ICT (CF developed sustainable best practices?	Will results that have been achi	eved through the prog	ramme be sustained?	
EQ16	What evidence is there to demonstrate that mechanisms are in place to enable continued delivery of ICT-enabled advisory services after grant funding?	 What Business / sustainability models are used? What is the replicability and scaling- up potential of the ICT-enabled service? Which financial and operational sustainability components are addressed? How effective are PPPs towards financially sustainable content creation and delivery? Which strategic partnerships are closed and why? Were the right partners selected? Are there differences between public sector and private sector solutions? 	Country reports. IBTCI reports. Interviews grantees / service providers.	Document review. Field visit. Interviews.	Qualitative, descriptive analysis. VFM analysis - what are the different contracting mechanisms being used between the contractor and ICT providers Contribution analysis of the different pathways (public, private, NGO) between the activity and output level in Impact Pathway 2 (Diagram 11). Exploration of assumptions related to sustainability between output and outcome level as in Impact Pathway 2 (these are: That there will be a stable supply of relevant messages, and a constant stream of demand from smallholder farmers; and there are increased	HIGH There should be good secondary data for this question and analysis can be triangulated through interviews with grantees

EQ No	Evaluation question (EQ)	Indicative areas to cover	Information sources	Data collection methods	Data analysis methods	Evaluability
					investment in ICT by stakeholders (leverage))	
Further	questions: Lessons and	l linkages				
EQ17	To what extent have lessons learned (and which lessons) been shared and adopted by project partners?	 What lessons have been learned about the effective combination of ICT-enabled agricultural extension channels; the combination of ICT-enabled agricultural extension; channels and traditional extension; other factors needed to support uptake of new seeds and technologies and; sustainable business models? What lessons have been learned by different stakeholders i.e. donors, grantees/sub-grantees, the M&E partner (IBTCI) and service providers? Was lesson sharing of adequate quality, specificity and timeliness for project partners to take action based on the lessons, if relevant to them? To what extent have project partners taken action based on the lessons learned and shared (if so what)? 	IBTCI learning event report. Country reports. USAID. MEL CONTRACTOR. Grantees. Sub-grantees. SSTP.	Interviews. Document review.	Qualitative, descriptive analysis.	MEDIUM Depending on evidence base shared by project partners regarding adoption of lessons learned/action taken based on lessons learned.
EQ18	What effective linkages did the programme make with other similar initiatives/ organisations providing ICT-enabled extension services,	 What global, regional and country level programmes were running before, or at the same time, as the NA ICT CF, that were also supporting ICT-enabled agricultural extension? What overlaps were there between NA ICT CF, SSTP ICT-enabled extension services and mNutrition; 	Country reports. SSTP reports. mNutrition reports. Other donor funded ICT- enabled agricultural extension programmes in the concerned countries.	Document review. Interviews.	Qualitative, descriptive analysis.	LOW to MEDIUM In that it may be very difficult to learn about all the other donor, NGO and government funded ICT-enabled agricultural extension initiatives.

EQ No	Evaluation question (EQ)	Indicative areas to cover	Information sources	Data collection methods	Data analysis methods	Evaluability
	and what lessons did they learn?	 and how were these noted and addressed? Did USAID and/or the grantees connect with these other programmes and if so what shared learning was there and what added value and synergy? Were there similar programmes running at the same time, or prior to, the NA ICT CF in the countries concerned with which no connection was made? If so, why not? 	USAID. Grantees. SSTP.			

Annex 6 - Theory of Change

Elaborated theory of change and its use in the evaluation

This annex contains, first, a detailed explanation of the three impact pathways (IPs) within the programme theory of change (ToC). This is followed by an explanation of how the ToC was used in the evaluation. Third and last, the overall ToC and the elaborated IPs are re-visited in the light of the evaluation findings, with a reassessment of the extent to which each assumption held and the implications of this for the programme and its ToC in terms of validity and accuracy

1.1 Detailed explanation of the three IP's within the programme ToC.

This section (also provided in the inception report of the evaluation) starts with the presentation of four diagrams that sum up the programme ToC and each of the three impact pathways. For impact pathway 1, a separate diagram containing the assumptions was also drawn up. The diagrams are as follow.

- Diagram 1: Overall theory of change;
- Diagram 2: Impact pathway 1 with assumptions;
- Diagram 3: Impact pathway 1 with intermediate steps;
- Diagram 4: Impact pathway 2;
- Diagram 5: Impact pathway 3.

A narrative of the impact pathways follows. The discussion includes the intermediate steps and assumptions that underlie the causal pathways. It is important to note that the theory-based approach to this performance evaluation necessitated the team to elaborate the ToC at such granular level. The objective is that the ToC will provide sufficient guidance to the team in undertaking the contribution analysis.

In the following, the diagrams are colour-coded for easy reference:

- Amber rounded rectangle problem
- Blue box activities
- Purple box outputs
- Dark blue box outcomes
- Teal box impact
- Green box/rounded rectangle intermediate steps
- Amber diamond/pentagon key decisions

Three different arrows are also used:

- Solid arrow direct action/influence
- Dashed arrow (bigger lines) contribution
- Dashed arrow (smaller lines) feedback loop

Diagram 1: Programme theory of change



Diagram 2: Impact pathway 1 with assumptions



Problem: Low adoption rate by farmers of quality inputs and improved technologies

Diagram 3: Impact pathway 1 with intermediate steps





Problem: Low adoption rate by farmers of quality inputs and improved technologies



PROBLEM: ICT enabled extension services are dependent on donor funding and therefore not a sustainable and viable complement to traditional extension services.

Diagram 5: Impact pathway 3



PROBLEM: Lack of robust evidence on the impact of ICT enabled extension services on the uptake of new technologies.

Theory of change narrative

A. Impact pathway 1: From provision of ICT-enabled extension services and improved content to increased agricultural productivity

To address the low adoption rates of farmers of quality inputs and improved technologies (problem in amber box, Diagram 1 Programme ToC), the donors are providing support to produce two outputs:

- (i) **Output 1**: Agronomic extension provided to smallholder farmers via ICT-enabled services;
- (ii) **Output 2**: Improved content adapted to specific needs, context and available ICT channels.

In theory, these outputs are produced sequentially starting from Output 2, since prior to the provision of ICTenabled services, content must first be developed and adapted. However, for content to be truly improved there has to be a feedback loop between these two outputs in that during the provision of services to the farmers, lessons learned regarding the content should feed into its improvement. This is represented by a bidirectional arrow between Outputs 1 and 2 in the overall ToC (Diagram 1).

Production of Output 2



A series of activities is required to produce Output 2. From the bottom of the diagram on the left-hand side, it is demonstrated that grantees begin with the SSTP content (most bottom green box) given that the NA ICT programme was designed to get its contents from SSTP. The content is then developed for the NA ICT programme beneficiaries, and the adaptation and updating process defined. This then leads to the adaptation of content to the local context, which depends on the crops, SSTP technologies being up-scaled, gender of smallholder farmers, and demand for the services. Where the business model denotes partnership with the government, the content will also need to be aligned with government priorities and policies related to inputs and technologies. The adaptation of the format follows considering the language requirements, length of messaging, and ICT channels. An appropriate time schedule for the messaging is defined. The developed content will then be tested and once approved leads directly to Output 2. Non-approval means a repetition of the process of development, adaptation, and testing of the content. The assumption underlying this process is that SSTP and other agricultural programmes work with ICT extension service providers to agree and develop content.

From content (Output 2) to access (Output 1) (and to improved content)

The pathway between Outputs 1 and 2, as Diagram 7 below demonstrates, is a series of actions that are very much a function of the type of ICT channel. Once the content has been developed and adapted, the selection of ICT-enabled services follows. Content is also adapted according to ICT channel and therefore it is not completely that ICT channel follows content adaptation. During the content adaptation process, choice of channel is part of adaptation. For instance, a script for interactive participatory radio is different from the content needed for a SMS.

The ToC qualifies the services into two types: direct services for channels that deliver messages directly through the farmers and, and indirect services for channels which require extension agents for the delivery of the message.

- For direct services such as IVR and SMS/USSD, the process is almost identical: demand for the service is created, farmers gain access to the network, they subscribe and finally receive the messages. Where radio was selected as the desired channel, the process starts with the selection of the community radio station. It is ensured that farmers have radio and can be reached by the coverage. The radio campaign then starts to market the programme and attract listeners. Farmers listen to the radio and call regarding the messages. In some cases, farmers will discuss the programme in listener groups.
- For **indirect services** such as mobile applications and website, the delivery of messages starts with the training of the agents, accessing the service, then providing it to the farmers. For video, extension agents receive training in video delivery so they can present it to the farmers. After watching, it is expected that the farmers will discuss the video.

In both the direct and indirect services, the theory is that once the farmers have received the services (i.e. voice messages, text, video, mobile app, etc.), feedback will be generated either through the extension agents or directly from the farmers to improve the messages.



Diagram 7: Pathway to Output 1

Six assumptions have been identified in three levels in this specific change process:

- At the activities level:
 - ICT-enabled services already exist in six NA ICT countries, in that the grantees will scale existing ICT-based extension services to provide advice on SSTP technologies instead of starting from scratch;

- Challenge fund was the appropriate modality for the programme, which means that the right challenge was put out and the right responses were garnered from potential grantees; and
- There are no problems with connectivity for mobile phone-based technology, implying that farmers within the programme have access to a mobile phone network in order to receive the messages.
- In the translation of activities to Output 1: Grantees and donors shared a common understanding that ICT is able to deliver extension services. The assumption takes it as a given that ICTs work in the delivery of extension services. Hence, the evaluation look at the different types of ICT used to deliver extension messages instead of comparing ICT-enabled extension services with conventional extension services without ICT)
- In the pathway between Outputs 1 and 2:
 - > The ICT-enabled services have been sent to and received by farmers;
 - Farmers have accessed (viewed, listened, read) the information from the ICT-enabled service the absence of demand means the service does not have any value; and
 - > There is sufficient demand from ICT-enabled agricultural service providers in the market.





From access to ICT-enabled extension services (Output 1) to increased utilisation of quality inputs and improved technologies (Outcome 1)

The ToC does not presuppose that farmers will automatically adopt and use quality inputs and technologies after accessing ICT-enabled services. There are many factors that could affect smallholder farmers' decision to use new inputs and technologies. Many of them would be beyond the programme's influence and direct control. This ToC will not be able to cover all these factors and assumptions but will focus on a limited number of pathways that can be tested by the evaluation.

At the heart of the change processes between Output 1 and Outcome 1 as demonstrated in Diagram 8 (amber diamond) is trust. Whether farmers trust the advice or not is decisive in the uptake of the messages. Usually, farmers either validate with other farmers first, and wait to see the results in the next harvest season. In any case, uptake by farmers requires tangible evidence of the effectiveness of inputs and technologies which could emanate either from early adopter farmers or through model, demonstration plots. However, for the farmers to be able to actually buy, then try, the inputs/technologies depends upon their access to finance and the availability of inputs. There may be instances where there is no need for trust to be built, when farmers via ICT-enabled extension services to contribute to the increased use of quality inputs and improved technologies by smallholder farmers, the following assumptions must hold:

- ICT-enabled extension services being provided can lead to increased adoption of quality inputs and improved technologies;
- Men and women smallholder farmers have equal opportunity to make an active decision to use quality inputs and improved technologies;
- Target population are not subject to drought, flooding, diseases, etc. during the course of the intervention;
- The SSTP country teams and other agricultural programmes will provide access to sufficient new technologies (inputs, information, and tools) for interested farmers to use.

From increased utilisation of quality inputs and improved technologies (Outcome 1) to increased agricultural productivity (Impact)

The ultimate result the programme is trying to achieve is "Improved agricultural productivity in targeted food crops by smallholder farmers in the six NA ICT countries". Similar to the results at the outcome level, many factors are beyond the programme's control, most of which this ToC will not be able to explore. The pathway in this ToC includes what the evaluation deems to be most pertinent as regards the NA ICT programme. The key link between the increased use of quality inputs and improved technologies and the broader improvements in agricultural productivity at the country-level is the result of continued utilisation of improved inputs and new technologies. If, in the longer term, results are not evident, it is most likely that farmers will not continue the use of new inputs and technologies. Other donor-funded or government programmes may also make available lower cost or free options to the farmers, such as through inputs subsidies programmes that provide free but low quality inputs and which prevent farmers from continuing the use of improved inputs and new technologies in the long run. On the other hand, continued use will be determined by extension agents' follow up actions and any visible increase in the yield and/or the crops' quality (i.e. improved taste, better resilience to climate extremes). All these will contribute to the long-term adoption of quality inputs and/or improved technologies. However, improved productivity will also depend on the farmers' ability to access inputs/technologies markets and business development services.



Diagram 9: Outcome 1 to impact

B. Impact Pathway 2: From financially sustainable ICT-enabled extension services to increased agricultural productivity

Diagram 10: Activity to output



The second impact pathway relates to the third financially output, **ICT-enabled** sustainable extension services operating and integrated with non-ICT extension service. The full representation for this pathway impact is in Diagram 4 and must accompany reading of this section.

Two activities are required to produce this output:

- Activity 7: Develop sustainability plans to work towards financially sustainable ICT-enabled extension services; and
- Activity 8: Develop partnerships to increase financial sustainability.

These activities in this ToC are sequential as opposed to concurrent, in that before the second of the two activities are undertaken, the first needs to be done. Between these two activities is the crucial step where the grantees produce a sustainability plan that contains a viable partnership strategy which will then allow for the selection of the right partners. Not having a sustainability plan with a partnership strategy could lead to two scenarios: either grantees develop partnerships that will not increase financial sustainability, or no viable partnership is developed. In either instance, ICT-enabled services will still be provided to smallholder farmers but only within the lifetime of the NA ICT programme. Assuming the programme was implemented effectively the programme can still potentially contribute to Outcome 1 *increased use of quality inputs and improved technologies by smallholder farmers*.





Grantees are able to develop partnerships that will increase financial sustainability where they developed a sustainability plan with viable partnership strategy. The assumption is that both the plan and strategy are implemented by the grantees. The pathway between Activity 8 and Output 3 depends on the type of business model the grantees adopt, as Diagram 10 demonstrates (green boxes). Within a public partnership, the government pays for the services and essentially provides a complementary ICT-enabled and traditional extension services. In a private partnership where services are provided by telecommunication companies or agribusinesses, either the providers pay for the services or the agribusinesses pay for them. In a model where the partnership is with an NGO, services would either be donor-funded or provided through a social enterprise. In these two latter partnerships, services can be complemented by traditional extension services provided by the government. Whatever the business model is, the underlying assumption is that grantees want, and aim, to be financially sustainable.

Producing financially sustainable ICT-enabled extension services (Output 3) contributes to the achievement of Outcome 2, increased financially sustainable ICT-enabled services. It is tempting to assume that the relationship between them is automatic, that more

financially sustainable ICT-enabled extension services will logically lead to increased financially sustainable ICTenabled extension services. This relationship however is predicated on three critical assumptions: (i) that there is a constant stream of demand for the services from the smallholder farmers, (ii) there is a stable supply of relevant messages; and (iii) there is an increased investment in ICT-enabled services by stakeholders other than donors.

Diagram 12 additionally demonstrates how achieving increased financially sustainable ICT-enabled services (Outcome 2) contributes to smallholder farmers' increased use of quality inputs and improved technologies (Outcome 1).



Diagram 12: Output 3 to Outcomes 1 and 2

C. Impact Pathway 3: From high quality evidence to increased agricultural productivity

The third impact pathway relates to the fourth output, *development of high quality evidence on cost-effectiveness and impact of ICT-enabled services*. It responds to the lack of robust evidence on the impact of ICT-enabled extension services on the uptake of new technologies, which especially resonates to the programme with its support to cross-ICT channels for delivering agronomic messages. Diagram 5 provides a comprehensive picture of this impact pathway and associated assumptions behind the conversion of one action/result to the next and up to the impact level.

The pathway begins with three activities (blue boxes in Diagram 5)

- Activity 9: Monitoring and learning partner provides technical support to strengthen implementing partners' monitoring capacities
- Activity 10: Monitoring and learning partner works with SSTP to align projects and data collection processes
- Activity 11: Monitoring and learning partner develops an overall Monitoring and Learning framework

The ToC conceives that the first step is to develop a programme monitoring and learning framework (Activity 10). In the process, the monitoring and learning partner should actively coordinate with SSTP to align projects and data collection processes (Activity 11). Both the NA ICT programme and SSTP each have their own unique programme characteristics meaning that instead of only NA ICT aligning unilaterally with SSTP, the latter will also need some adjustments to fully harmonise systems and processes, ensuring that indicators are shared, and timings synchronised to the extent possible. Once the overall programme framework has been established, country-level M&E frameworks shall follow, with the partner providing technical support to strengthen implementing partners' monitoring capacities (Activity 9).

At this level of the ToC, four assumptions have been identified:

- A monitoring and learning partner will work from the start of the programme across six countries
- Alignment process (between NA ICT and SSTP) is bi-directional
- SSTP has effective monitoring, evaluation, and learning system in place
- Relevant areas of weaknesses (of the grantees) were identified

Diagram 13: Pathway between Activities 9-11



For these activities to translate to high quality evidence on effectiveness and impact of ICT-enabled services, the monitoring and learning partner is expected to facilitate the coordination process effectively and also deliver quality support tailored to the specific needs of the grantees (amber shapes in the left-hand side of Diagram 13). Where this is not the case, the evidence that will be produced will be of low quality and relevance, without any feedback loop to improve evidence (pink circle, Diagram 14). Uptake of knowledge and lessons from the technical support is key to the production of high quality of evidence. The assumptions (5, 6, and 7 in Diagram 9) associated with this part of the impact pathway include:

- Grantees have the appropriate expertise and resources (otherwise, uptake will not happen regardless
 of the quality of support delivered).
- An effective monitoring and learning framework at the programme and country levels that track and measure the right things is developed and used from the start.
- Effective feedback loop for data collection and analysis between relevant staff and external stakeholders is in place to improve evidence.



Diagram 14: Activities to Output 4 Pathway

Between the production of evidence (Output 4) and the programme outcomes are the equally important intermediate outcomes related to adoption and utilisation of the evidence (green rounded rectangle, Diagram 10 below) and a general change of behaviour towards pre-conceived notions on what an effective and sustainable ICT-enabled extension services look like. The ToC identifies three intermediate outcomes:

• Donors and grantees adopt knowledge from evidence, change behaviour towards ineffective practices and unsustainable business models, and adapt programme management to improve performance.

- Monitoring and learning partner and grantees are able to communicate evidence produced effectively.
- Service providers (private, public, mixed) understand and are convinced of their role in the sustainability of ICT-enabled services.

The ToC recognises the centrality of the role of communicating evidence effectively in the adoption and utilisation of evidence. The assumption is that external factors (institutional, cultural, and environmental) allow for evidence-based programming, which is often not immediately the case and thus the typically long lag between evidence/knowledge production and uptake.



The final step in the ToC of impact pathway 3 is how evidence-specific results can contribute to the programme's impact. It has been noted earlier how the programme has decreasing influence as it goes up the results chain, specifically from the outcome to the impact levels. Within this ToC, the impact pathway is even more indirect and tenuous given the nature of knowledge and evidence as outputs and their rate of diffusion. Two most relevant intermediate steps were included in the ToC (green rounded rectangle, Diagram 15):

- Future programme design and implementation are informed by evidence.
- Knowledge and evidence spill over to, and applied by other donors and relevant stakeholders operating in ICT-enabled extension services space.

The assumptions were identified with the understanding that technological development moves swiftly and donors' and countries' priorities change overtime. They are as follows:

- Smallholder farmers continue to use ICT-enabled extension services.
- ICT-enabled extension services remain important and relevant to donors and countries in the long-run.

Diagram 16: Outcomes 1 and 2 to Impact within Impact Pathway 3



1.2 How the ToC and its detailed IPs were used for the evaluation

The elaborated ToC discussed in section 1.1 above, provided an analytical framework for the evaluation. A theorybased approach was the most appropriate and feasible approach to meeting the requirements and answering the key evaluation questions specified in the evaluation ToR. As noted in the Inception Report (IR), the ET chose to take a theory-based approach to the evaluation for the following reasons:

- There are multiple assumptions and contextual underpinnings to understand.
- There is a limited evidence base on which the relationship between the ICT-enabled service and improved uptake of technology, and between the latter and improved agricultural productivity in SSA can be built, and a ToC can unpack the complexities surrounding this relationship.
- The changes that occurred amongst small-scale farmers' agricultural practices may or may not have resulted from the NA ICT CF and ruling out alternative explanations to establish contribution is important.
- There may have been unintended consequences, positive and negative, and the explanatory causes for such an unexpected turn in the trajectory of change must be taken account of.
- There are innovative features to the NA ICT CF and a theory-based evaluation allows for the validity of the links supporting the ToC to be tested to see if they hold on the ground and whether other determining or causal factors contribute to or undermine the achievement of the intended objectives.

A theory-based approach provides a robust and tested means to assess how and why the interventions undertaken by the programme are working, by testing the hypotheses about the cause and effect relationships and the assumptions underpinning the change processes.

The ET used the elaborated ToC in several ways, as follows:

a) Finalisation of the EM

The elaborated ToC, including the three detailed IPs, helped inform the finalisation of the EM (see Annex 5).

b) Development of interview checklists

Interview checklists to be used with key stakeholders either during country visits or remotely for those countries not visited, took into account not only the EQs themselves, but also the causal pathways and assumptions behind them, from activity through to outcome levels for each of the three IPs, drawing on the granular detail of the three IPs. Hence, exploration of other potential pathways to the outputs/outcomes, alternative factors and unexpected or negative outcomes was built into appropriate interviews.

c) Country level ToC workshops

In the three countries visited, a full day was dedicated, at the start of the visit, to the exploration of the ToC at country level. The purpose of running the ToC workshop was to help the ET to validate the overall ToC and to create more elaborate country based ToCs owned by the (sub) grantees. Most attention was given to IP1 and for this IP participants (grantees) were invited to explain in detail the steps that they took from activity to output to outcome levels. The programme level IP diagrams were shared with the participants. In all three countries, what

came out of the full day ToC workshops were much more detailed descriptions of the IP, the causal pathway and the assumptions within it. For no country was there a contradiction with the overall ToC, but, rather, a great deal more information was made available to the ET.

d) Country level contribution analysis

The ET explored the explanations given by the grantees for all the steps in the IP through interviews with various stakeholders throughout the rest of their time in country. They tested whether what grantees had explained fitted with the interviewee's own understanding of the steps in the pathway. The ET developed visualisations of these steps which were then shared with the grantees during a half day validation workshop prior to departure. Contradictions between what the ET learned during the in-country ToC workshop and what they learned from other stakeholders, if any, were discussed. Subsequent to the half-day validation workshop, the ET revised the contribution stories for IP1 for each country based on feedback, and again shared these with the grantees for final validation. The process of contribution analysis allowed the ET to test the ToC and the assumptions at country level. The use of both the ToC and contribution analysis helped the ET to assess the extent to which project results at output, outcome and impact level, were due to the project itself or whether other factors were responsible. For all three countries visited, the common finding was that the project made a very strong contribution at output level, medium at outcome level and weak at impact level. This was not surprising given the increasing number of other factors that could affect results at the higher outcome and impact levels. Annex 7 provides the detailed contribution stories for each of the three countries.

e) Assessment of whether the elaborated ToC held true

During the process of analysing and writing up findings, the elaborated ToC, i.e. the details of each IP and the assumptions related to each IP at different levels from activity through to outcome and impact were re-examined. In particular, the ET re-visited each assumption to assess a) whether it was valid and b) whether it was held. A valid assumption is one that is outside of the control of the programme and is relevant to the cause and effect trajectory. In this way the ET was able to assess the strength of the programme as a whole and of the ToC IP. This re-assessment was based on the knowledge gained by the team during the implementation phase. Section 1.4 provides the details of the re-assessment, which are also drawn upon, in brief, in the relevant sections of the main report.
1.3 Re-examination of each IP in the light of evaluation findings

The three matrices below analyse the assumptions within each of the three IPs in Section 1.1 of this annex. The first column lists each assumption. The second assesses whether each assumption is valid¹⁵. The third column examines valid assumptions only, to see if the assumption holds. The fourth column considers the implications for the ToC/IP in the case of the assumption holding or not. The fifth column describes the implications for programme performance in the case of the assumption holding or not. An analysis of the content of each matrix is provided beneath each matrix.

Impact pathway 1

There were thirteen assumptions in this IP: four at activity level, four at activity to output level, four at the output to outcome level and one at the outcome to impact level. The assessment below is informed by review of documents, interviews and country visit findings, including the development of contribution stories for IP1 for three of the six countries (see Annex 7).

Table 1: Assumption assessment matrix for IP1

Assumption	Valid (Y/N)	Assumption held (Y/N)	Implications for the ToC/IP	Implications for Programme Performance
Activity level assumptions				
SSTP and other agricultural programmes work with ICT extension service providers to agree and develop content (Assumption 1)	Y	Y	The assumption was appropriate for the IP, it held and had positive outcomes, which indicates an accurate articulation of the IP/ToC at this level.	That SSTP and other government, private sector and NGOs contributed to relevant content development had a positive impact on Activity 5 and, through that, Output 2, of IP1.
ICT-enabled services already exist in the NA ICT countries (Assumption 2)	Y	Y	The assumption was appropriate for the IP, it held and had positive outcomes, which indicates an accurate articulation of the IP/ToC at this level.	There was some level of ICT-enabled services in all countries, though this varied by channel and country.
Challenge fund was the appropriate modality to deliver the programme (Assumption 3)	N (this is not a valid assumption as it was within the control of the programme)	n/a	n/a	n/a

¹⁵ A valid assumption is one which is outside of the control of the programme, and relevant to the cause and effect trajectory.

There are no problems with connectivity for mobile phone- based technology (Assumption 4)	Y	This partially held	The assumption was appropriate for the IP, it partially held and had positive outcomes where it did hold in terms of mobile based ICT-enabled extension, which indicates an accurate articulation of the IP/ToC at this level.	Connectivity was an issue in some locations, and also for women to some extent. It was also dynamic and evolving. Where there were problems with connectivity, the project took appropriate action to reach farmers, through other ICT-enabled channels, thus impacting positively on Activity 3 and Output 1
Activity to Output level assumption	ons			
Grantees and donors shared a common understanding that ICT is able to deliver extension services (Assumption 5)	Y	Y	The assumption was appropriate for this IP. That the assumption held and had a positive impact on Output 1 indicates an accurate articulation of the ToC for this IP	This assumption holding had a positive impact on Output 1: Agronomic extension provided to smallholder farmers via ICT- enabled services.
The ICT-enabled services have been sent to and received by farmers (Assumption 6)	N (this is not a valid assumption as it was within the control of the CF)	n/a	n/a	n/a
Farmers have accessed (viewed, listened, read) the information from the ICT-enabled service (Assumption 7)	Y	Y	That the assumption held and had a positive impact on Output 1 indicates an accurate articulation of the ToC for this IP	Output 1: Agronomic extension provided to smallholder farmers via ICT-enabled services, was positively affected by this assumption holding.
Sufficient demand from ICT- enabled agricultural extension service providers in the market (Assumption 8)	Y		That the assumption held and had a positive impact on Output 1 indicates an accurate articulation of the ToC for this IP	Output 1: Agronomic extension provided to smallholder farmers via ICT-enabled services was positively affected by this assumption holding.
Output to Outcome level assumpt	ions			
ICT-enabled extension service leads to increased adoption of quality inputs and improved technologies (Assumption 9)	This is not an assumption, but rather a condition that the NA ICT CF	n/a	n/a	n/a

	sought to influence			
Men and women smallholder farmers have equal opportunity to make an active decision to use quality inputs and improved technologies (Assumption 10)	Y	Ν	The causal impact pathways may be different for men and women, as women's access to, and control of, resources is different. In that where this assumption did not hold Outcome 1 was not achieved, the articulation of the ToC/IP is strong.	Outcome 1: Increased use of quality inputs and improved technologies by men and women smallholder farmers, was affected by Assumption 10 not holding, in that women smallholders generally (the situation varied both across and within countries) had lower access to, and control over, resources. Hence, they were disadvantaged in terms of purchasing inputs and equipment, though they could still apply labour-based best practices.
Target populations are not subject to drought, flooding, disease etc during the course of the intervention (Assumption 11)	Y	Ν	This remains a critical and relevant external factor, so it is important to keep this assumption. In that where this assumption did not hold the impact was not achieved, the articulation of the ToC/IP is strong.	The impact: Improved agricultural productivity in targeted food crops by smallholder farmers in six NA ICT countries in Africa, was affected by Assumption 11 not holding, in that In some (within) country locations, erratic rainfall and army worm infestations prevented improved agricultural productivity.
The SSTP country teams and other agricultural programmes will provide access to sufficient new technologies (inputs, information and tools) for interested farmers to use. (Assumption 12)	Y	Partially	This was a valid assumption and still stands. In the cases where the assumption did not hold, this negatively affected Outcome 1, hence the articulation of the ToC/IP is strong.	Outcome 1: Increased use of quality inputs and improved technologies by men and women smallholder farmers, was negatively affected in the instances where Assumption 12 did not hold, due to limited/no availability of particular varieties/technologies.
Outcome to impact level assumpt	ions			
Increased use of quality inputs and improved farming technologies lead to improved productivity (Assumption 13)	Y	Y	Where the assumption was valid, and the outcomes achieved, the articulation of the ToC/IP is strong. However, in addition to Assumption 11 which can affect improved productivity, another assumption that could influence the impact level of this IP would be that smallholders are settled, and not displaced due to conflict and instability.	With regard to the impact: Improved agricultural productivity in targeted food crops by smallholder farmers in 6 NA ICT countries, The NA ICT CF was not measuring productivity but there was indirect as well as anecdotal evidence that due to this assumption holding there was increased agricultural productivity.

At the activity, and activity to output levels, Assumptions 3 and 6 are not valid. The remaining six assumptions were all valid. All six assumptions held, though assumption 4: 'There are no problems with connectivity for mobile phone-based technology', only partially held. Where there was no connectivity then this did impact on farmers

accessing mobile-based technology, but the grantees sought to reach farmers through several ICT-enabled channels, often in combination with traditional extension measures. Outputs 1 and 2 were achieved, and thus the articulated causal pathways and the assumptions behind them were accurate.

At the output to outcome level, of the four assumptions originally identified, three are valid assumptions (Assumptions 10, 11 and 12). Of these three, two did not hold, and one partially held. This resulted in programme performance being affected in the case of Outcome 1: 'Increased use of quality inputs and improved technologies by men and women smallholder farmers' (in relation to Assumptions 10 and 12), and Impact: 'Improved agricultural productivity in targeted food crops by smallholder farmers in 6 NA ICT countries in Africa' (in the case of Assumption 11: 'Target populations are not subject to drought, flooding, disease etc during the course of the intervention').

That the three assumptions either did not hold, or only partially held (in the case of Assumption 12), and the programme performance was affected, show that, in terms of the articulated ToC, Assumptions 10, 11 and 12 were critical to performance and the articulated causal pathways on how the outputs lead to outcomes.

The one assumption at outcome to impact level (Assumption 13) held, based on limited evidence only, and, to that extent, the impact was achieved, hence the articulation of the ToC/IP was strong. However, other external factors could affect whether the use of quality inputs and improved farming technologies lead to improved productivity, for example that smallholders are able to farm in peace and are not displaced by instability or conflict.

Overall, at all levels, from activity to output to outcome to impact levels of IP1, the above analysis affirms the strength of the ToC/IP1.

Impact pathway 2

There were seven assumptions in this IP, with four at the activity level and three at the output to outcome level. The ET noticed that the difference between Output 3: 'Financially sustainable ICT-enabled extension services operating and integrated with non-ICT extension services' and Outcome 3: 'Increased financially sustainable ICT-enabled services to complement other extension services' is not very clear. It could even be argued that Outcome 3 is reached earlier than Output 3 (i.e. Increased financially sustainable ICT-enabled services operating and integrated before financially sustainable ICT-enabled services operating and integrated before financially sustainable ICT-enabled services operating and integrated with non ICT extension services). It would have been better to formulate Output 3 more at the level of "Sustainable business model of ICT-enabled extension services operational". The table below assesses all assumptions and is informed by review of documents, interviews and country visit findings.

Table 2: Assumption assessment matrix for higher level assumptions in IP2

Assumption	Valid (Y/N)	Assumption Held (Y/N)	Implications for the ToC/IP	Implications for Programme Performance
Activity level				
Grantees have a business plan that identifies who pays for the messages which then informs	Y	Partially	That the grantees developed business models with a mixed stream of revenues, allowing for the assumption to partially hold, indicates a medium level articulation of the	Activity 7: Develop sustainability plans to work towards financially sustainable ICT-enabled extension, and subsequently Activity 8: Develop partnerships to increase financial sustainability, were negatively affected by this assumption only partially holding. The assumption only partially

decisions on partnership selection (Assumption 1)			ToC for IP2 in relation to these steps in the causal pathway and Assumption 1. A more appropriate assumption might have been that "Male and female smallholder farmers are unlikely to be willing to pay for messages, so funding of messages will need to be drawn from MNO's, donors or government".	held because the grantees did not develop business plans as such, but created business models with a mixed stream of revenues such as service fee, commission, advertising fee, subscription fee, management.
Effective implementation of NA ICT programme (Assumption 2)	N (this is not a valid assumption as it was within the control of the CF)	n/a	n/a	n/a
Grantees want to be financially sustainable (Assumption 3)	Y	Ν	There was no strong evidence that the grantees wanted to be financially sustainable. Consortium leads in all six countries were NGOs. The assumption did not hold and this negatively affected the outcomes, hence the articulation of the ToC for IP2 was strong.	Activity 8: Develop partnerships to increase financial sustainability, and, subsequently Output 3: Financially sustainable ICT-enabled extension services operating and integrated with non-ICT extension services were not fully achieved. They were negatively affected by this assumption not holding.
Sustainability plan and partnership strategy are implemented (Assumption 4)	N (this is not a valid assumption as it was within the control of the CF)	n/a	n/a	n/a
Output to Outcome level assum	ptions			
Constant stream of demand from smallholder farmers (Assumption 5)	Y	Y	Remains relevant to IP2. That the assumption held, and this was beneficial to programme performance, indicates that the articulation of the ToC for IP2 was strong.	Continued demand from smallholder farmers supported both Outcome 1 (increased use of quality inputs) and Outcome 3 (Increased financially sustainable ICT-enabled services to complement other extension services).

Stable supply of relevant messages (Assumption 6)	Y	Y (during project)	Remains relevant to IP2. The assumption would have been more useful if worded as "Stable <u>and sustained</u> supply of relevant messages".	With no stable supply of relevant messages then Outcome 3: Increased financially sustainable ICT-enabled services, was difficult to meet in the long run, but was an appropriate assumption for the project period.
Increased investment in ICT by stakeholders other than donors. (Assumption 7)	Y	Y	Remains relevant to IP2. That the assumption held, and this was beneficial to programme performance, indicates that the articulation of the ToC for IP2 was strong. However, the following re-wording of the assumption may have been appropriate: "Increased investment in ICT by other stakeholders". The assumption as it stands presently reflects donor interest in ensuring that the private sector, government and civil society invest more, rather than continued donor support.	Outcome 3: Increased financially sustainable ICT-enabled services to complement other extension services, was facilitated by increased investment in ICT by stakeholders other than donors, although this did not yet cover 100% of implementation cost. Findings showed that donor support also continues to make a difference.

For IP2, at the activity to output level just two of the four assumptions were valid. Assumption 1 partially held, the third (assumption 3) did not hold. Therefore Output 3: 'Financially sustainable ICT-enabled extension services operating and integrated with non-ICT extension services' was not fully achieved. The three assumptions from output to outcome held, but with only a partially achieved output programme performance at the activity and output level, was affected negatively for some grantees (in Ghana and Senegal). The anticipated outcome 3 was not fully achieved by all grantees, indicating that the articulation of the ToC for IP2 was medium. Some assumptions were missing. For example, assumptions for different channels (radio channels have a different business model than platforms or video extension). In the long run, post-project, the ET sees a challenge regarding ongoing supply of relevant messages.

Impact pathway 3

There were ten assumptions, three at the activity level, four at the activity to output level, one at the output to outcome level and two at the outcome to impact level. The matrix below assesses each of the assumptions at output to outcome, and outcome to impact levels, and is informed by review of documents, interviews and country visit findings.

Assumption	Valid (Y/N)	Assumption Held (Y/N)	Implications for the ToC/IP	Implications for Programme Performa
Activity level				

Table 3: Assumption assessment matrix for higher level assumptions in IP3

A monitoring and learning partner will work from the start of the programme across six countries. Assumption 1)	N (this is within the control of the CF)	n/a	n/a	n/a
Alignment process (of M&E between NA ICT and SSTP) is bi- directional (Assumption 2)	Y	Y	Assumption 2 held and had a positive effect on programme performance in terms of evidence gathering by grantees. This confirms that the ToC for IP3 was strong	Activities 10 and 11 were positively impacted on by this assumption holding,
SSTP has effective MEL system in place (assumption 3)	Y	Y	Assumption 3 held and had a positive effect on programme performance in terms of evidence gathering by grantees. This confirms that the ToC for IP3 was strong	Activity 11: Monitoring and learning partner works with SSTP to align projects and data collection processes, was more effective due to SSTP having an effective MEL in place
Activity to Output level				
Relevant areas of weaknesses are identified (Assumption 4)	Y	Y	Assumption 4 held and had a positive effect on programme performance in terms of evidence gathering by grantees. This confirms that the ToC for IP3 was strong	Activity 9: MEL partner provides technical support to strengthen implementing partners' monitoring capacities, was positively affected by this assumption holding.
Grantees have the appropriate expertise and resources (Assumption 5)	Y	Partially	This assumption held to different degrees depending on the capacity and prior expertise of the grantees. Where it held this had a positive impact on project performance, in which case the articulation of the ToC for this activity and output in relation to the assumption was strong, but in other cases medium.	Whilst grantee expertise and resources for MEL varied, this assumption relates to Activity 9 (MEL partner provides technical support) and subsequent take up of knowledge and lessons from the MEL provider by the grantees, which did take place. Where there remained insufficient expertise and resources, this meant that achieving Output 4 was affected.
An effective MEL framework at the programme and country levels that tracks and measures the right things is developed and used from the start (Assumption 6)	N (this is within the control of the CF)	n/a	n/a	n/a

Effective feedback loop for data-collection and analysis between relevant staff and external stakeholders is in place to improve evidence (Assumption 7)	Y	Ν	This assumption did not hold in that there was no feedback loop to external stakeholders other than the NA ICT CF donors (particularly USAID and IFAD in the case of Tanzania). That the assumption did not hold, and this had a negative effect on the programme performance, indicates a strong articulation of the ToC for IP3.	That this assumption did not hold had a negative effect on Output 4: High quality evidence on (cost) effectiveness and impact of ICT-enabled service.
Output to Outcome level assumptions				
External factors (institutional, cultural, environmental etc.) allow for evidence-based programming (Assumption 8)	Y	Y	Assumption 8 held and had a positive effect on programme performance in terms of evidence gathering by grantees. This confirms that the ToC for IP3 was strong.	Conducive external factors including wider donor and NGO interest in evidence-based programming meant that MEL contractor and grantees paid sufficient attention to evidence gathering which contributed to Output 3 of IP3: High quality evidence on (cost) effectiveness and impact of ICT-enabled services.
Outcome to impact level assumptions				
Smallholder farmers continue to use ICT-enabled extension services (Assumption 9)	Y	Y	Assumption 9 was a critical assumption which held. This is important as, if there was no continued use, then future design being informed by evidence on ICT-enable extension findings would not be so relevant.	Evaluation findings indicate continued interest in ICT-enabled extension services amongst smallholder farmers in the 6 NA ICT CF countries, which should positively influence how future programme design and implementation is informed by evidence (towards the impact level of IP3).
ICT-enabled extension services remain important and relevant to donors and countries (in the long run) (Assumption 10)	Υ	Y	This assumption held and Outcome 1 (increased use of quality inputs) was achieved (Outcome 2 – increased financially sustainable ICT-enabled services - less so).	Interest amongst donors and grantees in ICT- enabled extension remains strong and this should mean that learning from the NA ICT and other projects should inform future programming and design when seeking to make changes at the impact level (improved agricultural productivity).

One of the three assumptions between activity and output did not hold and one only held partially. This had implications for the achievement of Output 4: "High quality evidence on (cost) effectiveness and impact of ICT-enabled services". High quality evidence was collected at output and outcome level, but not at cost effectiveness and impact level. Output 4 could better have been formulated as Output 4: "High quality evidence on output and outcome of ICT-enabled services". All three assumptions at output to outcome and outcome to impact levels held and outcomes were achieved or anticipated. The proposed revised Output 4 contributed to the achievement of Outcome 1 and Outcome 2. To this extent the articulated ToC for IP3 was strong and the assumptions were critical to performance and the articulated causal pathways on how the outputs lead to outcomes. But in relation to the original Output 4, this was not achieved. If the CF was continuing, then IP3 and its one output (Output 4) would need to be reconsidered, unless the continued project included measures of cost-effectiveness and impact.

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Performance Evaluation of the New Alliance Information and Communication Technologies Agriculture Extension Challenge Fund

Annexes 7-11 February 2019

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Annex 7 - Contribution stories

1. Objectives, Structure and Context

1.1. Objectives

The objectives of carrying out contribution analysis through developing contribution stories in three of the six NA ICT CF countries were as follows:

- To contribute to the overall evidence base being gathered during the evaluation's implementation phase.
- To determine to what extent the NA ICT CF has contributed to the desired outcome
- To Identify whether the IP1 component of the ToC developed in the inception phase was in line with what took place at country level
- To gain greater detail and understanding of the specific country level causal pathway, steps and assumptions at each level of IP1
- To validate the ToC for IP1, or, where not possible, to identify the alternative ToC for IP1 and the evidence of this
- Finally, to gain a more nuanced understanding of the articulation and accuracy of the ToC in relation to IP1, in this way contributing to the overall evaluation's findings through providing more understanding of how the NA ICT CF worked to generate change in relation to IP1.

1.2 Structure of annex

In this annex, Chapter 1 provides an outline of the structure (section 1.2) and context (section 1.3) of the annex and the key to the colours used in the contribution story diagrams or flow charts. Within section 1.3 the programme level ToC is reproduced, followed by the diagram of IP1 specifically, which includes the assumptions agreed upon during the inception phase when developing the programme level ToC in collaboration with the NA ICT CF donors. Finally, in section 1.3, the causal pathway for IP1 is reproduced. Again, this was defined during the process of establishing the programme level ToC in the inception phase.

The causal pathway has four diagrams, two at output level (content development and ICT-enabled extension dissemination), one at output to outcome level, with the outcome being Outcome 1: Increased use of quality inputs and improved technologies by men and women smallholder farmers, and the fourth from outcome to impact level, with the impact being that of the CF as a whole: Improved agricultural productivity in targeted food crops by smallholder farmers in six NA ICT countries in Africa. Each diagram leads into the next. These diagrams were the starting point for the ToC workshops in the three countries visited. They represent the programme level expectations of what the steps and assumptions in the causal pathway between the problem (low adoption rate by farmers of quality inputs and improved technologies) and the anticipated impact. By comparison, the equivalent diagrams available in Chapter 2.1 illustrate what actually took place at country level at each step. The ToC, including IP1, are discussed in detail in Annex 6 on the ToC.

Chapter 2 covers Methodology. Chapters 3-5 provide the contribution stories for each of Ethiopia, Senegal and Tanzania in turn. Each chapter has two sections. The first section provides the articulated causal impact pathways for the different steps in IP1 as learned through carrying out contribution analysis in country. This section relies on visuals in the form of flow charts, as these sum up the detail of what was learned in-country in the most succinct and accurate way. They can be contrasted with those in the programme level IP1 ToC, that is reproduced in section 1.2 below. The visuals examine first the activity to output levels of the IP which include two outputs (content development and dissemination of ICT-enabled extension). They then look at the causal pathway from outputs to outcome, before finally looking at the same for outcome to impact.

The second section in each chapter provides a discussion of the findings regarding the ToC and, in particular, the causal pathway and steps within it for IP1. These are again organised around steps in the pathway i.e. from activity to output, then output to outcome, and finally outcome to impact. The findings include those around the accuracy of the assumptions in the programme level ToC (see Diagram 2 below) and an assessment of the strength of the ToC for each level of the IP. Each chapter ends with a short conclusion. Note that the words "adoption" and "application" (in relation to Outcome 1, and PIRS indicator 1.3) are used interchangeably.

Chapter 6 provides a short overall conclusion drawing from all three contribution stories.

They key to the colours unused in the diagrams is provided in Figure 1 below.

Figure 1: Key to colours in IP1 diagrams that relate to in-country findings



1.3 Context

Throughout the annex, the programme level ToC is referred to often, as is impact pathway 1 (IP1) of the three IPs in particular. To this end, whilst these are available in Annex 6 (ToC) they are reproduced here for ease of reference. The first diagram is the overall ToC defined in the inception phase. The next one shows IP1 including the assumptions related to it. The next series of four diagrams show the detailed causal pathway for IP one, from the activity level through to the impact level.

Figure 2: Programme Theory of Change





Problem: Low adoption rate by farmers of quality inputs and improved technologies

Note that in the Programme ToC the outputs were described in the following order:

- > Output 1: Agronomic extension provided to smallholder farmers via ICT-enabled services
- > Output 2: Improved content adapted to specific needs, context and available ICT channels

However, Output 1 cannot be achieved without being preceded by Output 2, hence the flow chart for content development (step 1 or Output 2) is shown below before that for ICT dissemination (step 2 or Output 1).

Figure 4: Activity > Output level: Step 1 Content Development Process



Figure 5: Step 2: Dissemination of information to farmers in original ToC







Figure 7: Outcome level > Impact: Step 4 Impact – Original programme level



2. Methodology

2.1 Sample and Scope

Contribution stories were developed for each of the three countries visited: Ethiopia, Senegal and Tanzania. Development of contribution stories requires a great deal of interaction with the grantees and sub-grantees, as well as KIIs and FGDs with a range of other stakeholders including SSTP grantees, government, NGO and civil society (cooperative) extension officers; radio broadcasters; researchers; female and male smallholder farmers and others. This level of interaction was not possible for the countries that were not visited by the ET. Annex 4 on evaluation Methodology provides the criteria used for selection of countries to visit and hence explains the country "sample" for contribution analysis.

In terms of scope, the ToC, as also explained in Section 2 of the main report and in Annex 6 on the ToC, has three IPs. IP1 relates to the problem of low adoption rates by farmers of quality input and improved technologies. It involves two outputs: Output 1 being "Agronomic Extension provided to smallholder farmers via ICT-enabled services" and Output 2 (which in fact leads into Output 1) "Improved content adapted to specific needs, context and available channels". These then lead to Outcome 1 (which is also in IP2 and IP3) which is: "Increased use of quality inputs and improved technologies by men and women smallholder farmers".

IP2 concerns the problem that ICT-enabled extension services are dependent on donor funding and therefore not a sustainable and viable complement to traditional extension services. This IP2 leads to an Output 3: "Financially sustainable ICT-enabled extension services operating and integrated with non-ICT extension services". IP2 has two outcomes: Outcome 1 (as above) and Outcome 3: "Increased financially sustainable ICT-enabled services to complement other extension services".

IP3 concerns the lack of robust evidence on the impact of ICT-enabled extension services on the uptake of new technologies. IP3 leads to Output 4: "High quality evidence on (cost) effectiveness and impact of ICT-enabled services". IP3 has two outcomes: Outcome 1 (as in IP1 and 2) and Outcome 2 (as in IP2).

All three IPs lead to the same NA ICT CF Impact: "Improved agricultural productivity in targeted food crops by smallholder farmers in six New Alliance countries in Africa".

Outcome 1 features in all three IPs. It is also fundamental to reaching the impact level. IP1 was the most critical to explore at country level, given the time needed to explore the causal pathway and assumptions behind it for each IP, as well as the wealth of information at country level about content development and ICT-enabled extension dissemination. IP3 was not suited to contribution analysis at country level, as much of this pathway concerned actions of other programme level stakeholders, particularly the MEL contractor. IP2 could have been explored at country level if there had been sufficient time, but, when having to prioritise, the ET considered that exploring IP1 through contribution analysis in the three countries would help the most in gaining more in-depth findings related to the EQs as well as providing the opportunity to test the accuracy of the ToC for this, IP including the assumptions behind it.

2.2 Methods used

As noted in Chapter 2 of the main report, and in Annexes 4 and 6, the evaluation has taken a theory-based approach which included contribution analysis. Annex 4 describes the Theory based approach and thereafter the steps taken for contribution analysis. Annex 6 describes the ToC including all three IPs. In brief, USAID had already developed a Results Framework and DFID had developed a ToC for the NA ICT CF. During the inception phase the ET pulled together a draft ToC from these and other sources and held a 3-hour workshop with the donor group and the MEL contractor to discuss and validate the ToC for the programme as a whole from the donor perspective. From this, the full programme level ToC was developed (see Figure 2 in Chapter 2 of the main report).

The contribution analysis was undertaken for IP1 for each of the countries visited through:

- A full day ToC workshop in each country with grantees (i.e. lead grantee and consortium members/subgrantees)
- Key informant interviews (KIIs) with grantees
- KIIs and focus group discussions (FGDs) with a range of stakeholders
- A de-brief session with the grantees at the end of each country visit

Each are discussed in turn below.

• A full day ToC workshop in each country with grantees.

During each of the ToC workshops, grantees were facilitated in creating their own country ToC for IP 1 step-bystep, based on the following questions:

- Activities > Output
 - 1. What are the key activities & output (for both outputs)?
 - 2. What are the Intermediate steps to achieve the output?
 - 3. Who were the actors?
 - 4. What were your assumptions? Were they correct?
 - 5. What were the challenges?
 - 6. What adaptations to the activities did you make during implementation?
- Output > Outcome
 - 1. What are your definitions of adoption?
 - 2. What were the intermediate steps to reach adoption?
 - 3. What are the key factors to achieve adoption / no adoption?
 - 4. What were the assumptions to achieve adoption? Were they correct?
 - 5. What is your evidence that the outcome was achieved?
 - 6. What were the challenges?
 - 7. What adaptation did you make to the programme?
 - 8. Did you see unintended results?
- Outcome > Impact
 - 1. Do you have evidence of increase productivity through adoption of SSTP technologies? How was this measured? If not, why not?
 - 2. What were the assumptions between outcome and impact?
- Gender
 - 1. How was gender considered during design and implementation?

The country level ToC workshop in each country helped begin the process of interrogating and validating the ToC for IP1 in each country. The ToC workshops helped the ET gain a more detailed and comprehensive understanding of the country programme and in particular the steps taken from activity to outcome/impact level for IP1 from the grantees' perspectives.

• Key informant interviews (KIIs) with grantees

Whilst KII and FGD checklists had already been prepared prior to arriving in the country, these were re-visited in the light of what the ET learned from the grantees about the IP1 causal pathway. Interview checklists for different stakeholder categories were thus fine-turned. The ET first had more in-depth KIIs with the grantees, interviewing the lead grantee and then different consortium member organisations separately.

• Klls and focus group discussions (FGDs) with a range of stakeholders

Following the ToC workshop and KIIs with grantees in each country, the ET drew on the fine-tuned checklists to interview a range of other stakeholders (see section 2.4 for their details). These interviews and FGDS enabled the ET to confirm, question or clarify their understanding of IP1 gained from the ToC workshops and KIIs with grantees.

• A de-brief session with the grantees at the end of each country visit

At the end of each country visit the ET met once again for a half day meeting with the grantees. The purpose of this meeting was to share with the grantees the visualisations (see Chapter 3) of the steps in the IP3 causal pathway. This provided the opportunity for correction (where needed) and validation of the contribution story at country level for IP1. Following the validation, the contribution stories as described in Chapter 3 of this Annex, were drawn up. These represent the detailed country level interpretation of the programme level ToC IP1.

2.3 Data collection, management and analysis

The four steps involved in the development of the contribution story in each country were outlined in section 2.2. Table 1 below lists, in the first row, the stakeholders involved in the ToC workshops (and de-brief meetings) in each country. The following four rows list the interviewees that were sources of information regarding the steps in the causal pathway of IP1.

In all cases, as described in the Methodology Annex, notes were made and information collated against the relevant topic. Towards the end of each field visit, the ET drew up, from what had been confirmed, or further detailed by stakeholders, diagrams that show in visual form the detail of each step. The diagrams were used in the de-brief session. They were later used not only to develop the contribution stories but as a source of evidence against various EQs. The diagrams proved particularly useful in depicting accurately and succinctly the details within each step of the causal pathway and made it easy for participants in the country level de-brief sessions, to note if and where there remained some inaccuracies, for example in terms of placement, flow and linkage arrows including their directions.

Table 1: Participants in country level ToC workshops and other stakeholders interviewed, by step in IP1

IP step	Stakeholders interviewed Heading			
	Ethiopia	Senegal	Tanzania	
ToC workshop and debrief (start and end of country visit)	Country Director, DG Project Director, DG M&E Director, DG Admin and Finance Director, DG M&E Manager, DG Acting Country Representative, FRI Knowledge Management Officer, FRI Vice President of Operations, Awaaz.De	Country Director Gambia, Senegal & Guinea Bissau, UP Graduate student researcher for MEL, TCIMbay (UCSC) Project Officer, TICmbay Director, Jokalante Senior Advisor Agriculture and Livelihoods, PAC West Africa Practical Action Director, SB Conseil	CABI Project Coordinator, CABI Content Manager, CABI ICT officer, FRI Radio volunteer, FRI Acting Project Manager/Officer,	
Activity to Output: Content Development	2 Regional Bureaus of Agriculture and Natural Resources 2 Woreda Bureaus of Agriculture and Natural Resources 4 Development Agents (DA's) Agricultural Transformation Agency (ATA) Wukro ATVET 2 radio stations involved in potassium fertiliser and Aybar BBM campaign SSTP ex country coordinator 2 SSTP grantees (MBI and Aybar BBM)	SSTP grantees (CU-SSTP, Tool baye, Apronstar dealer) Cooperatives (COPI, COORAD and FAPAL) 3 radio stations involved in seeds campaign, khetakh and Apronstar	3 scientists at agricultural research institutes (covering beans, cassava and maize) 2 District Agricultural Irrigation and Cooperatives Officers in the Southern Highlands 3 private sector seed companies 3 radio stations involved in cassava, potatoes and maize campaigns SSTP ex country coordinator SSTP grantee (SAGCOT)	

Activity to Output: ICT dissemination	2 Regional Bureaus of Agriculture and Natural Resources 2 Woreda Bureaus of Agriculture and Natural Resources 4 DA's ATA Wukro ATVET 2 radio stations involved in potassium fertiliser and Aybar BBM campaign SSTP ex country coordinator 2 SSTP grantees (MBI and Aybar BBM) Farmer groups in Amhara and Tigray	SSTP grantees (CU-SSTP, Toolbaye, Apronstar dealer) Cooperatives (COPI, COORAD and FAPAL) 3 radio stations involved in seeds campaign, khetakh and Apronstar 2 farmer focus groups in Fogny, Casamance and Mow, Matam	3 scientists at agricultural research institutes (covering beans, cassava and maize) 2 District Agricultural Irrigation and Cooperatives Officers in the Southern Highlands 3 private sector seed companies 3 radio stations involved in cassava, potatoes and maize campaigns SSTP ex country coordinator SSTP grantee (SAGCOT) The farmer group concerned with potatoes
Output to Outcome Pathways to adoption	2 Regional Bureaus of Agriculture and Natural Resources 2 Woreda Bureaus of Agriculture and Natural Resources 4 DA's ATA 2 radio stations involved in potassium fertiliser and Aybar BBM campaign SSTP ex country coordinator 2 SSTP grantees (MBI and Aybar BBM) Farmer groups in Amhara and Tigray	SSTP grantees (CU-SSTP, Toolbaye, Apronstar dealer) Cooperatives (COPI, COORAD and FAPAL) 3 radio stations involved in seeds campaign, khetakh and Apronstar 2 farmer focus groups in Fogny and Mow	3 scientists at agricultural research institutes (covering beans, cassava and maize) 2 District Agricultural Irrigation and Cooperatives Officers in the Southern Highlands 3 private sector seed companies 3 radio stations involved in cassava, potatoes and maize campaigns SSTP ex country coordinator SSTP grantee (SAGCOT) FGDs with male and female smallholders from three villages (Utengule and Lwangu villages in Njombe, and Simambwe village in Mbeya, all of which are in the Southern Highlands
Outcome to Impact Adoption to improved productivity	2 Regional Bureaus of Agriculture 2 Woreda Bureaus of Agriculture 4 DA's 2 radio stations involved in potassium fertiliser and Aybar BBM campaign 2 SSTP grantees (MBI and Aybar BBM) FG with farmers in Amhara and Tigray	SSTP grantees (CU-SSTP, Toolbaye, Apronstar dealer) Cooperatives (COPI, COORAD and FAPAL) 3 radio stations involved in seeds campaign, khetakh and Apronstar 2 farmer focus groups in Fogny and Mow	3 scientists at agricultural research institutes (covering beans, cassava and maize) 2 District Agricultural Irrigation and Cooperatives Officers in the Southern Highlands 3 private sector seed companies SSTP grantee (SAGCOT) FGDs with male and female smallholders from three villages

2.4 Limitations and research challenges

Once the decision was made to apply contribution analysis to just one IP, there were no limitations or research challenges as such. Due to advance communication, the grantees were all available for the full day ToC workshop, as well as separate KIIs and a half-day de-brief workshop. As checklists for each stakeholder category had already been developed in advance of the visits, there was time to tailor these further in-country, based on what the ET learned from each ToC workshop. A good range of stakeholders were interviewed, which allowed for strong triangulation. The ET was open to feedback from the grantees during the de-brief workshop in each country and shared the subsequent of the contribution stories with the grantees for their final validation.

3. Contribution Story: Ethiopia

3.1 Articulated Causal Impact Pathways

The figures in this section sum up in a visual way what was actually done by the grantees in Ethiopia at each step in IP1, from activity to output (2 steps), output to outcome and, finally, outcome to impact levels. The diagrams capture the detailed steps, including their flow and linkages between them. At both the activity to output, and output to outcome levels, the grantees distinguished between ICT channels, hence separate diagrams are provided for each. These can be compared with the programme level steps anticipated for IP1, which are in Section 1.2.

3.1.1 Activity > Output level: Step 1 Content Development Process

At the country level, content development varied by channel, with that for each of video, radio and IVR content being different. The following three figures show each of these in turn.



Figure 8: Step 1 Video Content Development Process - Ethiopia





Figure 10: Step 1 and step 2 IVR Content and dissemination process - Ethiopia



3.1.2 Activity > Output level: Step 2 Information Dissemination Process

In Ethiopia a distinction was made between video and radio dissemination steps, as per the two diagrams below.

Figure 11: Step 2 Video Dissemination process - Ethiopia



Radio dissemination campaign



3.1.3 Output > Outcome level: Step 3 Increased use of technologies

Just as for Step 2 above, the grantees in Ethiopia identified two causal pathways for the output to outcome level (leading to adoption or application of technologies), one for video-based adoption and one for radio-based adoption, as indicated in the two figures below. Both diagrams show how adoption is verified and monitored.

Figure 13: Step 3 Video-based adoption - Ethiopia





3.1.4 Outcome level > Impact: Step 4 Improved Productivity

The figure below depicts how the Ethiopian grantees understood the steps from outcome to impact level. This diagram differs slightly to the one in the overall IP1 causal pathway included in section 1.2.

Figure 15: Step 4 Impact - Ethiopia



3.2 Findings

3.2.1 Activity > Output level: Step 1 Content Development Process

Grantees and other stakeholders in Ethiopia distinguished between video, radio and IVR content development as indicated in Figures 8-10 in section 3.1. Giving grantees the opportunity to identify and describe each of these in the ToC workshop, then having the opportunity to confirm and triangulate these findings with the grantees and other stakeholders across the country, helped the ET gain a much more nuanced and detailed understanding of how content development was actually done in Ethiopia. Although there is much greater granularity in these figures than in that for the programme level IP step (see Figure 4 in Section 1.2) they are aligned. Content development involved appropriate stakeholder contributions, including those of farmers, had adequate feedback, validation and certification mechanisms, and allowed for alignment between the ICT (video, radio, IVR) channels. The evidence for the anticipated content development steps was strong and no alternative pathways were identified beyond those depicted in Figures 8-10.

With regard to assumptions, the grantees commented on the assumptions related to this step in the programme level Toc (see Figure 3 in Section 1.2) and also shared and subsequently discussed their own assumptions. The grantees agreed that all three assumptions related to this step in the programme level diagram were more or less were true.

- Assumption 1: SSTP and other agricultural programmes work with ICT extension service providers to agree and develop content True SSTP grantees participated in content development.
- Assumption 2: ICT-enabled extension services already exist in the country True though the route they had wanted to use for IVR messaging (an "E1" line) was not available so the services were re-designed by Awaaz.de (a consortium member/sub-grantee).
- Assumption 4:¹ No problems with the connectivity for mobile phone based technology Partly True this is an issue in the rural areas. But this does not affect the other channels (radio and video).

Generally, therefore, the programme level assumptions related to Step 1 held in Ethiopia.

The grantees also had some assumptions regarding content development (some of which overlap with Step 2, dissemination). These were:

- Updated packages of practices (POPs) are already available. This was the case, the grantees drew on these in the content development process. (Note, this assumption is similar to programme level IP1 assumption 1 discussed above).
- Partners are cooperative: this was partially true though not all stakeholders are available for all content development sessions (This assumption also relates to the programme level IP1 assumption 1).
- Broadcasters are interested to disseminate agricultural relation information. This was the case.
- The selected technology is tested, proven and available. This was partly true. Not all technologies were already fully tested (one that was not was potassium fertilise). Also the grantees noted that whilst the assumption was largely met, the commitment from the grantees (SSTP) is to produce a particular variety but farmers may demand something else.

Considering the above, the assumptions did, on the whole, hold true. If a ToC for IP1 with assumptions had been developed from the start in Ethiopia, additional assumptions could have been included drawing on the grantee's own assumptions bulleted above.

Given the correlation (albeit with much greater granularity) between the content development steps in the causal pathway in Ethiopia with the programme level equivalent, and given that most assumptions held, it is concluded that the strength of evidence on the contribution of the NA ICT CF to planned outputs at this step of IP1 was strong.

3.2.2 Activity > Output level: Step 2 Information Dissemination Process

Three of the six channels in the programme level IP1 diagram for information dissemination were used in Ethiopia: Video, Radio & IVR. During the ToC workshop grantees distinguished between the steps taken in video and radio

dissemination (see Figures 11 and 12 in Section 2.1). As for Step 1, the causal pathways for each of these are much more detailed than in the programme level version (Figure 5, section 1.2), but they do not contradict the latter. Whilst there was low alignment / collaboration between video and radio in the dissemination phase, the content was aligned.

Using the ToC approach and having a full day for the ToC workshop to allow for grantees to really explore and describe the specificities of each step, provided a depth of learning to the ET that would not have been gained so quickly otherwise, and which informed the finalisation of interview checklists with other stakeholders throughout the country visit. The box below includes the key findings related to each channel, just as an example of what was learned in relation to this step:

Box 1: Findings regarding the information dissemination process via video, radio and IVR in Ethiopia

Key findings regarding the video channel:

- There is scope for emerging topics (such as fall army worm), to be included in a timely manner (and reach a larger group of farmers than pilot groups).
- There is a systematic process of M&E of each video dissemination at woreda and kebele level. This leads to a systematic measurement of dissemination and adoption of new technologies and practices under farmers including cross checks by third party bodies as well as Digital Green
- The video channel has an advantage over the radio because seeing is more powerful than listening and DA's are trained in video dissemination and could answer questions & answers. After viewing a video, farmers commit to whether they will adopt, and that commitment is verified by the group leader and DA.

Key findings regarding the radio channel:

- Evidence gathered confirmed the participatory nature of the campaigns.
- There is regular systematic monitoring of both the technical content and the quality of the radio broadcasts, with a feedback mechanism to ensure corrections are made when needed.
- M&E procedures with baseline, midterm and end line surveys do lead to systematic recording of results of a campaign
- The number of people reached through radio is higher than through video, but less targeted

Key findings regarding the IVR channel:

- IVR could strengthen the video message if timely
- Local content of ATA 8028 (IVR) in selected woreda's is appreciated by farmers that use it
- Use of 8028 is low amongst farmers > barrier to start due to complication of registration
- Lack of own E1 line made IVR solutions more expensive and made acceptance complicated the acceptance (only broadcasting and not 2-way communication)

With regard to assumptions, the grantees commented on those in the IP2 programme level figure (see Figure 3 in section 1.2) and also considered their own assumptions. The grantees agreed that all four assumptions related to this step in the programme level diagram, were true. These were:

- Assumption 5: Grantees and donors shared a common understanding that ICT is able to deliver extension services.
- Assumption 6: The ICT-enabled services have been sent to and received by farmers.
- Assumption 7: Farmers have accessed (viewed, listened, read) the information from ICT-enabled services.
- Assumption 8: Sufficient demand from ICT-enabled services provided in the market grantees had the following assumptions related to information dissemination:
 - > Availability of development groups in selected Kebeles. This assumption was true (it held)
 - PICO projectors are available in country. This is the case, but more are needed and these are difficult to find at the moment
 - > Trained DA's available in selected Kebeles: True
 - > Need for information on that specific issue by the farmers in selected Kebeles: True
 - SSTP Technology availability/applicability in selected Kebeles: Not always the case e.g. Aybar BBM or potassium fertiliser (therefore this assumption did not hold in all cases)

These assumptions are appropriate and are specific to the Ethiopian context. They do not contradict the overall ToC IP1 assumptions 5-8 above for this step. All the programme level assumptions for this step held in the case of Ethiopia, and most of their own assumptions also held. Two of the grantees' assumptions did not hold. If they had been included in an Ethiopia specific ToC for IP1 then they may have provided additional guidance to the programme planning and implementation process.

Overall, the strength of the evidence was high, there was a lack of evidence for alternative pathways to information dissemination, there was alignment with the programme level Step 2, and the country level specificity provides greater depth to the programme level Toc IP1 information dissemination step. As for step 1, Given the correlation (albeit, again, with much greater granularity) between information dissemination steps (Step 2) in the causal pathway in Ethiopia with the programme level equivalent, and given that most assumptions held, it is concluded that the strength of evidence on the contribution of the NA ICT CF to planned outputs at this step of IP1 was strong.

3.2.3 Output > Outcome level: Step 3 Increased use of technologies

The country level causal pathways to adoption/non-adoption are in line with the programme level causal pathway. As for steps 1 and 2, there is much more detail in the country level figures (see Figures 13 and 14) than in the programme level figure (Figure 6 in section 1.2). The grantees, further, looked at the pathway to adoption (or application) for each of video and then radio based extension. The grantees also described how this adoption was verified and measured. As for other steps. Having time for the grantees to really consider and describe this important step in the IP, and then having time in-country to validate and triangulate this with other stakeholders, was greatly useful to the ET. It increased the depth of their understanding right at the start of the country visit and helped them tailor the interview checklists for interviews with other stakeholders. Key findings were that, whilst alternative pathways were not evident, information dissemination is not the only factor that contributes to adoption. The box below includes some specific findings that were useful to the ET.

Box 2: Findings regarding adoption based on radio and video based extension

- Adoption levels of most technologies are good (overall 20%, video 44% and radio 16%)
- Evidence that the video-enabled extension enhances and extends reach of traditional extension high
- With vide-based extension, farmers express willingness to apply, which is checked by lead farmer and DA. This increases adoption rate
- Farmers usually first apply the new technology and practices on a small part of their farm, then, if satisfied, may scale up in future.
- Constraints to adoption include lack of availability of the technology, low quality of seeds, low sales price, high input prices, and lack of capital (influencing purchase of inputs and/or labour)
- Reasons for adoption as a result of radio-based extension included availability and affordability of the technology, and being convinced about the technology farmers are very sceptical, they may want to see the result of the technology on other people's plots. And they need to be well informed.
- Reasons for adopting as a result of video-based extension included understanding of the "non-negotiable" practices, capacity to do them, availability and affordability of the technology, alignment of message with the cropping calendar and support from DAs/lead farmers.

Grantees considered the programme level assumptions related to the output to outcome step (Assumptions 10-13) and had the following responses:

- Assumption 10: Men and women small holder farmers have equal opportunity to make an active decision to
 use quality inputs and improved technologies. This they did not agree with, it did not hold, but they addressed
 it by giving good attention to how to involve and reach women.
- Assumption 11: Target population are not subject to drought, flooding, disease etc. during the course of the intervention. This assumption also was not the case; drought was a fact during the project.
- Assumption 12: SSTP country teams and other agricultural programmes will provide access to sufficient new technologies (input, information and tools) for interested farmers to use. This was the case, but there were not always enough supplies.

- Assumption 13: ICT-enabled extension service leads to increased adoption of quality inputs and improved technologies. Grantees agreed with this but stated that it is certainly not the only factor. Grantees also had their own assumptions about the pathway to adoption, as follows:
 - The technology is available. This was seen as partly true (some technologies not available, seeds also not always). This equates to Assumption 12 in the generic IP1.
 - > Farmers will be interested on the technology. This assumption held, farmers were interested.
 - The promoted technology /practice is in alignment with the farmer's demand. This was not always the case, for instance farmers were not convinced by, or interested in, using potassium fertiliser
 - The technology is affordable, accessible and easy to apply/use. This was partly true, not always affordable for all farmers
 - > The technology/practice is timely (within the cropping calendar). This was also just partly true. Some campaigns were not in time.

Assumptions at country level are relevant and do not contradict those developed in relation to the programme level ToC at this level. Given that where the programme level and country specific assumptions did not hold, this had a negative impact on the project outcome, the articulation of the ToC for IP1 between output to outcome levels was relatively strong. The country level findings confirmed the anticipated causal pathway for this step from output to outcome (i.e. from receiving information to adoption/non-adoption). Alternative pathways were not in evidence, but, whilst information dissemination contributes to adoption, is not the only factor. Figures 13 and 14, which depict the understanding gained in country of how adoption is reached based on video and radio based extension, indicate that farmers need to understand the technology, be willing to apply it, then it has to be both affordable and available. Thus, overall, the strength of evidence regarding the contribution of the programme to the outcome is medium rather than strong.

3.2.4 Outcome level > Impact: Step 4 Improved Productivity

Figure 15 in section 2.1, which is the country level understanding of the output to impact step, differs slightly from figure 7 in section 1.2 which was the programme level IP1 depiction of this step. The country level diagram indicates that access to markets, continued use of new technologies will lead to improved opportunities and income, all this based on increased production. The programme level diagram shows that adoption and access to markets and business development services will lead to increased productivity. These are different ways of depicting the same thing. These are findings from the country level:

- At the outcome to impact level of the IP1 causal pathway, more external factors come into play and contribution is harder to assess.
- Some interviews regarding some crops identified alternative pathways between adoption and increased production, and between increased production and increased income.
- Key external factors relate to availability of seeds, access to, and the state of, the market, and the security situation.

On assumption 13 in the programme level ToC for IP1: Increased use of quality inputs and improved farming technologies lead to improved productivity. They commented that although this might be true they had no evidence based on data. There were not indicators to measure yield/productivity and grantees were not required to measure this. It was noted that it is very costly to measure indicators at this level, and so this should be built in at the design stage. Overall, the contribution story at the outcome to impact level of IP1 is not as strong as at the activity to output, and output to outcome levels, as many factors come into play at this level.

3.3 Conclusion from the Ethiopia contribution story

Taking a ToC approach allowed for much greater elucidation by Digital Integration of the detailed steps from activity through to outcome and the assumptions behind these for IP1 of the ToC. It also allowed for verification and clarification of these steps during subsequent stakeholder interviews. It is concluded that in the case of the Ethiopia IP1, the intervention was implemented as planned and the predicted ToC and expected results occurred. There were no rival explanations for the steps in the pathway. To this end the contribution story is assessed as strong, with evidence that the NA ICT CF makes a positive contribution to change at output to outcome level, but less at the outcome to impact level, where external factors had more influence.

4. Contribution Story: Senegal

4.1. Articulated Causal Impact Pathways

The figures in this section sum up in a visual way what was actually done by the grantees in Senegal at each step in IP1, from activity to output (2 steps), output to outcome and, finally, outcome to impact levels. The diagrams show the detailed steps including their flow and linkages between them. These can be compared with the programme level steps anticipated for IP1 which are in Section 1.2.

4.1.1. Activity > Output level: Step 1 Content Development Process

At the country level, content was developed for each campaign with consortium members and SSTP grantees. In the Campaign Plan the key messages for certified seeds or other selected SSTP technologies like Apronstar or khetakh were defined, and the regions/districts for the campaign selected. This plan is validated by SSTP grantees to check if key messages are still in line with what SSTP grantees want to communicate. The localised plans of all radio stations form the final campaign plan.





4.1.2. Activity > Output level: Step 2 Information Dissemination Process

Senegal developed dissemination steps in their campaign plan, including a feedback mechanism as per the two diagrams below.

Figure 17: Step 2 Running a campaign - Senegal



Figure 18: Step 2 Feedback loop of a campaign - Senegal



4.1.3. Output > Outcome level: Step 3 Increased use of technologies

Senegal identified one pathway to application.

Figure 19: Step 3 Pathways to adoption/non-adoption (output to outcome) - Senegal



4.1.4. Outcome level > Impact: Step 4 Improved Productivity

The figure below depicts how the Senegal grantees understood the steps from outcome to impact level. This diagram is similar to the one in the overall IP1 causal pathway included in section 1.2.

Figure 20: Step 4 Outcome to Impact - Senegal



4.2. Findings

4.2.1. Activity > Output level: Step 1 Content Development Process

Grantees and other stakeholders in Senegal work together to develop a campaign plan as indicated in Figures 16 in section 4.1. Giving grantees the opportunity to identify and describe each of these steps in the ToC workshop, then having the opportunity to confirm and triangulate these findings with the grantees and other stakeholders across the country, helped the ET gain a much more nuanced and detailed understanding of how content development was actually done in Senegal. Although there is much greater granularity in these figures than in that for the programme level IP step (see Figure 4 in Section 1.2) they are aligned. Content development involved that appropriate stakeholder contributions, including those of farmers, had adequate feedback and validation. There is a difference with the programme level IP steps. TICmbay does not seek government approval for content. This is not required by the Government of Senegal. From content tested the stakeholders themselves approve the content in the final campaign plan. The evidence in the field for the anticipated content development steps was strong and no alternative pathways were identified beyond those depicted in Figures 16.

With regard to assumptions, the grantees commented on the assumptions related to this step in the programme level Toc (see Figure 3 in Section 1.2) and also shared and subsequently discussed their own assumptions. The grantees agreed that all three assumptions related to this step in the programme level diagram, were true.

- Assumption 1: SSTP and other agricultural programmes work with ICT extension service providers to agree and develop content – True.
- Assumption 2: ICT-enabled extension services already exist in the country True. Orange had a platform Emerginov with voice in Senegal that TICmBay did not use due to the high fee Orange demanded. That is why SB Conseil build on top of Emerginov their own TICmbay platform, hosted within the office, still on the Orange backbone with a T2 line.
- Assumption 4:² No problems with the connectivity for mobile phone based technology True.

The grantees also had some assumptions regarding content development (some of which overlap with Step 2, dissemination). These were:

- Radio stations could develop content False. Radio stations needed more capacity building than anticipated, addressed by central content development by SSTP grantees and TICmbay and localization of the central content in a training workshop for radio stations and cooperatives facilitated by Jokalante.
- Trusted voice in local language by radio stations would reach farmers True.
- Farmers would call in to radio station > contacts used to build up the mAlert database False, both for radio stations due to their having income generating numbers for call in with a paid number and farmers who were willing to pay for being live on radio. They did not like talking to a machine.
- Cooperatives would have a database of members False. They did not have, addressed by campaign with tablet App to register door-to-door Resopp members.
- Cooperatives would want to communicate with members Partly false. They had to be sensitised, because
 members did have memberships for life and came to the cooperative to buy inputs. Cooperatives did not have
 a strong desire to communicate with all their members.

Considering the above, the assumptions did, on the whole, hold true. If a ToC for IP1 with assumptions had been developed from the start in Senegal, additional assumptions could have been included drawing on the grantee's own assumptions bulleted above. It allows for alignment between ICT channels in terms of content development (radio and IVR and mAlert as add on to the other channels). Some TICmbay assumptions during design for Step 1 were false, but well addressed with appropriate adjustments in activities.

Given the correlation (albeit with much greater granularity) between the content development steps in the causal pathway in Senegal with the programme level equivalent, and given that most assumptions held, it is concluded that the strength of evidence on the contribution of the NA ICT CF to planned outputs at this step of IP1 was strong.

² Assumption 3 was not valid

4.2.2. Activity > Output level: Step 2 Information Dissemination Process

Two of the six channels in the programme level IP1 diagram for information dissemination were used in Senegal: Radio and IVR; YouTalk (call in) and mAlert (voice messages). During the ToC workshop, grantees developed two diagrams (dissemination and feedback, see Figures 17 and 18 in Section 4.1.2). As for Step 1, the causal pathways for each of these are much more detailed than in the programme level version (Figure 5, section 1.2), but they do not contradict the latter. There was alignment/collaboration between radio and IVR in the dissemination phase.

Assumptions are specific to the two channels and do not contradict the overall programme ToC IP1.

Box 3: Findings regarding the information dissemination process via video, radio and IVR in Senegal

Key findings regarding the radio channel:

- Evidence gathered confirmed the anticipated campaign to market SSTP technologies. Radio programmes are more focused on disseminating the message and record farmer voices than a very participative nature of the campaigns.
- There is regular systematic monitoring of both the technical content and the quality of the radio broadcasts, with a feedback mechanism to ensure corrections are made when needed.
- M&E procedures with midterm and end line surveys do lead to systematic recording of results of a campaign.
- Radio: strong consensus on men and women's access, strong women listenership and in places there is access to several radio stations.

Key findings regarding the IVR channel (YouTalk and mAlert):

- Facts and figures: 65,000 farmer profiles, 34 organisations, 19 radio stations, over 82,000 mAlerts sent.
- mAlerts: More used and appreciated by men, women seemed to have difficulties to access the service
- You Talk low use, especially amongst women.
- Underestimation of the farmers need for training in how to access and use You Talk and mAlerts although addressed on radio.
- Radio stations were reluctant to use YouTalk and did not promote use (they had other income generating call lines).
- Due to farmer difficulties in using YouTalk and mAlert, the access to the information was facilitated by local informal extension agents acting as multipliers of information dissemination, with people calling them directly.

With regard to assumptions, the grantees commented on those in the IP2 programme level figure (see Figure 3 in section 1.2) and also considered their own assumptions. The grantees agreed that all four assumptions related to this step in the programme level diagram, were true. These were:

- Assumption 5: Grantees and donors shared a common understanding that ICT is able to deliver extension services
- Assumption 6: The ICT-enabled services have been sent to and received by farmers
- Assumption 7: Farmers have accessed (viewed, listened, read) the information from ICT-enabled services
- Assumption 8: Sufficient demand from ICT-enabled services provided in the market grantees had two assumptions related to information dissemination:
- Farmer cooperatives interested to have better membership information: This was partially false. Awareness raising was needed. Cooperatives did not have digital farmer profiles. The grantees had to collect their own farmer profiles (partly face-to-face and partly with a flash survey).
- Weather conditions were normal: False. In 2015 and 2016 rains came, seeds germinated and then the rain stopped and there was no harvest. Matam (one of the areas that NA ICT was operating) was a food support region.

These assumptions are appropriate and are specific to the Senegal context. They do not contradict the overall ToC IP1 assumptions 5-8 above for this step. All the programme level assumptions for this step held in the case of Senegal. Their own assumptions did not hold but were well addressed. There is clear alignment/collaboration between radio and IVR (YouTalk) in the design and dissemination phase.
Overall, the strength of the evidence was high, there was a lack of evidence for alternative pathways to information dissemination, there was alignment with the programme level Step 2, and the country level specificity provides greater depth to the programme level Toc IP1 information dissemination step. As for step 1, given the correlation (albeit, again, with much greater granularity) between information dissemination steps (Step 2) in the causal pathway in Senegal with the programme level equivalent, and given that most assumptions held, it is concluded that the strength of evidence on the contribution of the NA ICT CF to planned outputs at this step of IP1 was strong.

4.2.3. Output > Outcome level: Step 3 Increased use of technologies

The country level causal pathways to adoption/non-adoption are in line with the programme level causal pathway. As for steps 1 and 2, there is much more detail in the country level figures (see Figures 13 and 14) that in the programme level figure (Figure 6 in section 1.2). The grantees looked at the pathway to adoption (or application) and grantees described how this adoption was verified and measured. As for other steps, having time for the grantees to really consider and describe this important step in the IP, and then having time in-country to validate and triangulate this with other stakeholders, was greatly useful to the ET. It increased the depth of their understanding right at the start of the country visit and helped them tailor the interview checklists for interviews with other stakeholders. Key findings were that, whilst alternative pathways were not evident, information dissemination is not the only factor that contributes to adoption. The box below includes some specific findings that were useful to the ET.

Box 4: Findings regarding adoption based on radio and IVR-based extension

- Access to information contributes to adoption but is not the only factor that determines adoption
- Trust is very important in Senegal: local trusted voices used to gain trust farmers worked > part of TICmbay strategy from start
- Radio stations gave farmers a voice to share experiences and provide feedback of service > enhancing farmer – to – farmer knowledge transfer
- Adoption is slow: channels complement traditional extension sources in reinforcing the message
- Jokalante increased demand for certified seeds and Apronstar through its promotions
- Adoption rates vary between years, revised targets were met
- Barriers to apply improved certified seeds: seed availability (particularly timing), farmers preference to wait for subsidized seed, quality of seed, type of variety, high cost & risk involved
- The government system to buy certified seed and distribute that to farmers (usually diluted with lower quality seeds) is distorting the seed market. Farmers wait for free seeds, certified seed producers sell their seeds to government and not to the market leading to a stall: farmers wait for free seeds government, see that it is not enough or of low quality, start to buy on market but notice that seeds are not available, result it is planted too late
- Certified seed system is a complex process with many factors contributing towards adoption, dissemination of information is only one contributing factor

Grantees considered the programme level assumptions related to the output to outcome step (Assumptions 10-13) and had the following responses:

- Assumption 10: Men and women small holder farmers have equal opportunity to make an active decision to
 use quality inputs and improved technologies. Partly false: women and men seemed to have reasonable equal
 access, but women have less access to land, and are only responsible for some crops like rice in Cassamance
 and vegetables including cowpeas.
- Assumption 11: Target population are not subject to drought, flooding, disease etc. during the course of the intervention. This was false. There were droughts and insects were devastating for seeds before the SSTP supported seed treatment, Apronstar, was made available.
- Assumption 12: SSTP country teams and other agricultural programmes will provide access to sufficient new technologies (input, information and tools) for interested farmers to use. This was false, SSTP was not yet ready to scale and when it was it was abruptly stopped.
- Assumption 13: ICT-enabled extension service leads to increased adoption of quality inputs and improved technologies. Grantees partly agreed, it contributes, but no evidence to determine percentage.

Grantees also had their own assumptions about the pathway to adoption, as follows:

- The technology is available. False: SSTP technologies were not yet ready to bring to scale, so not everywhere were improved seeds available.
- Farmers will be interested on the technology: True.
- Farmers are willing to buy improved seeds: True. Usually they were waiting until they were clear about the amount they would receive from government and the quality of it. After that they are willing to buy good quality seeds.
- The technology is affordable, accessible and easy to apply/use. Partly true: Apronstar was affordable, accessible and easy to use, for improved seeds this was not always the case.
- The technology/practice is timely (within the cropping calendar). There were sometimes delays due to government distortions.

Assumptions at country level are relevant but one did not hold and two others only partly held (see above). The country level causal pathways to adoption/non-adoption are in line with the programme level causal pathway, but evidence is weak regarding full contribution. This was expected, because other external factors also highly contribute to adoption/non-adoption. Given that, where the programme level and country specific assumptions did not hold, this had a negative impact on the project outcome, the articulation of the ToC for IP1 between output to outcome levels was relatively strong. The country level findings confirmed the anticipated causal pathway for this step from output to outcome (i.e. from receiving information to adoption/non-adoption). Alternative pathways were not in evidence, but, whilst information dissemination contributes to adoption, is not the only factor. Figures 19, which depicts the understanding gained in country of how adoption is reached, indicates that farmers need to trust the information, understand it, have the willingness to take a risk, the technology should be available at right time and affordable before they try and apply. Thus, overall, the NA ICT CF contributed positively towards change at the outcome level.

4.2.4. Outcome level > Impact: Step 4 Improved Productivity

Figure 20, which is the country level understanding of the outcome to impact step, is similar to figure 7, which was the programme level IP1 depiction of this step. At country level the general step 4 was only validated. The country level diagram provides more detail on causes for a positive result (improved seeds/khetakh/Manure, Apron Star), mix of technologies and for no visible result (result is not socially acceptable, increased frustration due to non-availability). These are findings from the country level:

- No stakeholders have gathered data on improved yields, all evidence is based on reported increase of yield only.
- Famers reported increased yield both in Casamance and Matam and by some of cooperatives.
- Male farmers in Casamance shared their seed with friends and neighbours because of high yield and quality.
- SSTP demonstration plot shows strong increased productivity in combination with soil fertility measurements (highest improved seed + High NPK + manure).
- Natural soil treatment (manure, khetakh) shows also increased yield even without certified seeds (based on SSTP trials) (local seed + high NPK + manure higher then improved seeds with high NPK).
 - Key external factors relate to availability of seeds and the state of the market:
 - Access to opportunities
 - Access to markets

•

Government subsidy system.

Assumption 13 in the programme level ToC for IP1: Increased use of quality inputs and improved farming technologies lead to improved productivity was seen as partly false. Farmers do not choose improved varieties to maximise yield, although demonstration plots provide evidence that improved seed with good soil management does lead to improved yield. Farmer seek to minimise risks. There were not indicators to measure yield/productivity and grantees were not required to measure this. The contribution story at the outcome to impact level of IP1 is weak compared to the activity to output, and output to outcome levels.

4.3. Conclusion from the Senegal contribution story

Taking a ToC approach allowed for much greater elucidation by TICmBay of the detailed steps from activity through to outcome and the assumptions behind these for IP1 of the ToC. It also allowed for verification and clarification of these steps during subsequent stakeholder interviews. It is concluded that in the case of the Senegal IP1, the intervention was implemented as planned and the predicted ToC and expected results occurred. There were no rival explanations for the steps in the pathway. To this end the contribution story is assessed as strong and TICmBay made a positive contribution to outcome level change. (At the outcome to impact level external factors had more influence).

5. Contribution Story: Tanzania

5.1 Articulated Causal Impact Pathways

The figures in this section sum up in a visual way what was actually done by the grantees in Tanzania at each step in IP1, from activity to output (2 steps), output to outcome and, finally, outcome to impact levels. The diagrams show the detailed steps including their flow and linkages between them. At both the activity to output, and output to outcome levels, the grantees distinguished between ICT channels hence separate diagrams are provided for each. These can be compared with the programme level steps anticipated for IP1 which are in Section 1.2.

5.1.1 Activity > Output level: Step 1 Content Development Process

At the country level, content was developed for a crop campaign. In Tanzania a distinction was made between radio channel and the SMS channel. The base for Radio and SMS content is the Technology Brief. The content development process is illustrated in figure 21.



Figure 21: Step 1 Campaign Development - Tanzania

5.1.2 Activity > Output level: Step 2 Information Dissemination Process

In Tanzania a distinction was made between radio and SMS dissemination steps as per the two diagrams below.

Figure 22: Step 2 Radio campaign -Tanzania



Radio campaign Tanzania





5.1.3 Output > Outcome level: Step 3 Increased use of technologies

Tanzania identified two pathways to application, one for radio and one for SMS.

Figure 24: Step 3 Pathways to adoption/non-adoption (output to outcome) for radio - Tanzania



Figure 25: Pathways to adoption/non-adoption (output to outcome) for SMS - Tanzania



5.1.4 Outcome level > Impact: Step 4 Improved Productivity

The figure below depicts how the Tanzania grantees understood the steps from outcome to impact level. This diagram differs slightly from the one in the overall IP1 causal pathway included in section 1.2.





5.2 Findings

5.2.1 Activity > Output level: Step 1 Content Development Process

Grantees and other stakeholders in Tanzania distinguished between radio and SMS content development as indicated in Figure 21 in section 5.1. Giving grantees the opportunity to identify and describe each of these in the ToC workshop, then having the opportunity to confirm and triangulate these findings with the grantees and other stakeholders across the country, helped the ET gain a much more nuanced and detailed understanding of how content development was actually done in Tanzania. Although there is much greater granularity in these figures than in that for the programme level IP step (see Figure 4 in Section 1.2) they are aligned. Content development involved appropriate stakeholder contributions, including those of farmers, had adequate feedback, validation and certification mechanisms, and allowed for alignment between the ICT (radio and SMS) channels. The evidence for the anticipated content development steps was strong and no alternative pathways were identified beyond those depicted in Figure 21.

With regard to assumptions, the grantees commented on the assumptions related to this step in the programme level Toc (see Figure 3 in Section 1.2) and also shared and subsequently discussed their own assumptions. The grantees agreed that all three assumptions related to this step in the programme level diagram, were true.

- Assumption 1: SSTP and other agricultural programmes work with ICT extension service providers to agree and develop content True
- Assumption 2: ICT-enabled extension services already exist in the country True
- Assumption 4:³ No problems with the connectivity for mobile phone-based technology True

The grantees also had some assumptions regarding content development (some of which overlap with Step 2, dissemination). These were:

- Every stakeholder will contribute to the technologies (development)
- Farmers do not used improved inputs because they do not know about them
- The weather will be as predicted so the crop calendar can be followed
- Expect some degree of adoption at the end of the project, even at this stage

- Issues listed during the formative research are what affect all farmers
- Extension workers should give feedback or attend to farmers' questions

Considering the above, the assumptions did, on the whole, hold true. If a ToC for IP1 with assumptions had been developed from the start in Tanzania, additional assumptions could have been included drawing on the grantee's own assumptions bulleted above.

Given the correlation (albeit with much greater granularity) between the content development steps in the causal pathway in Tanzania with the programme level equivalent, and given that most assumptions held, it is concluded that the strength of evidence on the contribution of the NA ICT CF to planned outputs at this step of IP1 was strong.

5.2.2 Activity > Output level: Step 2 Information Dissemination Process

Two of the six channels in the programme level IP1 diagram for information dissemination were used in Tanzania: Radio & SMS. During the ToC workshop grantees distinguished between the steps taken in radio and SMS dissemination (see Figures 22 and 23 in Section 5.1). As for Step 1, the causal pathways for each of these are much more detailed than in the programme level version (Figure 5, section 1.2), but they do not contradict the latter. Whilst there was low alignment / collaboration between radio and SMS in the dissemination phase, the content was well aligned.

Using the ToC approach and having a full day for the ToC workshop to allow for grantees to really explore and describe the specificities of each step, provided a depth of learning to the ET that would not have been gained so quickly otherwise, and which informed the finalisation of interview checklists with other stakeholders throughout the country visit. The box below includes the key findings related to each channel, just as an example of what was learned in relation to this step.

Box 5: Findings regarding the information dissemination process via radio and IVR in Tanzania

Key findings regarding the radio channel:

- Evidence gathered confirmed the participatory nature of the campaigns.
- There is regular systematic monitoring of both the technical content and the quality of the radio broadcasts, with a feedback mechanism to ensure corrections are made when needed.
- Monitoring and evaluation procedures allow for updating of scripts and the related technology brief to inform echo radio campaigns.
- The number of people reached through radio is far higher than through SMS

Key findings regarding the SMS channel:

- There is scope for emerging topics (such as information on pest/disease outbreaks or market issues) to be included in a timely manner.
- There is a systematic process of monitoring and evaluation of each SMS campaign. This leads to updating of the technology brief and SMS messaging which informs subsequent echo campaigns.
- The SMS channel has an advantage over the radio in that farmers can store the message on their phones and can share it with other farmers or show it agro-dealers when wanting to purchase a specific named item

With regard to assumptions, the grantees commented on those in the IP2 programme level figure (see Figure 3 in section 1.2) and also considered their own assumptions. The grantees agreed that all four assumptions related to this step in the programme level diagram, were true. These were:

- Assumption 5: Grantees and donors shared a common understanding that ICT is able to deliver extension services.
- Assumption 6: The ICT-enabled services have been sent to and received by farmers.
- Assumption 7: Farmers have accessed (viewed, listened, read) the information from ICT-enabled services.
- Assumption 8: Sufficient demand from ICT-enabled services provided in the market.

Grantees had the following assumptions related to radio dissemination:

• To have, for each radio station, a total of 250 interactions per week during a PRC.

- To have equal participation of men and women during radio shows.
- That the broadcaster will download the questions asked by farmers and pass them on to the expert some days before the next show he/she is recorded so as to make preparations.
- Broadcasters go to the villages in the field to get material.

Grantees had the following assumptions related to SMS dissemination:

- Farmers have access and ability to adopt the technologies promoted.
- Climatic conditions would be favourable for the production of the promoted crops.
- Esoko has the capacity to deliver the service.
- Availability of the promoted technologies (seed/planting materials).
- Support for the campaign and approval for dissemination by government agencies.
- Farmers have phones, radios and connectivity.
- The partnership between FRI and CABI will be cohesive and productive.

These assumptions are appropriate and are specific to the Tanzania context. They do not contradict the overall ToC IP1 assumptions 5-8 above for this step. All the programme level assumptions for this step held in the case of Tanzania, and all of their own assumptions also held. If they had been included in a Tanzania specific ToC for IP1 then they may have provided additional guidance to the programme planning and implementation process.

Overall, the strength of the evidence was high, there was a lack of evidence for alternative pathways to information dissemination. There is alignment with the programme level IP1 ToC Figure 4 and the Tanzania Figures 22 and 23. UPTAKE's assumptions for Step 2 are appropriate. As for step 1, Given the correlation (albeit, again, with much greater granularity) between information dissemination steps (Step 2) in the causal pathway in Tanzania with the programme level equivalent, and given that most assumptions held, it is concluded that the strength of evidence on the contribution of the NA ICT CF to planned outputs at this step of IP1 was strong.

5.2.3 Output > Outcome level: Step 3 Increased use of technologies

The country level causal pathways to adoption/non-adoption are in line with the programme level causal pathway. As for steps 1 and 2, there is much more detail in the country level figures (see Figures 23 and 24) than in the programme level figure (Figure 6 in section 1.2). The grantees, further, looked at the pathway to adoption (or application) for each of radio and then SMS based extension. The grantees also described how this adoption was verified and measured. As for other steps, having time for the grantees to really consider and describe this important step in the IP, and then having time in-country to validate and triangulate this with other stakeholders, was greatly useful to the ET. It increased the depth of their understanding right at the start of the country visit and helped them tailor the interview checklists for interviews with other stakeholders. A key finding was that, whilst alternative pathways were not evident, information dissemination is not the only factor that contributes to adoption. The box below includes some specific findings that were useful to the ET.

Box 5: Findings regarding adoption based on radio and SMS-based extension

- Farmers may seek more information from other farmers and extension officers and look at demonstrations before applying
- Farmers usually first apply the new technology and practices on a small part of their farm, then, if satisfied, may scale up in future
- Reasons for application marketability e.g. maize (Tanzania sells a lot to Kenya) suitability for particular AEZs (maize does well in the southern highlands), availability of seeds (in the southern highlands there is high seed availability of improved), suitable weather, food security (for maize), Trust, and access to finance
- Farmers have low confidence in the knowledge of extension agents and high confidence in research institutes. Certification of messages increases the trust of farmers
- Factors that would result in non-adoption: Lack of seed i.e. in eastern zone didn't have enough planting material
 of cassava. Climate variability, some of the technologies we were promoting were not popular e.g. some maize
 ones, for reasons of taste of the weight of the grain and lack of information.
- Challenges: Climatic variability, socio-cultural practices, low literacy levels, external factors such as low prices on the market and government restrictions on export (that specifically for maize) farmers may stop planting,

prices were really low, maize exports were stopped by the government, the market was flooded. Areas where there are weak transmission signals. Limited government support for aspects like info on the fall army worm.

Grantees considered the programme level assumptions related to the output to outcome step (Assumptions 10-13) and agreed on them:

- Assumption 10: Men and women small holder farmers have equal opportunity to make an active decision to use quality inputs and improved technologies.
- Assumption 11: Target population are not subject to drought, flooding, disease etc. during the course of the intervention.
- Assumption 12: SSTP country teams and other agricultural programmes will provide access to sufficient new technologies (input, information and tools) for interested farmers to use.
- Assumption 13: ICT-enabled extension service leads to increased adoption of quality inputs and improved technologies.

Grantees also had their own assumptions about the pathway to adoption, as follows:

- Farmers do not have adequate information, if they did, they would adopt.
- The variety that the farmer is currently planting is not realising its potential, it is assumed that if all factors stay constant in terms of getting a particular yield per acre, that the soil fertility is good, environmental conditions will be suitable, there will be no pest or disease outbreaks and that the weather will follow what is forecasted information about good agricultural practices and they have improved seed then they will get maximum yields.
- The information disseminated is exactly what the farmers require.
- The farmers have purchasing power and will be willing to take on board new varieties and practices.

Assumptions at country level are relevant and do not contradict those developed in relation to the programme level ToC at this level. Given that, where the programme level and country specific assumptions did not hold, this had a negative impact on the project outcome, the articulation of the ToC for IP1 between output to outcome levels was relatively strong. The country level findings confirmed the anticipated causal pathway for this step from output to outcome (i.e. from receiving information to adoption/non-adoption). Alternative pathways were not in evidence, but, whilst information dissemination contributes to adoption the step on radio and SMS based extension, indicate that farmers need to understand the technology, be willing to apply it, then it has to be both affordable and available. Thus, overall, the strength of evidence regarding the contribution of the programme to the outcome is medium rather than strong.

5.2.4 Outcome level > Impact: Step 4 Improved Productivity

Figure 26 in section 5.1, which is the country level understanding of the outcome to impact step, differs slightly from figure 7 in section 1.2 which was the programme level IP1 depiction of this step. This level of the IP1 causal pathway was not discussed in the ToC workshop and no assumptions were available from the UPTAKE team; the country level findings were drawn from subsequent interviews and validated in the end of visit de-brief with UPTAKE.

The country level diagram indicates that increased yield, try out technologies in bigger plots, high demand for improved seeds and a good price will lead to higher income. The programme level diagram shows that adoption and access to markets and business development services will lead to increased productivity. These are different ways of depicting the same thing. These are findings from the country level:

- At the outcome to impact level of the IP1 causal pathway, more external factors come into play and contribution is harder to assess.
- Some interviews regarding some crops identified alternative pathways between adoption and increased production, and between increased production and increased income like FIPS that had the mother-baby trials so farmer can try out on a small scale
- Key external factors relate to availability of seeds and the state of the market
 - Example 1: Some increased production of potatoes in the Southern Highlands was due to the SSTP grantee, SACGOT, promotion of new varieties, not the SMS which were late for some farmers

Example 2: Increased production did not lead to increased income in the case of maize due to border closures and a glut in maize.

On assumption 13 in the programme level ToC for IP1: Increased use of quality inputs and improved farming technologies lead to improved productivity, they commented that though this might be true they had no evidence based on data. There were not indicators to measure yield/productivity and grantees were not required to measure this.

Overall, the contribution story at the outcome to impact level of IP1 is not as strong as at the activity to output, and output to outcome levels, as many factors come into play at this level.

5.3 **Conclusion from the Tanzania contribution story**

Taking a ToC approach allowed for much greater elucidation by UPTAKE of the detailed steps from activity through to outcome and the assumptions behind these for IP1 of the ToC. It also allowed for verification and clarification of these steps during subsequent stakeholder interviews. It is concluded that in the case of the Tanzania IP1, the intervention was implemented as planned and the predicted ToC and expected results occurred. There were no rival explanations for the steps in the pathway. To this end the contribution story is assessed as strong, UPTAKE has a positive contribution at output to outcome level, while at the outcome to impact level external factors had more influence.

6. Conclusion

Conclusions after the three country-based ToC workshops:

- The contribution analysis, using the ToC, allowed for a deeper and more detailed examination of the detailed steps from activity through to outcome and the assumptions behind these. It also allowed for verification and clarification of these steps during subsequent stakeholder interviews.
- It is concluded that in the case of all three visited countries (Ethiopia, Tanzania and Senegal) the intervention was implemented as planned, and the ToC as formulated during the inception phase held true, and the expected results were achieved.
- Assumptions at the start of project design within the countries did not always hold, but grantees adjusted their approach in response to this.
- Contribution stories have been written for each visited country based on the collected evidence. Each contribution story illustrates why it is reasonable to assume that the actions of the programme have contributed to the observed outcomes.

Figure 27 below illustrates the strength of the contribution of the ToC for IP1 at the activities to output, output to outcome, and outcome to impact levels in all three countries.





Annex 8 - Data Quality Audit

Introduction

A data quality audit was performed to assess the quality of the data reported by grantees, with regard to New Alliance ICT Challenge Fund **key performance indicators**. In other words, the exercise focused on the PIRS, which report upon the six indicators agreed upon between USAID and its MEL contractor.

Performance Indicators Reference Sheets (PIRS) were created by the MEL contractor. The function of PIRS was to provide a plan for the data collection, analysis, reviewing and reporting procedures for key performance indicators of the New Alliance ICT Extension Challenge Fund, and ensure these plans were tailored to each country and grantee context, while allowing for monitoring and aggregation of results at programme level. PIRS were created in 2016, when the programme was already a year into implementation for two grantees.

This DQA aimed to take stock of the quality of data in order to inform performance at output and outcome levels, and to consider the existence of enabling conditions towards the production of sound and robust data. In line with this, the DQA framework designed by the ET focused on data planning, design of tools, data collection, data cleaning, data analysis, disaggregation, reporting (including consistency) and data quality review. Moreover, the evaluators included a focus on the disaggregation by gender, technology, and crop, and looked at grantees' baseline, midterm and end evaluations.

This exercise intended to inform the response to **EQ 6** Was high quality evidence on (cost) effectiveness and impact of ICT-enabled services produced and how? and most particularly its **4th sub-question**: How accurate and valid are the results reported by the grantees, both individually and in total; similarly, how accurate and valid is the disaggregation?

Methodology

Rationale and objectives

During the initial document review undertaken in the inception phase, the evaluation team noted some inconsistencies and limitations on the disaggregation of PIRS in the narrative of various reports. It therefore decided to undertake a data quality audit in the implementation phase to ascertain: (i) completeness and timeliness of reporting; (ii) internal and external consistency of data; (iii) methodology for data aggregation at gender, crop, SSTP technology,⁴ and determine whether they are assumed, estimated, or actual and who is responsible for the counting; and (iv) quality of data used to report against PIRS indicators at country level for sub-grantees.⁵ The DQA was also motivated by the fact that the data is self-reported by grantees and the MEL Contractor did not perform thorough audits to assess the data quality assessments. The DQA results are here presented.

Criteria

A DQA framework was therefore designed to respond to those questions. In designing the DQA framework, the ET referred to USAID standards for DQA⁶ and identified areas worth exploring in the frame of the overall evaluation framework, thus adapting the USAID standards for DQA to the specific objectives of this exercise. The following criteria have been retained and guided the synthesis of findings. Each criterion comprises of several sub-questions, as illustrated below.

Table 1: Criteria DQA

Criteria	Questions
Timeliness	Has the data collection been undertaken at an appropriate time?
	Has the data reporting been timely?

⁴ In the inception report, we stated that we would have assessed disaggregation by youth level, however youth was excluded from reporting by all grantees as this was not required for grantees based on their USAID contract and PIRS plans.
⁵ See page 15, inception report.

https://usaidlearninglab.org/sites/default/files/resource/files/cleared_-_ah_-_dqa_checklist.pdf

⁶ USAID recommended Data Quality Assessment Checklist, ADS 201 Additional Help, USAID,

Reliability	Was the analysis of the data performed correctly? For example, were the calculations correctly done?		
	Do the PIRS data support the findings presented in Annual Reports?		
	Is evidence available on how the PI data had to be collected and aggregated, and how they were in practice? Does the approach taken to PI collection conform to good research practices?		
	Were the methodologies for data collection used by the grantees and sub grantees consistent?		
	Were household and respondent selection criteria established and followed?		
	Do grantees specify if they used estimate, actuals or assumed figures?		
	Do grantees specify who is responsible for the data collection and for the counting?		
Validity/Relevance	Do the data show signs of having been properly cleaned (e.g., no missing data, no double entries, answers match to the question)? Do the data show signs of having been entered correctly? Are there indications of duplicate entries?		
	Was a clear methodology for the data analysis set?		
	Has the data collected been disaggregated by gender, channel and crop technology?		
	Have any concerns or limitations of the research process been pointed out in the reports?		
	Do the reports identify the source and methods used for the PI reported? Do the reports highlight if the PI results are preliminary or final?		
Completeness	Did grantees report against all requested indicators? Did they report against all disaggregations?		
	Was the sample of respondents representative?		

The integrity criterion, which is normally part of USAID DQA standard, has not been included in the framework used for this evaluation as the evaluators believed that some issues pertaining to data integrity, data management and data quality procedures would have been better investigated through interviews with the MEL contractor.

Table 2: Colour rating to assess achievements against DQA

Colour	Description					
Excellent	Grantees' achievement against this DQA question/criteria exceeded targets and/or expectations					
Good	Grantees' achievement against this DQA question/criteria met expectations					
Fair	Grantees' achievement against this DQA question/criteria was fair. There were some shortcomings.					
Unsatisfactory	Grantees' achievement against this DQA question/criteria was unsatisfactory, with many short comings					
Not applicable / available	Not applicable / available					

Sampling

Data reported for all grantees were covered in the frame of the DQA. However, due to the extensive body of literature produced by the programme, and the limitation in the resources available for this evaluation, the ET used

a 20% sampling approach to the selection of documents to be reviewed in great detail. Additional documents were reviewed to validate specific points.

The approach to the selection of documents for review is set out below:

- Mapping all the relevant documents to the DQA, namely those documents containing data on grantees' PIRS approach and performance. This process covered a total of 118 documents;
- Purposively selecting documents to ensure:
 - ✓ Coverage of reporting for each grantee
 - ✓ Coverage of a broad variety of types of documents containing data from grantees.

For all grantees, the following documents were used to extract the sample of 20% of documents reviewed: country PIRS documents; Workplan Y1; Workplan Y2; Workplan Y£3; Annual Report (AR) Y1; AR Y2; AR Y3; Quarterly report (QR) 1 Y1; QR Q2 Y1; QR Q3 Y1; QR Q4 Y1; QR Q1 Y2; QR Q2 Y2; QR Q3 Y2; QR Q4 Y2; QR Q1 Y3; QR Q2 Y3; QR Q3 Y3; QR Q4 Y3; MEL Plan / Performance Monitoring Plan; Baseline Report; Midterm Report; Endline Report (see sub-annex 1 for the lists of selected and sampled documents).

It is worth noting that the process ensured coverage of all grantee PIRS documents to analyse the differences between the grantees in the approach used for PIRS collection, analysis and reporting (including all raw data). In addition, all relevant documents have been analysed against each grantees' 'Workplan Y1' (and relevant adjustments timelines where applicable) to check for the completeness and timeliness of reporting.

Limitations

Two key limitations are to be noted. Firstly, what we present in this annex is an analysis of a sub-set of relevant documents on grantee data. Therefore, some of the identified shortcomings may not be evident, or evident to the same degree, in other documents which were not subject to detailed review. However, it is reasonable to expect that if a sample of documents representing a broad cross section of types of grantee data reporting contain deficiencies, these deficiencies may extend across grantee data more generally (as there is no reason to expect that the sampled documents would manifest more issues than other data sources or that non-sampled documents would be of a higher quality).

Secondly, the DQA findings were impacted by the fact that grantees were not required to report certain information which the DQA looked at as they constitute best practice in data collection - for example, alignment of data collection with agricultural seasons. Inclusion of some important requirements pertaining to good practice in data collection were important to include in the DQA to comprehensively assess data quality. The fact that grantees were not asked to adhere to these elements constitute oversights in the data reporting requirements set for grantees.

Results

Timeliness

Under timeliness, the DQA looked at the following questions:

1. Has the data collection been undertaken at an appropriate time?

The DQA reviewed the sample documents for information on the timeless of data collection, considering whether baselines were prepared at an appropriate time, time periods matched so that data could be aggregated with confidence, and whether data were collected at the appropriate time of the year, vis a vis the agricultural calendar The reporting requirement for all grantees was to report on the PIRS before 31st October in each year. Therefore, it appears that no consideration was given to the agricultural crop calendar.⁷ It was found that, beyond reporting requirement deadlines established in all cooperative agreements between USAID and the grantees, there was an absence of data collection plans detailing time schedules thus the findings were limited for this point. However, the cooperative agreements did not require data collection timing plans, and some further specific points on timeliness of data collection were found:

- For **Digital Integration in Ethiopia**, beyond reporting requirement deadlines established in cooperative agreements, no timeline of collection dates was provided in the sampled documents.
- For AgroTech in Ghana, it was found that a delay in USAID's recruitment of the MEL contractor and in securing approval for the baseline study had meant that Grameen could not complete their MEL plan until Quarter 2 of 2015 and the baseline study until Quarter 3. Grameen highlighted that due to deadlines set by the donor, data collection was not undertaken at the most appropriate time as farmers were cultivating their crops and thus the evaluation could not access data on yield for maize and rice and could not establish the effect of the promoted technologies on production of these crops.
- For MODES in Malawi, in the documents reviewed it was found that the timeliness of collection of PI data was initially inadequate but improved with time. Catholic Relief Services (CRS) commissioned a baseline study in September 2015, however this was not the most appropriate time as the survey was undertaken almost a year after the project was launched. For the first year of the project (October 2014- September 2015) 'In Year 1, the program finalized the baseline assessment for the program and conducted one farmer learning experience sharing session to gauge program performance'. Data was collected for this first year, however the delays in conducting the baseline assessment prevented full appropriate PI data being collected. Collection of PI data had improved by the latest stages of implementation and was undertaken at an appropriate time in that years were covered fully with no gaps in reporting.
- For **EMM in Mozambique** in the Annual Report 2016, it was established that data would be collected quarterly, starting from December 2016. However, no further timeline of collection dates was found in the sampled documents.
- For **TICmbay in Senegal** baseline data collection appeared to have been undertaken at an appropriate time, namely before project start. However, no detailed timeline of collection dates for PI was provided in the sampled documents.
- For **UPTAKE in Tanzania**, in the documents reviewed in the sample baseline data was not collected as the grantee was not required to conduct a baseline report. In annual reviews and other documents in the sample, no detailed timeline of collection dates was found.

In sum, beyond the reporting requirement deadlines established by cooperative agreements, the DQA identified very little information regarding the exact time periods of the data collection, whether this fit the agricultural calendar and led to the production of similar data that could be aggregated with confidence. In addition, for MODES, it was noted that baselines were not prepared at an appropriate time as collecting this a year after project launch is likely have compromised the accuracy of the data. Furthermore, the DQA did not find information regarding appropriateness of data collection times for PI and thus the findings were inconclusive.

2. Has the data reporting been timely?

For all grantees, agreements with USAID, work plans and PIRS indicated a deadline of October 31st of each year for grantee-collected data, provided through annual reports. An extension to November 30th was permitted for FY2016 for SSTP survey cross-checked results. Annual, end line and quarterly reports reviewed in the sample were found to have been submitted by indicated dates. PI data was only required in annual reports, and overall the timeliness of this data from grantees was found to be good in that requested indicators were reported on. However, there were some minor shortcomings:

- For EMM in Mozambique, timely data reporting in documents reviewed was found to be an issue for 2016: in Mozambique's Annual Report (April-September 2016) data on progress indicators was not reported on. In this report, only results targets were set and it was established that data would be collected quarterly, starting December 2016. Furthermore in the PIRS data, 2016 data was missing and it was stated that it would be available by March 2017.
- For **Digital Integration in Ethiopia**, in sampled annual reports the PI were reported on adequately and timely for three years and annual reports reviewed were submitted in time.

- For **AgroTech in Ghana** from the reporting of PI data in both quarter and annual reports in the sampled documents, data reporting was timely and adequate. Target and actual performance figures were reported for all required indicators in the PIRS data.
- For **MODES in Malawi**, in the documents reviewed it was found that performance indicators were reported on as requested in timely reports.
- For **TICmbay in Senegal**, in the documents reviewed it was found that performance indicators were reported on as **requested in timely reports**, and therefore the DQA found it to be timely and adequate.
- For UPTAKE in Tanzania, in the documents reviewed in the sample, data reporting was found to be timely and adequate, with the exception that in the annual report of 2017 some targets had not been set as they required radio coverage maps which had not been completed until after data collection had begun.

Overall assessment for Timeliness: Fair. Grantees' achievement against this EQ of timeliness was fair. There were some shortcomings found. However, an important caveat to this assessment is that the DQA was inconclusive on whether data collection was undertaken at an appropriate time as time schedules of data collection were not available. Apart from AgroTech, the DQA did not identify information regarding the exact time periods of the data collection, whether this fit the agricultural calendar and lead to the production of similar data that could be aggregated with confidence. For MODES, baselines were not prepared at an appropriate time as collecting this a year after project launch may have compromised the quality of the data. The DQA found that data reporting was fair in terms of being timely and adequate, with PIRS data being reported on as requested and to time schedules, with the exception of the case of EMM which did not report for 2016 in time.

Reliability

Under reliability, the following questions were assessed:

1. Was the analysis of the data performed correctly? For example, were the calculations correctly done?

For this question PIRS raw data on indicators provided by the grantees and the MEL contractor were reviewed. However, these documents only provided a comparison of targets and actual figures and did not evidence the process of analysis, and therefore a full assessment of the reliability of analysis could not be made. Available figures were checked for consistency and totals were checked. Calculations for total appeared to have been carried out correctly. Overall, however, no conclusive assessment can be made for this question as insufficient information was made available to the evaluators.

2. Do the PIRS data support the findings presented in Annual Reports?

For this guestion, PIRS data was compared against annual reports reviewed in the sample. The use of PIRS data to support findings was good, with some minor exceptions. Documents reviewed for AgroTech provided a good example of PIRS data being used to support findings presented in annual reports. Performance indicators were referred to by title, and data provided in tables or figures as well as within the narrative to support the findings of the report. In the reports reviewed in the sample for Digital Integration, PIRS data were used to support the findings of annual reports. However, in the Final report (January 31 2018) covering the period October 2014 to December 2017 PIRS data were not widely used to support the findings presented. For MODES, the first annual report for FY15 and the second annual report for FY16, limited PI data were used to support findings. Data were only available for the number of service users, disaggregated by channel. For EMM, in the first annual report PI were used to illustrate the targets, whilst actual data were not available in the report. For the second annual report, PI data were used well to support the findings presented. Data were incorporated throughout the narrative as well as being reported in a table comparing target and actual figures, disaggregated by gender and channel. For Tanzania, PI data were used to support findings in annual reports, with the shortcoming that data for the requested indicator 1.4 was not used in the annual reports of 2016 and 2017. For TICmbay, in the first annual report of April to September 2015 only draft targets were set, and actual PI data were not used. However, in the second annual report for FY16, PI data were used to support findings.

It is worth noting that, in some annual reports, it was found that figures for latter years in implementation did not precisely match the PIRS data documents. However, this is most likely due to annual reports being submitted later than the PIRS, therefore annual reports were likely to have different more up-to-date data.

Overall assessment for Reliability: Good. Through the DQA, achievement of reliability in data quality from grantees was established as generally good and as meeting expectations. Whilst there is not sufficient information to assess the analysis methods used by grantees, the calculations of data generally appeared to be correct. Overall, PIRS data supported findings presented in annual reports for all grantees, although more extensively for some grantees than others. Nevertheless, it is important to note that from the limited information on analysis and calculation available it was not possible to rigorously establish reliability.

Validity/relevance

Under validity, the following questions were assessed:

1. Is evidence available on how the PI data had to be collected and aggregated, and how they were in practice? Does the approach taken to PI collection conform to good research practices?

Plans for how PI data would be collected and disaggregated were found for all grantees, with PIRS documents providing a plan for data collection for each indicator. This involved identification of data sources, methods of data collection including survey sample frame, categories of data disaggregation and how this would be estimated in cases were actual disaggregated data would be unavailable. However, evidence of how PI data was collected and disaggregated in practice was inconsistently available across grantees and between documents. Evidence was strongest from sampled documents from Agrotech and TICmbay. Planned methods of collection outlined in PIRS plans for all grantees, and monitoring and evaluation plans provided by grantees (where available), conformed to good research practices (including transparent sampling methods, triangulation of data). However, the provided evidence varied between grantees. Country-specific examples that arose via the DQA included:

- Agrotech's final and end line evaluation reports provide evidence of how PI data were collected and aggregated. Detailed information was provided on evaluation design, sample sizes and selection criteria, conforming to good research practices by determining a representative sample and detailing how data was collected. The baseline report provides evidence on how data from questionnaires was collected, how collection avoided data entry errors, the gaining of informed consent from participants and following ethical procedures to conform to good research practices. In the monitoring and evaluation plan, good evidence was available on how the PI data was to be collected and aggregated using a quasi-experimental design method to conduct the end line evaluation. Evidence was also provided on sampling methods (a multi stage cluster method) to identify treatment and control group, and this was appropriate to the evaluation questions and specific project design. For the mid-term evaluation, evidence was found that the research was based on multiple data sources, with surveys used as the primary data collection method, and focus group discussions used to triangulate findings and add qualitative context to the quantitative findings.
- In the documents sampled for **Digital Integration** evidence varied some documents had substantial information on PI data collection methods while others did not include PI data nor indicate collection methods. The MEL plan presented methods for collection, frequency and responsibilities for data collection. For instance, for indicator 1.2 collection methods included records of attendance, surveys verified by third party samples and sample cross-verifications, paper-based data collection and mobile data collection tool. In annual reports there was some evidence on how data was collected through Digital Green's data management platform (COCO) with its mobile application, CommCare, which together would be used to record farmer participation, feedback, and adoption data of those who attended Digital Green's video screenings.
- In the documents sampled for MODES in Malawi, some evidence was available on how data collection and aggregation was planned, with limited evidence available on how this was completed in practice. As in all PIRS plans, detailed plans for how data would be collected was provided were available for MODES and these corresponded to high research standards. For example, for indicator 1.3 annual data would be

collected in a randomized sample survey. The ET has doubts on results of indicator 1.3 (too high compared to other countries without clear evidence for high result) for MODES and EMM. In the main report they will be seen as outlier data. For indicator 1.4, data sources would include grantee records and survey reports and collection through own assessments. Draft questions were provided which conformed to good research practices. The baseline report provides good evidence and plans suggest conformity to good research practices, for example through all stakeholders consultation. In the second year annual report, PI data was limited as data was available for the number of users of the mobile services and this was collected from the service provider platform. However beyond these examples, there was a lack of detailed evidence on how PI data was collected.

- For the documents sampled for EMM evidence on collection and aggregation methods was good and corresponded to high research standards. Firstly, PIRS plans provided information on planned collection and aggregation methods. Secondly, further evidence was found in the annual reports on how PI data was collected and aggregated in practice. For example, for the second year annual report this included 'For the 321-service, data for indicator 1.2 was captured from the HNI/Vodacom managed system. To calculate Indicator 1.3 & 1.4, the project used the survey results from survey conducted in Ribaue and AltoMolocue and extrapolated it to the entire farmers reached under 1.2 to give a result for the entire country.'
- In the documents sampled for TICmbay, substantial evidence on how PI data was collected and aggregated was found, and this corresponded to high research standards. For example, the MEL strategy of 2016 planned for data to be collected annually through in-depth surveys and Short Indicator-Focused Surveys, and quarterly through phone-based survey audits and user experience focus groups. Sampling methods were detailed and found to conform to good research practices, as it will be explained in the question about households and respondents selection criteria below.
- In the documents sampled for UPTAKE, good evidence was found on how PI data was collected and aggregated. For example, both the October 2016 and October 2017 Annual Reports provided good evidence: for radio coverage and reach the aggregation method was detailed, using data collected from the radio station and population data. Data collection methods through household and telephone surveys were also discussed.
- 2. Were the methodologies for data collection used by the grantees and sub grantees consistent?

From the documents reviewed in the sample, methodologies across grantees appeared to be consistent in the use of a mix of qualitative and quantitative methods, triangulation of data, and the uses of estimated and actual figures where appropriate. Planned methodologies included in PIRS plan documents and MEL plans in the sample, were also consistent. However, as per the example showed above, methods for the production of estimate and/or actuals, and more broadly for the identification of results, were not always identical across grantees.

3. Were household and respondent selection criteria established and followed?

Evidence from the documents sampled varied in response to this question, with some grantees establishing and following household and respondent selection criteria consistently and others not providing clear evidence of selection criteria. Country-specific evidence found included:

- In Agrotech's M&E Plan, selection criteria were well established: a multi stage cluster sampling method would be used to select the treatment and control groups. This criterion was followed in Agrotech's 2015 baseline report. The evaluation was designed to interview 360 farmers and 50 extension agents following a multi-stage cluster sampling method, classifying each District as a cluster. A simple random sampling method was used to select communities and respondents for the survey. Furthermore, this selection criterion was followed in Agrotech's end line report of 2016: a multi stage stratified sampling method was used to select communities for interviewing.
- For **Digital Integration**, PIRS plans established selection criteria. Evidence of this being followed was found but this was limited: in Digital Integration's Year 3 Progress Report (Oct 2016-Sep 2017) it was stated that 'Endline surveys for PRCs completed in Y2 surveyed 30 households selected from each of the

39 sampled kebeles using a cluster sampling method, ensuring that 50% of respondents were female farmers'. In Farm Radio International's Year 3 endline survey final report, and Digital Integration's final report of 2018, information on data collection methods including respondent selection criteria were provided.

- For MODES, PIRS plans established selection criteria. The March 2015 Baseline Report and October 2015 Baseline Study Report provided good evidence on establishing and following selection criteria: data was collected using a multistage stratified cluster sampling strategy and selection of households was done through the Spin method. However, other documents reviewed in the DQA sample (which were submitted later in the project) were not found to establish selection criteria.
- For EMM, in addition to PIRS plan establishing selection criteria, annual reports provided evidence of this being followed. In the first annual report, some communities were sampled from each of the districts using computer generated random sampling method. A simple random sampling method was used in order to generate a sample of beneficiaries to be interviewed within each community, thus ensuring an equal chance of being interviewed for each smallholder farmer.
- For **TICmbay** the documents reviewed in the sample established selection criteria and provided evidence of following this. As well as PIRS plans, TICmbay's MEL strategy of 2016 established criteria as follows: in-depth surveys would be conducted in four purposively selected villages: 2 affiliated with SSTP and 2 paired non-SSTP villages. A sample of 15-30 households, disproportionately stratified by wealth would be purposively identified with aid from a key informant or head of the village. For short indicator-focused surveys, ten villages within 40km of each radio station would be randomly selected. Farmers would be randomly selected in each village in year 1, and the same farmers would be surveyed in year 2 and 3. For phone based surveys the criteria for respondents would be being listed on the TICmbay database in one region each quarter. Focus groups would be selected through a random sample and the grantee would coordinate with radio station partners to schedule these. The January 2017 Baseline study provided evidence that this selection criteria was followed: in each of the six regions two communities were randomly selected from among the intervention sites for the SSTP-United Purpose (UP) project. Representatives from the local cooperative were asked to identify a non-SSTP village to pair with each SSTP-targeted village. Both SSTP-UP project villages and their quasi-equivalent pairs were selected by cooperative representatives. Key informants in each village aided in selection of a purposive sample of approximately 30 households stratified by wealth class. In some smaller villages, all households were surveyed. For each household, a coin toss determined whether an adult male or female was surveyed. Moreover, phone surveys would be based on a randomized cluster-based sampling model, with outgoing calls made to approximately 50 randomly selected numbers from the TICmbay database in one region each quarter.
- In the case of UPTAKE, PIRS plan established selection criteria and there was evidence found in the sampled documents that this was followed. For example, the October 2017 Annual Report established the criteria followed for the radio household survey. The survey was conducted in four districts that were in the reach of Voice of Africa FM, and villages were randomly selected by using SPSS. In order to select households "spin the bottle" method was adopted.

It is also to be noted that in all PIRS plans it was established that the Feed the Future definition of a SHF is one that holds 5 hectares or less of arable land. For indicator 1.1, selection criteria was all farmers with potential access to services in targeted areas. For indicator 1.2, criteria was all smallholder farmers who had used the services in targeted areas. Indicator 1.3 criteria was SHFs (and others) who had applied improved technologies or management practices as a result of USG assistance.

Overall, evidence of grantees establishing and following household and respondent selection criteria was good. Selection criteria was established in PIRS plans for all grantees, with evidence on how this was followed provided to different degrees of detail by grantees. Documents reviewed in the sample for AgroTech and TICmbay provided strong and detailed evidence of establishing and following selection criteria. For EMM and UPTAKE this was also good. For Digital Integration and MODES, selection criteria were established but evidence on how it was followed was limited.

4. Do grantees specify if they used estimate, actuals or assumed figures?

In the PIRS plans, it was established that estimation could be used for indicators 1.1 and 1.4, and that indicator 1.3 would be based on outcome surveys. For indicator 1.2 it was possible that figures could be estimated or actuals. The DQA looked for specification on estimates, actuals or assumed where figures were used by grantees. In quarterly and annual reports, most grantees reported that radio station reach figures were estimated and detailed how estimates were produced. For indicator 1.4, it was recognised in PIRS plans for all grantees that the measures would be an estimate of number of hectares on which farmers are applying technologies, thus it would not be possible to attribute the number of hectares under improved technologies or management practices to the ICT-enabled services reported. Specification across grantees was found to be fair. Although figures were not clarified as estimated, actuals or assumed every time they were used this was acceptable as it could be understood from the PIRS plans and methodology of the grantees where data was estimated, actual or assumed,

5. Do grantees specify who is responsible for the data collection and for the counting?

For all grantees, PIRS plans specified individual(s) responsible at USAID, and individual(s) responsible for providing data to USAID. For AgroTech, TICmbay, Digital Integration and EMM the sampled documents further specified responsibilities for actual data collection and counting well. In the documents sampled for Digital Integration, MODES, EMM and UPTAKE, beyond the PIRS plans it was not further specified who was responsible for the actual data collection and country-specific examples identified by the DQA included:

- Agrotech's M&E Plan for the period October 2015 to November 2016 specified that the responsibility for data collection oversight, data quality, analysis and dissemination for the indicators was shared between the M&E, program and Tech teams. The M&E team would take the lead in disseminating the M&E plan and supporting utilization by each user group. A table of positions and M&E role was provided: FRI were responsible for data collectors at the community (radio listenership) level and data collection from SMS/IVR system/ULIZA platform, data analysis and sharing of radio surveys, while agents were responsible for primary monitoring data collectors, entry of monitoring data on an ongoing basis, and timely submission of accurate monitoring data.
- **Digital integration**'s MEL Framework and plan specified the MLE Roles/Function/Responsibilities for each organisation in the consortium and specified any dedicated M&E staff in each organisation.
- In the documents reviewed for MODES, outlining of responsibilities was limited. The September 2014 Cooperative Agreement with USAID outlined the responsibility of the grantee to report, and a draft Monitoring & Evaluation Indicators Matrix indicated who would be responsible for each outcome indicator, including 'Grantee M&E team and work with Fund M&E Contractor.' However, it must be noted that this was only an indicative draft of responsibility. MODES's October 2015 Baseline study reported that CRS commissioned the study to Agriconsultants and Suppliers and that data collection was done with assistance from ten research assistants and two supervisors. However, further clarification on responsibilities for collection and counting was not provided in other documents reviewed in the sample for MODES.
- For **EMM**, in documents reviewed for the DQA it was not specified who was responsible for the collection and counting of data. EMM were not required to provide an MEL plan as the MEL contractor was in place in the project when the Mozambique grantees were contracted. Therefore, the PIRS plan was seen as the MEL plan for EMM. Furthermore, in the grantees contract with USAID a MEL manager is specified.
- In the case of **TICmbay**, the July 2016 Monitoring and Evaluation Strategy established responsible partners for each data collection methods: for in-depth surveys 'UCSC (coordination), UCSC's local research team (enumeration)' for short indicator-focused surveys 'UCSC (coordination), SSTP and ADG

field officers (enumeration)', for phone-based surveys 'Jokalante (coordination, implementation), UCSC (training, guidance)', for focus groups 'Jokalante (coordination), radio stations (implementation), UCSC (training, guidance)'. In the January 2017 Baseline Study it was established that authors Rachel Voss and Carol Shennan of the University of California had been responsible for the collection of data 'with the aid of five research assistants from the University of Ziguinchor who were Master's and PhD students'.

• Similarly to EMM, **UTPAKE was** not required to provide an MEL plan. The PIRS plan was used as the MEL plan for UPTAKE and the outlining of responsibilities was sufficient in terms of contract requirements.

Whilst limited evidence was found for MODES; AgroTech, Digital Integration and TICmbay showed to have designed a system to ensure clear responsibilities for monitoring and reporting. For Tanzania and Mozambique, outlining of responsibilities in the PIRS plans were sufficient for these grantees in terms of their contract requirements.

6. Do the data show signs of having been properly cleaned (e.g., no missing data, no double entries, answers match to the question)? Do the data show signs of having been entered correctly? Are there indications of duplicate entries?

For these questions PIRS data on indicators was reviewed. However these documents provided a comparison of targets and actual figures only and did not evidence the pre-cleaned of data occurred, and therefore an assessment of the validity of the data cleaning and entry could not be made. Overall, data appeared to match questions and double entries were not found. There were several cases of missing data for some years and disaggregates. However, it was unclear from the data whether this was appropriate, whether it had not been collected, or whether it had been collected and not entered.

7. Was a clear methodology for the data analysis set?

PIRS documents set a broad methodology for the data analysis. The DQA analysed sampled documents to test whether a clear methodology for the data analysis was set. It was found that grantees' methodology for data analysis were varied:

- Ghana grantee documents sampled provided adequate evidence of clear methodology for data analysis. AgroTech's Baseline report of July 2015 established that analysis would include frequencies for various variables, and bivariate and multivariate data analysis, via SPSS. To further establish differences in production between farmers implementing recommended agronomic practices and those not implementing, independent sample two tail t-test and Analysis of Variance (ANOVA) was used to compare means and determine the level of significance. AgroTech's M&E Plan of October 2015 to November 2016 also established a detailed analysis plan: comparison of mean test would be used to establish the level of significance of any changes in average yield as well as behaviour adoption, enabling the grantee to ascertain the real impact of the AgroTech solution on beneficiary farmers. There would also be comparison of promoted crop mean production before and after implementation to ascertain potential impact. Another level of analysis would include calculating mean differences between the post-implementation and pre-implementation for each category of respondents, and then compared across categories to enable the establishment of the real impact of the AgroTech on yield.
- For MODES, the Baseline Report set a detailed methodology for data analysis: for phase I and field observation, the analysis followed qualitative approaches whereby the credibility of the data was verified with experts and some references were made to published work. Information from consultations was transcribed and analysed using a coding process to add key words that became the basis for the analysis. Data and information from all respondents were cross-referenced with literatures. For phase II, the survey's results were analysed through frequency and cross tabulations, correlation analyses (Chi-square, Student's t test, ANOVA, and correlation tests). The report also states that the Gross Margin analysis was mainly conducted in MS Excel. However, in other documents reviewed in the sample clear methodologies

of data analysis, for example for quarterly and annual reports, was not provided, thus making unclear to what extent plans for data analysis have been followed.

• For **Digital Integration, EMM, TICmbay and UPTAKE** documents sampled did not provide clear evidence of data analysis methodology, apart from, what specified in the PIRS plan.

In sum, while clear and detailed data analysis plan were found for AgroTech and MODES, the DQA analysis is unable to assess to what extent data analysis plan were respected. No plans for data analysis were found for Digital integration, EMM, TICmbay and UPTAKE.

8. Has the data collected been disaggregated by gender, channel and crop technology?

As per the PIRS plans all grantees had to disaggregate data by sex, channel and agricultural technology type where appropriate. In cases where actual disaggregated data would be unavailable it was outlined how estimates would be produced. Where data was available in the documents sampled, grantees successfully disaggregated by gender and channel in most cases of reported figures. Crop was disaggregated in a slightly less number of instances (AgroTech,⁸ MODES,⁹ TICmbay,¹⁰ UPTAKE¹¹) however this was not required in the PIRS plans. The disaggregation by agricultural technology type was only found in documents sampled from TICmbay and MODES, and was reported against to a limited degree.

9. Have any concerns or limitations of the research process been pointed out in the reports?

In the PIRS plans, potential data limitations or concerns were outlined for each indicator. These were the same across all grantees. These included the use of estimations from sample survey and secondary data, unreliable data on technology ownership in rural areas, the risk of double counting between channels (e.g. one farmer accessing radio and mobile being counted as two farmers). For indicators 1.3 and 1.4 it was highlighted in the PIRS plans that it would not be possible to directly attribute the number of farmers applying technologies or the number of hectares under improved technologies or management practices to the ICT-enabled services. In grantee documents reviewed in the sample, evidence of highlighting of concerns and limitations of the research processes varied between grantees.

- AgroTech sampled documents pointed out concerns and limitations well. For example, in the baseline
 report, limitations of the sample size were recognised: 'even though large enough to draw effective
 conclusions, the sample became small when multivariate analysis is conducted, sometimes limiting the
 ability of certain variables to present a representative response'. In AgroTech's monitoring and evaluation
 plan it was recognised that the adoption of a quasi-experimental design method and not randomized
 control trial would mean that the selection of the sample would not be completely randomized, and this
 could reduce the level of representativeness.
- TICmbay also provided good evidence of recognising concerns and limitations of the research process. For example it was noted that during FY 2015 baseline data collection, MEL fieldwork showed that varietal names are used inconsistently across communities and regions, making it difficult to accurately assess the use of improved seed technologies. As a result, surveys were adjusted to focus less on monitoring use of individual varieties rather than improved seeds in general. An additional example of limitations of the research being highlighted was found in TICmbay's January 2017 Baseline Study which highlighted that the study's sample was not randomized and could not be considered representative of all farmers in

⁸. G3.2.9 (Nov 2016 Endline Evaluation) includes farmers questionnaire which asks farmers for sex, crop type, region. Respondent's characteristics are reported by disaggregations including region, gender, crop G3.2.23 Final report February 2016 and G3.2.9 November 2016- all requested indicators disaggregated by sex and technology type and crop type

⁹ Ma3.3.4 Baseline report submitted (March 2015) data reported disaggregated by crop Ma3.3.2 October 2015 Baseline study report- data disaggregated by gender, crop, region in some cases. Ma3.3.7 Final report (April 2018) data disaggregated by crop, region, gender.

¹⁰ S3.5.2 (January 2017 Baseline Study) Baseline data disaggregated by crop,

¹¹ 3.6.9 (October 2017 Annual Report) Data is disaggregated by gender, crop type T3.6.20 (Draft Progress Report Quarter 2 2017 – June 2018) PI data not fully provided- Data given on number of messages sent by crop and year, number of registered farmers by region and crop, age range and gender.

Senegal. As such, it was advised that caution must be exercised in applying these findings to the broader population.

- For MODES, the baseline study of October 2015 provided evidence of highlighting concerns, such as the limited period of the survey against the need to consult a wide range of key stakeholders, and that the baseline survey was undertaken almost a year after the project was launched and as such some of the responses may have been influenced by prior knowledge of the project activities. However, evidence of highlighting concerns or limitations was not consistently provided in later reports reviewed.
- In documents from Digital Integration, EMM and UPTAKE, concerns or limitations were pointed out in the PIRS plans as for all grantees. However, beyond the PIRS plans, the sampled documents did not provide country-specific concerns or limitations and comments about confidence in the research were not provided, hence not allowing the reader to understand whether, beyond the general concerns and limitations highlighted by the PIRS plans, country-specific concerns and limitations did not exist or were not reported.
- 10. Do the reports identify the source and methods used for the PI reported? Do the reports highlight if the PI results are preliminary or final?

Overall, where PI data were used in annual and quarterly reports reviewed in the sample, sources and methods of data collection (i.e. household surveys and data from mobile platforms) were identified well. However, there were exceptions to this general trend and some cases of poorly identified sources and methods for results reported. Documents from AgroTech and TICmbay consistently identified sources and methods of PI data well, while those reviewed from Digital Integration, MODES, EMM and UPTAKE did not consistently identify the sources and methods used for the results in some reports. Consistent labelling of data as preliminary or final was not found, however the labelling of preliminary data by grantees was adequate and differences between preliminary and final data could be interpreted.

<u>Overall assessment</u>: <u>Good</u>. Through the DQA the overall validity/relevance of data in the documents sampled was found to be good, with some limitations where robust evidence on which to base an assessment was not available. Overall, AgroTech and TICmbay performed very well in the DQA assessment, UPTAKE, Digital Integration and EMM also performed well, while MODES performed fairly.

This assessment was drawn from the following conclusions: that overall, data sources and collection methods used for the results reported were established well and conformed to good research practices (including transparent sampling methods, triangulation of data). Evidence of grantees establishing and following household and respondent selection criteria was also good. Where data was available in the documents sampled, disaggregation of data by gender and channel type was found to be reliable, while crop disaggregation was provided less frequently. The highlighting of concerns and limitations of the research processes was done well by grantees overall, with AgroTech and TICmbay performing strongly and other grantees performing fairly in providing country-specific concerns and limitations that went beyond the general outlines in PIRS plans.

Limitations to this assessment were that methodologies for data analysis, and evidence of how data was cleaned and entered were not consistently available across grantees.

Completeness

Under completeness, the following questions were assessed:

1. Did grantees report against all requested indicators? Did they report against all disaggregations?

Indicators 1.2, 1.3 and 1.4 were required and all grantees planned to report on these, while indicator 2.1 was a custom indicator. Indicators 1.1 and 1.5 were optional and some grantees specified in PIRS plans that they did not plan to collect on these. TICmbay, UPTAKE and Digital Integration did not plan to report on indicator 1.5. MODES did not plan to report on indicator 1.5, and only planned to report on indicator 1.1 in Y1 and Y3. In the PIRS plans, Agrotech and EMM did not indicate whether or not they planned to report on the optional indicators.

The table below indicates completeness of data reporting by grantees based on information provided in raw data by grantees:

T+A= Targets and Actuals provided

Table 3: completeness of data per grantee

	Indicator 1.1.	Indicator 1.2	Indicator 1.3	Indicator 1.4	Indicator 1.5	Indicator 2.1
	*Optional				*Optional	*Custom
Digital Integration Ethiopia	T + A Gender for all years; Channel incomplete- radio not available for FY15, only channel video for FY16, radio and video available for FY17	T + A For all 3 FYs disaggregated by gender and channel type of radio, IVR and video (not SMS)	T + A For all 3 FYs and disaggregated by gender and channel type of radio and video (not IVR and SMS)	T+ A For all 3 FYs disaggregated by gender. For FY17 only, disaggregation for channel types of radio and video (not SMS/IVR)		T+A
AgroTech Ghana	T for 2016. A for 2017 No actuals for 2016 or targets fpr 2017. ¹² Gender disaggregation only	T + A for 2016 and 2017 Gender The channel disaggregation of radio provided for 2017 actuals only.	T + A for 2016 and 2017 Gender, channels of radio and IVR provided for 2017 actuals only.	T + A for 2016 and 2017 Gender, channels of radio and IVR provided for 2017 actuals only.	T for 2016, T and A for 2017 Gender	T+A for 2017 only
MODES Malawi	A for 2015. 2016 and 2017. T for 2016 and 2017 only. Disaggregated by gender and radio, mobile and video channels	A for 2015. 2016 and 2017. T for 2016 and 2017 only. Disaggregated by gender and channels	A for 2015. 2016 and 2017. T for 2016 and 2017 only. In 2015 disaggregated by gender and three agricultural technology types. In 2016 and 2017 by gender and 1 technology	A for 2015, 2016 and 2017 T for 2016 and 2017 only. Disaggregated by gender and the technology of 'crop genetics'. Channel disaggregation only provided for endline, not for 2015 or 2016		T + A for 3 years Disaggregated by channel type

¹² These data are provided in Annual report 2016.

			type. Disaggregates for channels incomplete; for radio 2015 and 2016 provided, in 2017 radio not provided. Video and SMS/IVR reported for endline, not for each year	Actuals channel disaggregation for 2016 were stated as due in Sept 2016 however the DQA was conducted in 2018 and did not find evidence of this being reported.	
EMM	T+ A	T + A	T + A	T + A	T + A
Mozambique	2017 only, states 2016 would be available by March 2017 however the DQA was conducted in 2018 and did not find evidence of this being reported. Disaggregated by gender and channel type	2017 only, states 2016 would be available by March 2017 however the DQA was conducted in 2018 and did not find evidence of this being reported. Disaggregated by gender and channel type	2017 only, states 2016 would be available by March 2017 however the DQA was conducted in 2018 and did not find evidence of this being reported. Disaggregated by gender and channel type	2017 only, states 2016 would be available by March 2017 however the DQA was conducted in 2018 and did not find evidence of this being reported. Disaggregated by gender and channel type	2017 only, states 2016 would be available by March 2017 however the DQA was conducted in 2018 and did not find evidence of this being reported.
TICmbay	A for 2015,	T for 2016,	T for 2016,	T for 2016,	T + A
Senegal	2016 and 2017 + T for 2016, 2017 and 2018	2017 and 2018 + A for 2016 and 2017	2017 and 2018 + A for 2016 and 2017	2017 and 2018 + A for 2016 and 2017	for 2017
	Disaggregated by gender. For 2017 disaggregation s for radio and IVR channels reported, other channels figures not reported.	Disaggregated by gender. For 2017 disaggregation s for radio and IVR channels reported, other channels figures not reported.	Disaggregated by gender. For 2017 disaggregation s for radio and IVR channels reported, other channels figures not reported.	Disaggregated by gender. For 2017 disaggregation s for radio and IVR channels reported, other channels figures not reported.	
UPTAKE Tanzania	T + A for 2015 and 2016. Not Provided for 2017 in the PIRS raw data, but provided in	T + A for 2016 and 2017. Not for 2015. Disaggregated by gender, and	T+ A for 2016 and 2017. Not for 2015. Disaggregates for some	T + A for 2016, T only for 2017. Not for 2015.	*This was an optional indicator for Tanzania

2017 Annua report Disaggregated by gender, fo 2017 for radio channel only	I for radio and SMS channels for 2017 actuals only.	technology types for 2016, and for 2017 disaggregates for radio and SMS channels	Only gender disaggregates		under their IFAD contract.
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PIRS plans outlined that grantees would disaggregate data by gender, channel and technology type where appropriate.¹³ Where actual disaggregated data would be unavailable it was specified how numbers would be estimated. All grantees reported against the gender and channel type disaggregation. In the documents reviewed in the sample, disaggregation was found to be fair but with some shortcomings across grantees. For example, AgroTech grantee documents provided the strongest evidence of reporting against disaggregations of gender and channel. For both Digital Integration and TICmbay, data was disaggregated by gender and channel type however some channel types were missing and varied between indicators. For MODES, data was disaggregated by gender, channel type, and for indicator 1.3 and 1.4 some technology types were reported. For EMM, data reported (for 2017 only, data not provided for 2016) was disaggregated by gender, and by channel type to a less complete degree. Reporting against disaggregated indicators was therefore found to be fair, with some shortcomings including missing data for some channels, and a lack of technology type disaggregation across grantees.

2. Was the sample of respondents representative?

As mentioned above, in the documents reviewed, the quality of evidence on sampling varied between grantees. AgroTech provided detailed information on sampling equations followed to ensure representativeness, and for MODES, EMM and TICmbay this was provided in documents to a lesser degree of detail. For Digital Integration, information on sampling was not detailed enough to make a judgement on representativeness. UPTAKE's 2017 annual report provided details on methods used for determining sample size and sampling procedures to ensure representativeness, however this was not provided by other documents reviewed for the grantee.

Where detailed evidence was available on sampling procedures, the representativeness of samples of respondents was increased by steps including the calculation of necessary sample sizes through formula taking into consideration of the population size and a 95% confidence level, random sampling strategies, and multistage stratified cluster sampling strategies. However, from the documents reviewed, overall evidence was limited, and it could not be confirmed if sampling plans were followed and achieved representativeness.

Overall assessment for completeness: Fair. Through the DQA of the sampled documents, it was found that grantees performed well with regard to the completeness of PI data, but with some shortcomings. Where detailed evidence was available on sampling procedures, the representativeness of samples of respondents was increased by steps including calculations of the necessary sample sizes through formula taking into consideration of the population size and a 95% confidence level, random sampling strategies, and multistage stratified cluster sampling strategies. However, from the documents reviewed, overall evidence on sampling was limited and thus it could not be confirmed if sampling was consistently sufficient to provide complete data. Grantees succeeded in reporting against all requested indicators, with some minor exceptions where project years were missing/awaiting data. Disaggregation of available data was found to be reliable across grantees for gender and channel disaggregation, with some minor exceptions were missing.

Overall finding on data quality

Despite the limited availability of evidence necessary to reach conclusive assessments for some of the subquestions investigated upon, through the DQA, the evaluators found that overall grantees strived towards the production of good quality PIRS and adequately reported against them, thus providing data that can be broadly relied. Specific performance against each criterion, at programme level, is presented below:

Table 4: Overall of data quality findings

Timeliness	Overall, the DQA found that achievement of timeliness was fair. From the evidence available to the DQA, it was inconclusive whether data collection was undertaken at an appropriate time as time schedules of data collection were not available. Data reporting was fair in terms of being timely and adequate, with PIRS data being reported on as requested and to time schedules, with the exception of Mozambique.
Reliability	Overall, the DQA found that achievement of reliability was good and met expectations . Whilst there was not detailed evidence for the DQA to assess the analysis methods used by grantees, the calculations of data appeared to be correct and the PIRS data supported the findings well, therefore assessment was determined as good.
Validity / Relevance	Overall, the DQA found that achievement of validity/relevance was good and met expectations. Data sources and collection methods used for the results reported were established well. Planned methods of collection conformed to good research practices. Where data was available, disaggregation was found to be fair, and the highlighting of concerns and limitations was also fair. Limitations were that the illustration of methodologies used for data analysis by the majority of grantees was limited, which hampered the judgement under validity. From the evidence available to the DQA it was not possible to establish if the data had been properly cleaned or entered.
Completeness	Overall, the DQA found that achievement of completeness was fair . There were some shortcomings. All grantees were found to have performed fairly well in reporting against all requested indicators and disaggregation, with the exception of Mozambique which was found to be unsatisfactory. The representativeness of the sample of respondents was unable to be established through the DQA - whilst AgroTech, MODES, TICmbay and UPTAKE performed fairly well, evidence was unavailable for dDigital Integration and EMM.

Specific performance by each grantee is presented below:

Table 5: Overview of grantee performance

Digital Integration Ethiopia	In the DQA, the Ethiopia grantee data was good and met expectations. It performed well for timeliness and validity/relevance of data. Digital Integration performed fairly for reliability and completeness of data.
AgroTech Ghana	The DQA found that Ghana's grantee data was good and met expectations. It performed well in timeliness. For reliability, data was good and met expectations, although evidence available to the DQA on data analysis was limited. AgroTech performed strongly in the criteria of validity/relevance. In terms of completeness of data, AgroTech performed fairly well.
MODES Malawi	The DQA found that Malawi's grantee data was fair with some shortcomings. It performed fairly well in terms of reliability, validity/relevance and completeness. The ET has doubts on reliability of indicator 1.3 (too high compared to other countries without clear evidence for high result). Timeliness of data collection was found to be unsatisfactory; however timeliness of data reporting was good.
EMM Mozambique	The DQA found that Mozambique's grantee data was fair overall with two areas of unsatisfactory performance. For reliability, data was good and met expectations, although evidence available to the DQA on data analysis was limited. The ET has doubts on reliability of indicator 1.3 (too high compared to other countries without clear evidence for high result). For validity/relevance, EMM scored well overall, but there was a lack of methodology for data analysis. The completeness of reporting and timeliness of data reporting was unsatisfactory
UPTAKE Senegal	The DQA found that Senegal's grantee data was good and met expectations. It performed strongly across validity/relevance, reliability and timeliness and fairly well in terms of completeness.

UPTAKEThe DQA found that Tanzania's grantee data was fair. Completeness and timeliness were fairly well
achieved. Validity/relevance and reliability were good but evidence on data analysis for both of these
categories was insufficiently available.

Implications of DQA for the evaluation of NA ICT Performance

The overall quality of the data reported by grantees of NA ICT CF was fair. Grantees performed well overall in the reliability of data. They performed fairly well in the timeliness, validity/relevance and completeness of data. Areas where most unsatisfactory evidence was found was in the setting of a clear methodology for data analysis, and the highlighting of concerns/limitations of the research process. AgroTech, TICmbay and Digital Integration came out as the strongest performers, while MODES and UPTAKE performed fairly well with some shortcomings. EMM's performance appeared as fair, although it was unsatisfactory in terms of timeliness and completeness.

Grantees' performance came about despite the limited support and guidance in the collection and analysis of data at the start of the NA ICT programme, lack of quality review by the MEL contractor (see section 3.2.3 in main report), budgetary constraints, and the start of the M&E contract where the programme was already in its implementation.

The results of the DQA are in line with the findings of the ET overall and are cross-referenced with the document review and interviews conducted by the ET. Data in particular from two grantees – MODES and EMM – for 1.3 as compared to indicator 1.2 appears high. The ET did check the validity of this data with the MEL contractor and were assured that it is accurate, but, given that this data may be seen as "outlier" data, in the relevant section of the report (Section 3.4) comparisons are provided both including and correcting the data from MODES and EMM (according to the average of Digital Integration, AgroTech, TICmbay and UPTAKE).

List of DQA-relevant documents

The list below includes all documents that were considered relevant for the DQA and that were used to identify the sampled documents, which are here outlined.

Red= Read for DQA

Purple= Checked for timeliness Q only

Ghana

Farm Radio International (February 2016) 'Midterm report: ICT Extension Challenge project in Ghana's Volta and Brong Ahafo Regions'

Farm Radio International, Rosemond Ohene (April 25h- May 20th 2015) 'ICTC for Maize and Rice Formative Research Report'

Grameen Foundation (16th February 2015) 'ICT Challenge Intent Statement'

Grameen Foundation (2015) 'Performance Report for the quarter ending December 31st 2015'

Grameen Foundation (2016) 'Grameen FY16 Performance Narrative Report'

Grameen Foundation (December 2014) 'Ghana ICT Challenge: ICT Service Provider Market Assessment and Extension Provider Partner Landscape Assessment'

Grameen Foundation (December 31st 2014) 'Performance Report for the quarter ending December 31, 2014'

Grameen Foundation (December 31st 2014) 'Updated Country Plan'

Grameen Foundation (February 28th 2017) 'Final Program Report: September 2014 to January 2017'

Grameen Foundation (June 30th 2015) 'Performance Report for the quarter ending June 30th, 2015'

Grameen Foundation (March 31st 2015) 'Performance Report for the quarter ending March 31, 2015'

Grameen Foundation (March 31st 2016) 'Performance Report for the quarter ending March 31st 2016'

Grameen Foundation (November 2016) 'Endline Evaluation Report'

Grameen Foundation (November 3rd 2015) 'ICT Challenge, Ghana: Annual Programme Report for Project Year 1'

Grameen Foundation (October 31st 2016) 'Annual Program Report for Project Year 2'

Grameen Foundation (September 30th 2015) 'Updated Country Program and Two-Year Work Plan'

Grameen Foundation (September 30th 2015) 'Updated Country Program and Two-Year Work Plan'

Grameen Foundation 'Detailed NCE Work Plan for ICT Challenge Ghana October 2016-January 2017'

Grameen Foundation 'ICT Challenge Ghana Monitoring and Evaluation Plan: October 2015- November 2016'

Grameen Foundation 'ICTC Ghana Work Plan October 2014- September 2015'

Grameen Foundation: Limange, Joseph Sineka. (November 2016) 'Endline Evaluation Report'

Grameen Foundation: Limange, Joseph Sineka. (October 2015) 'New Alliance ICT Extension Challenged Fund: Baseline Survey Report'

USAID (September 26th 2014) 'Cooperative Agreement No. AID-OAA-A-14-00104: New Alliance ICT

Ethiopia

BDS Center for Development Research 'Final Report: End-line Survey of Participatory Radio Initiatives On Potassium Fertilizer And Aybar-bbm'

Digital Green (Approved 1.9.2015) 'Digital Integration to Amplify Agricultural Extension in Ethiopia: Work Plan October 2014 to September 2015'

Digital Green (April 2nd 2015) 'Year 1 Quarter 2 Progress Report: January 1st- March 31st 2015'

Digital Green (December 31st 2015) 'Year 2 Quarter 1 Progress Report: October 1st- December 31st 2015'

Digital Green (December 31st 2016) 'Year 3 Quarter 1 Progress Report: October 1st - December 31st 2016'

Digital Green (January 31st 2018) 'Final report: October 1st 2014- December 31st 2017'

Digital Green (July 1st 2015) 'Year 1 Quarter 3 Progress Report: April 1st- June 30th 2015'

Digital Green (June 30th 2016) 'Year 2 Quarter 3 Progress Report: April 1st 2016- June 30th 2016'

Digital Green (June 30th 2017) 'Year 3 Quarter 3 Progress Report: Aprl 1st- June 30th 2017'

Digital Green (March 31st 2016) 'Year 2 Quarter 2 Progress Report: January 1st - March 31st 2016'

Digital Green (March 31st 2017) 'Year 3 Quarter 2 Progress Report: January 1st- March 31st 2017'

Digital Green (October 21st 2017) 'Year 3 Progress Report: October 1st 2016-September 30th 2017'

Digital Green (October 30th 2015) 'Year 1 Progress Report: October 1st 2014- September 30th, 2015'

Digital Green (October 31st 2016) 'Year 2 Progress Report: October 1, 2015 - September 30, 2016'

Digital Green (September 30th 2015) 'Work Plan Year 2: October 2015- September 2016'

Digital Green (September 30th 2015) 'Year 1 Quarter 4 Progress Report: July 1st- September 30th 2015'

Digital Green (September 30th 2016) 'Monitoring, Evaluation and Learning Framework and Plan'

Digital Green (September 30th 2016) 'Work Plan Year 3: October 2016 - September 2017'

Digital Green (September 30th 2017) 'Year 3 Quarter 4 Progress Report: July 1st- September 30th 2017'

Digital Green 'Year 1 Quarter 1 Progress Report: September 30th-December 31st 2014'

Farm Radio International (2016) 'Baseline report: ICT Extension Challenge Project Blended-fertilizer'

Farm Radio International (June 15th 2016) 'Quarterly Progress Report: April-June 2016'

Farm Radio International (May 2017) 'Endline Survey report: Digital Integration to Amplify Agricultural Extension in Ethiopia'

Farm Radio International (October 2015) 'Baseline report: ICT Extension Challenge project in Amhara and Oromia Regions, Ethiopia'

Farm Radio International (October 2017) 'Baseline report: Digital Integration to Amplify Agricultural Extension in Ethiopia'

USAID (September 15th, 2014) 'Cooperative Agreement No. AID-OAA-A-14-00052'

Mozambique

NCBA CLUSA (15th November 2017) 'Work Plan Year 3: October 2017 to January 2019'

NCBA CLUSA (5th September 2016) 'Mozambique New Alliance ICT Extension Activity e-Extensao: Project Country Program'

NCBA CLUSA e-Extensao 'Year 1 Work Plan'

NCBA CLUSA/ Extensao Multimedia (July 31st 2016) 'Peformance Report for the quarter I: April-June 2016'

NCBA CLUSA/ Extensao Multimédia (October 31st 2016) 'Mozambique New alliance ICT Extension Activitiy Annual Report: April-September 2016'

NCBA CLUSA/EXTENSÃO MULTIMÉDIA (April 20th 2018) 'Quarterly Report: January-March 2018'

NCBA CLUSA/EXTENSÃO MULTIMÉDIA (April 30th 2017) 'Quarterly Report: January-March 2017'

NCBA CLUSA/EXTENSÃO MULTIMÉDIA (January 31st 2017) 'Quarterly Report: October-December 2016'

NCBA CLUSA/EXTENSÃO MULTIMÉDIA (July 26th 2018) 'Quarterly Report: April-June 2018'

NCBA CLUSA/EXTENSÃO MULTIMÉDIA (July 30th 2017) 'Quarterly Report: January-March 2017'

NCBA CLUSA/EXTENSÃO MULTIMÉDIA (July 31st 2018) 'Quarterly Report: October-December 2017'

USAID (February 11th 2016) 'Cooperative Agreement No. AID-OAA-A-16-00003: Mozambique New Alliance ICT Extension Activity (e-Extensio)

Senegal

Concern Universal (October 28th 2016) 'TICmbay Annual Peformance Report and 4th Quarter US Fiscal Year'

Concern Universal (October 30th 2015) 'Annual Performance Report (and 4th Quarter US Fiscal Year) Period: April (March 28th)-September 2015'

Shennan, Carol and Voss, Rachel (January 2017) 'New Alliance ICT Extension Challenge- Senegal: Basline Study Results'

SSTP (30th May 2017) 'AGRA Grant Narrative Report Outline: January 2015 to March 2017'

TICmbay (July 2016) 'Monitoring and Evaluation Strategy'

United Purpose (21st August 2017) 'Annual Work Plan: October 1st 2017- September 30th 2018'

United Purpose (October 30th 2017) 'Annual Peformance Report and 4th Quarter US Fiscal Year: October 2016-September 2017'

United Purpose/ Formerly known as Concern Universal (April 30th 2017) 'TICmbay Peformance Report for the period April-June 2017, 3rd Quarter US Fiscal Year 2017'

United Purpose/ Formerly known as Concern Universal (January 30th 2017) 'TICmbay Peformance Report for the period October-December 2016, 1st Quarter US Fiscal Year 2017'

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Annex 9 - VfM Analysis

Summary of findings regarding VfM

The ET has mixed findings for Value for Money along the 4Es and the VfM measurements in the DFID's business case proposition. The M&E systems and the financial accounting systems of the grantees were not aligned with each other. The financial data provided to the ET was unfortunately incomplete, with insufficient detail to link cost data to outputs and outcome. VfM as an approach was not embedded from the design of the programme and difficult to measure retrospectively. This limitation was discussed with DFID in mid-2018 and it was agreed that the ET would endeavour to carry out a limited and partial VfM at country level for those countries for which there was enough information. In Annex 9 a detailed analysis is conducted based on the data the ET gathered from grantees. The NA-ICT CF programme developed a results framework with PIRS indicators. These indicators were developed as comparative measurements to compare programme achievements between grantees internally. The ET assessed that the grantees did use their funding well in terms of efficiency in achieving outputs, and effectiveness in achieving outcomes, because at programme level all targets of PIRS indicators were met with the funds received. Neither cost-effectiveness nor impact indicators were measured by the grantees.

Findings on economy were less strong. Grantees were selected using a competitive process, but accountability and VfM were not at the forefront when finalising agreements. In addition, while grantees may have taken measures to ensure economy, e.g. through competitive procurement, cost savings and actual expenditure, this was not part of the required reporting and, therefore, was impossible to assess by the ET through lack of data. The ET assessed "equity" findings also as less strong. Women have more limited access to ICT-enabled services than men, as a result of socio-economic factors and the choice of crops and technologies under SSTP.

The table below provides the rating used to assess the different aspects of VfM (Economy, Efficiency, Economy and Equity) in table 2

Colour	Description
Excellent	NA ICT CF achievement against this EQ exceeded targets and/or expectations
Good	NA ICT CF achievement against this EQ met expectations
Fair	NA ICT CF achievement against this EQ was fair. There were some shortcomings.
Unsatisfactory	NA ICT CF achievement against this EQ was unsatisfactory, with many short comings
Not applicable / available	Not applicable / available

Table 1: Evaluation team's rating of achievement of the NA ICT CF

Table 2: Overall findings Value for Money

Value for Money	Rating	Narrative Summary
EQ 7 Economy: To what extent has the programme considered and managed costs?	Fair	All grantees were selected using an open competition based on USAID procedures, with donors participating in the selection process. The ET had insufficient data on expenditure to have a detailed VfM analysis between grantees. The focus of the programme has been on establishing the ICT-enabled services for SSTP technology and achieving targets; and less on setting up VfM measures from the start. Being the NA ICT is a challenge fund, more attention could have been given to competitive procedures to

Value for Money	Rating	Narrative Summary
		ensure cost are managed well and to report on the actual contributions in cash and in-kind of grantees.
EQ 8 Efficiency: How well are programme resources used by grantees to deliver programme outputs?	Good	The programme resources were well used at grantee level. Outputs were overachieved, particularly for Indicator 1.1, which far exceeded its target at programme level. The programme is still in implementation in three out of six countries, and actuals will increase further when data is collected for the PIRS 2018 and 2019. At donor level, due to different reporting formats and different reporting deadlines, resources could have been used more efficiently (e.g. with a harmonised reporting structure and one reporting deadline).
EQ 9 Effectiveness: To what extent has the programme enabled grantees to achieve outputs and outcomes?	Good	The Programme was well enabled to achieve all targets. All outcomes were (over) achieved at programme level.
EQ 10 Equity: are the services and benefits equally accessible across gender, region, or socio-economic background?	Fair	Women have less access to ICT-enabled services than men, due to social-economic factors and to the choice of crops and technologies under SSTP. Within that context, grantees have taken measures to ensure more access for women. The NA ICT programme included several measures to address women's needs, like audio-visual channels to overcome illiteracy, female trusted voices, and use of female reporters.

Table 3: Overview overall VfM assessment per grantee

Country	Overall	Economy	Efficiency	Effectiveness	Equity
Digital Integration Ethiopia	Fair	Fair	Good	Good	Good
AgroTech Ghana	Good	Good	Excellent	Good	Fair
MODES Malawi	Fair	Fair	Excellent	Good	Good
EMM Mozambique	Fair	Fair	Fair	Fair	Excellent
TICmbay Senegal	Good	Good	Good	Fair	Excellent
UPTAKE Tanzania	Fair	Good	Fair	Good	Good

1. Introduction to VFM Assessment

This annex presents the Value for Money analysis carried out in the frame of this evaluation, and the approach taken to it, both at programme and at country level. In Annex 10, a separate VfM Guidance note on how VfM could be built in from the business case stage, during programme inception and implementation until post-closure of the programme to measure sustained benefits to target population is presented.

For this evaluation, the ToR requires VfM measures that assess four key factors at country- and programmelevels:

Economy: the means and extent to which the programme considered and managed costs;

Efficiency: how well programme resources are used by grantees to deliver programme outputs;

Effectiveness: the extent to which the programme has enabled and sustained programme outputs, leading to sustained benefits for the target populations; and

Equity: are the services and benefits equally accessible across gender, region, or socio-economic background.

Each of these four VfM factors, with some overlap across them, measures a different stage in the project implementation cycle. Measurements relate directly to the four VfM factors, the questions above, and the VfM Measurement Process as depicted in Figure 1.

Figure 1: VfM Measurement Process



"Value for Money (VfM) is about maximising the impact of each (GB)Pound spent to improve poor people's lives" (DFID, 2011)

For this evaluation, the ET has also assessed the Value for Money (VfM) measures described in the DFID business case, which are defined as follows:

- Most of DFID's funds will be pooled with other donors and managed directly by USAID. USAID will not charge any project management staff time or overhead costs to the fund;
- Grantees will be selected through a competitive process with Value for Money and amount of co-funding as important selection criteria;
- Accountability and Value for Money will be at the forefront when finalising the funding agreement with the individual grantees;
- DFID will directly procure and contract the service providers for the evaluation function on behalf of the ICT Agriculture Extension Fund Steering Committee. This will mean that a proportion of DFID's funds (approximately 11%) will not be in the pooled fund but will be spent directly on the evaluation contract;
- DFID's investment will complement funding provided by USAID, BMGF and IFAD which may attract additional resources from other sources. In addition, grantees are expected to bring in their own investments, which would gradually increase during the project implementation;
- The project includes incentives for stimulating innovations and good performance by providing additional 'good' performance awards; and
- Opportunities for ensuring quality, robust evidence generated of relevance for the wider Sector.
2. Methods and limitations of VfM Analysis

2.1 Data collection

The ET conducted a document review of cooperative agreements, annual reports, quarterly reports, PIRS data and, where available, financial reports. Specifically for the VfM analyses, each of the grantees and in some cases their sub-grantees, have been provided a VfM webinar and took part in a discussion to orient stakeholders to VfM lines of enquiry, measurements, data requirements and sources. Following the VfM orientation, each grantee received a country-specific data request.

2.2 Data requests and sources

Landell Mills repetitively made detailed requests for VfM data to the grantees, the MEL contractor and the donors. In January 2018, an initial request was made to grantees for specific financial data, to map annual budget and expenditure to PIRS indicators disaggregated for gender, channel, SSTP technology and crop. This request also asked for financial data on expenditure on staff, indirect cost, and costs of services covered by non-donor sources. The MEL contractor was asked for the actual PIRS and financial data it had received from grantees, and the donors were asked for actual grant disbursements and the financial reports of all grantees. A second request was made in March 2018, after insufficient data was provided. This was a simplified request based on the example of the data provided by TICmbay's to disaggregate the cost for gender, channel, SSTP technology and crop. Several follow-up emails and offers to have discussion with the VFM expert were offered during the first four months of 2018, in an attempt to provide support to grantees in the retrieval and production of sought data. Efforts to assist them in re-examining their costs/expenditure each year and allocating them to different outputs and outcomes had very limited success.

Whilst grantees annually reported to USAID regarding expenditure, this was not linked to outputs or indicators.

In most instances, the grantees provided up-to-date results vs. target data in the PIRS for 2016 and 2017 with, in some cases, more up-to-date PIRS data then provided in either endline reports or quarterly reports for quarter 3, 2018. The ET also received all Cooperative Agreements of the six grantees including their agreement budget divided into sections for personnel, contractual, travel, equipment, other direct cost and administrative cost, as a minimum. From USAID, information on disbursements through SF270 and SF425 forms received, but not annual financial reports. None of these reports linked financial data with input and results.

Overall, the ET's and Landell Mills' attempts to acquire the necessary data to conduct the VfM analysis detailed in the evaluation Inception Report have led to limited results.

2.3 Data limitations and impact on VfM analysis

Data limitations

The "VfM analysis rests primarily upon secondary data provided by donors and grantees"¹⁴. The data provided was unfortunately incomplete. Financial data were not linked to outputs and outcome, nor channels or SSTP technology. This shows a disconnect between the M&E system and the financial accounting system. This limitation was discussed with DFID in mid-2018 and it was agreed that the ET would endeavour to carry out limited and partial VfM analysis at country level for those grantees for which there was enough information. Grantees also had difficulty to breakdown their available financial data to fulfil VfM requirements. The ET also had concerns about the quality of some of the data on indicators provided. The last limitation is that the programme is not yet finished. Based on all these limitations, the VfM analysis presented here is only partial.

a) Incomplete financial data

Incomplete data on actual expenditures were obtained by the evaluation team. Cost data was only disaggregated by some grantees (in Ghana and Senegal) at a level that cost per output and outcome could be calculated. For four grantees we only obtained some expenditure information by a financial paragraph in a final report (MODES), a break-down of cost after the VfM data request (TICmbay), an Aide memoire of IFAD (UPTAKE) and a full expenditure overview (AgroTech). This was insufficient to provide the possibility to conduct a trend analysis. For EMM and Digital Integration, we only have budget information and no expenditure data, except for some data regarding non-donor sources of funding for leveraging. For the level of analysis, this means that cross-country comparison on budget vs expenditure is not possible. At country level, the level of detail that can be provided differs.

b) No detailed financial data

Most data does not provide insight on how the grant is converted along the result chain. At best a comparison can be made for total direct cost versus output and outcome. We did not receive detailed cost information regarding the development of ICT-enabled services (the channels), the development of content or for the dissemination of information to farmers. We only received information from AgroTech and TICmbay regarding cost per channel, SSTP technology or crop. This is discussed in the country findings.

c) Credibility of result data

Results and target data for key indicators - over time and cumulative – is available through the PIRS provided by the MEL contractor. The PIRS however do not measure all outputs, outcome and impact of the Theory of Change.

At **output level** the PIRS indicators 1.1. Number of farmers with access to the provided ICT-enabled services (potential reach) and 1.2. Number of farmers using ICT-enabled services are measured. Indicator 1.1 is optional and is not consistently measured by all grantees (for example in Ghana it is measured for year 1 and described in the Annual report of year 1, but not in the PIRS). This relates to output 1 and output 2 of the Theory of Change.

At **outcome level** the PIRS indicators 1.3 Number of farmers and others who have applied improved technologies or management practices as a result of donor assistance, 1.4 Number of hectares under improved technologies or management practices as a result of USG assistance, Indicator 1.5 Number of farmers who have received donor supported short-term agricultural sector productivity training or food security training (Optional) and Indicator 2.1 Annual percentage of costs of ICT-enabled services covered by non-donor sources are measured. Indicator 1.5 is only measured by AgroTech. We have used indicator 1.3 and 1.4 as a base to measure Outcome 1: Increased use of quality inputs and improved technologies by smallholder farmers. We did not use indicator 1.5. Indicator 2.1 is used as a base to measure Outcome 2: Increased financially sustainable ICT-enabled services to complement other extension services.

The ET has some concerns about the credibility of the data for some grantees. For example, the data for indicator 1.3 for MODES in Malawi and EMM in Mozambique are much higher than the other countries. This was verified with the MEL contractor, which confirmed that the data was correct. For this analysis we have accepted the PIRS as the data to measure results. Data can be used for a cross-country comparison and at country level.

d) Programme not yet finished

Four grantees still have to report their PIRS for 2018 (covering from Q4 2017 to Q3 2018): Digital Integration only for Q4 2017; EMM, TICmbay and UPTAKE not only for 2018, but also for 2019 (Q4 2018 and Q1 2019). This means that we presently have incomplete data on results. Especially at outcome level, full results would only be complete after closure of the full programme. The actual results at end of programme would be higher than currently reported, although even at this point in time all programme levels targets are met.

e) No VfM measures were set when designing the programme

To conduct a meaningful evaluation of VfM within the NA ICT Programme, VfM measures and indicators should have been included from the start and used already ex-ante (at the appraisal stage), for monitoring (by the MEL contractor and by the grantees) and not only ex post (at the evaluation stage). If VfM is not embedded from the start it is difficult to get reliable, up-to-date data that will measure all the VfM metrics. Financial sustainability was a key concern from business case until end of programme, but other VfM measures especially around economy, cost-efficiency and cost-effectiveness were not built in from the start as part of reporting requirements.

Assessment of VfM data by country

The next step in VfM analysis is to link financial data with the indicator, target and results. In other words, we begin by linking performance and financial data at the same operational level, typically activities, output and outcome.

Fundamental to VfM analysis are specific quantitative data sets: a) the agreed upon results framework with targets and results detailed for each relevant indicator across all time-periods, b) baseline data where relevant, c) financial data (budgets and expenditures) that are aligned by the program with the results framework indicators, d) beneficiary data that are disaggregated by user identifier (gender at a minimum). Additional data detailing procurement, cost-sharing, costs per channel, etc. are also needed for this cross-country program. Overall, the data will not allow us to do a comparative financial analysis across countries, or channels, or crops.

2.4 Evaluation Framework

In the evaluation Framework EQ 7 – EQ 10 relate to Value for Money

- EQ 7 relates to Economy
- EQ 8 relates to Efficiency
- EQ 9 relates to Effectiveness
- EQ 10 relates to Equity

In the overview below we describe the VfM analysis at cross-country and country level we were able to conduct, based on the data limitations discussed above.

Table 4: Actual analysis Value for Money per Economy, Efficiency, Effectiveness and Equity

EQ	Metric	VfM Analysis	Actual Possible analysis			
Econor	ny					
EQ7	Qualitative	Review of due diligence in selection/procurement of (sub) grantees	Country level; no cross-country comparison			
	Quantitative cost- driver comparison	Administration to programmable expenditures ICT channel/type cost driver analyses	Country level; no cross-country comparison			
	metrics	staffing number and cost comparison of grantees and sub grantees; percentage of HR costs to total budget	Administration to programmable expenditures for countries with expenditure information			
	Quantitative cost sharing % metrics	Stakeholder cost sharing; percentage of quantified support from national extension services, ICT providers, other stakeholders, annual and total	Country level; cross-country comparison			
Efficien	су					
EQ8	Quantitative financial and results	Annual and to-date trend analysis: expenditure vs. budget; results vs. target for key indictors	Programme, country level; cross country comparisons			
	trend metrics	1.1, 1.2, 1.3.1.4, 1.5, and 2.1 ¹⁵ (MEL contractor)	Results analysis possible; Expenditure vs budget: only at country level			
	Quantitative cost- efficiency metrics	Calculate cost-efficiency ratios at output level for all indicators	Country level for countries with expenditure data			
			Results analysis possible;			
	Quantitative cost- efficiency metrics	Calculate cost-efficiency ratios at output level for indicators collected by the MEL contractor	Country level			
	Quantitative unit cost metrics	Beneficiary unit-costs for key indicators Review by channel and technology, as data permit	Country level for countries with expenditure data			
Effectiv	veness					
EQ9	Quantitative cost- results analysis	Annual and to-date trend analysis: expenditure vs. budget; results vs. target for key Outcome indictors (MEL contractor)	Programme, country level; cross country comparisons			

	Quantitative Outcome analysis	Disaggregate by technology/channel	Cost per farmer applied, Cost per hectare Results analysis possible; Some disaggregation by technology / channel	
	Quantitative leverage metric	Value and percentage of total investment of new stakeholder investment by country or technology	Programme and country level Comparison 2.1 target vs actual	
	<i>Qualitative</i> and quantitative	Review/assess financial sustainability of ICT business models	Country level; summarise at programme level Limited comparison, in-depth under EQ 16	
	Quantitative application analysis	User application rates; percentage of all reached (subject to data availability)	Programme, country level; cross country comparisons	
Equity				
EQ10	Quantitative analysis	Number and of men and women (i) reached, (ii) using, and (iii) adopting new technologies	Country level; programme summary	
		Differences in terms of channel use or	Country level; ICT channel	
		on crops / SSTP technologies) between men and women	Results analysis possible	

2.5 Assessment

The following assessment criteria to judge if the results of the programme are achieved and colour coding for rating will also be used for the VfM criteria Economy, Efficiency, Effectiveness and Equity.

Table 5: Ranking of performance indicator results

Colour	Ranking	Description
	Far exceeded	Targets were far exceeded > 150% of target
	Exceeded	Actuals between 110% and 150% of target
	Targets met	Actuals between 90% - 110% of target
	Targets not met	Actuals between 70% and 90% of target
	Unsatisfactory	Actuals below < 70% of target
	Not applicable / available	

3. Cross Country findings

In this chapter, the ET presents the cross-country findings for the six grantees for Economy, Efficiency, Effectiveness and Equity.

3.1 **Programme overview**

The NA ICT was funded by DFID, Bill and Melinda Gates Foundation, USAID and IFAD. DFID committed £2.8 million (which, with the estimated exchange rate of \$1.562, corresponded to a total of \$4,373,600). USAID and BMGF each gave \$3,000,000, and IFAD \$1,500,000. This was all disbursed, but the exchange rate was much lower than anticipated (14% lower in June 2016). This funding was used for a country programme in six countries (\$1,700,000 to Digital Integration in Ethiopia, AgroTech in Ghana, MODES in Malawi, EMM in Mozambique and TICmbay in Senegal and \$1,500,000 to UPTAKE in Tanzania), the M&E contractor I (\$810,380, paid by DFID) and the external evaluation by Landell Mills (\$468,000), as well as an adaptation fund. Due to the lower GBP to USD exchange rate, the adaptation fund was reduced from \$550,000 to \$202,500 to compensate for the reduced funding. Digital Integration, EMM and UPTAKE received each \$67,500 from the adaptation fund.

An overview of budgets for grantees and the MEL contractor, sub-grantees per country, the main activities, budget and start/end date of the contract, is provided in table 6.

Grantees / Sub-grantees Main activities Start and end Country Budget Date Ethiopia Digital Radio A combination of participatory \$1,700,000 30/09/14 to Green, Farm International, Awaaz, De DiMagi "Digital radio; low cost video; IVR (with 31/12/17 integration" SMS option) extension services integrated with Government extension services Ghana Grameen Foundation, Digital Green, Services are a mix of a digital \$1,699,951 30/09/14 to "AgroTech" Farm Radio International (FRI) application (AgroTech) for 31/01/17 extension agents connected to farm aggregators in North Ghana, participatory radio (FRI) and low cost video (DG) on extension agents devices and a saving option for inputs linked to agents and financial institution (InterPay) Malawi CRS. Africa, A mix of IVR, SMS (with Airtel) \$1,682,838 30/09/14 to Self Help "MODES" Human Networks International (HNI), services and participatory radio 30/09/17 CADECOM extension services Mzuzu (Airtel is partner of HNI, but no funding from grantee, nor HNI) Mozambique National Cooperative mix of IVR (with \$1,700,000 12/02/16 to Business Offering **"EXTENSÃO** Association: Cooperative League of Vodafone) (voice and SMS) + 30/02/19 MULTIMÉDIA" the USA (CLUSA) with HNI and FRI FRI's participatory radio (EMM) programs Concern Universal (now Uniited Uses mix of radio programs and \$1,698,019 25/03/15 to Senegal "TICmbay" Purpose) with SB Conseil, Practical related mobile services (IVR / 25/03/19

Table 6: Overall budget 6 NA ICT countries

Action, UC Davis, ADG

SMS) (with Orange / Sonatel) managed by a social enterprise (Jokolante) and provided via

Country	Grantees / Sub-grantees	Main activities	Budget	Start and end Date
		cooperatives and radio stations as customers		
Tanzania "UPTAKE"	FRI and Centre for Agriculture and Biosciences International (CABI)	A mix of participatory radio extension service and an integration of mobile tools to tie farmers to radio stations	\$1,500,000	01/11/15 to 31/12/18
MEL contractor		Monitoring and learning (M&L) services	\$804,347	08/03/15 to 30/09/18

3.2 VfM in the business case

The ET also assessed the Value for Money (VfM) measures described in the DFID business case. The findings on the six subheadings mentioned in the business case are presented below.

Most of DFID's funds will be pooled with other donors and managed directly by USAID. USAID will not charge any project management staff time or overhead costs to the fund. The programme is delivered by USAID. DFID is providing £2,800,000 over four years. Grants are fully operational in all six countries¹⁵. 89% is pooled with the other donors. DFID have contracted the service providers for the evaluation function on behalf of the ICT Agriculture Extension Fund Steering Committee. 11% of DFID's funds are spent directly on the evaluation contract. The total fund is around \$12m over four years. The other donors are USAID (\$3 million plus \$1.6m in kind for managing the fund and grantees); the BMFG (\$3m) and IFAD (\$1.5 million). This criterion is met.

Grantees will be selected through a competitive process with Value for Money and amount of co-funding as important selection criteria. A technical committee, made up of USAID, DFID and BMGF for all but Tanzania, and IFAD and USAID for Tanzania, reviewed the bids from all grantees. The template for bid assessment included five criteria: program strategy; collaboration and synchronization with SSTP; results planning, feedback process, sustainability and scalability; implementation and management capacity; and staffing and resource leveraging. Each had sub-questions and asked for assessments against strengths and weaknesses. Value for Money was not explicitly mentioned in the bid assessment template. Only under 'program strategy' a referral is made to a cost effective approach. This criterion is partly met.

Accountability and Value for Money will be at the forefront when finalising the funding agreement with the individual grantees. In the Cooperative Agreement between USAID and the grantees Value for Money is not part of the agreement. This criterion is not met.

DFID's investment will complement funding provided by USAID, BMGF and IFAD which may attract additional resources from other sources. In addition, grantees are expected to bring in their own investments, which would gradually increase during the project implementation. No additional resources were attracted outside the initial four donors. Grantees have an amount of \$5,048,732 as commitment for cost share/leverage in their contract. The actual amounts of leverage funds are unclear at programme level, because the ET did not receive all expenditure information.

The project includes incentives for stimulating innovations and good performance by providing additional 'good' performance awards. An adaptation fund was awarded at midterm in the project. In the original budget, the adaptation fund was \$800,000. A competition between the six grantees resulted in an award of \$67,500 each for UPTAKE, Digital Integration and EMM. The initial adaptation fund had to be reduced due to the lower than expected exchange rate of the British Pound. This criterion was met, although the amount was lower than planned.

Opportunities for ensuring quality, robust evidence generated of relevance for the wider sector. No public documents are published so far, but the evaluation will publish lessons learned that are relevant for the wider sector. This criterion was not met. **Fair**: In the DFID business case criteria were stated regarding the VfM proposition of the programme. Not all these expectations were met. Funds were pooled and efficiently managed by USAID. Grantees were selected using a competitive process. They have committed funds for over \$5 million (although actual expenditure is not yet at that level) and a good performance award was provided to UPTAKE, Digital Integration and EMM, although with lower funds than initially foreseen. VfM was not part of the cooperative agreement which made it difficult to do a fully-fledged VfM assessment during the performance evaluation and evidence on VfM is not yet published to share with the wider sector, although this evaluation will provide these wider lessons. Overall, the expectations in the business case were not fully achieved with regard to VfM. This does not mean that money was not well spent, but it does explain why the ET could not conduct a full VfM analysis.

3.3 The four VfM factors: Economy, Efficiency, Effectiveness & Equity

Economy: To what extent has the programme considered and managed costs?

Table 7: Overall assessment Economy cross-country

Sub question Economy	Rating	Narrative
What is the evidence of due diligence in selection of grantees and sub grantees?	Good	All country grantees were selected using an open competition based on USAID procedures with donors participating in the selection process.
What are the grantee and sub grantee staffing plans and actual costs, compared across six target countries?	NA	Not enough data to provide a meaningful comparison between grantees is available. Only for four grantees some expenditure data was available. Subgrantee staffing plans in some countries fall under the budget line for personnel and in other countries under the budget line for contracts. This means that a comparison is not possible.
Is there evidence of competitive procurement among grantees and sub grantees; is the supplier market constrained, thus limiting competition?	NA	Not enough data to provide a meaningful comparison between grantees is available. In the country section we were able to make an analysis at country level.
Is there evidence of cost sharing or in-kind support from national extension services or other stakeholders yet?	Fair	Yes, cost sharing is an important component of the NA ICT programme. 33.7% of total programme budget consist of commitments from grantees for cost sharing/leverage of grantees. In Ethiopia, the government is the main contributor, whilst in other countries private sector telco's, NGO's and seed companies are contributors to cost sharing. Evidence of cost sharing/leverage is provided, although financial reports show the expenditure on cost sharing/leverage was not up to the level of the commitments. Limited in-depth information on the actual contribution of funds/in-kind resources is provided by grantees
Overall summary Economy: To what extent has the programme considered and managed costs?	Fair	All country grantees were selected using an open competition based on USAID procedures with donors participating in the selection process. The ET had insufficient data on expenditure to have a detailed VfM analysis between grantees. The focus of the programme has been on establishing the ICT-enabled services for SSTP technology and achieving targets, and less on setting up VfM measures from the start. NA ICT is a challenge fund and more attention could have been given to competitive procedures to ensure cost are managed well and to report on the actual contributions in cash and in-kind of grantees.

What is the evidence of due diligence in selection of grantees and sub grantees?

All country grantees were selected using an open competition based on USAID procedures, with donors participating in the selection process¹⁶. The normal US procedures are followed to select grantees. All sub awards

were approved by the Agreement Officer of USAID. USAID mentioned that in Mozambique a second round was needed to get an experienced grantee. No evidence from grantees about competitors was found. All donors participated in the selection process. No additional due-diligence measures were in place.

The donors used a bid assessment sheet to evaluate each proposal¹⁷. Five main criteria were used for scoring: program strategy; collaboration and synchronization with New Alliance Scaling Seeds and Other Technologies (SSTP) Roadmap for the country; results planning, feedback process, sustainability and scalability; implementation and management capacity, and; staffing and resource leveraging. Furthermore, each criterion contained sub-questions. The officer assessing the concept paper had to explain the rationale for the rating and outline strengths, weaknesses and deficiencies of each bid.

Each grantee is leading a consortium to ensure they meet a grant requirement to offer a mix of ICT-enabled extension services. Subgrantees were brought together organically; that is, the selected subgrantees had prior experience in ICT services, were already working with other consortium partners or were selected because they were the best of a limited pool of service providers.

What are the grantee and sub grantee staffing plans and actual costs, compared across six target countries?

Personnel cost are provided as a lump sum in the cooperative agreements. The ET does not have the required data on how staff is used to provide a meaning full analysis at cross-country level. In the cooperative agreements of the six grantees, there are staffing plans mentioned at least at grantee level, but there is no data on how staff is actually used during implementation. For MODES, TICmbay and Digital Integration, personnel of the subgrantees is part of the subcontract budget. For EMM, a staffing plan for grantee and subgrantees is available in the cooperative agreement, but there is no expenditure data available. AgroTech and UPTAKE provided expenditure information about personnel. Both spent more on personnel than they budgeted for. More details will be provided in chapter 4 of the country findings.

Is there evidence of competitive procurement among grantees and sub grantees? Is the supplier market constrained, thus limiting competition?

There is no cross-country analysis possible due to a lack of required data. There is no evidence of competitive procurement processes in most countries, simply because it is not described in the cooperative agreements nor in annual reports. Only UPTAKE in Tanzania described that they used FRI procurement procedures. Other grantees might have used good procurement processes, but these are not reported. There is also no information available on competition to recruit best staff or sub-contractors.

Is there evidence of cost sharing or in-kind support from national extension services or other stakeholders yet?

There is clear evidence of cost-sharing or in-kind support from national extension services and other stakeholders. This is a key part of the NA ICT programme, measured by the outcome-level indicator 2.1 Percentage of costs of ICT-enabled services covered by non-donor sources.

The overall Programme budget for NA ICT was \$9,981,048 (USAID) and \$5,048,732 (cost share/leverage from (sub) grantees), for a total of \$15,029,780. This shows that 33.6% was required by grantees to contribute to the overall programme budget. There was a difference between grantees for which amounts they committed in the cooperative agreement, as shown by figure 2 below.

Figure 2: Grant budget vs committed cost share / leverage for all grantees



If we compare commitments with actual reported expenditure on cost share/leverage, the actual cost share/leverage is less than the budgeted commitments. This is partly because we do not have all detailed expenditure break-downs for all grantees, partly because the expenditure we received is not always reporting on cost share/leverage, and partly indicator 2.1 was reported in the PIRS, but not always with a breakdown of actual expenditure. A good example of contributions of national extension service is Ethiopia, with a cash contribution of \$598,599 for equipment, and in year three alone a contribution of \$491,310 in kind (based on staff time and meeting rooms). A good example of private sector contribution is Mozambique, where Vodacom contributed \$189,246 in promotion cost and free calls. More detail will be provided under effectiveness (paragraph 3.3.4) and within each country-level analysis.

Efficiency: How well are programme resources used by grantees to deliver programme outputs?

Table 8: Overall Efficiency finding Overall Programme

Sub-question Efficiency	Rating	Narrative Summary
What are the trends, over time, of programmable budgets vs. actual expenditures?	NA	There is not enough detailed expenditure information to provide a meaningful overview at programme level. There was however some level of inefficiency at donor level, as the different donors required different reporting formats, under different reporting deadlines. This could be seen as a waste of time and resources. A harmonised reporting structure with one reporting deadline would have been more efficient.
How do financial data correlate with planned results and actual achieved results when compared to logframe results indicators, at programme level?	Excellent	The DFID logframe aimed to reach 3,000,000 farmers to use ICT-enabled extension services. The planned total target was 2,613,657, although target setting might have been too low. The actual achieved results were 3,510,356 farmers (while the programme is still implementing) that used the ICT-enabled extension services. This is 117% of the intended 3,000,000 farmers. The total budget is disbursed. The ET did not have sufficient information to assess the correlation between financial expenditure and actual results. Overall actual performance indicators are (far) overachieved compare to targets.

What are the cost-efficiency ratios for key results at the programme levels?	Excellent	Actual output indicators are overachieved.
What are the unit costs across key	NA	There is not enough detailed financial data to provide a unit
indicators at programme?		cost across the programme.
Is user satisfaction data useful to	NA	Not enough evidence provided on user satisfaction.
triangulate with quantitative results?		
Overall Efficiency: How well are	Good	The programme resources were well used at grantee level.
programme resources used by		Outputs were overachieved, particularly for Indicator 1.1,
grantees to deliver programme		which far exceeded its target at programme level. The
outputs?		programme is still in implementation in 3 of 6 countries and
		actuals will increase further when data is collected for the
		PIRS 2018 and 2019. At donor level, due to different
		reporting formats and different reporting deadlines,
		resources could have been used more efficiently with a
		harmonised reporting structure with one reporting deadline

What are the trends, over time, of programmable budgets vs. actual expenditures?

There is not enough detailed expenditure information to provide a meaningful overview at programme level. There was some level of inefficiency at donor level, however, as the different donors required different reporting formats with different reporting deadlines. A harmonised reporting structure with one reporting deadline would be more efficient. In the cooperative agreement all grantees provided a budget that was at least broken down into personnel cost, travel cost, sub contracts, other direct cost and indirect cost. A major cost driver is sub-contracting.



Figure 3: Budget Breakdown¹⁸

There was no detailed break-down to determine if subcontracts consisted of budgets for subgrantees only or also for external consultants. The budget is also not broken down in cost drivers for ICT-based extension (like cost of content development, the cost of content curation, the cost of disseminating messages, the cost of personnel providing ICT-based extension services, the cost of promotion ICT-based extension services, the investment cost to develop a digital extension platform or a mobile app)¹⁹

The best proxy therefore is to compare direct cost, indirect cost and cost share. The average percentage of indirect cost is 14%. Agrotech and EMM were above this average. Senegal and Tanzania had the lowest indirect cost ratio. In terms of commitments for cost share/leverage, Digital Integration, MODES and TICmbay committed amounts above average, while AgroTech and EMM had the lowest budgeted commitments. All budgets were part of the cooperative agreement with USAID (except UPTAKE that had an agreement with IFAD).

Table 9: Overall budget Programme²⁰

¹⁸ Cooperative agreement budgets for all 6 countries

¹⁹ mNutrition evaluation Cost-Effectiveness Baseline Report Ghana.

²⁰ Budgets in Cooperative agreement for all 6 grantees

x	Ethiopia	Ghana	Malawi	Mozambique	Senegal	Tanzania	Programme
Direct Programme cost	1,478,260	1,111,105	1,482,299	1,297,694	1,575,292	1,363,720	8,308,369
1 B 4 4	004 700	000 000	000 404	400.004	400.000	400.070	4 077 000
Indirect cost	221,739	293,688	200,431	402,331	122,829	136,372	1,377,390
Total Budget NA ICT	1 600 000	1 404 703	1 682 730	1 700 025	1 608 121	1 500 002	9 685 760
Total Budget NA IOT	1,033,333	1,404,795	1,002,750	1,700,025	1,030,121	1,500,092	3,003,700
Cost share / leverage	1,700,000	250,000	1,125,000	158,850	1,234,882	580,000	5,048,732
Overall budget	3,399,999	1,654,793	2,807,730	1,858,875	2,933,003	2,080,092	14,734,492
% Indirect cost of total							
budget NA ICT	13%	21%	12%	24%	7%	9%	14%
% cost share/overall							
budget	50%	15%	40%	9%	42%	28%	34%

Digital Integration in Ethiopia and EMM in Mozambique did not provide any expenditure information. Other grantees provided some expenditure information that will be analysed in the country sections. Main cost drivers are subcontracts and personnel. There is not enough detailed information to make a meaningful cross country analysis between budgets and expenditure. In the country finding chapter we were able to do an analysis at country level (especially for AgroTech and TICmbay).

How do financial data correlate with planned results and actual achieved results when compared to logframe results indicators, at programme and country level?

The DFID logframe aimed to reach 3,000,000 farmers to use ICT-enabled extension services. The planned total target was 2,613,657, but, according to the ET, target setting might have been too low. The actual achieved results were 3,510,356 farmers (while the programme is still implementing) that used the ICT-enabled extension services. This is 117% of the intended 3,000,000 farmers. The total budget is disbursed. The ET did not have sufficient information to assess the correlation between financial expenditure and actual results. The Performance Indicators for NA ICT are divided in output and outcome indicators as illustrated in Table 10.

Indicator	Description	Level
Indicator 1.1	# farmers - having access to the ICT-enabled services	Output
Indicator 1.2	# farmers - using ICT-enabled services	Output
Indicator 1.3	# farmers - applying improved technologies or management practices	Outcome
Indicator 1.4	# hectares - under improved technologies or management practices	Outcome
Indicator 1.5	# farmers who have received donor supported short-term agricultural sector productivity training or food security training (this was an optional indicator only measured in Ghana, the ET has therefor decided not to use this indicator in the analysis)	Outcome
Indicator 2.1	Percentage of costs of ICT-enabled services covered by non-donor sources	Outcome

Table 10: Performance indicator result level

In this paragraph we will compare all indicators (output and outcome) to measure if the intended targets are met. A more detailed analysis of the output indicators will be provided under Efficiency, and a more detailed analysis of the outcome indicators under Effectiveness. In table 11, an overview of the overall performance is given: Table 11: Performance indicators actual / target²¹

Performance % (actual							Overall
/ target)	Ethiopia	Ghana	Malawi	Mozambique	Senegal	Tanzania	Programme
1.1. Number of farmers							
with access to (the							
provided ICT-enabled							
services) (potential							
reach)	198%	202%	489%	132%	130%	115%	173%
1.2. Number of farmers							
using ICT-enabled							
services	112%	128%	535%	51%	257%	94%	134%
1.3. Number of farmers							
who have applied							
improved technologies	115%	297%	315% ²²	128%	97%	122%	183%
1.4 Number of hectares							
under improved							
technologies	40%	1291%	111%	58%	66%	94%	124%
2.1 Percentage of costs							
of ICT-enabled services							
covered by non-donor							
sources	132%	67%	102%	155%	50%	NA	100%

Overall, all indicators are achieved at the programme level. Indicators 1.1 and 1.3 are far overachieved. Data in particular from two grantees – MODES in Malawi and EMM in Mozambique – for 1.3 as compared to indicator 1.2 appears high. The ET did check the validity of this data with the MEL contractor and were assured that it is accurate. However, given that this data may be seen as "outlier" data, in the relevant section of the report (Section 3.4) comparisons are provided both including and correcting the data from MODES and EMM according to the average of Digital Integration, AgroTech, TICmbay and UPTAKE). Based on the assessment in the DQA, assuming that MODES and EMM achieved the average conversion rate from indicator 1.2 to indicator 1.3. If so, MODES would overachieve indicator 1.3 with 167%, but EMM would underperform, with a result of 52% of target for indicator 1.3. Overall, indicator 2.1 is achieved according to target. UPTAKE did not have to report on indicator 2.1. At country level, not all indicators are achieved. For most indicators, grantees expect to reach targets before end of contract. More details on reasons behind underachievement will be provided in Chapter 4 for each country.

What are the cost-efficiency ratios for key results at the programme levels?

We did not have all expenditure information to calculate clear cost-efficiency ratios. But all grantees had similar budgets to implement their country programme. Achieving targets for outputs could be a good way to assess cost efficiency. Grantees that most exceeded their targets are seen as more cost-efficient than countries that just met the targets. EMM, TICmbay and UPTAKE are still in implementation. All three have not only to report their PIRS for 2018 (up to quarter 3, 2018), but also their PIRS for 2019 (for quarter 4, 2018 and in the case of TICmbay and EMM also quarter 1, 2019). Digital Integration finished on the 31 December2017 and still has to report their PIRS for 2018 (for quarter 4, 2017). This means that the figures for the indicators will become higher. EMM for example is confident that they are still able to achieve their target for indicator 1.2.

Outputs

In figure 4, the results of indicator 1.1 over time are presented. In 2016, this indicator was around the level of intended targets, whilst in 2017, this was far overachieved. An explanation for this could be the introduction of the radio coverage tool, which was better able to determine the audience of a radio station. More males had access to the ICT-enable services than women, as further discussed under Equity.

²¹ Source PIRS 2016 and 2017, annual report 2016 for Ghana and quarterly report Q3 2018 for Senegal and Mozambique

²² The indicator 1.3 (too high compared to other countries without clear evidence for high result) for MODES and EMM. In the main report they will be seen as outlier data.



For indicator 1.2. Number of farmers using ICT-enabled services, the overall target is far over achieved. Most data for 2018 were to be reported in the PIRS 2018 (due in November 2018).



Figure 5: Results Targets vs Actuals for the programme indicator 1.2²³

For the results of indicator 1.2, Digital Integration is the largest contributor, but MODES far overachieved their target 1.2 and is not far behind Digital Integration. The ET is not sure if grantees had set realistic targets at the start or rather conservative ones.

Figure 6: Number of farmers using ICT-enabled services (indicator 1.2) 24



Based on the results of indicator 1.2, Digital Integration is the most cost-efficient in terms of reaching the most farmers using ICT-enabled services for their budget, and EMM and TICmbay the least. The latter two grantees are still implementing and they may be able to improve the number of farmers using ICT-enabled farmers before their contract ends. There is not sufficient expenditure information to compare actual reached number of farmers with the actual expenditure.

What are the unit costs across key indicators at programme level?

The evaluators are not able to calculate consistent actual cross-country unit cost to make a meaningful comparison, due to insufficient expenditure information for all grantees. The ET was able to calculate a unit cost for AgroTech, MODES, TICmbay and UPTAKE. Whilst more detailed information is provided in the country sections, the table below provides an overview.

Unit cost	Digital Integration	AgroTech	MODES	ЕММ	TICmbay	Uptake	Programme
Direct Cost per user	N/A	2.02	1.78	N/A	3.38	2.42	2.40
Direct Cost per farmer that applied SSTP technologies	N/A	4.34	3.37	N/A	26.90	8.81	10.85
Direct cost per hectare	N/A	1.95	2.66	N/A	21.67	6.51	8.20

Table 12: Unit cost cross-country²⁵

Effectiveness: To what extent has the programme enabled grantees to achieve outcomes?

Table 13: Overall programme effectiveness

Sub-questions Effectiveness	Rating	Narrative Summary
What are the user conversion/application rates?	Good	The application rates are based on the targets set and the actuals for indicator 1.2 and indicator 1.3. The targets were achieved, but the ET does not have sufficient data available to assess if targets were set appropriately.
Specific to each Performance Indicator, what is the evidence of achieved outcomes?	Good	Indicator 1.3 was overachieved Indicator 1.4 was overachieved Indicator 2.1 was achieved
Is there evidence of increased investment in ICT by stakeholders other than donors? Leverage factor	Good	The target for the programme was to reach 54% non- donor funding. This was achieved with 55%.
Business model financial sustainability	Fair	The grantees have chosen for different business models. None of them is yet sustainable.

²⁴ Source PIRS 2016 and 2017 and Q3 report 2018 of Senegal and Mozambique.

²⁵ Based on expenditure reports and PIRS data.

Service provider and user feedback	NA	Not sufficient information provided
Overall summary Effectiveness: To what extent has the programme enabled grantees to achieve outcomes?	Fair	The Programme was well enabled to achieve all targets. All outcomes were (over) achieved at programme level. There was insufficient financial data to make a cost-effectiveness analysis. There is evidence of overall programme cost sharing commitment, but no clear evidence that actual cost- sharing was at level of commitments. None of the country programmes was fully sustainable yet.

What are the user conversion/application rates?

Figure 28: Percentage of farmers that use ICT enabled extension (1.2) that applied SSTP technologies or practices (1.3)



The highest actual conversion rate for EM is 69%, and the lowest is in Senegal 12.6%. MODES and EMM have the highest conversion rates. TICmbay is the only grantee with an actual conversion rate that is lower than planned. This could be caused by the fact that in Senegal the focus of message was to promote SSTP technologies only, while certified seeds as such were not new for the country. With a new technology like Apronstar, which addressed a real urgent problem for farmers, the conversion rate appears higher, but not all data is yet available. In other countries, like Mozambique and Malawi, SSTP technologies were new. The average actual conversion rate (39%) is slightly above the targeted conversion rate (36%). The ET did not find clear reasons why they were able to achieve such a high rate compared to the other countries²⁶. If EMM and MODES are treated as outlier data the average conversion rate of the other four grantees is 28%. For channels, a cross country analysis is possible only for radio. The average is a conversion of 21% for radio. However, there are big differences that could not really be explained: TICmbay (6%) and UPTAKE (5%) have a low radio conversion, while EMM is (92%) extremely high.

²⁶ The ET did double-check the accuracy of the data from MODES and EMM with the MEL contractor and were assured that it was valid. Both grantees were not able to provide a good explanation why their conversion rate was so high. The ET assessed therefore the data for indicator 1.3 for both grantees as outlier data and shows also the effect if EMM and MODES both achieved the average conversion rate of the other 4 countries which is 28%

Specific to each Performance Indicator, what is the evidence of achieved outputs and outcomes?

The DQA (see Annex 8) show mixed findings. The overall quality of the data reported by the grantees was fair. Grantees performed well, overall, in the reliability of data. They performed fairly well in the timeliness, validity/relevance and completeness of data. Areas where most unsatisfactory evidence was found was in the setting of a clear methodology for data analysis, and the highlighting of concerns/limitations of the research process. AgroTech, TICmbay and Digital Integration came out as the strongest performers, while MODES and UPTAKE performed fairly well, with some shortcomings. EMM's performance appeared as fair, although it was unsatisfactory in terms of timeliness and completeness.

All grantees have created their own country-based narrative for Performance Indicator Reference Sheets (PIRS) for NA-ICT CF together with the MEL contractor. It described the definitions of each indicator for each country, what the plan is for data collection, how data will be disaggregated (sex, channel and SSTP technology), what are data limitations (e.g. indicators are often based on secondary data, possible double counting between channels, difficulty of attribution of farmers that apply SSTP technologies or hectares under improved technologies towards ICT-enabled extension, extrapolation based on sample outcomes), plans for data analysis, review and reporting.

There is no overall baseline used for the programme. Sometimes, in individual grantee baselines, information is available for some indicators. Radio usually used baseline, midterm and endline surveys for each campaign to learn from each campaign. The baseline was then used to get information about farmer needs, preferred radio stations and listening times for radio.

The programme has four outcome indicators:

- Number of farmers and others who have applied improved technologies or management practices as a result of donor assistance (indicator 1.3)
- Number of hectares under improved technologies or management practices as a result of USG assistance (indicator 1.4)
- Number of farmers who have received donor supported short-term agricultural sector productivity training or food security training (indicator 1.5) (optional and only measured in Ghana, this indicator will be discussed in the relevant country section)
- Percentage of costs of ICT-enabled services covered by non-donor sources (indicator 2.1)

For 2018 the actual PIRS data are not yet available. EMM, TICmbay and UPTAKE are still implementing the programme and will report more actuals. Nevertheless, the overall programme already overachieved the overall target with 182%.

Figure 8 Target vs Actual indicator 1.3 Number of farmers and others who have applied improved technologies or management practices as a result of donor assistance²⁷



MODES appears to be the most effective with 457,579 farmers that applied, and Senegal the least effective with 29,583. Five of the six grantees scored excellent. Only Senegal could not completely reach their target, but their scored in nevertheless still good.

Figure 9 Overview of indicator 1.3 by country²⁸



The ET corrected for EMM and MODES indicator 1.3 and treated this as outlier data with the average conversion rate from indicator 1.2 to indicator 1.3 of the other 4 grantees. Under this scenario, MODES would achieve 243,419 farmers and not 457,579 farmers, and EMM would achieve 46,734 farmers and not 115,299 farmers. Overall, indicator 1.3 would still achieve 1,026,473.



Figure 10 Indicator 1.4 target vs actual²⁹

Overall, the programme exceeded the programme target and reached 1,709,886 hectares under improved technologies or management practices (Indicator 1.4). This is mainly due to AgroTech and MODES's results. The grantee with the highest number of hectares under technologies or management practices is AgroTech with 659,807 and the lowest is TICmbay, with 36,714. Only two of the six grantees reached the target. AgroTech far exceeded (1291%) due to an underestimation of hectares per farmer and an overachievement of number of farmers that applied SSTP technology. Digital Integration only achieved 40% of their target. The data of quarter 4 2017 will still provide additional results on this indicator. EMM reached 58% of their target, but is still implementing. In general, most targets were met in the programme. In most countries the indicator was calculated based on number of farmers that applied improved technologies or management practices (indicator 1.3), times a proxy for average hectares under improvement per farmer. In the country section, more details concerning why or why not the grantees achieved their targets is provided.

²⁸ Source PIRS 2016 and 2017 and Q3 2018 report Senegal and Mozambique

²⁹ Source PIRS 2016 and 2017 and Q3 2018 report Senegal and Mozambique

Is there evidence of increased investment in ICT by stakeholders other than donors? Leverage factor

Indicator 2.1 (% of non-donor funding) was not compulsory for all grantees. UPTAKE did not provide data for indicator 2.1. The average of the other 5 grantees was 55%, just above the average target of 54%. Two of the five countries did not achieve their target. EMM had the highest result with 96%, due to a higher than expected contribution of Vodacom, whilst Agrotech the lowest with 20%. Agrotech had a shorter contract for just 2 years, but found a new donor (IDRC) after the contract ended, to scale up their AgroTech project.



Figure 11 Overview of indicator 2.1 by grantee³⁰

In the country sections in chapter 4 the detailed contributions per country for indicator 1.4 will be discussed.

Business model financial sustainability

The type of business model used by the different grantees to achieve financial sustainability is described under EQ 16 in the main report. None of business models used is yet sustainable. Digital Integration has embedded the ICT-enabled extension within the government extension system, AgroTechhas embedded it into the private extension system with outgrower schemes, but are also searching for a private sector business owner who can take over the ownership of the AgroTech tools and brand. MODES and EMM have secured a private sector Telco with a farmer package. TICmbay has established a social enterprise that sells services to other NGOs, cooperatives and input suppliers and UPTAKE has a mixed model with a value added reseller (Esoko) that sells services to NGOs and input dealers that use the ICT-enabled services as part of their marketing budget to reach farmers.

Service provider and user feedback

There is limited evidence of feedback from service providers or users. In the case of AgroTech, MODES and UPTAKE some country level findings will be presented.

Equity: Are services accessible to women and men?

Table 14: Overall Programme Equity

Sub-questions Equity	Rating	Narrative Summary
Are services accessible to women and men?	Fair	Women have less access to ICT-enabled services due to social economic constraints. The country grantees did their best to include measurements to reach more women despite SSTP itself not having a clear gender focus.
Do services meet the needs and preferences of women?	Good	The NA ICT programme include several measures to address women's needs, i.e. audio-visual channels to overcome illiteracy, use of female trusted voices and female reporters.
Gender spread of benefits	Fair	In general women have less access to ICT-enabled services than men. But with all actions undertaken by the grantees still the percentage women for all indicators is not above 1/3. All targets for women were overachieved, but less than men targets.
Are recipients from a diverse range of social and economic backgrounds?	NA	Not enough information to assess diversity backgrounds of beneficiaries is available. The focus of the programme is primarily on smallholder farmers.
Overall Equity: Are services accessible to women and men?	Fair	Women have less access to ICT-enabled services than men, due to cultural and social-economic factors and due to the choice of crops and technologies under SSTP. Within that context, grantees have taken measures to ensure more access for women. The NA ICT programme includes several measures to address women's needs such as the use of audio-visual channels to overcome illiteracy, female trusted voices, and female reporters. The targets for women for all indicators were around 33%. This was similar for the actuals, but due to over-achievement of all indicators for men and women farmers, more women were reached than targeted.

To what extent did the grantees and sub-grantees consider gender equality/equity in the programme design?

Gender was considered in the design phase in the development of ICT-enabled services and in the development of relevant content. The NA ICT was an add-on to SSTP, which did not have a clear gender focus. Some of the crops were "women's" crops but most were considered "male's" crops (like maize). NA ICT did their best to address gender, including through the following ways: inclusion of women-only groups, and use of female reporters, female extension agents and female trusted voices. Most data was properly disaggregated by gender. All grantees were aware of the challenges of addressing gender, and noticed that the disaggregating data was important, but not enough was done to effectively tackle gender disparities.

There was not enough information to judge if the recipients were from a diverse range of social and economic backgrounds. The country programmes had a focus on small holder farmers. DFID's Annual Reviews always had recommendations on gender. The MEL contractor was guided by USAID in the development of a gender plan and it conducted various activities related to gender and how to improve the gender sensitivity of grantee projects. The F2F workshop in Ethiopia had a gender session (world cafe) and there was a webinar on the topic too. IFAD have a self-evaluation checklist for analysing gender equality and women's empowerment and youth inclusion in project implementation arrangements and used it in Tanzania. In the country section specific activities of grantees regarding gender will be described.

Common findings across countries:

- Gender did not come out strongly in the TORs and was not a priority of SSTP.
- The grantees did not detect that gender was a main concern of the donors
- There was a perception amongst grantees that it was more important to meet targets than to try to reach more
 women and get more female application, particularly where many of the SSTP crops were ones that men grow
 With the selection of errors being male griented it was border to consider grander applied.
- With the selection of crops being male oriented it was harder to consider gender equality
- However, all grantees both at design and in implementation made clear efforts to ensure the ICT-enabled extension reached women. These measures including the choice for radio (to overcome higher levels of illiteracy amongst women), finding out when women are free to listen to the radio and seeking to have

broadcasting at those times, having female voices on the radio and IVRs (including female broadcasters, lead farmers), setting up CLGs to which women were encouraged to go to, having women only groups (e.g. in Tigray)

Differences:

- Digital Integration focused on gender in several ways and towards the end of the project developed a gender strategy brief and a gender learning document.
- Both MODES and UPTAKE considered age as well as gender in design, but more emphasis was given to addressing gender than age differences during implementation.

Gender spread of benefits

In general, women had less access to ICT-enabled services than men. However, with all actions undertaken by the grantees, still the percentage of women for all indicators is not above 1/3. All targets for women for each indicator were overachieved. The targets for men even to a bigger extent. Relatively more men than women were reached.

- Indicator 1.1 33% of all farmers with access of ICT-enabled services were women
- Indicator 1.2 32% of all farmers that used ICT-enabled services were women
- Indicator 1.3 29% of all farmers that applied were women
- Indicator 1.4 30.0% of hectares under improvement were of women. In figure 12 it is also clear that for all indicators the number of women reached exceeded the target (this is the case for men too).

7,000,000 6,000,000 5,000,000 Number of hectares 4,000,000 3,000,000 2,000,000 1,000,000 0 Male Female Male Female Male Female Male Female Indicator 1.1 Indicator 1.2 Indicator 1.3 Indicator 1.4 Target 3.546.687 1,661,895 1,671,256 832,401 200.000 47,500 976,268 404.884 Actual 5,997,279 2,888,332 4,272,601 1,562,826 202,861 115,114 1,186,683 520,661

Figure 12: Gender spread

Annex 10 - VFM Guidance

Introduction

These Guidance Notes draw upon experience using available data and working with NA ICT grantees to assess and manage VFM. The purpose of these Guidance Notes is to inform future grantees to assess, manage, and report on Value for Money (VFM). These notes are not prescriptive, that is, each programme requires a VFM framework that is specific to the programme interventions and context. It is expected that some programmes will develop additional metrics that will enable stronger VFM and results management during programme implementation. Conversely, some metrics and approaches in these notes may be less applicable in particular contexts. Taken as a whole, however, these approaches are useful starting points for programme VFM management

Value for Money (VFM) Overview

Fundamental to VFM analysis are specific data streams, and the alignment of those data to specific metrics to manage and measure four VFM factors: Economy, Efficiency, Effectiveness, and Equity, described below.

VFM analysis links planned and actual inputs with planned and achieved results, for targeted beneficiaries over time.

- **Economy** is measured as inputs are translated into programme implementation through processes such as procurement, HR deployment, partner selection, contracting, etc.
- **Efficiency** is measured as programme implementation generates activity and output level results. Achieved results vs. targets, actual expenditures v. budgets, unit-costs, cost-efficiency ratios, and the internal rate of return, across locations or programme approaches are frequently measured.
- Effectiveness is a measure of sustained outputs generating planned outcomes. Value gained by sustained outcomes; value lost when outputs are not sustained, and the cost-benefit analysis of ongoing or of additional investment to sustain or regain output adoption are often key effectiveness metrics. Catalytic benefits and unintended positive or negative consequences are frequent measures. Additional measures including a cost-benefit analysis (CBA) of outcomes or impacts, or an analysis of internal rate of return (IRR) can be informative as measures of sustained effectiveness. Often these measures, though useful, are not undertaken as longer-term outcomes are often not fully evident during project implementation. Further, a balance between the cost of such measures, and the likely evidence generated by the expenditure must be considered.
- Equity measures the spread of benefits across beneficiaries by gender, ethnicity, region, wealth quintile, etc.

Key requirements for rigorous use of VFM analysis and performance management include some or all of the following:

- the business case or planning documents for the program being assessed;
- documentation related to HR deployment, procurement, purchases of goods and services, and budget details;
- activity, output and outcome level results, planned and achieved, measured semi-annually or annually, and cumulative;
- budgets and expenditures aligned to same indicator levels and time periods as results reported;
- outcome level sustainability data, external surveys, cooperative agreements with stakeholders for continued service delivery, etc.;
- beneficiary data clearly defined by type: assumed, estimated, or actual with supporting data collection methodology; and,
- comparison of similar metrics across different locations, project sites, countries.

Narrative reporting forms a valuable source of data triangulation for VFM analysis and is usually included to more fully "tell the value for money story" of a programme. Nonetheless, quantifiable data is foundational. Quantitative VFM metrics are calculated and linked to each of the four key VFM factors, triangulated with additional narrative

data when informative. The evidence generated by VFM analysis is used to manage project processes and results for greater VFM at all points in the project cycle.

Data Limitations

Aligning financial, results, and beneficiary data across interventions for VFM analysis is frequently a challenge.

The challenges are primarily institutional: programmes are established without planning for later VFM analysis; the budget systems of implementing partners are not aligned to results frameworks; the processes to translate donor funds to activities and outputs are not always transparent; implementing partners are sometimes reluctant to provide complete financial data; cascading overhead charges are not disaggregated; and projects may conclude before outcome level data are available.

Each of these potential limitations undermines the rigor of VFM analysis.

The planned VFM analyses to be conducted as part of the Evaluation of the NA ICT CF are presented in the Final Report. The planned VFM analysis was hindered by significant data challenges that have also been well-documented in the Final Report.

Steps to Operationalise VFM in future projects

During the assessment of VFM in the NA ICT programme, a number of factors were identified that caused significant limitations of the VFM analysis that was possible. The following steps identify key points that may be undertaken to strengthen future VFM management and analysis:

- a) Ensure that key staff understand the dimensions and uses of VFM analysis as a management and measurement tool;
- b) Development of a VFM framework of metrics and data sources to generate evidence for leadership to make decisions, manage performance, and report on key metrics;
- c) Systems and processes should be embedded from the planning and inception stages through project implementation, to provide regular VFM analysis for leadership to use for ongoing project management;
- d) Regular, ongoing VFM analysis using common VFM indicators, should be embedded in management information and finance systems;
- e) Key decisions at each stage of the project cycle should be accompanied by justification of a VFM analysis of alternatives, where feasible;
- f) Changes in project design or implementation, and the effect of such changes on overall project VFM, should be identified and reported;
- g) Processes should be assessed for capacity to manage VFM in HR deployment; procurement, and contracting;
- h) Scalable VFM tools should be provided to project staff to build capacity for VFM management and analysis.

VFM Guidance Notes

The following VFM Guidance Notes are prospective in that they suggest how future programming may be better prepared for ongoing and retrospective VFM analysis. VFM analysis in each of the project stages is detailed.

The Business Case Stage

Programmes primarily funded by DFID (and some other donors) require a VFM analysis of the proposed intervention at the Business Case stage. The Business Case and inception stages should clearly set out the framework for ongoing VFM analysis of programme operations (what will be measured, data sources, timing, etc.).

Developing and agreeing upon a VFM Framework at the planning stages helps to align data reporting for VFM analysis, brings all partners into the same understanding of data and reporting needs, and streamlines the VFM assessments.

When the project planning and inception phases do not anticipate VFM analysis, as is the case with NA ICT, the data challenges increase, partner ability to comply with data requests diminishes, and the rigor of the eventual VFM analysis suffers.

At the planning stages, future programming should:

- determine if and when VFM analysis will be required;
- develop a VFM Framework, including metrics, data sources and challenges, and links to each of the four VFM factors;
- embed systems in programme M&E and finance to collect data and report on VFM metrics regularly (to minimize last-minute data collection);
- a multi-country programme with similar indicators, such as NA ICT, should be framed by a consistent results framework and budgeting structure. This will likely include some degree of financial code-mapping³¹ across partners,
- aligning financial and results data across partners may impose an additional burden on partners with dissimilar financial management or M&E systems, and funding to support code mapping should be considered; NA ICTs approach to assume that the MEL contractor would align results and financial data did not support VFM analysis; and,
- at inception, plans should consider the use of external studies to assess outcome level results as part of the exit strategy, or after closure, to assess sustained effectiveness.

During Programme Inception

The inception stage bridges the planning and implementation stages. Key VFM activities at Inception include:

- confirming data availability according to the previously developed VFM matrix;
- establishing operational and reporting responsibility for VFM management;
- developing systems for regular data gathering and VFM analysis for management use of VFM analysis to strengthen results.

The *ex-post facto* implementation of VFM analysis in NA ICT required the creation of a retrospective data analysis and VFM framework, retrieval of data from partners (some of whom had closed their NA ICT project) and retrospective data alignment between financial, results, and beneficiary data. This proved quite difficult for partners to manage, despite the efforts of the evaluation team.

Partner Selection

The building of implementing partner consortia often happens organically, as it was the case with NA ICT. Where there are multiple implementing partners it is valuable for VFM analysis to understand the details of cascading partner overheads, the HR structure and costs of partner staffing, and activity-level target and results contributing to key programme outputs.

Partner detailing should include:

- the competitive process to select partners, if any;
- partner budgets and expenditures including overhead and indirect costs;
- partner responsibility for targets and results, measured regularly;
- contracting structures, if any, that reduce risk and incentivize results (PBR or results-based incentives, for example).

Partner details as above enable more granular VFM analysis of the processes, costs, and activities that lead to programme level results. Value and rigor could have been gained for the NA ICT VFM analysis if quantifiable data about partner processes and activity-level results had been available.

Programmes with few partners, or with partners whose activities are not cost-drivers may not need to be included in VFM analysis.

During Programme Implementation

There are valuable opportunities to use VFM analysis during programme implementation. VFM analysis is a constructive programme management tool, specifically as,

 regular VFM analysis provides programme leadership with another internal lens through which to assess programme performance;

- VFM generates evidence for managers to focus remedial attention where needed to improve results or to replicate approaches leading to strong achievement;
- VFM is a powerful tool to manage downstream partners;
- for partners, VFM results can be used as a key driver for payment by results or incentivised contracting;
- VFM analysis can justify cost variances between project implementation sites by linking unit costs and exogenous evidence of cost variations between locations;
- VFM measures quantify the costs to reach the most vulnerable and the most difficult to reach, again
 providing evidence of the necessary costs to fulfil DFID's rights-based approach to reach the most
 vulnerable;
- VFM measures the programme impact of catalytic benefits and unintended consequences.

None of these tools were used in NA ICT because insufficient thought was given to VFM during implementation. Looking forward, as donors and programme managers want to understand which ICT channels, or which ICT-enabled interventions are most efficient and effective, VFM analysis will provide insight to programme leadership and donors. The challenge will be to develop a VFM framework in advance, then analyse and report regularly.

Maximising the benefits of VFM analysis during implementation requires a change in mind-set from viewing VFM primarily as a donor compliance requirement to a broader understanding of VFM as an evidence-generating programme management tool.

At Mid-term and Programme Closure

VFM analysis contributes to Mid-term and Final Reviews, complementing narrative reporting and triangulating findings. The nature and metrics of VFM analysis at these stages are similar to ongoing VFM analysis, except that Final reviews may have the opportunity to assess early signs of intervention effectiveness. The uses of VFM at the mid-term review include:

- generating analysis that may lead to programme changes;
- innovations to strengthen or replicate results; changes in intervention strategy;
- rigorous partner reviews; and,
- accumulation of regular prior VFM assessments during programme implementation to validate long term findings.

The mid-term and final reviews conducted by each NA ICT partner and by the MEL contractor, did not include measures of the input to output chain. Limited evidence was provided to validate the cost effectiveness of ICT channels, or crops cultivated. Had the NA ICT country-programmes included regular VFM analysis, the data limitations identified elsewhere could have been addressed earlier and the consequent mid-term and final evaluations would be based in stronger evidence.

Post-Closure

Value for Money reviews at the post-programme closure stage contribute to cost-benefit analysis (CBA) of sustained benefits to target populations. Often combined with external quantitative and qualitative data collection, outcome level CBAs identify the long-term cost-results linkage.

The advantage of post-closure analysis is significant. As donors and agencies seek an evidence-base for future programme interventions, the VFM analysis of past programmes is informative for planning. As future ICT-enabled extension services are planned, future cost-benefits will be enhanced if VFM analysis during programme inception and post-closure is designed at inception.

Lessons Learned

Several key lessons emerge from our VFM analysis of NA ICT:

- The use of VFM analytics to manage and assess project performance is greatly strengthened if donor requirements are explicit during project planning and inception;
- Future ICT-enabled projects can make valuable use of comparative VFM metrics across programs, countries, crops and interventions. Making use of comparative metrics will increase the management of VFM across programs for ongoing measurement and management;

• Monitoring parties working alongside programs should be equipped as VFM resources to programs.

In summary, while the current use of VFM analysis in NA ICT is variable, the opportunity to design and implement robust VFM performance management plans will strengthen future ICT supported programming and enable cross-program comparisons.

Annex 11 - Dissemination plan

The purpose of this dissemination plan is to provide a rationale for the communication activities and outputs to be undertaken in the frame of this evaluation by the ET and Landell Mills, in partnership with DFID.

It takes into account the purpose and objectives of the evaluation itself, the relevance of the findings for different audiences and the most effective ways of transmitting key messages to those audiences, which the evaluation has helped identify as key stakeholders and reference actors in the industry of ICT4Agr. This plan provides a structured way of managing the communication and dissemination activities for this evaluation, and will also help to ensure that they are appropriate and reflect the most relevant and useful findings.

Landell Mills will lead on the delivery of the communication plan. The Team Leader will define the tasks and assign these within the evaluation team, whilst also enlisting the support of Landell Mills' in-house communications staff and graphic design team where required. In some cases, communication activities will require the input of DFID, USAID or other key stakeholders, as described in Table 1.

As indicated in the ToR, the objective of the communication activities will primarily be to generate and share evidence-based learning "on what does and does not work in relation to scaling up ICT-enabled extension approaches through working with the public and private sectors".

There are a wide range of audiences for whom this learning will be of relevance. This includes, but is not limited to, those donors and/or governments who are already supporting or intending to support ICT-enabled agricultural extension; organisations involved in developing and delivering agricultural extension services (government and non-government, national and international); and the ICT industry who are already engaging or intending to engage in providing ICT services for agricultural extension. In providing a comparative analysis of the design and performance of the grantees, there will also be lessons that can be directly applied by the implementing partner (grantees and sub-grantees).

With this in mind, the communications plan identifies different strategies according to the target audience. Given the need to implement this plan efficiently, and within the evaluation budget, the evaluation team will consider the most effective and low-cost ways of transmitting key messages, on a priority basis. For example, certain stakeholders will require a direct and detailed presentation of findings (e.g. DFID, USAID), others may benefit from reading the full evaluation report, whilst for others it will be sufficient to share the publishable 2-page evaluation brief.

Table 1 below presents a summary of the dissemination plan, key actions and indicative timing based on an early assessment of the evaluation objectives.

Table 1: Communication Plan

Target audience / stakeholders	Dissemination objective	Strategy	Actions and timing
1. Donors directly supporting NA ICT			
DFID IFAD USAID Bill and Melinda Gates Foundation (BMGF)	- to apply learning in future phases/extensions, programme design through adoption of recommendations of the evaluation.	 Direct consultation during evaluation Presentation and feedback on findings at key stages of evaluation Dissemination of final evaluation report and evaluation brief to: Implementing partner. Internal staff working in ICT/Agricultural programmes. Related projects/programmes. Donor networks. 	 Actions: DFID to facilitate attendance at workshops and presentations for delivery by ET (Interim – by end May 2018; and Final – by end of Feb 2019); ET to finalise evaluation report (by end Jan 2019). ET to discuss and propose format, content for evaluation brief (in consultation with DFID) (by mid-Feb 2019). ET to obtain suitable images during fieldwork and enquire as to use of grantees, DFID images (by mid-Feb 2019). ET to finalise and distribute evaluation brief by end March 2019).
2. Grantees and			
Digital Green, Farm Radio International, Awaaz, De DiMagi Grameen Foundation, CRS, Self Help Africa, Human Networks International (HNI), Mzuzu CADECOM (Airtel is partner of HNI, but no funding from grantee, nor HNI) National Cooperative Business Association: Cooperative League of the USA (CLUSA) with HNI and FRI. United Purpose SB Conseil Practical Action	 to adjust/improve current interventions where possible in line with comparative lessons and recommendations of the evaluation. 	 Direct consultation during evaluation Presentation and feedback on findings at key stages of evaluation Dissemination of final evaluation report and evaluation brief to: Key staff involved in NA ICT implementation 	 Actions: i. DFID and ET to identify key staff and obtain contact details (by mid-Feb 2017). ii. ET to consult on EQs during field visits and follow-up (by end Oct 2018).

Target audience / stakeholders	Dissemination objective	Strategy	Actions and timing
University of California Santa Cruz ADG Centre for Agriculture and Biosciences International (CABI)			
3.			
World Bank GIZ IFPRI	 to learn from best practice by other donor-supported programmes. to integrate best practice/lessons into potential new programmes, or to integrate learning into existing funding programmes. 	 Dissemination of final evaluation report and evaluation brief to: Evaluation department ICT/development programming staff. 	 Actions: i. ET to prepare full list of donors and contact details of relevant staff (by end Feb 2019). ii. ET to prepare and send covering e-mail with attachments (report and brief) and request uploading of evaluation report/brief on organisation website and/or link to DFID website (by end March 2019).
4.			
Relevant ministries (agriculture, etc.) Agricultural extension services in countries of evaluation, and in others (as identified by DFID).	 to integrate lessons into policy, regulation and/or activities in support of ICT/agriculture scale-up. to raise awareness of benefits of ICT/agriculture amongst users of agricultural extension services and to inform future development of services. 	 Dissemination of final evaluation report and/or evaluation brief to: Key staff working directly in ICT/Agricultural development. TBC - dissemination of MailChimp evaluation summary (based on evaluation brief but viewable on tablet, mobile phone, etc.) to agricultural extension service users 	 Actions: DFID and ET to prepare full list of relevant organisations and contact details of key staff (by end Feb 2019). ET to prepare and send covering e-mail with attachments (report and evaluation brief) for distribution by organisation (by end March 2019). ET to prepare mail-out (MailChimp) of evaluation findings for distribution to agricultural extension service users – to be discussed (by end Feb 2019).
5.			
Other NGOs and stakeholders (including ICT industry) as identified by DFID	 to raise awareness of benefits of ICT/agriculture amongst membership. 	 Dissemination of final evaluation report to and/or evaluation brief: Key staff working directly in ICT/Agricultural development. 	Actions: i. DFID to prepare full list of relevant organisations and contact details of key additional stakeholders to be identified (by end Feb 2019).

Target audience / stakeholders	Dissemination objective	Strategy	Actions and timing
	- to integrate lessons into		ii. ET to prepare and send covering e-mail
	activities in support of		with attachments (report and evaluation
	ICT/agriculture scale-up.		brief) (by end March 2019).