

## **Incorporating the use of ICTs into Oxfam's markets-based livelihoods programmes: A guidance paper<sup>1</sup>**

### **1. Introduction**

By the end of 2013, the number of mobile subscriptions in developing countries was expected to exceed 89 per cent of the total population (ITU 2013). This phenomenon has awakened the interest of development organisations, private enterprises and governments, resulting in myriad mobile-enabled initiatives around the world. A number of pilots and projects have emerged at Oxfam over the last few years, ranging from monitoring water points to providing cash transfers with mobiles during an emergency. However, Oxfam has only recently started to embrace this technological opportunity for strengthening its markets-based livelihoods programmes, particularly in agriculture. This Guidance Document is for Oxfam programme managers who are incorporating Information Communication Technologies (ICTs) into markets-based livelihoods programmes.

'ICT for Development' (ICT4D) projects have been operating in one form or another since the beginning of the 1990s. In recent years, as the pace of technical development and innovation has quickened and the price of technology continues to decrease, there has been less interest in developing or picking winning technologies (for example voice vs. text vs. internet), and more in exploring how communication technologies can be applied in different domains and sectors to yield the greatest benefits.

### **2. Mobile Agriculture (M-Agri) and its benefits**

One form of ICT4D that is well suited for use in agricultural livelihoods programming is **Mobile agriculture (M-Agri)**.<sup>2</sup> M-Agri services have come a long way since their early pilots in the late 1990s. While SMS messaging continues to be used widely to share market prices, expert advice and agricultural tips, far more sophisticated systems have also been developed to help farmers access markets more effectively. For example, SMS services are increasingly supplemented with photos and videos, and call centres are being set up where farmers can speak to an extension expert in their own language. The advent of 'mobile money', including micro-payments technology, is providing farmers with access to a wider range of markets and financial services. For example, about half of Kenya's population, estimated at 43 million, use mobile payments (M-Pesa), and over 30 per cent of Kenya's GDP is spent through M-Pesa. In addition, there are some examples of mobile technology being used to facilitate tasks related to agriculture itself, such as the control of irrigation pumps and the identification of counterfeit fertilisers.

This wide range of services can be categorised as Information Services, Value Chain Linkages, and Financial Services. These three groups of services aim to address the different needs of smallholder farmers along the agricultural crop cycle, from planning to harvesting to selling (see Annex 2). Benefits include improved incomes, reduced transaction costs, improved quality assurance procedures, and access to financial services (see Table 1 for more details).

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<sup>2</sup> See Annex 1 for a Glossary of Terms.

**Table 1: Types of M-Agri services and associated benefits**

	<b>Service offering</b>	<b>Benefits</b>
<b>Information Services</b>	<ul style="list-style-type: none"> <li>-Input information</li> <li>-Agronomic Information</li> <li>-Weather forecasts</li> <li>-Market information</li> </ul>	<ul style="list-style-type: none"> <li>-Better choice on inputs</li> <li>-Better sustainable agro practices</li> <li>-Improved productivity</li> <li>-Higher crop quality</li> <li>-Higher prices received</li> <li>- Reduced vulnerability of production to climate variability</li> <li>-Horizontal as well as vertical information flow</li> </ul>
<b>Value Chain Linkages</b>	<ul style="list-style-type: none"> <li>-Aggregation of farmers for purchase and sale</li> <li>-Connection with input providers and buyers</li> </ul>	<ul style="list-style-type: none"> <li>-Purchase inputs more cheaply</li> <li>-Access to larger buyers</li> <li>-Less product loss</li> <li>-Access to new products and markets</li> </ul>
<b>Financial Services</b>	<ul style="list-style-type: none"> <li>-Mobile banking (money transfers)</li> <li>-Micro-credit/saving</li> <li>-Micro-insurance</li> </ul>	<ul style="list-style-type: none"> <li>-Reduced risks and transaction costs</li> <li>- Increased investment in assets</li> <li>-Reduced vulnerability to risks and shocks</li> </ul>

### 3. Principles for success

Since 2000, non-governmental organisations (NGOs), international organisations and private companies have developed hundreds of M-Agri services around the world. However, the vast majority did not manage to achieve economic sustainability or even continue beyond the pilot phase. Duplication of pilots providing the same type of services in one country has been common. There are currently over 100 active initiatives in the M-Agri field (see Figure 1), many of which still compete in the same countries with similar service offerings.

**Figure 1: Existing M-Agri Value Added Services**



Source: [GSMA mAgri tracker](http://www.gsma-magri.com), an online site that maps the mobile agriculture products and services across the developing world.

Since 2010, more cooperative and complementary initiatives have been developed between organisations. This shift has been accompanied by an increasing recognition of the importance of private-public partnerships to ensure long-term economic sustainability of the service provision.

The following are key **principles for success** based on recent studies<sup>3</sup> and M-Agri experiences.

- **ICTs are not an end in themselves; they are a means to enable specific development and poverty-reduction goals.** The use of ICTs in a specific programme will not determine its development outcomes; these will be directly linked to the set of activities and services provided by the programme and not by its delivery channel.
- **ICTs can contribute to enhance the overall impact of a programme** by increasing its outreach, reducing its running costs, increasing efficiencies, promoting accountability of stakeholders and by improving the monitoring and evaluation activities of the programme.
- **Women's rights at the heart:** any M-Agri intervention must promote women smallholder's power in markets, and consider the cultural, financial and educational barriers that might prevent them or other marginalised groups from accessing these technologies and services. If not, the intervention might result in negative impacts on gender power dynamics, reinforcing or even exacerbating existing inequalities.
- **Build on existing ICT infrastructure and services where possible:** use common platforms and existing applications to reduce costs and increase the likelihood of achieving the desired impact.
- **Keep the technology simple:** low-tech solutions are often appropriate, easier to source, more user-friendly and equally reliable as more expensive alternatives.
- **Plan for the future, not the now:** design business models that are financially, environmentally and socially sustainable and scalable in the medium to long term.
- **Stakeholder engagement and ownership:** in the development phase, it is vital to listen to beneficiaries to understand their needs and risks that they face, and to maximise control and ownership over services. Build in ways to monitor and evaluate the services to ensure that they effectively meet beneficiaries' needs.
- **Timely, actionable and relevant services:** appropriate delivery channels to ensure that users receive the information they need in an accessible format and in a timely fashion. The information is relevant to the farmer's location, climatic zone, current position in the agricultural cycle, income level, farming activity and native language.

#### 4. Integrating ICTs in Oxfam's livelihoods programmes

Once the need and willingness to include ICTs in a particular programme has been identified, programme managers can take the following steps to determine the kind of intervention that is needed to draw on lessons learned, existing services and to avoid potential failures.

##### **Step 1: Learn about the wide range of ICT- enabled information and financial services available**

The first step is to gain familiarity with the wide range of information services, value chain linkages and financial services that can be provided through ICTs, and to understand how these can benefit smallholder farmers. Programme managers will need this background knowledge to identify opportunities for using ICTs and to ensure that the programme draws on best practices from the industry (see the 'Further reading section' on pages 18-19 for a list of resources detailing the range of mobile agriculture services available).

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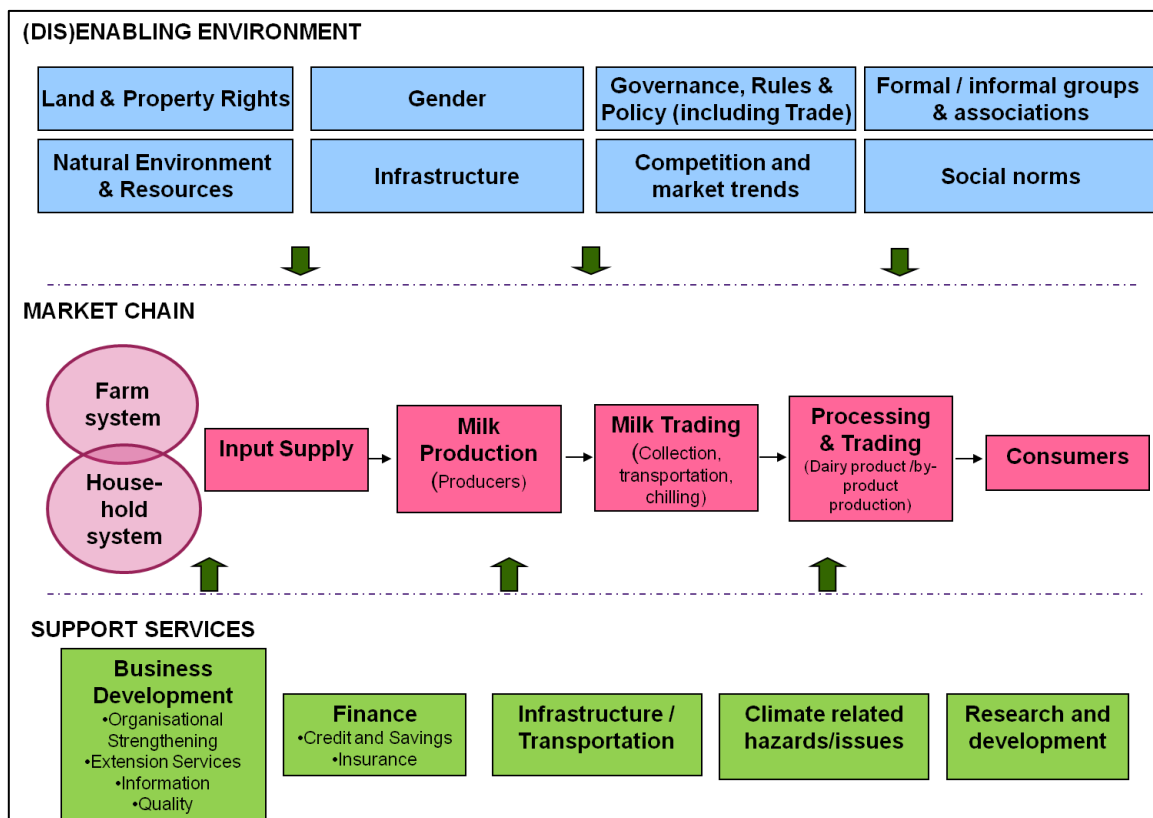
<sup>3</sup> FAO (Miller, Saroja and Linder 2013), USAID (FACET 2012) and World Bank (Qiang, Kuek, Dymond and Esselaar 2012).

## Step 2: Identify and prioritise opportunities for using ICTs

The second step consists of identifying activities where ICTs could provide an effective way of delivering services to women and men smallholder farmers in ways that reduce operating costs, increase the outreach and improve the efficiencies of the programme.

It is important to do this after you are clear on what markets/sub-sectors hold the highest potential for improving livelihoods based on a thorough analysis of market demand, the market actors and service providers, and the barriers and opportunities for women and men smallholders. It is often helpful to represent this information visually on a map. For example, Figure 2 shows a gendered market map, which is a comprehensive visual representation of the roles of men and women involved in a particular market system. It consists of three levels. The top level – called the enabling environment – shows the external factors affecting a market chain (e.g. infrastructure, natural or policy environment). The middle level is the market chain itself. And the bottom level depicts the market services (e.g. transport, finance, information and extension services) needed to enable the market chain to function.<sup>4</sup>

**Figure 2: Example of a gendered market map (dairy sector in Bangladesh)**



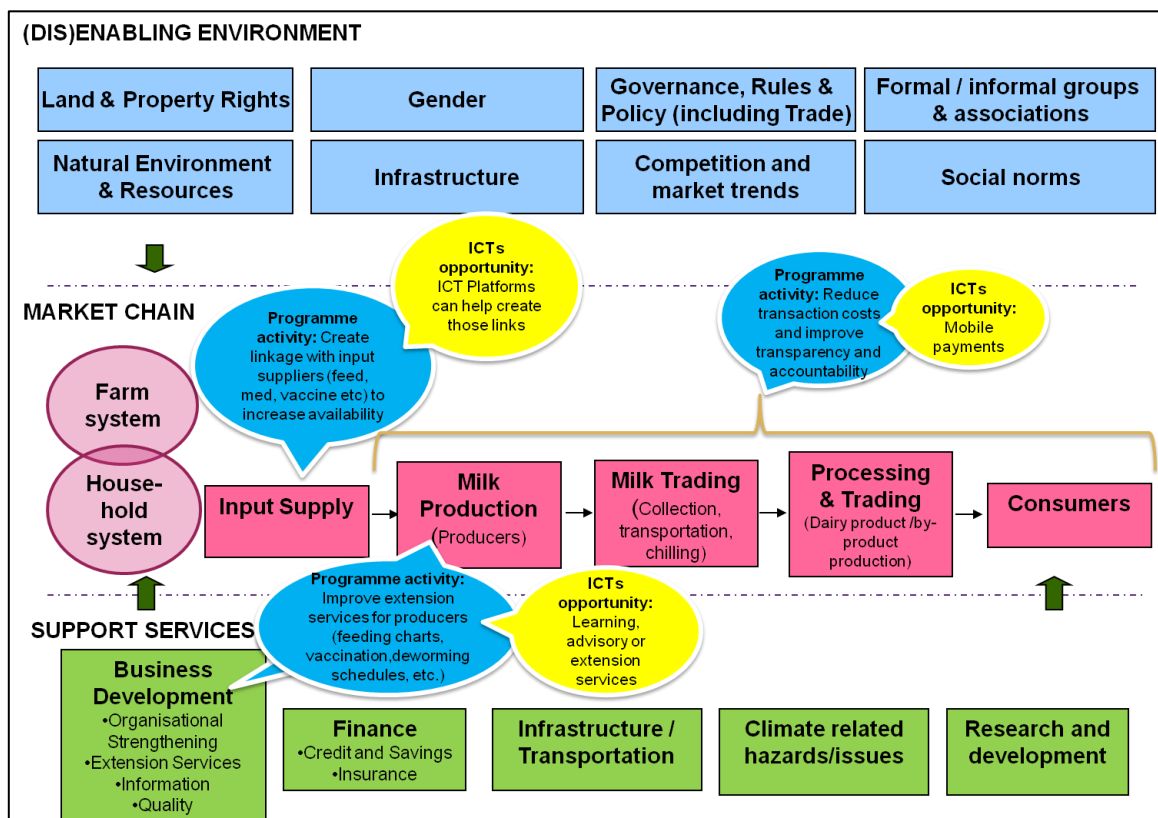
<sup>4</sup> A team of people internal and external to Oxfam, including a market research specialist or agricultural sector specialist, and advisory support on women's economic leadership, typically lead the development of a gendered market map. This is done in a participatory way with a range of stakeholders, such as community representatives, market actors, government, and service providers. Information on how to develop a gendered market map is available under [Learning Resources](http://www.growsellthrive.org) on [www.growsellthrive.org](http://www.growsellthrive.org)

To identify potential opportunities for integrating ICTs in a markets-based livelihoods programme, a good starting point is to analyse the 'market chain' and 'support services' sections of your market map. Oxfam staff often use 'thought balloons' to make visible on a market map specific programme activities or opportunities for promoting women and men into new roles in market chains and services, or linking men and women smallholders to new markets or improved services. The thought balloon to the right depicts the programme activity in Bangladesh to develop active women paravets to fill the gap in veterinary services in a target area.



By looking at your market map with the perspective of ICTs in mind, you will identify those constraints and activities where ICTs could play a facilitative role. For example, in the dairy sector, you may identify an opportunity to link smallholder producers with input suppliers (feed, medications and vaccines) for dairy farmers. ICT platforms could help create those links. Similarly, there may be a gap in extension services for promoting animal health leading to a lack of awareness among smallholders regarding feeding charts, vaccination schedules and deworming schedules. ICTs could be used to improve learning, advisory and extension services provided by government. Figure 3 shows how you could integrate these ideas into your market map using yellow thought balloons.

**Figure 3: Market chain section of gendered market map depicting opportunities for ICTs in the dairy value chain Bangladesh**



For each gendered market map, you will most likely identify several opportunities to use ICTs. However, because their impact on the overall performance of the programme will be different for each opportunity, it will be important to prioritise the ICT opportunities that have the most potential to increase impact, and use this prioritised list to make more informed decisions about the most appropriate intervention (see Step 4).

### **Step 3: Understand the current service-offering and enabling environment in the country**

The third step is to conduct a quick analysis of the current M-Agri service-offering and enabling environment in the country. This analysis will help you identify the compatibility between the existing M-Agri service-offering in the country and the specific needs of the programme, and potential public and private partners, as well as the possible constraints in the enabling environment.

A good starting point is to conduct desk research in GSMA's<sup>5</sup> Mobile Development Intelligence Website to identify the current service-offering in your country. This website lists the majority of ICT4D initiatives in developing countries and it is regularly updated:

1. Go to <https://mobiledevelopmentintelligence.com/>
2. Click on > Join MDI (top right of the page).
3. Fill in your details and click > Agree to the Terms and Conditions.
4. Once you have registered, go to > Markets > Countries.
5. Select your country. There you will find a coverage map, key statistics, organisations, and products and services.
6. Click on > Products and Services Show More (bottom right of the page). You will then see a list of existing services in your country.
7. Filter the list by sector > Mobile Agriculture.
8. Click on each initiative to learn more about the specific service-offering.

This desk research should be followed by a quick review of Oxfam's ongoing and planned ICT4D projects, including Oxfam's new Mobile Nutrition Programme (M-Nutrition), to determine if there are any other existing or planned Oxfam initiatives in the country that you could build on or link to.<sup>6</sup>

This desk research could be complemented by face-to-face meetings with key private and public stakeholders in your country (e.g. main mobile network operators, and ministries of agriculture and ICTs). These meetings would serve to check on the validity of the information identified through the desk research, communicate Oxfam's interest in using ICTs to improve its livelihoods work, and explore further the potential constraints in the enabling environment. Examples of potential constraints in the enabling environment may be regulations that prevent the provision of information services through ICTs by any organisation apart from the government or lack of mobile network infrastructure in rural areas. More thorough meetings will come later once the type of intervention and right stakeholders have been identified.

### **Step 4: Identify existing ICT service-offerings that could be incorporated into the programme**

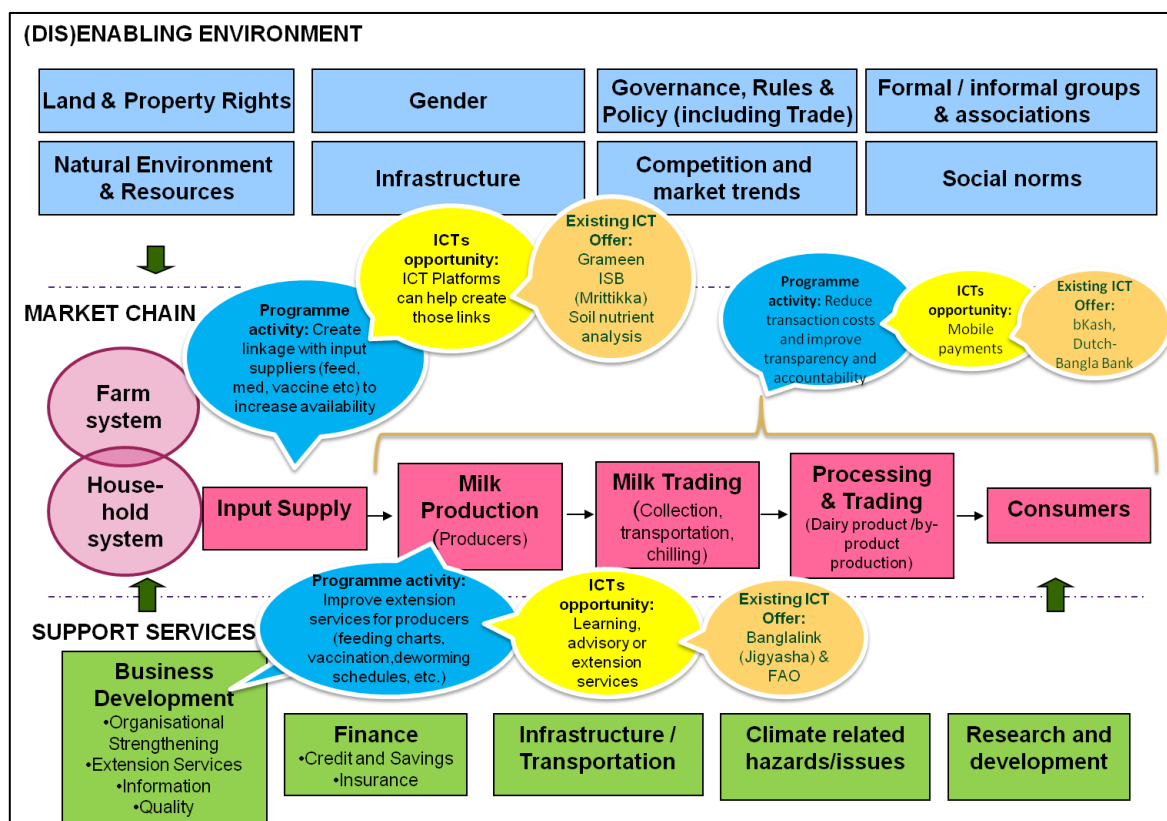
Step 4 consists of comparing the opportunities for using ICTs in the programme (see Step 2) and the existing ICT service-offering in the country (see Step 3) to identify potential synergies between both. This exercise can begin by including the findings from your market map (see Step 2) and determining how the opportunities for using ICTs relate to the existing service offering. You could do this visually by including the existing service offering in your market map, represented as orange thought balloons linked to the yellow balloons for ICT opportunities (see Figure 4).

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<sup>5</sup> Groupe Speciale Mobile Association

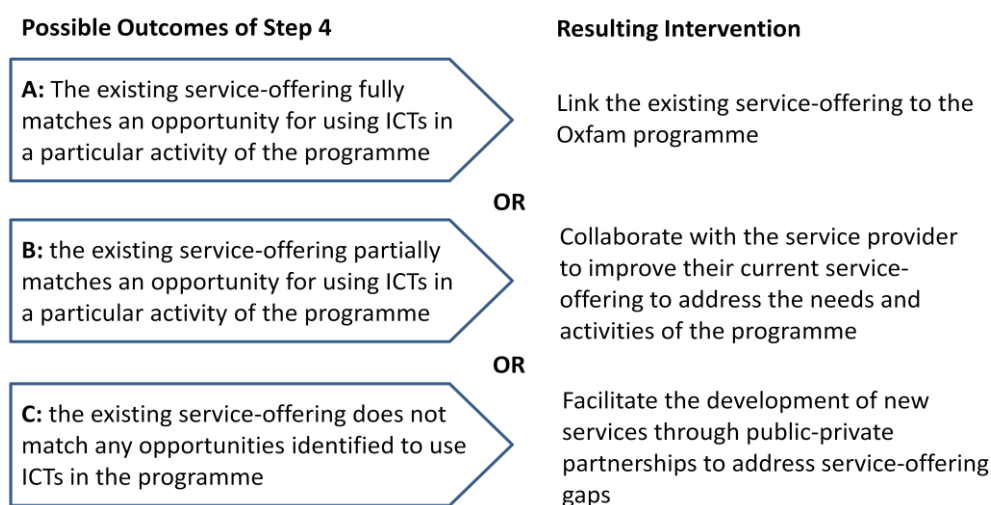
<sup>6</sup> For more information on Oxfam's ongoing and planned ICT4D projects, please refer to <https://sumus.oxfam.org/ict4d> or contact Chaliya Sophasawatsakul at [Csophasawatsakul@oxfam.org.uk](mailto:Csophasawatsakul@oxfam.org.uk). Note that a major ICT4D programme for Oxfam currently is the Mobile Nutrition programme, which Oxfam is implementing as part of a consortium led by CABI and conformed by five partners, including Oxfam. This programme will take place over 2014–2017 in 14 different countries to be chosen out of 15 countries in Sub-Saharan Africa and Asia (Ghana, Malawi, Mozambique, Nigeria, Tanzania, Kenya, Rwanda, Côte d'Ivoire, Uganda, Zambia, India, Pakistan, Sri Lanka, Myanmar and Bangladesh) and will offer three different types of services: M-Agri specific services, M-Health services, and M-Nutrition Services. If you work in any of the countries specified above, please contact Alvaro Valverde at [avalverde@oxfam.org.uk](mailto:avalverde@oxfam.org.uk) for more information.

**Figure 4: Market chain section of gendered market map depicting opportunities for ICTs and existing service-offerings (dairy value chain in Bangladesh)**



Next, you can compare the prioritised ICT opportunities with the existing service offering in the country. This comparison will have one of three different outcomes that translate into three different types of interventions as shown in Figure 5 below. These outcomes and related interventions are discussed in more detail the Section 5 below.

**Figure 5: Outcomes of step 4 and resulting interventions**



## 5. Interventions

This section describes the three types of possible interventions resulting from Step 4, including the process for setting them up and the implications in terms of influencing potential, time and skill requirements and sustainability for each.

### 1. Link the existing service offering to an Oxfam programme

If the existing service-offering fully matches an opportunity for using ICTs in a particular activity of the programme, then the intervention for Oxfam is to **link the existing service-offering to the Oxfam programme**.

*Process:* The process for setting up this type of intervention is relatively straightforward and consists of the following five activities:

1. Gain a better understanding of the service-offering:
  - exact range of products covered;
  - target markets for the service;
  - pricing models of the service;
  - literacy and ICT requirements for accessing the service;
  - network coverage of the mobile operator;
  - organisations involved in the service provision (private and public).
2. Gain familiarity with Oxfam's guidelines on private sector engagement.<sup>7</sup> These guidelines explain how to engage with businesses at the national and regional levels (strategising, identifying a compelling value proposition and developing the right skills).
3. Conduct an ethical check for the main organisations involved in the service provision.<sup>8</sup> This is a necessary step for partnership development with the private sector.
4. Identify in the market map those actors that need to have access to the service (e.g. direct beneficiaries, programme/partner staff and traders).
5. Gain a better understanding of any potential constraints that may prevent those actors from accessing the services, and develop strategies for addressing those constraints. Examples of potential constraints are:
  - types of ICTs owned by the direct beneficiaries of the programme;
  - types of ICTs accessed by the direct beneficiaries of the programme;
  - literacy levels of those beneficiaries with access to ICTs;
  - willingness to pay for the specific services;
  - types of ICTs owned by programme and local partner staff;
  - literacy levels of programme and local partner staff with access to ICTs;
  - number and frequency of beneficiaries met by programme and local partner staff.
6. Identify and train programme and local partner staff to serve as channels between the beneficiaries and access to the services. Ensure these staff promote uptake of the services from direct beneficiaries with access to the required technologies taking into account previously identified constraints.
7. Secure funding to support the training of programme and local partner staff and for MEL purposes.

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<sup>7</sup> Guidelines on private sector engagement can be accessed by Oxfam staff here: <https://karl.oxfam.org.uk/communities/private-sector/wiki/ethical-checking/>

<sup>8</sup> *Ibid.*



*Influencing potential:* Low levels of influencing are required for this type of intervention. However, it can be a good starting point to build trust with the service provider and influence them to expand their service-offering to address some other needs and activities of the programme in the future (see interventions 2 and 3).

*Sustainability potential:* This type of intervention is likely to be sustainable in the long term, given that the service provider (typically a mobile network operator) has commercial incentives to provide the service and expand their customer base.

*Practical example:* The main mobile network of Ethiopia (Ethio Telecom) has recently launched three call centres where representatives from eight different ministries (e.g. Agriculture, Health and Transport) are available to reply to queries – free of charge – from any caller during working hours. Oxfam is planning to link this service with women honey producers from the EDP programme in Amhara region. The beneficiaries will contact the call centre directly or through facilitators from the local partner NGO and will request information on weather forecasts, production and processing practices, and market prices. Access to this information will help them improve the productivity and quality of the honey production and increase their bargaining power.



Honey Producers in Amhara Region, Ethiopia – Photo Credit: Alvaro Valverde, Oxfam

## **2. Collaborate with the service provider to improve their current service-offering to address the needs and activities of the programme**

If the existing service-offering partially matches an opportunity for using ICTs in a particular activity of the programme, then the intervention for Oxfam is to collaborate with the service provider to improve their current service-offering to address the needs and activities of the programme.

*Process:* The development of these types of interventions requires higher investment of time than the first type of intervention described. The process will consist of the five activities listed on page 9 under the first intervention, as well as the following seven listed here.

1. Identify which aspects of the services do not match the needs of the programme (e.g. the service does not cover the crops of our programme; the service matches the needs of the programme but there is no coverage in the region where the programme operates; there is a mobile money service in place but users cannot access credit through the service).
2. Analyse the business strategy of the service provider and identify potential motivations for the service provider to expand their service-offering (e.g. increased customer base, reduced churn levels, amortisation of the network coverage in rural areas, increase revenue through the particular service and other voice/data services).
3. Prepare and present a business case and proposal to the service provider. This may involve Oxfam subsidising some activities initially to reduce risk and stimulate interest of the service provider.
4. Identify additional 'content providers' (when needed to improve the service-offering) and link them to the service provider. Content providers are organisations who provide specific information and data that is used in the service – e.g. meteorological services, veterinary and agricultural research bodies etc.
5. Sign an Memorandum of Understanding (MoU) with the service provider.
6. Identify and train programme and local partner staff to serve as channels between the beneficiaries and access to the services. Ensure these staff promote uptake of the services from direct beneficiaries with access to the required technologies taking into account previously identified constraints.
7. Conduct monitoring and evaluation and regularly feed back to the service provider.

*Possible implications:* It is common practice that the service providers require an exclusive agreement at the time of signing the MoU, and in many cases services (e.g. financial and information) will be offered by different service providers. This reinforces the importance of prioritising activities and interventions before picking winners.

*Influencing potential:* These types of interventions involve more influencing of the service providers (usually private sector actors), which is closely aligned with the recommendations of the Oxfam strategy.<sup>9</sup>

*Sustainability potential:* These interventions have a medium to high likelihood of achieving sustainability in the medium term, as they build on existing services. However, it is important to motivate the service provider to expand their service offering and to identify reliable partners that provide content. These two factors are directly related to the sustainability potential of the initiative.

*Practical example:* In Kenya, Oxfam is trying to link Micro-finance Institutions from the Turkana Region with the network of M-Pesa agents to facilitate fishermen's access to micro-finance services in the shores of Lake Turkana. Access to credit will enable fishermen to acquire boats, nets and other equipment, reducing existing dependencies on boat owners and beach management units, and increasing their incomes.

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<sup>9</sup> <http://www.oxfam.org/sites/www.oxfam.org/files/oxfam-strategic-plan-2013-2019.pdf>



Fishermen in Lake Turkana, Kenya – Photo Credit: Alvaro Valverde, Oxfam

### **3. Design and implement new services through public-private partnerships to address service-offering gaps**

If the existing service-offering does not match any opportunities identified to use ICTs in the programme, the resulting intervention for Oxfam is to facilitate the development of new services through public-private partnerships to address service-offering gaps.

*Process:* The development of this type of intervention requires the greatest investment of time of the three. The process will depend on the specific country context and complexity of the service to be designed. However, there are certain recommended activities that are important for designing any new ICT initiative. In normal circumstances Oxfam would not directly do most of these activities but would work in partnership with more specialised agencies. However it is important that staff have an understanding of the process.

1. Improve understanding of the underlying factors that will influence the design of the service. Much of this information may already be available in your programme:
  - Map the agricultural cycle. This is critical to understanding what information is needed and when. For instance knowing when farmers make decisions on planting will influence when information that helps this decision needs to be provided. Likewise information on animal health or soil conservation will be particularly relevant at certain periods.
  - Carry out a market segmentation exercise that identifies different groups of customers according to characteristics such as language, culture, gender, willingness and ability to pay, and other attitudinal factors. This information will influence the design of the service and help ensure it is appropriate and user-friendly.

2. Assess the full market potential of a service – i.e. not just over the area covered by the Oxfam programme This activity will provide information on the scalability and economic sustainability of the service and will help in the business case to the service providers.
  - Analysis of the Agriculture sector at the national level. Number of potential customers/beneficiaries (farmers working in the particular value chain).
  - Qualitative research with potential customers outside the remit of the programme (including language, culture, gender, willingness to pay and other attitudinal factors).
3. Identify the right partners for the implementation of the service. The exact partnership model will vary depending on the specific context, but there are some general recommendations for the types of partners that should be involved.
  - Having a mobile network operator (MNO) in the core partnership can help achieve economic sustainability. MNOs are very keen to increase their customer base in rural areas. Reasons for this include wanting to increase their customer base and amortisation of rural infrastructure. MNOs want to develop Value Added Services (VAS) for small holder farmers to reduce churn<sup>10</sup> levels, improve their brand image and increase their revenues. Moreover, they are particularly motivated to expand their customer base in financial services (mobile payments represent 30 per cent of the profit of MNOs in developing countries).
  - In some cases the government (e.g. Ministry of Agriculture or Ministry of ICTs) might be sufficiently motivated to actively engage in the design and implementation of VAS for smallholder farmers. This can help achieve systemic<sup>11</sup> sustainability, which is an alternative to commercial sustainability. In these cases MNOs may not be in the core partnership but will still play an important role in the implementation of the services.
  - Leverage an ecosystem of partners to provide content for the ICT service. MNOs have the outreach but not the content and they know that a successful VAS needs accurate, timely, actionable and reliable content. It is recommended to build on Oxfam's existing partner network for increased trust levels and reduced costs, when possible and appropriate.
4. Gain familiarity with Oxfam's guidelines on private sector engagement.<sup>12</sup> These guidelines explain how to engage with businesses at the national and regional levels (strategising, identifying a compelling value proposition and developing the right skills).
5. Conduct an ethical check for the organisations identified as potential partners for the service provision.<sup>13</sup> This is a necessary step for partnership development with the private sector.
6. Design the business model of the service. Work with the core partners in this activity to promote shared ownership of the service and ensure agreement between partners.
  - Identify the most appropriate delivery channels, both to reach directly and indirectly the beneficiaries of the programme and potential customers. This analysis should include: types of ICTs owned and used by the direct beneficiaries of the programme and types of ICTs owned and used by farmer cooperatives and local NGOs.
  - Understand connectivity limitations in the targeted areas.

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<sup>10</sup> Churn: The movement of customers from one service provider to another. 'Churn rate' can be defined as the proportion of customers who leave a service provider within a given time period.

<sup>11</sup> Type of sustainability achieved through engagement with the government.

<sup>12</sup> *Ibid.*

<sup>13</sup> *Ibid.*

- Identify the most appropriate methods of communication mechanisms based on literacy levels and cultural constraints: face to face, call centre, Interactive voice response (IVR), voice message, Unstructured Supplementary Service Data (USSD), Short Message Service (SMS).
  - Think about how the aggregation of information is going to take place: accuracy checks, localisation, translation and formatting.
7. Design an exit strategy. Oxfam is increasingly moving from direct delivery to facilitation and convening of stakeholders. This means that at the time of the business model design Oxfam should think about how the business model should evolve in a given timeframe to allow Oxfam to decrease its direct involvement in the delivery of the service.
  8. Sign an MoU with the partners.
  9. Pilot the service: Services like this need to be tested, assumptions checked and if necessary re-design needs to take place. This is critical for achieving impact and scale. A pilot process could include the following:
    - Choose a relevant target market to pilot the service;
    - Set clear goals for the pilot;
    - Conduct a baseline study;
    - Have a clear timeframe for the implementation;
    - Conduct M&E of the pilot.
  10. Redesign the commercial business model according to the outcomes of the pilot phase.
    - Develop reliable revenue streams with which to offset operational costs based on the willingness and ability to pay of the beneficiaries: direct customer revenue, business to business revenue, and contract sales. This is the most important activity to achieve economic sustainability and to engage and influence MNOs.
    - Provide partners with a unique value proposition and a clear rationale for their continued support.
  11. Launch the service. This will be done in agreement with all the partners, but will involve:
    - a marketing plan and campaign;
    - baseline studies to measure impact of the services;
    - continuous monitoring and evaluation (M&E) of the service;
    - an expansion plan.

*Possible implications:* The country office may not have the right economic and human resources to conduct all the activities required for the design and implementation of a new programme. Working with partners with the right technical and business skills will be important to make this Option successful. Organisations that can help with market research and business plans, which are knowledgeable about the ICT sector would be particularly useful. Global and regional advisers can assist in the identification of appropriate partners.

Funding may assist in the development of such services and programme staff are encouraged to get in touch with global or regional advisors to see if there are any upcoming opportunities to request for funding or to get additional support in the preparation of a funding proposal.<sup>14</sup>

*Influencing potential:* These types of interventions have the greatest potential for influencing, given Oxfam's engagement since the early stages of the design of the service. This is aligned with the recommendations of the new Oxfam strategy.

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<sup>14</sup> For more information, Oxfam staff can visit [https://karl.oxfam.org.uk/communities/programme-funding/wiki/front\\_page/](https://karl.oxfam.org.uk/communities/programme-funding/wiki/front_page/)

*Sustainability potential:* These interventions have a low to medium likelihood of achieving sustainability in the long term, as they are completely new services and depend on the business model design. A high proportion of M-Agri services are not sufficiently successful to enable them to continue beyond the pilot stage and achieve commercial sustainability, particularly in the case of single information services (e.g. Market Information Systems). A combination of different information services has greater potential for commercial sustainability, and the inclusion of financial services in the service bundle will rapidly increase the potential to continue in the long term.

*Practical example:* In Rwanda, a mobile network operator (Tigo) and the Ministry of Agriculture are both interested in developing agricultural information services (prices, weather and agronomic practices) and a trading platform to connect farmers and traders in the main markets. Oxfam is trying to work with the operator and the Ministry to help develop the service offering, and link the service to the beneficiaries of its livelihoods programme.



Pineapple Farmer in Nyagatare, Rwanda – Photo Credit: Alvaro Valverde, Oxfam

In summary, the three interventions described here require their own process for setting them up and have their own implications in terms of influencing potential, time and skill requirements and sustainability. Table 2 summarises the implications for each of the three types of interventions.

**Table 2: Types of interventions and associated costs, time, skills and potential for sustainability**

	<b>Influencing potential</b>	<b>Time requirement</b>	<b>Skill requirements</b>	<b>Sustainability potential</b>
<b>A. Link the existing service offering to an Oxfam programme.</b>	Low	Low	<i>Technical Brokering: Low</i> <i>Leveraging: Low</i>	High
<b>B. Collaborate with the service provider to improve their current service-offering to address the needs and activities of the programme.</b>	Medium - High	Medium	<i>Technical Brokering: Medium</i> <i>Leveraging: High</i>	Medium
<b>C. Design and implement new services through public-private partnerships to address service-offering gaps.</b>	High	High	<i>Technical Brokering: High</i> <i>Leveraging: High</i>	Medium - Low <sup>15</sup>

## 6. Gender approach

Whilst it is widely acknowledged that knowledge alone cannot bring about change, technologies such as mobile phones can contribute to overcoming women’s time and mobility constraints. They can facilitate access to relevant information and financial services, which contribute to addressing power imbalances at the household and community levels. However, women’s needs, motivations and constraints need to be taken into consideration during the design and implementation of these types of services, or the result may be an exacerbation of existing power imbalances.

Mobile phones provide an opportunity to target messages directly to the end user without going through a network of intermediaries. Messages can be specifically focused on users’ needs/interests. It is, therefore, important to conduct market research and market segmentation, as part of the landscape analysis, before launching the services. Of particular importance is to understand the relationship between mobile phone ownership, access and usage by men and women, as well as the socio-economic factors that can determine behaviour change in response to exposure to information.

Access and use of mobile technology differs between genders and interpretation of messages is strongly influenced by social experience and literacy levels. For example, the younger generations are more likely to actively engage with mobile use than older generations, though we acknowledge this is not a universal truth for young mothers in rural areas without mobile access. This will require effective messaging being able to reach the intended audience on a community group level, or through other channels that can easily reach women, such as women’s groups, faith groups, community ‘champions’, etc. Engaging with young mobile users will be different from adult users who use mobiles and respond to messages in different ways.

<sup>15</sup> Those services that have surpassed the pilot stage and are still active have a greater likelihood of achieving economic or systemic sustainability. New services have greater risks associated with the design of the service and business model to achieve sustainability in the medium to long term.

Our approach to content development and adaptation through mobile delivery must recognise the following key factors:

- **Constraints** that prevent women’s access to mobile phones:
  - financial constraints to buy mobile phones and pay for services;
  - higher levels of technological and language illiteracy;
  - mobility constraints as they are also responsible for the household and the children.
  
- **Benefits** to women derived from **mobile ownership**:
  - improved safety; having a communication line can promote women’s rights against domestic and other types of violence;
  - improved connectivity; together with access to information, mobile connectivity might generate spaces for economic and social collective action and have the potential to rebalance the unequal distribution of roles and benefits between men and women. Additionally, a mobile phone can promote the communication of women’s rights and facilitate the integration of women in social networks and even their participation in political processes;
  - improved perception of independence; mobile phones can address the constraints on women’s time and mobility.
  
- **Benefits** to women derived from accessing **specific services through the mobile phone**. The specific benefits will depend on the service provided, such as nutrition, agronomic information or financial services.

**Reaching women: Different strategies will be needed according to how women access a mobile phone.**

- **Reaching those women who own a mobile phone:**

Women’s willingness and ability to pay for accessing services through mobile phones is low, particularly for information services. Specific services have to be designed that address the needs of women for a small amount of money or free of charge.

- **Reaching those women who do not own, but borrow, a mobile phone:**

There is a need to map mobile phone ownership at the community level to gain a better understanding about how those women who do not own a mobile phone could access the services (e.g. borrowing a mobile from a peer or husband). As shown in Figure 5, a large number of women access services through borrowing phones.<sup>16</sup>

**Figure 5: Ownership and usage of mobile phones by women in rural areas**



Source: GSMA (2010)

<sup>16</sup> 0.5 billion adult women who live in areas with mobile coverage access mobile phones through borrowing; 270 million women have never used a mobile phone.



Local NGOs and producer cooperatives can be a good starting point to reach women borrowers. This can help overcome the literacy and financial constraints for some women.

- Being aware of the technology and the variety of services provided through mobile phones can determine customer uptake with current borrowers being the potential next wave of subscribers.
  - Borrowers are less willing and able to pay for mobile services than owners, as they are less likely to be paying for the service themselves (spouses or parents typically do). This points to the need to provide these services for free or at a low price.
- **Reaching those women who do not own or borrow a mobile phone:**
    - This is the most difficult group to reach. This should be done by using alternative delivery channels with greater outreach, like radio, television or community boards. This will increase the awareness of the service.
    - Through local NGOs, producer cooperatives, Self Help Groups, etc.

## 7. Building on the use of ICTs in humanitarian responses for markets-based livelihoods programming

Over the last few years Oxfam has used Mobile Cash Transfers (e.g. Kenya, Somaliland and Haiti) and vouchers as appropriate and effective tools to support people affected by disasters in a way that maintains dignity and choice for beneficiaries while stimulating local economies and markets.

Oxfam will increase efforts to facilitate the transition from mobile cash transfers during emergencies to mobile enabled financial services for markets-based livelihoods.

## 8. ICTs and advocacy

ICT companies (mobile network operators, software developers and handset producers among others), as any other private sector players, could also be subjected to Oxfam's advocacy work. The reasons may vary in each particular case, ranging from tax avoidance to sourcing raw materials from conflict areas (e.g. coltan from Eastern DRC). If you identify any of these potential issues related to ICT companies at the country or regional level, you could seek advice and support from Erinch Sahan (Policy Advisor, Private Sector Advocacy) at [esahan@oxfam.org.uk](mailto:esahan@oxfam.org.uk).

## 9. Concluding remarks – getting support and giving feedback

We hope that this Guidance Document will provide you with useful inputs and guidance for assessing whether to incorporate ICTs into your programme, and how. Please give us your feedback. We would like to know if you have found this guidance useful and any suggestions you may have for how it could be improved or developed. Please contact **Alvaro Valverde** at [avalverde@oxfam.org.uk](mailto:avalverde@oxfam.org.uk) with your comments or share them in our 'ICT group' at <http://growsellthrive.org/group/ict-connect>

You can also join this ICT group if you want to connect to others in Oxfam who are working on ICT initiatives in markets-based livelihoods programming. In this group, you can learn about other people's experiences with ICTs, and share your own.

If you need additional support or advice in this area, please contact Alvaro Valverde or visit <http://growsellthrive.org/our-work/ict>

## Further reading

### Introduction to M-Agri

- **Vodafone Accenture Connected Agriculture Report 2011:** This report focuses on the opportunity to improve agriculture and to bring new investment to smallholder farmers through mobile technologies and highlights a key finding that estimates a potential increase in agricultural income of US \$138 billion across 26 countries in 2020.
- **ICT in Agriculture: Connecting Smallholders to Knowledge Networks and Institutions:** This large report includes 15 modules describing mobile applications that can improve agricultural and rural development, smallholder inclusion, supply chains, risk management, access to financial services, increase productivity as well as enable innovation and improve rural governance and land administration.
- **World Bank – Mobile Applications for Agriculture and Rural Development (ARD):** This report details methodology and case selection, development impact, mobile ecosystems and business models of mobile use and application in development.

### Evidence Impact and Case Studies in M-Agri

Financial Services:

- **Key Lessons for Mobile Finance in African Agriculture: Three Case Studies:** Case studies on Zoono, SmartMoney and Opportunity bank describe how mobile payment and banking technologies are being applied within agricultural value chains in new and innovative ways and also assessed how mobile money transfers and mobile banking can benefit agribusiness and farmers in Sub-Saharan Africa.
- **Mobile Phone Micro-Insurance: The Case of Kilimo Salama – Kenya:** This report provides information on a weather index-based agriculture micro-insurance scheme for Kenyan farmers based on mobile phone technology.

Information Services:

- **M-Agri Information Services through Community Knowledge Workers (CKWs): The Case of Grameen App Lab:** This study describes and proposes future development of the CKWs programme to provide farmers with timely information on agriculture from data bases to CKWs with smart phones who relay relevant information to farm workers in Uganda.
- **M-Agri Programme Case Study: IKSL, India:** In this brief you will find information on IKSL, which provides voice-based agricultural information to empower rural farmers and reinforce cooperatives through the mobile network in India.

For more resources on ICTs, visit <http://growsellthrive.org/our-work/ict-resources>

## Sources and bibliography

FAO (Miller, Saroja and Linder, 2013), 'ICT uses for inclusive agricultural value chains'

Geldof, M., Grimshaw, D. J., Kleine, D. and Unwin, T. (2011), 'What are the key lessons of ICT4D partnerships for poverty reduction'

GSMA mAgri tracker: <http://www.gsma.com/mobilefordevelopment/programmes/magri/tracker>

ITU (2013), 'The World in 2013 ICT facts and figures'

USAID (FACET, 2012), 'African Agriculture and ICT: An Overview'

World Bank (Qiang, Kuek, Dymond and Esselaar 2012), 'Mobile Applications for Agriculture and Rural Development'

Programming and the business sector – Programme Policy Guidelines (internal Oxfam document)  
<https://karl.oxfam.org.uk/communities/private-sector/view.html>

## Annex 1: M-Agri Glossary of Terms

- **Agricultural Value Added Services (VAS):** Information or financial services that address concrete farmer needs along the agricultural crop cycle.
- **Churn:** The movement of customers from one service provider to another. 'Churn rate' can be defined as the proportion of customers who leave a service provider within a given time period.
- **Commercial Sustainability:** The extent to which M-Agri services have the capacity to generate revenue and become commercially sustainable.
- **Cybercafé:** A place which provides internet access to the public, usually for a fee.
- **Digital Divide:** An inequality between groups, broadly construed, in terms of access to, use of, or knowledge of ICTs within or between countries.
- **Feature phone:** Mid-range priced mobile phone with additional functions over and above a basic mobile phone which is only capable of voice calling and text messaging.
- **ICT, or Information and Communication Technology:** Technology that provide access to information through telecommunications, with a focus on communication technologies. This includes the Internet, wireless networks, mobile phones and other communication mediums.
- **ICT4D, or Information and Communication Technology for Development:** The pro-poor application of ICTs in the pursuit of economic and social advancement in developing countries.
- **Infomediary:** An agent able to use ICT-based services to access information on behalf of intended beneficiaries.
- **Information Capability:** The ability to know when there is a need for information, to be able to identify, locate, evaluate and effectively use that information for the issue or problem at hand.
- **M-Agri, or Mobile Agriculture:** Initiatives designed to improve the productivity and incomes of smallholder farmers through the use of mobile phones and mobile technology. It is important to note that such mobile communications services tend to form part of larger ICT systems, which are often based on internet technology.
- **Market Information System (MIS):** Information systems used in gathering, analysing and disseminating information about prices and other information relevant to farmers, animal rearers, traders, processors and others involved in handling agricultural products.
- **Mobile Application (App):** A software application designed to run on smartphones, tablet computers and other mobile devices.
- **Multimedia Messaging Service (MMS):** A standard way to send messages that include multimedia content to and from mobile phones, usually feature phones.
- **Mobile Money or Mobile Payment:** Payment services operated under financial regulation and performed from or via a mobile device (also referred to as mobile money transfer, or mobile wallet).
- **Mobile Network Operator (MNO):** Provider of wireless communications (mobile) services that owns or controls all the elements necessary to sell and deliver services to an end user including radio spectrum allocation, wireless network infrastructure, billing, customer care and provisioning computer systems and marketing.
- **Mobile Trading Platform (Marketplace):** A mobile based (SMS, MMS or App) virtual space where producers and buyers come together to discuss and agree prices, quantities, qualities, delivery times, transportation and payment mechanisms for agricultural production.
- **PDA:** Also known as a palmtop computer, or personal data assistant, it is a mobile device that functions as a personal information manager. PDAs are largely considered obsolete with the widespread adoption of smartphones.
- **Short Message Service (SMS):** A text messaging service component of a mobile phone, usually limited to 160 characters.

- **Smartphone:** A mobile phone with more advanced computing capability and connectivity than a feature phone. Some functionalities of a smartphones may include media players, digital cameras, GPS and touch screens.
- **Subscriber Identity Module Card (SIM Card):** An integrated circuit card that securely stores the international mobile subscriber identity (IMSI) and the related pass code used to identify and authenticate subscribers on mobile phones.
- **Systemic Sustainability:** The extent to which M-Agri initiatives link with, or are supported by existing agricultural services (e.g. Ministry of Agriculture extension agents, Meteorological Departments, etc.).
- **Telecentre:** A public place where people can access computers, the Internet and other digital technologies that enable them to gather information, create, learn, and communicate with others while they develop essential digital skills.
- **Wi-Fi:** A popular technology that allows an electronic device to exchange data or connect to the Internet remotely (without the use of wires) using radio waves.
- **3G:** Third generation of mobile telecommunications technology which provides mobile broadband access.

## Annex 2: Types of M-Agri services – Information and financial needs along the agricultural crop cycle

	Planning	Planting and growing	Harvesting, post harvesting and selling
<b>Information services and networks for knowledge exchange</b>	<ul style="list-style-type: none"> <li>- Long-term weather forecast</li> <li>- Implication of local agro-environment</li> <li>- Crop and seed selection</li> <li>- Seeds/fertiliser availability, prices and location</li> <li>- Land preparation</li> </ul>	<ul style="list-style-type: none"> <li>- Techniques to protect against and prevent disease and pest infestation</li> <li>- Pesticides</li> <li>- Diagnose and treat disease and pest infestation</li> <li>- Short-term weather forecast</li> </ul>	<ul style="list-style-type: none"> <li>- What is the best time and method of harvesting</li> <li>- Weather forecast and implication for storage</li> <li>- Availability, cost and location of storage services</li> <li>- Instruction for self-storage</li> </ul>
<b>Value chain linkages</b>	<ul style="list-style-type: none"> <li>- Expected crop demand</li> <li>- Potential price fluctuations</li> <li>- Cost and availability of transport of inputs</li> <li>- Market contacts</li> </ul>		<ul style="list-style-type: none"> <li>- Accurate and competitive market pricing</li> <li>- Potential price fluctuations</li> <li>- Cost and availability of transport to market</li> <li>- Marketing, sales or negotiation tips</li> </ul>
<b>Financial services</b>	<ul style="list-style-type: none"> <li>- Loans and insurance availability, rates and contacts</li> </ul>	<ul style="list-style-type: none"> <li>- Loan availability and rates for non-farming activities</li> </ul>	<ul style="list-style-type: none"> <li>- Savings account rates and availability</li> </ul>

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For further information on the guidance provided in this document please e-mail [avalverde@oxfam.org.uk](mailto:avalverde@oxfam.org.uk).

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