

FGN/IFAD COOPERATION PROGRAMME

**DIGITAL INNOVATION ACTION PLAN
(DIAP) 2024 - 2029**

Outline

I	Background of the FGN/IFAD Cooperation Digital Innovation Action Plan	3
I.1	Introduction	3
I.2	Key Recommendations from the ICT4D Policy Dialogues	4
I.3	Key Recommendations from the South-South Triangular Cooperation (SSTC) Nigeria Exchange Mission to Kenya	4
I.4	Priority ICT4D Actions from the Debrief Workshop with Government Stakeholders ...	4
I.5	Objective and Strategic Approach of the FGN/IFAD Cooperation Digital Innovation Action Plan	5
II	Foundational Principles of the FGN/IFAD Cooperation Digital Innovation Action Plan	5
II.1	Key Principles of the Action Plan	5
II.2	Preconditions for Success	7
III	Advantages of the FGN/IFAD Cooperation Digital Innovation Action Plan	7
IV	Major Components of the FGN/IFAD Cooperation Digital Innovation Action Plan	7
V	Success Factors for the implementation of FGN/IFAD Cooperation Digital Innovation Action Plan 8	
	Key factors for successful implementation include:	8
VI	Planning, Implementation Arrangement	9
	Annex 1: Overview of FGN/IFAD Cooperation Digital Innovation Action Plan (2024-2029)	10
	Annex 2: Priority Recommendations from the Debrief Workshop of the South-South Triangular Cooperation Mission to Kenya with Government Stakeholders	15

I Background of the FGN/IFAD Cooperation Digital Innovation Action Plan

I.1 Introduction

As part of the International Fund for Agricultural Development's (IFAD) ongoing commitment to sustainable agricultural transformation, IFAD acknowledges the immense potential that digital innovations hold for modernizing the agricultural sector. Despite some progress, the IFAD Nigeria country programs' adoption and integration of Information Communication and Technology for Development (ICT4D) has room for expansion. In Nigeria, a nation abundant with agrarian promise yet frequently constrained by traditional challenges, the fusion of digital tools can serve as a crucial catalyst.

In line with national policies and strategies such as the National Agricultural Technology and Innovation Policy (NATIP), Nigeria National Pathways to Food Systems Transformation, the Federal Government of Nigeria/International Fund for Agricultural Development (FGN/IFAD) Cooperation Program aims to scale up the adoption and integration of ICT4D to accelerate agricultural transformation and substantially improve the livelihoods of smallholder farmers.

The Federal Government of Nigeria and International Fund for Agricultural Development undertook several strategic initiatives during the year 2023:

1. Rapid assessment of the existing ICT4D solutions available within the IFAD Nigeria Portfolio Programmes (March 5, 2023)
2. Digital Agriculture Ecosystem Assessment (June 2023)
3. Multi-stakeholder Strategic Dialogue on Scaling up ICT4D for the empowerment of smallholder farmers (May 10, 2023)
4. ICT4D Online Trainings on Principles for Digital Development (August 15 - 25, 2023) and Digital Agriculture Ecosystem and Interoperability (August 25 to Sept 6, 2023)
5. ICT4D Monitoring and Evaluation Training for project staff and relevant government stakeholders (November 7-8, 2023)
6. National Policy Dialogue on ICT4D with government agencies development partners, civil society and relevant private sector actors (November 29, 2023) to boost partnership for the scale up of digital solution for smallholder farmers empowerment.
7. South-South Triangular Cooperation (SSTC) exchange visit of Nigerian delegation to Kenya Cereal Enhancement Programme Climate Resilient Agricultural Livelihoods Window (KCEP-CRAL), Nairobi, Kenya (September 4 - 8, 2023) to explore best practice in the implementation of digital solutions in project management and agricultural value chains, identify potential partners for collaboration in ICT-driven agricultural development, enhance project management efficiency and sustainability through digital interventions in agricultural value chains.

This document presents the FGN/IFAD Cooperation Programme action plan for ICT4D which was developed leveraging the major recommendations from the strategic initiatives listed above and organized by FGN and IFAD in collaboration with farmer representatives, development partners and private sector actors with the goal to boosting the empowerment of smallholder farmers.

These strategic initiatives were organized through a close collaboration between the Federal Ministry of Agriculture and Food Security (FMAFS) and IFAD with the direction of Planning and Projects Coordination Unit of FMAFS playing an active leadership role. In addition, the strategic support of the Federal Ministry of Finance (FMF) and the Special Advisor to the President on Agribusiness and Productivity Enhancement/Office of the Vice President contributed to the successful organization of these ICT4D strategic initiatives. Furthermore, the exercise received some strong technical contributions from the National Information Technology Development Agency (NITDA).

These efforts were leveraged to develop the FGN/IFAD Cooperation Integrated Operational Action Plan for ICT4D, to help implement the recommendations, ensure the optimal utilization of resource, and strengthen collaborations for an accelerated and inclusive digitalization of agriculture in support of smallholder farmers.

I.2 Key Recommendations from the ICT4D Policy Dialogues

The two (2) ICT4D policy dialogues organized by IFAD in coordination with FMAFS on May 10, 2023, and November 29, 2023. The key recommendations of these dialogues are summarized below:

- a) Promote digital integration with multiuser interface using a whole FGN/IFAD Programme approach
- b) Multistakeholder approach with consistent engagement of different partners from both public and private sectors.
- c) Harmonization of farmer registry database. This is key for scaling up innovative digital technology to enhance food system across the country. This farmer registry will serve to facilitate:
 - Data driven decision making system to support targeted advisory, access to services, financial support and information;
 - Data sharing and governance to be strengthened for more protection of farmer data while promoting access to services and private sector investments;
 - Integrated solution taking into account the ecosystem and the available solutions;
 - Avoid duplication of intervention by different actors and
 - Promote harmony in delivery of digitally enabled services.

I.3 Key Recommendations from the South-South Triangular Cooperation (SSTC) Nigeria Exchange Mission to Kenya

Below are the recommendations from the SSTC exchange to Kenya:

1. Hold a debriefing session with government leaders, including other stakeholders, to discuss the outcomes of the exchange.
2. Examine program designs for VCDP, SAPZ, and LIFE-ND to incorporate digital solutions, most especially the e-Voucher System, GIS/Remote Sensing, and an Integrated Knowledge Management System/Electronic Document Management System.
3. Facilitate funding for ICT4D in Agriculture by the Government and private sector
4. Examine funding mechanisms to ensure timely release of cash for programs and projects, including government funding commitments.
5. Make deliberate attempt for an inclusive policy that incorporates ICT4D in all projects especially a policy on e-vouchers.
6. Encourage implementation of ICT4D by other MDAs and sectors such as donors/multilateral financing corporations (finance, environment, water, etc.), the private sector, agro-dealers, network service providers, and smallholder farmers.
7. Support M&E and knowledge management functions and tracking of results for transparency, accountability, visibility, ownership and sustainability.
8. Pay special attention to young smallholder farmers who are more likely to incorporate ICT into their agricultural practices.
9. Develop central database system of farmers disaggregated by gender from local governments, states, and the federal government for better planning, policies, and decision making.
10. Establishment of Climate Information System, robust dissemination mechanism for information transmission to rural farmers.

I.4 Priority ICT4D Actions from the Debrief Workshop with Government Stakeholders

During the debrief workshop held on 6 November 2023, the following priority ICT4D actions were recommended by the FGN delegation who attended the South-South Triangular Cooperation (SSTC) exchange visit of Nigerian delegation to Kenya Cereal Enhancement Programme Climate Resilient Agricultural Livelihoods Window (KCEP-CRAL), from 4 September to 8 September 2023:

- a) Digital interventions in support of M&E and KM

- b) Digital interventions in post-harvest handling and market access
- c) Agriculture production and extension services, including e-Voucher, e-Extension and digital climate information system.

Annex 2 provides additional information on Priority ICT4D actions from the debrief workshop with Government Stakeholders

I.5 Objective and Strategic Approach of the FGN/IFAD Cooperation Digital Innovation Action Plan

In line with COSOP Nigeria 2024 – 2029 which is aligned with the NATIP, the FGN/IFAD Cooperation Digital Innovation Action Plan aims to scale up digital solutions for the efficient delivery and achievement of the strategic objectives of FGN/IFAD Programmes. These digital solutions will be used to enhance productivity, production, food and nutrition security, market access, income and resilience of smallholder farmers. For example, the action plan leverages mobile technologies to integrate innovative climate smart agriculture advisory services. The action plan also promotes policy and partnerships with key stakeholders to ensure synergies for increased ICT4D uptake among young people and women and foster linkages between service providers and beneficiaries¹ including those in fragile areas.

The action plan also aims to enhance the effectiveness and efficiency of FGN/IFAD Programmes for greater compliance, value for money, and sustainability. For example, digital technologies will be used to enhance the quality of M&E and knowledge management systems.

The FGN/IFAD Cooperation Digital Innovation Action Plan follows a Portfolio approach towards addressing the key challenges whilst using an integrated Strategy to ensure Nigeria IFAD funded programmes drive towards a more strategic focus on ICT4D to reach needed scale. The action plan also includes details of key prerequisites and additional support needed for the deliverables to be produced across the period of implementation as well as the resources needed. To enable implementation of this action, plan the activities that need to be included and further detailed in the AWPB of the projects.

Some of the cross-cutting prerequisites for success of the action plan include (i) Policy and Regulatory Support (ii) capacity building and training (iii) inclusive approach for women and youth (iv) Infrastructure and connectivity (v) robust monitoring and evaluation as well as (vi) adequate funding.

II Foundational Principles of the FGN/IFAD Cooperation Digital Innovation Action Plan

II.1 Key Principles of the Action Plan

The key principles for the action plan include: Alignment with National priorities, Policy Intervention for data ecosystem, Integrated programme approach to innovative digitalization, Collaboration and partnership, Leverage of existing digital solutions, Joint financing Project budget- for economies of scale and FGN/IFAD programme coordination.

Principle 1: Alignment with National Priorities

- a) The action plan speaks to the key priorities identified during the policy dialogue led by the Government and IFAD, and
- b) It is also in line with the recommendation of the Kenya, South-South exchange visit by the government of Nigeria facilitated by IFAD.
- c) The action plan aims to facilitate a more conducive ecosystem by supporting the national agenda related to the farmer registry.

Principle 2: Policy Intervention for Data Ecosystem

¹ Federal Republic of Nigeria Country strategic opportunities programme 2024–2029 p 10

Support to government policy interventions such as strengthening farmer registry, promoting coordination of digital initiatives, enhancing data sharing and governance.

Principle 3: Integrated Programme Approach to Innovative Digitalization

- a) The implementation of actions for digital solutions in support of projects will be done in a synergistic way with each project leading one initiative while involving the other 2 projects to ensure that each digital solution benefits the 3 projects. Each solution will have an interface for each project.
- b) Specific procurement processes will be held for solutions that are purchased on the market.
- c) The action plan will also promote partnerships with key stakeholders for piloting and scaling up innovative digital solutions.

Principle 4: Collaboration and Partnership

The action plan aims to foster collaboration and partnership amongst the key stakeholders. The action plan will also promote partnership for piloting and scaling up innovative digital solutions.

Principle 5: Leverage of Existing Digital Solutions

The FGN/IFAD Cooperation Digital Innovation Action Plan gives priority to accessing existing solutions, especially off-the-shelf solutions to develop and/or improve a digital solution which will be efficient, compatible and scalable.

Principle 6: Financing of Project Digital Solutions

It is expected that projects will fund the major solutions including digital monitoring and evaluation, digital bundle services and e-voucher system, market access and the farmer registry.

Principle 7: FGN/IFAD Programme Coordination for project solutions

- a) Technical coordination for FGN/IFAD project digital solutions will be done in close cooperation with the Planning and Policy Coordination Department, Projects Coordination Unit (PCU) and Country Programme Advisory Team (CPAT).
- b) A consultative taskforce will be proposed to provide inputs during the design of the digital solutions.
- c) The consultative taskforce will include FMAFS, FMF, NITDA, SSA to the President on Agriculture Productivity/Office of the Vice President.

Principle 8: FGN/IFAD Programme Coordination for Ecosystem Initiatives

- a) The coordination for ecosystem initiatives will be led by the national actors in line with their respective institutional mandates. The ecosystem initiative includes for example policy formulation for data governance, national farmer registry, platform for coordination and exchange on ICT4D initiative for smallholders.
- b) IFAD Cooperation Programmes will collaborate with other development partners that are supporting the Government's efforts in building the national digital ecosystem. The action plan provides opportunities for technical support taking into account funding availability and procedures.
- c) The consultative taskforce for ecosystem will include FMAFS, FMF, NITDA, SSA to the President on Agriculture Productivity/ Office of the Vice President.

II.2 Preconditions for Success

Preconditions for a successful implementation of the action plan and achievement of targets include:

- a. Adequate coordination and collaboration
- b. Sufficient and timely budget
- c. Monitoring and follow up of implementation
- d. Funding from the government
- e. Partnership with private sector

III Advantages of the FGN/IFAD Cooperation Digital Innovation Action Plan

Key actions include:

- a) This integrated approach allows the Federal Government and IFAD to have a comprehensive overview of the FGN/IFAD programmes through each of the digital solutions. Each solution having an interface for each project and a consolidation page for the whole FGN/IFAD programmes. This should facilitate accountability to FGN, States and IFAD.
- b) Jointly designing digital solutions helps reduce the cost of design, maintenance and upgrade for each project due to economics of scale and having one integrated software solution for the programme.
- c) Possibility for other projects for example, the Value Chain North Programme currently in design, to use these digital solutions since flexibility for use by other projects is embedded from the design stage.
- d) Sustainability as the design has involved several actors who can continue to support the digital solutions after the completion of existing projects.
- e) Off-the-shelf digital solutions and existing digital solutions help save time and resources.
- f) Ecosystem approach in design of solutions allows to make room for integration of programme/projects digital solutions in new national systems such as the National Farmers Registry.

IV Major Components of the FGN/IFAD Cooperation Digital Innovation Action Plan

The major key areas of the FGN/IFAD Cooperation Digital Innovation Action Plan are:

- Action Area 1: Scale-up ICT4D solutions to support Production and Productivity across the Portfolio
- Action Area 2: Enhancing Market Linkages and Value Addition
- Action Area 3: Enhancing Project Level Monitoring, Evaluation and Knowledge Management
- Action Area 4: Policy Engagement and Programme Coordination

These action areas are detailed below, and their implementation is dependent on funding availability and procedures.

Action Area 1: Scale-up ICT4D solutions to support Production and Productivity across the Portfolio

Key actions include:

1-1. National farmers registry (under the coordination of FMAFS with the technical support of IFAD in complementarity with other ongoing initiatives)

1-2. Bundled Services to support Agriculture Advisory and Access to Inputs. This is to provide comprehensive digital services to farmers, including advisory services, weather forecasts, and access to quality inputs and financial services (joint implementation by all FGN/IFAD projects under the coordination of LIFE-ND project with co-financing of other projects (VCDP, SAPZ).

1-3. e-Voucher System: facilitate payments and access to input credit/subsidy (joint implementation by all FGN/IFAD projects under the coordination of LIFE-ND project with co-financing of other projects (VCDP, SAPZ).

Action Area 2: Enhancing Market Linkages and Value Addition - Improve farmers' access to markets and opportunities for value addition, increasing income and sustainability. Joint implementation by all FGN/IFAD projects under the coordination of VCDP with co-financing of other projects (LIFE-ND, SAPZ).

Action Area 3: Enhancing Project Level Monitoring, Evaluation and Knowledge Management: Joint implementation by all FGN/IFAD projects under the coordination of SAPZ project with co-financing of other projects (LIFE-ND, VCDP).

Action Area 4: Policy Engagement and Programme Coordination to be jointly financed by the projects.

V Success Factors for the implementation of FGN/IFAD Cooperation Digital Innovation Action Plan

Key factors for successful implementation include:

1. Responsiveness to smallholder farmers needs
2. Policy and Regulatory Support under the coordination of FGN/FMAFS
3. Continuing understanding of the ICT4Ag ecosystem in the country
4. Technical expertise
5. Inclusive approach for women and youth
6. Infrastructure and connectivity
7. Leveraging, piloting and scaling up innovations through partnership
8. Strategic approach for engaging in highly fragile environments
9. Robust monitoring and evaluation
10. Proper procurement
11. Proper budget planning
12. Joint implementation arrangements for all the portfolio and
13. Coordination with Government, development partners, and other stakeholders including synergy with private sector.

VI Planning, Implementation Arrangement

The implementation arrangements of the FGN/IFAD Cooperation Digital Innovation Action Plan (2024-2029) will be aligned with the COSOP Nigeria 2024 - 2029 Programme Implementation arrangement and FGN/IFAD Projects Procedures. Implementation will be based on funding availability. Partnerships will be encouraged to accelerate achievement of the results and to foster innovation. Implementation will be monitored and evaluated during the period covered by the plan with 2028 and 2029 for consolidation and evaluation.

Annex 1: Overview of FGN/IFAD Cooperation Digital Innovation Action Plan (2024-2029)

Action	Activities	Components alignment	Estimated Costs ² subject to funding availability ³	Key Prerequisites for Success	Key Stakeholders	2024	2025	2026	2027
Government Lead with the Support of all Projects									
Action Area 1. Scale of ICT4D solutions to support Production and Productivity across the Portfolio		Component 2: Smallholder Productivity Enhancement Subcomponent 2.1: Strengthening of Farmers' Organizations (VCDP)		Recruitment of National ICT4D Specialist at Ministerial level to support the implementation of the initiatives		X	X	X	
Harmonisation of Farmer Registry database - <i>Create an integrated and accessible farmer registry database to streamline access to services and support innovation for the sector (under the leadership of the government and subject to clarity on institutional anchoring)</i>	Conduct a comprehensive review of the existing digital registry(s) and Conduct a Needs Assessment for development of Farmer Registry and mapping data needs in the target states.	Component 1: Foster climate resilient and nutrition sensitive production (VCN) Subcomponent 1.2: Production and marketing infrastructure support to agribusinesses. (Life-ND)	30000	Budget for Technical Consultant to provide technical assistance towards these initiatives		x			
	Stakeholder engagement workshop to validate the needs assessment results (Continuous engagement is captured under action area 4)	Agricultural Productivity, Production, Market Linkages and Value Addition in SAPZ Catchment Areas	8000	Participation of Government agricultural departments, technology partners, farmer associations, and private sector	FMAFMS, NITDA, Private Sector	X			
	Expansion of the National Farmer Registry at National Level		400,000	Allocation of financing from all the Projects to support the initiative. Availability of resources for Data collection in all the states (will require		x	x	x	x

² Costs provided in the Action Plan are estimates. The needs assessment(s) will revise these costs downwards or upwards

³ Funding subject availability of resources and approval procedures of IFAD/FGN projects.

Action	Activities	Components alignment	Estimated Costs ² subject to funding availability ³	Key Prerequisites for Success	Key Stakeholders	2024	2025	2026	2027
				procurement of Tablets and Desktop computers to process the data at State level) Coordination with FMAFS, NITDA, VPs Office on Agribusiness and other key stakeholders such as Farm Monitor, Digital Green, Convexity Technologies working in the same space. Ensuring reliable IT infrastructure and connectivity,					
	Integrate Pilot and Scale including management of the Farmer Registry system into Projects AWPB		150,000	Establishing clear policies on data privacy, security, and sharing to build trust among stakeholders, protect personal identifiable data while promoting data access.		x	x	x	
	Training of PMU, Partner organisations and Farmer Organisations on how to collect data and continuous update to the registry		30,000				x	x	x
LIFE ND Leads with the Contribution of other Projects									
Bundled Services to support Agriculture Advisory and Access to Inputs- <i>Provide comprehensive digital services to farmers, including advisory services, weather forecasts, and access to quality inputs and financial services</i> To be done for all projects under the technical coordination of LIFE ND in collaboration with other projects (VCDP)	In Collaboration with NITDA and Department of Extension, Conduct feasibility study on advisory, input distribution efficiency and e-vouchers. (Understand the requirements of farmers, input suppliers, and local communities)	Component 2: Smallholder Productivity Enhancement Subcomponent 2.2: Support to Smallholder Production (VCDP) Component 1: Foster climate resilient and nutrition sensitive production (VCN) Subcomponent 1.2: Production and marketing	40,000		FMAFS, NITDA, Private Sector, NIMET	x			

Action	Activities	Components alignment	Estimated Costs ² subject to funding availability ³	Key Prerequisites for Success	Key Stakeholders	2024	2025	2026	2027
	Implementation of E-voucher systems. Assess feasibility of leveraging existing e-wallet/registry from FMAFS/NITDA or other to facilitate payments and access to input credit/subsidy	infrastructure support to agribusinesses. (LIFE-ND)	150,000			x	x	x	
	Scale of Digital Advisory services with opportunities for integration of GIS and Artificial Intelligence to enhance extension delivery	Agricultural Productivity, Production, Market Linkages and Value Addition in SAPZ Catchment Areas	350,000			x	x	x	x
	Partnerships with input suppliers, agronomists, and meteorological agencies for Development and periodic update of Content for advisory services and other services		20,000	Sustainable Business Model: Developing a business model that ensures the long-term sustainability of the platform, possibly through a mix of user fees, government subsidies, and private sector partnerships using subscription model.		x	x	x	x
	Pilot the Bundled services Platform in selected states, gather feedback, and scale up in other states based on success and learnings.		150,000	Raising awareness among farmers about the benefits, value and availability of these services to encourage adoption and usage			x	x	x
VCDP Leads with the Contribution of other Projects									
Action Area 2. Enhancing Market Linkages and Value Addition in VCNS- Improve farmers' access to markets and opportunities for value addition, increasing income and sustainability.	Comprehensive assessment of existing market structures and dynamics in targeted regions	Subcomponent 1.1: Support to Value Addition and Market Linkages (VCDP)	35000	Conducting thorough analyses to identify market opportunities, pricing, demand trends, and value chain bottlenecks to inform targeted interventions.		x	x	x	x
	Mapping of Agri businesses and review of existing Agritech e-marketplaces supporting the projects	Component 1: Enhancement of economic opportunities for rural youth and poor women (LIFE-ND)	20000	Assess the effects of value addition initiatives on product quality, pricing, and farmer income					
		Subcomponent 1.2: Production and marketing infrastructure support	50000						

Action	Activities	Components alignment	Estimated Costs ² subject to funding availability ³	Key Prerequisites for Success	Key Stakeholders	2024	2025	2026	2027
Support the Implementation of Agri Value Chain	Conduct a full Review of AMIS- identify gaps, key recommendation on areas of upgrade into a robust system and develop a scale up plan	to agribusinesses. (LIFE-ND) Agricultural Productivity, Production, Market Linkages and Value Addition in SAPZ Catchment Areas (SAPZ)	250000						
	Full Implementation of an Integrated Agriculture Market Information system	Component 2: Enhance inclusive and profitable inclusion of target groups in the VCs (VCN)							
	Support the development of facilities and services for value addition- logistics, warehousing, packaging, processing					x	x	x	x
SAPZ Leads with the Contribution of other Projects									
Action Area 3. Enhancing Project Level Monitoring, Evaluation and Knowledge Management		Component 3 other Projects and Comp 2 for LIFE-ND							
Establish integrated Project M&E system in the projects-	Centralized platform for monitoring, evaluation and reporting performance and productivity of projects with GIS. Establish and regularly update tracker monitor programme initiatives and reporting.		60,000	Adapt an M&E framework that outlines key indicators, data sources, data collection methods, and frequency of data collection and analysis for each component of the initiative (e.g., farmer registry database, bundled services, market linkages).	FMAFS	x	x	x	x
	Evaluate the impact of the action plan								
Support to Policy and Coordination: Contribution from all Projects									
Action Area 4. Policy Engagement and		Component 3 for other Projects and Comp 2 for LIFE-ND							

Action	Activities	Components alignment	Estimated Costs ² subject to funding availability ³	Key Prerequisites for Success	Key Stakeholders	2024	2025	2026	2027
Programme Coordination									
Improve coordination and collaboration for the implementation of ICT4D initiatives with Ministry, Office of the VP, Private Sector and other Stakeholders	-Develop a database of all key players in digital agriculture -Technical Assistance to VP Office on Agribusiness for support of National Agriculture Transformation Strategy Implementation		50,000 70,000			X	X	x	x
Strengthen policy and data governance to promote digital transformation	Support Review of policies on data privacy, security, and sharing to build trust among stakeholders, protect personal identifiable data while promoting data access		30,000			X	x	x	x
	Establish a Digital Ag Working group to promote regular ICT4D related sharing and updates amongst working group members		10,000			x	x	x	x

Annex 2: Priority Recommendations from the Debrief Workshop of the South-South Triangular Cooperation Mission to Kenya with Government Stakeholders

GROUP A

GROUP 'A': Interventions from Projects

ICT4Ag Intervention (Projects):	<ol style="list-style-type: none"> 1. EDMS/IKMS: Digital Interventions in Support of M&E and KM 2. Digital Data Collection Tools: The projects are using Kobo Collect and ODK in the collection of one form of data or the other. The LIFE-ND has a mobile app for data collection. 3. Projects Centralized Farmers Database: Yes. The VCDP has an eCapture system for the capturing of beneficiary data; the LIFE-ND domiciled in ArcGIS
Current Status in Nigeria's Context (Projects, Partners)	<ol style="list-style-type: none"> 1. We currently have MIS systems for M&E in the projects. 2. These tools are working and being used. 3. The tools from the 2 VCDP AF and LIFE-ND are working and being used.
What are the Gaps? (in terms of scale, efficiency, sustainability)	<ol style="list-style-type: none"> 1. The MIS systems of VCDP AF and LIFE-ND are lacking in terms of integration of KM and electronic document management. 2. Inadequate skilled staffs; inadequate funding. 3. Funding constraints; human capacity; infrastructure deficits
Causes of the Gaps	<ol style="list-style-type: none"> 1. Technical capability; management buy-in; staff apathy to technology adoption and change. 2. Inadequate skilled manpower; poor remuneration. 3. Inadequate financing; low budget for staff capacity building; lack of investment in ICT tools.
<p>What action(s) do we need to take? (Who is the lead actor for each action? who are the supporting actors for each action?)</p> <p>What are the conditions to ensure success for each action?)</p>	<p>Action 1: Adequate and timely release of budget. FMAFS. Strong stakeholder partnership and collaboration, budget performance monitoring.</p> <p>Action 2: Adequate manpower and capacity training/ of staffs. Project Management. Development partners, and other technical partners.</p> <p>Action 3: Purchase of relevant of ICT equipment. Project Management. Procurement and IT Officers. Availability of relevant and skilled expertise, adequate funding, enabling environment.</p>

GROUP 'A': Interventions from Government

<p>ICT4Ag Intervention (Government):</p>	<ol style="list-style-type: none"> 1. EDMS The FMAFS collate data from all the projects, research institutes, agencies, parastatals operating under its purview and transmit to OFSGF and MoBEP disseminate. There is an EDMS in the works. 2. The FMAFS is currently using KoboCollect and ODK for collecting data. 3. Integrated National Farmers Database for warehousing all farmer information.
<p>Current Status in Nigeria's Context (Gov't)</p>	<ol style="list-style-type: none"> 1. Currently, data is collected using a hybrid format (paper and Excel sheets). But there is a form designed using Google Sheets which going forward will be used for the data collection and consolidation. The EDMS is in Phase 1 i.e., scanning of documents of the FMAFS. This is ongoing till end of 2023, after which Phase 2 will commence in 2024 (digitalization of workflow and classification of documents). Phase 3 will be in 2025 and will include other parastatals of the FMAFS. 2. Some of the departments in the ministry are using these tools (ODK and KoboCollect) for data collection. 3. The Integrated National Farmers Database is currently in its final stages of development and awaiting full deployment.
<p>What are the Gaps? (in terms of scale, efficiency, sustainability)</p>	<ol style="list-style-type: none"> 1. Human capacity/Manpower/ Low skill base of staffs/ Attitudes 2. Inadequate funding/ Funding constraints 3. Insufficient digital infrastructure 4. Inadequate power (electricity) 5. Slow technological knowledge transfer
<p>Causes of the Gaps</p>	<ol style="list-style-type: none"> 1. Inadequate manpower/ Low skill base/ Low training and capacity building of staffs/ Resistance to change in adopting new technologies/The FMAFS is currently using consultants in the use of these tools, but the staffs of the ministry are to be capacitated in the use of these tools, but this transfer of knowledge is still low. 2. Inadequate financing 3. Inadequate investment in digital infrastructure 4. Inefficiencies in the power sector
<p>What action(s) do we need to take? (Who is the lead actor for each action? who are the supporting actors for each action? What are the conditions to ensure success for each action?)</p>	<p>Action 1: Adequate and timely release of budgetary allocation. FMoF. Dept. of Finance and Accounts in FMAFS. Strong stakeholder partnership and collaboration, budget performance monitoring.</p> <p>Action 2: Adequate manpower and capacity training/ of staffs. FMAFS. Development partners, MoBEP and other technical partners such as ASCON, CMD, PSI, ARMTI, etc.</p> <p>Action 3: Upgrading of ICT infrastructure. FGN (MoCDE). Relevant institutions such as NCC, NITDA and telecom service providers. Availability of relevant and skilled expertise, effective regulatory framework and compliance, adequate funding, enabling environment.</p>

GROUP B ASSIGNMENT

Group Focus: Digital Interventions in Support of Agricultural Production/Extension

ICT4Ag Intervention (Projects)	Digital Interventions in Support of Agricultural Production/Extension
Current Status in Nigeria’s Context (Gov’t, Projects, Partners)	<p>E-voucher: Projects are yet to deploy E-voucher mechanisms but additional processes have commenced for the process of digitizing such platforms. At the moment little is done in engaging private firms. Projects are underway to include these into respective AWPB 2024.</p> <p>E-extension: Projects are yet to implement e-extension initiative, efforts are in place, developed ToRs, tools, etc.,</p> <p>Digital Climate Information System: Projects have collaborated with NiMET; Digital Smart weather readers have been deployed to farmers and mini weather stations installed. However, these practices need to be strengthened.</p>
What are the Gaps? (in terms of scale, efficiency, sustainability)	<p>E-voucher: Weak adoption of technology, scale and sustainability. Limited ICT infrastructure.</p> <p>E-extension: Weak synergy with private sector service providers, and language barrier. Affordability, Limited infrastructure, and funding.</p> <p>Digital Climate Information System: Limited access to information due to poor infrastructure</p>
Causes of the Gaps	<ol style="list-style-type: none"> 1. Insufficient technical capacity hampers effective integration of digital solutions. 2. Evaluation of cost implications is necessary for sustainable implementation, causing gaps in the project. 3. Limited awareness and lack of specialized training create hurdles, contributing to gaps in the project's success.
What action(s) do we need to take? (Who is the lead actor for each action? Who are the supporting actors for each action? What are the conditions to ensure success for each action?)	<p>Action 1:</p> <ol style="list-style-type: none"> 1. Support partnership and collaboration with NGOs, Agricultural Extension services, Private Sector Service Providers etc. 2. Increase awareness and adoption 3. Develop farmer-centric ICT tools 4. Promote affordable access to technology 5. Provide digital skill training 6. Address cost consideration <p>Action 2:</p> <ol style="list-style-type: none"> 1. Actions 1-6 to be implemented by Projects <p>Action 3:</p> <ol style="list-style-type: none"> 1. Support by key stakeholders including: NGOs, Agricultural Extension services, Private Sector Service Providers, Academic institutions, <p>Action 4:</p>

	<ol style="list-style-type: none">1. Inclusion of all actions into the AWPB 2024.2. Clear roles and responsibilities defined for each partner.3. Regular communication and information sharing among partners.4. Targeted awareness campaigns and dialogues.5. Showcasing success stories and demonstration plots to highlight the benefit of ICT tools.6. Continuous Monitoring and evaluation to access levels and adoption.7. Involvement of smallholder farmers in the design and development process to ensure relevance and usability.8. Localized content and language options to cater to diverse farming communities.9. Development of training programs tailored to the specific needs and KAP level of smallholder farmers.10. Partnership with technology manufacturers and vendors to offer discount or affordable options.11. Consideration of geographical factors and the specific needs of rural farmers.
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GROUP B: Government

Group Focus: Digital Interventions in Support Agricultural Product/Extension

<p>ICT4Ag Intervention (Government):</p>	
<p>Current Status in Nigeria’s Context (Gov’t, Projects, Partners)</p>	<p>E-voucher: The government has implemented a mobile phone-based input subsidy scheme, wherein electronic vouchers are utilized to provide farm inputs. This initiative aims to surpass conventional "smart" subsidies which are in line with the Agricultural Transformation Agenda (ATA) policy and guidelines.</p> <p>E-extension: The FMAFS has an e-extension division in the Department of Agricultural Extension at Federal and State levels. They have national farmers helpline (toll-free line) centers operating on a 24 hours basis. Farmers obtain Agricultural information using the toll-free calls. (Pg. 31 NATIP)</p> <p>Digital Climate Information System: The FMAFS through the Environmental and Climate Change Unit is collaborating with NiMET (Nigerian Meteorological Agency) and NABDA (National Biotechnology Development Agency), and spearheaded the establishment of additional weather stations. These stations are integral in the integration of agricultural weather and research data tailored for smallholder farmers. The process of downscaling this information to the farming community has been financially supported by the Government.</p> <p>NATIP supports the promotion of digital climate approaches, encouraging the development of on-farm and off-farm use and adoption of digital technology and innovation platform (Pg. 54 NATIP)</p>
<p>What are the Gaps? (in terms of scale, efficiency, sustainability)</p>	<p>E-voucher: Due to network service issues, farmers continue to get delayed input services. Low farmer awareness about the use of key tools contributes to the problem.</p> <p>E-extension: Inadequate infrastructure to promote e-extension services poses a huge challenge.</p> <p>Digital Climate Information System: Inadequate finance has hampered the development of more weather stations, which are necessary for gathering weather data for smallholder farmers. This constraint also makes it difficult to effectively downsize weather information to meet the specific needs of smallholders.</p>
<p>Causes of the Gaps</p>	<ol style="list-style-type: none"> 1. Insufficient Funding: Limited financial resources hinder the scalability and sustainability of ICT4Ag interventions, restricting their ability to reach a broader audience and maintain long-term impact. 2. Inadequate Training and Support: Lack of comprehensive training programs and ongoing technical support for end-users leads to inefficient implementation, reducing the effectiveness of ICT tools in the agricultural sector. 3. Lack of Strategic Planning: Absence of long-term strategic planning and coordination in implementing ICT4Ag initiatives results in a lack of continuity, making it challenging to sustain these projects beyond their initial phases.

	<p>4. Unequal Digital Access: Disparities in internet connectivity and access to digital devices, particularly in rural areas, create a digital divide, limiting the reach of ICT4Ag interventions and hindering their potential to bridge informational gaps among farmers.</p>
<p>What action(s) do we need to take? (Who is the lead actor for each action? who are the supporting actors for each action?)</p> <p>What are the conditions to ensure success for each action?)</p>	<p>1. E-voucher Initiative:</p> <p>Action(s) Needed:</p> <p>Lead Actor: Federal Ministry of Agriculture and Food Security (FMAFS). The Ministry is currently promoting digital agriculture and not e-voucher System (NATIP page 23)</p> <p>Supporting Actors: Department of Agricultural Extension, NITDA, Ministry of Finance, Private sector digital tools suppliers</p> <p>Action: Address network service issues to ensure timely delivery of input services to farmers. Enhance farmer awareness through targeted campaigns about the usage and benefits of e-voucher tools.</p> <p>Conditions for Success:</p> <p>Adequate collaboration and coordination among FMAFS, Department of Agricultural Extension, NITDA, and private sector digital tools suppliers.</p> <p>Regular monitoring and feedback mechanisms to assess the effectiveness of awareness campaigns.</p> <p>Reliable funding allocation from the Ministry of Finance to support awareness campaigns and network infrastructure improvements.</p> <p>2. E-extension Initiative:</p> <p>Action(s) Needed:</p> <p>Lead Actor: Federal Ministry of Agriculture and Food Security (FMAFS)</p> <p>Supporting Actors: Department of Agricultural Extension, NITDA, Ministry of Finance, Private sector digital tools suppliers</p> <p>Action: Invest in the development of necessary infrastructure to facilitate e-extension services, including internet connectivity, training centers, and technical support for farmers.</p> <p>Conditions for Success:</p> <ol style="list-style-type: none"> 1. Collaboration with NITDA and private sector digital tools suppliers to leverage technological expertise and resources. 2. Continuous training and capacity building for agricultural extension workers to effectively utilize e-extension tools. 3. Financial support from the Ministry of Finance to fund infrastructure development and training programs. <p>3. Digital Climate Information System:</p> <p>Action(s) Needed:</p>

	<p>Lead Actor: Federal Ministry of Agriculture and Food Security (FMAFS)</p> <p>Supporting Actors: NIMET, Ministry of Finance, Private sector digital tools suppliers</p> <p>Action: Secure adequate funding to establish additional weather stations, ensuring comprehensive coverage for weather data collection. Allocate resources for research and development to enhance downsizing methods for weather information tailored to smallholder farmers.</p> <p>Conditions for Success:</p> <ol style="list-style-type: none"> 1. Collaboration with NIMET for technical expertise in weather station setup and data collection methods. 2. Financial support from the Ministry of Finance to fund the establishment of weather stations and research initiatives. 3. Partnership with private sector digital tools suppliers for innovative downsizing techniques and effective dissemination of weather information to smallholders.
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GROUP ASSIGNMENT ON THE DEVELOPMENT OF PRIORITY ACTION PLAN FOR SELECTED ICT4D SOLUTIONS

Group C Focus: Digital Intervention in Support of Post-Harvest Management/ Market Access

Group Focus: Digital Solutions in support of:

1. Warehouse Management/Receipt System
2. GIS/Remote Sensing

Group C: Projects Interventions

ICT4Ag Intervention (Projects):	Warehouse Management/Receipt System
Current Status in Nigeria's Context (Projects, Partners)	<ol style="list-style-type: none"> 1. Projects have constructed a number of warehouses/Aggregation centres in the major production hubs across the intervention states. Equipped with Digital Weighing Scales, Moisture testing equipment, Solar Powered Boreholes, deep freezers for storage of fish/poultry. 2. Mode of Management: It is a farmer organizations' (committee) managed through Commodity Alliance Forum (CAF) and Commodity Apex Development Association (CADA). 3. There are aggregators who collect produce from farmers and store in the warehouses, ready centralized off-taking by the off-takers. 4. The facilities are currently manually managed. 5. The farmers are charged stipends to keep their produce for a period.

<p>What are the Gaps? (in terms of scale, efficiency, sustainability)</p>	<ol style="list-style-type: none"> 1. Inadequate warehouse facilities (coverage) 2. The efficiency is low because the warehouses are manually managed. 3. In terms of sustainability, since they are currently managed by CAF & CADA there is a degree of assurance in sustainability. However, the management system needs to be strengthened. 4. There are still challenges in the ownership of the facilities. 5. Some of the facilities are not easily accessible due to poor access roads to communities where they are sited. 6. It is not clear if the stipends generated from the Management of these Warehouses are sufficient for their maintenance.
<p>Causes of the Gaps</p>	<ol style="list-style-type: none"> 1. Inadequate budgetary provisions to construct more warehouses 2. Lack of digitalized tools to aid management process 3. Funding for O&M 4. Lack of clear ownership structure
<p>What action(s) do we need to take? (Who is the lead actor for each action? who are the supporting actors for each action? What are the conditions to ensure success for each action?)</p>	<p>Action 1: Provide more budgetary allocations to support warehouse construction Lead Actor: NPCs of the projects Supporting Actors: SPCs/Project Engineers, IFAD/Government</p> <p>Conditions for Success:(i) Adequate Budgetary provisions (ii) Early AWPB preparation and approvals. (iii) It should be demand-driven and properly sited. (iv) Security of the environment (v) Climate resilient designs</p> <p>Action 2: Digitalize the management and operations of the Warehouses Lead Actor: NPCs of the projects Supporting Actors: SPCs/ICT Staff of the projects, IFAD/Government, private sector</p> <p>Conditions for Success:(i) Adequate Budgetary provisions (ii) strong partnership with relevant agencies of government and private sector. (iii) The design and development should employ bottom-top approach.</p> <p>Action 3: Lease agreement with reliable private sector partnership for effective management, transparency, accountability and sustainability.</p> <p>Lead Actor: NPCs of the projects Supporting Actors: SPCs/FOs Leaders/Community Leaders, private sector</p> <p>Conditions for Success:(i) Signing of MoUs/Contractual Agreements (ii) strong partnership with relevant private sector. (iii) Stakeholder engagement and buy-in.</p>

<p>Justification</p>	<ol style="list-style-type: none"> 1. Implementation of this system will ensure effective management of the facilities, transparency, accountability and sustainability of the existing Aggregation Centres, strengthen farmer organizations, reduce post-harvest losses and facilitate access to market. 2. The system will equally provide real time data on volume of produce stored, off-taken, and amount realized for accurate report rendition in order to make better and informed decisions. 3. This technology is in alignment with the following national policies: 4. The National Agricultural Technology and Innovation Policy (NATIP) 2022 – 2027 5. National Pathway for Food Systems Transformation
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Group C: Government Interventions

ICT4Ag Intervention (Government):	Warehouse Management System
Current Status in Nigeria's Context (Gov't)	<ol style="list-style-type: none"> 1. The Government under the Federal Ministry of Agriculture have a number of Silos across the states. 2. The facilities are used for grain reserves. Equipped with weighing scales and are manually managed.
What are the Gaps? (in terms of scale, efficiency, sustainability)	<ol style="list-style-type: none"> 1. Low buffer stock in the reserves 2. Poor maintenance of the existing silos 3. Poor road networks inhibiting access to the silos
Causes of the Gaps	<ol style="list-style-type: none"> 1. Insufficient funding 2. Lack or weak functional strategies in mopping up grains from farmers
<p>What action(s) do we need to take? (Who is the lead actor for each action? who are the supporting actors for each action?)</p> <p>What are the conditions to ensure success for each action?)</p>	<p>Action 1: Favorable government policy that encourage private sector participation and reduction in service charges Lead Actor: FMAFS Supporting Actor: NITDA, NCC, relevant government agencies, private sector</p> <p>Conditions for success: (i) continuous advocacy and stakeholder engagement, (ii) strong partnership with relevant government and private sector organizations.</p> <p>Action 2: Adequate budgetary support Lead Actor: FMAFS Supporting Actor: FMoF</p> <p>Conditions for success: (i) continuous advocacy and stakeholder engagement, (ii) strong partnership with relevant government and private sector organizations.</p> <p>Action 3: IT Infrastructure support Lead Actor: FMAFS Supporting Actor: NITDA</p> <p>Conditions for success: (i) continuous advocacy and stakeholder engagement, (ii) strong partnership with relevant government and private sector organizations.</p> <p>Action 4: Training and Capacity Building Lead Actor: FMAFS Supporting Actor: donors/NGOs, private sector</p> <p>Conditions for success: (i) continuous advocacy and stakeholder engagement, (ii) strong partnership with relevant government and private sector organizations.</p>
Justification	<ol style="list-style-type: none"> 1. Implementation of this system will ensure effective management of the grain reserves, transparency, accountability and sustainability of the existing Silos, reduce post-harvest losses and facilitate access to market. 2. The system will equally provide real time data on volume of produce stored, sales, and amount realized for accurate report rendition in order to make better and informed decisions. 3. This technology is in alignment with the following national policies:

	<ol style="list-style-type: none"> a. The National Agricultural Technology and Innovation Policy (NATIP), 2022 – 2027 b. National Pathway for Food Systems Transformation. c. National Digital Economy Policy and Strategy (NDEPS) (2020 – 2030)
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ICT4Ag Intervention (Projects):	GIS/Remote Sensing
Current Status in Nigeria’s Context (Projects, Partners)	<ol style="list-style-type: none"> 1. The LIFE-ND Project is using GIS technology. 2. It is used for reporting, tracking of productivity, data storage and develop template for field activities. The System is web-based and real-time. 3. VCDP had used GIS through an engaged Service Provider to geo-reference all the intervention sites such as Market Infrastructures, Production Sites, Water facilities, processing facilities etc. 4. However, VCDP does not have a GIS/Remote Sensing System
What are the Gaps? (in terms of scale, efficiency, sustainability)	<ol style="list-style-type: none"> 1. LIFE-ND is yet to start implementing the remote sensing technology. i.e Cannot monitor farmers’ production site from the comfort of their office. 2. At the moment, the system cannot make location specific weather prediction. 3. The GIS/Remote Sensing is not a community/farmers’ driven technology. Hence, its sustainability is in doubt.
Causes of the Gaps	<ol style="list-style-type: none"> 1. Low awareness on the GIS technology 2. It requires a lot of technical skill and cannot be easily managed by farmers and/or unskilled project staff.
What action(s) do we need to take? (Who is the lead actor for each action? who are the supporting actors for each action? What are the conditions to ensure success for each action?)	<p>Action 1: Awareness creation on the application of GIS/Remote sensing</p> <p>Lead Actor: NPCs of the projects Supporting Actors: SPCs/Project, IFAD/Government, Private Sector.</p> <p>Conditions for Success:(i) Adequate Budgetary provisions in the AWPB (ii) Identification and engagement of key private sector partners to drive the sensitization.</p> <p>Action 2: Training and Capacity Building for the technical staff of the project/Oversight Ministry Staff (Agric) to explore its full application/potential</p> <p>Lead Actor: NPCs of the projects Supporting Actors: SPCs/ICT Staff of the projects, IFAD, private sector</p> <p>Conditions for Success:(i) Adequate Budgetary provisions (ii) strong partnership with relevant agencies of government and private sector. (iii) Involvement of volunteers/champion farmers in the training and capacity building.</p> <p>Action 3: Establishment of the GIS/Remote Sensing System by VCDP to utilize its benefits</p> <p>Lead Actor: NPCs of the projects</p>

	<p>Supporting Actors: SPCs/IT Staff of the projects, IFAD, KCEP-CRAL</p> <p>Conditions for Success:(i) Adequate Budgetary provisions (ii) Strong partnership with relevant private sector service providers. (iii) Identification of quality service providers to drive the technology.</p>
Justification	<ol style="list-style-type: none"> 1. The GIS/Remote sensing solution will ensure adequate planning, efficient utilization of resources, and monitoring through mapping of interventions for informed decision making and determination of locations for future interventions. 2. This Digital solution is in alignment with the following national policies: The National Agricultural Technology and Innovation Policy (NATIP), 2022 – 2027 National Digital Economy Policy and Strategy (NDEPS) (2020 – 2030)

GROUP C: Government Interventions

Group Focus C: Digital Intervention in Support of Post-Harvest Management/Market

ICT4Ag Intervention (Government):	GIS/Remote Sensing
Current Status in Nigeria's Context (Gov't)	<ol style="list-style-type: none"> 1. The government, through the Surveyor-General of the Federation Mr. Samuel Adeniran is now focusing on the diversification of the economy to lessen dependence on the downstream sector and the use of geospatial technology to harness resources in mining, tourism, agriculture, transportation, land and housing among other engagements.
What are the Gaps? (in terms of scale, efficiency, sustainability)	<ol style="list-style-type: none"> 1. Lack of adequate infrastructure 2. Unskilled manpower
Causes of the Gaps	<ol style="list-style-type: none"> 1. Low awareness about the GIS technology 2. It requires a lot of technical skill and cannot be easily managed by unskilled staff. 3. Inadequate funding
<p>What action(s) do we need to take? (Who is the lead actor for each action? who are the supporting actors for each action?)</p> <p>What are the conditions to ensure success for each action?)</p>	<p>Action 1: Establishment of a National Geospatial Data Infrastructure. Lead actor: Federal Ministry of Science and Technology Supporting actors: National Space research and Development Agency (NASRDA), National Geospatial Data Infrastructure (NGDI) committee, FMAFS, NITDA, private sector</p> <p>Conditions for Success:(i) Adequate Budgetary provisions (ii) Strong partnership with relevant private sector service providers. (iii) Identification of quality service providers to drive the technology.</p> <p>Action 2: Deepen awareness of the technology among relevant stakeholders Lead actor: National Space research and Development Agency (NASRDA) Supporting actors: National Geospatial Data Infrastructure (NGDI) committee, FMAFS, NITDA, Donor agencies/ NGOs, private sector.</p>

	<p>Conditions for Success: (i) Adequate Budgetary provisions (ii) Strong partnership with relevant private sector service providers. (iii) Continuous advocacy and stakeholder engagement</p>
<p>Justification</p>	<ol style="list-style-type: none"> 1. The GIS technology provides the government with requisite geospatial data to ensure good decision making, planning and implementation of policies and programmes geared at improving the lives of Nigerians. 2. This Digital solution is in alignment with the following national policies: National Digital Economy Policy and Strategy (NDEPS) (2020 – 2030) National Geospatial Data Infrastructure