

Agri Connect: Enabling Private Sector Investment and Access to Services for Smallholder Farmers through Digital Farmer Registry

Grant proposal identification form (for competitive selection)

1. Grant Sponsoring Division: PMI	2. Co-sponsoring Division(s): PMD, ECG and RIA
3. Technical Grant Manager: Brenda Gunde, Lead Global Technical Specialist	
4. Title of the grant: Enabling Private Sector Investment and Access to Services for Smallholder Farmers through Digital Farmer Registry (Agri Connect)	
5. Value of IFAD grant: US\$ 1.5 Million	6. Co-financing: TBD
7. Implementation period: 24 months	8. GRIPS ID:
9. Selected Strategic Priority: 6. Strategic Priority Endorsed by EMC	
10. Window: Indicate Global/Regional <input checked="" type="checkbox"/> Country <input type="checkbox"/>	11. Country/Countries: Nigeria and Rwanda
12. Recipient: <i>Select <u>one</u> of the following options</i> <ul style="list-style-type: none"> • Competitive selection at CN stage <input checked="" type="checkbox"/> and name of recipient • To be selected competitively at design stage <input type="checkbox"/> • Direct selection <input type="checkbox"/> and name of recipient 	
13. Rationale for recipient selection and recipient capacity: <p>The recipient of this grant will be selected at Concept Note Stage through a competitive process. It could include private sector, a non-profit entity, a consultancy firm, or an alliance/consortium of these institutions depending on expertise.</p>	
14. Background/relevance: <p>Digital Public infrastructure (DPI) is “a set of shared digital systems which are secure and interoperable, built on open standards, and specifications to deliver and provide equitable access to public and/ or private services at societal scale and are governed by enabling rules to drive development, inclusion, innovation, trust, and competition and respect human rights and fundamental freedoms”. (DPI Playbook, UNDP, 2023) DPI’s are often composed of open, interoperable technology with transparent, accountable, and participatory governance frameworks to unlock innovation and value at scale. (ibid)</p> <p>DPIs such as farmer registries, which are electronic registries with data on farm holdings and farm holders can enable informed decision-making, promote investment into the agriculture sector, enable policies and services through provision of information on ‘who does what and where’ in the agriculture sector and act as a key building block for innovation. (FAO, 2023).</p> <p>Farmer registries can enable private sector investment and delivery of targeted services based on geographic information, crop type, crop volumes as well as target agronomic advisory, input and mechanisation. Availability of farmer data can drastically bring down customer acquisition costs by aggregation of demand and services through farmer organisations (FOs). It can boost service provision in rural areas and coordination among ecosystem players, removing inefficiencies in the provision of services to farmers and FOs as well as enable improved risk measurement for the financial sector to de-risk access to finance especially for the smallholders, SME’s and Farmer organisations. Similarly, farmers and FOs understand ‘who does what and where’, enabling them</p>	

to determine if there is demand for their offerings and identify potential partners for commercial synergies (including government) at local level.

Farmer Registries can also enable delivery of government subsidies for inputs and enhance food security, compliance with food safety, promote accountability and potentially serve as a pilot to integrate data protection and cybersecurity policies into these pioneering rural registries, which can expand and support central data systems.

The proposed grant project will support ongoing initiatives to create a digital public infrastructure through the implementation of Digital Farmer registry building on the main principles of DPI development in 2 member countries (Nigeria and Rwanda) over the period of 2 years. The project will build on the success of the Digital Advisory Services Grant (D-Alliance) which supported digital ecosystem assessments and identification of opportunities to use the DPI approach in several countries as well as IFAD's experience in designing the farmer organisation platform led by PMI. The grant project's focus countries have been determined based on existing initiatives of the Nigeria Federal Ministry of Agriculture and Food Security (FMAFS) and Rwanda Ministry of Agriculture and Animal Resources (MinAgri) in collaboration with the respective Ministries of ICT to create digital public infrastructure through the digital farmer registry. The grant will at startup also assess the needs of the public and private sector as well as willingness of the public sector to own manage and maintain the systems in the long run and create the enabling policies for data sharing and interoperability.

In Nigeria, in line with national policies and strategies such as the National Agricultural Technology and Innovation Policy (NATIP) and the 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. In the same vein the Ministry of Agriculture and Animal Resources and Rwanda Agriculture and Animal Resources Development Board are committed to promote innovation and technology for increasing production of both food and industrial crops through access to input use, adoption of good agriculture practices and innovative research and technology transfer to farmers.

The proposed project is also aligned with IFAD's ICT4D Strategy 2020-2030, which aims at leveraging ICTs to increase development impact and improve the economic and social conditions of rural people through increased agricultural productivity, greater benefits from market participation and strengthened household resilience. The project is also aligned to IFAD's existing private sector strategy, as the underlying foundational infrastructure being developed under the project will support private sector collaboration to deliver services in the rural sector enabling both IFAD target and non-target groups.

15. Direct and indirect target group:

Direct target groups are country implementing and strategic partners including Ministries of Agriculture, Information and Communication as well as Project Management Units. The grant will also enable smallholder farmers with a focus on youth and women in accessing productive inputs through subsidies, market linkages and access to financial services etc, leveraging digital solutions. Indirectly the grant will support digital technology providers tailor solutions to support farmers' access to inputs enabled by digital vouchers, digital wallets for payments, access to financial services and aggregation for markets through farmer organisations and policy strengthening.

16. Goal, objectives and expected outcomes:

The main **goal** is to contribute to transition agriculture in the countries from informal, disconnected, subsistence-based models to become data-integrated, entrepreneurial, and commercially oriented.

Objective: Facilitate development and implementation of Digital Farmer Registry to create network effects and enable digital services delivery to smallholder farmers to enhance productivity and post-harvest activities leveraging data.

Sub-Objective: Support creation of enabling policies to act as an incentive for private sector to develop and deliver innovative services for the agriculture sector.

Expected outcomes.

- Improved access by smallholder producers to information and digital enabled services for improved agronomic practices and yields.
- Enhanced access to farmer registry data driving private sector digital innovation and expansion in the agriculture sector.
- Increased number of use cases supporting last-mile delivery of digital enabled services to small holders for improved production and productivity

Expected Outputs

- Situational & gap analysis and validation is completed for the identified countries.
- Operational mechanism for development of the farm registries is setup.
- Unified Farmer Services Interface developed to support API integration.
- Functioning pilots of farmer registries ready to scale
- Defined use cases with private sector to ensure sustainability and last mile delivery of digital services.
- Data governance and usage guidelines are developed.
- Technical assistance for technology infrastructure deployment

17. Key activities by component:

Specifically, the grant will support the delivery of the following activities:

Component 1: Design and pilot implementation of digital farmer registry

The grant will support design and implementation of digital farmer registry based on key features and principles of DPI (including interoperability, efficient and cost effectiveness, scalability, citizen centric design, flexible and adoptive features, promote positive governance and cross sector collaboration) ([Deloitte, DPI approach 2023](#)). The following activities will be undertaken to support the implementation in the two countries:

- Needs assessment of public and private sector, existing data sources /farmer registries
- Define the overall data needs i.e. granularity, coverage, governance, accessibility, and interoperability.
- Create a network effect by unlocking partnerships with private sector to define key use cases (i.e. digitising existing transactions to capture efficiencies, scaling, data needs for financing institutions) and collaboration with FOs as key stakeholders.
- Develop/customise existing technology solutions for farmer registry.
- Validation of farmer data based on agreed data points and protocols based on existing databases.
- Selection of pilot areas for usability and gradual scale up
- Operational mechanism for data collection storage and management of data

- Development of API Standards to support data exchange and interoperability.

Component 2: Building capacity and strengthening data governance and knowledge.

This component will focus on building capacity of in country counterparts to manage and scale-up the implementation of the farmer registry platform and build partnerships and cross sector collaborations for sustainability of operations. The following activities will be undertaken:

- Building capacity for data collection and simplification of data collection and access mechanisms.
- Data governance process for sharing data, privacy and protection with other stakeholders such as private service providers- middlemen, enterprises, AgriTech, Fintech, financial institutions among others.
- Technical assistance towards development/adoption of data policies and regulatory frameworks to enable data sharing and interoperability.
- Document and disseminate key lessons from implementation to support scale up into other countries including through collaboration with UN and development agency networks, UN2.0 community and targeted knowledge sharing events.

18. Project cost: USD 1.5 Million

Project total costs will be USD 1.5 million, divided as follows per component. IFAD will also seek some potential additional co-financing including (technology subsidisation) from the grantee, selected country counterparts or other donors while developing the proposal.

Component 1: Design and pilot implementation of digital farmer registry – **USD 1.25 Million (Pilots in 2 selected countries)**

Component 2: Building capacity and strengthen data governance – **USD 0.25 Million**

19. Risks and Mitigation Measures: The main risks for this grant are:

- 1. Institutional and capacity risks.** Digital Public Infrastructure concept is new to many countries / field conditions, where they will be deployed. Ministries of Agriculture, government institutions and other stakeholders in the IFAD member states might not be well versed on how to manage and maintain such platforms and capacity-building efforts may need more continuous support to be sustainable. To mitigate this, technical assistance will be embedded to ensure transfer of capacity, a coordinating body will be setup up embedded within key counterpart ministries/agencies fostering a cooperative framework and measures will be included within the grant to ensure knowledge transfer to the coordinating bodies.
- 2. Infrastructural risks.** Currently, there is limited ICT infrastructure, especially data infrastructure within countries. To mitigate this the project will promote partnerships with telecom companies to improve internet connectivity in rural areas as well as promote offline functionality for data collection.
- 3. Operational risks.** The potential misuse of farmer data by either the public or private sector for political or commercial use could infringe on privacy rights This will be mitigated by ensuring data governance framework that govern access, use and sharing of data is developed and operationalised. Private sector partners building services based on data from farmer registry would be required to introduce data protection measures.

20. Monitoring & Evaluation, KM and Learning:

The project financed by this grant will be regularly monitored by the grantee who will report quarterly to the IFAD technical and country teams in collaboration with FMAFS and MinAgri on the progress of implementation. A project specific log frame will be developed to report on key output and outcomes

of activities. A big part of the work under the grant is to establish data governance mechanisms and operational mechanisms, which will serve a knowledge base for replication in other regions/countries. Lessons learnt will be developed as part of the grant implementation.

21. Supervision modalities:

The progress of activities under this grant will be closely supervised by IFAD ICT4D Global Technical Specialists, with the support of the country teams of the selected countries. The grantee is expected to prepare and submit regular progress reports on all activities. The grantee must be available for regular discussions and reviews with the country team as well as technical specialists and responsible for the accuracy and timely transmission of reports, escalation of operational bottlenecks and addressing any type of issue hampering the project execution on the ground.

22. Linkages:

The grant will facilitate stronger linkages with the key stakeholders in the implementing member countries, local and regional private sector as well as IFAD supported projects and programmes. It is expected that targeted beneficiaries under IFAD projects will be included in DPI implementation at the pilot stage. The private sector uses cases will be defined in alignment and consultations with stakeholders already supporting or expected to be engaged with IFAD and other partner supported projects to support uptake. Further, the grant will explore complementarities in the countries and with other private sector led initiatives such as the 'Digi Farm' by Safaricom, one farm by Stanbic Bank and Olam in digitising the supply chain which are already exploring the use of farmer data to enable private sector led services. Cross sector collaboration with other ministries, agencies as well as Agritech and Fintech players in the targeted countries will be explored.

23. Scaling up:

The grant project aims to support implementation of the digital farmer registry (platform) in 2 member countries with existing IFAD operations. These countries(s) implementation will act as pilots and will be fully embedded within key line ministry/agency, which will be responsible for overall implementation of the platform. The identification of pilot countries has been based on consultations already held during the design of RDDP2 project in Rwanda and Digital ecosystem assessment completed for Nigeria and is based on the intention of government to support and scale-up the implementation of such platform and hence scaling up will be fully undertaken by the relevant ministry/agency.

The grant will develop detailed data governance and operational mechanism as well as undertake capacity building and handover technical assistance to the key stakeholders, which will support scaling up the platform. As part of the project, a business model (including financing avenues, required manpower and costs) and implementation approach will also be developed to prepare host government for scale-up phase.

24. Sustainability:

Digital farmer registry is a public good and it is expected that the platform will be sustained through public funds in the long run. Other financing/sustaining mechanism will include exchange with private sector generating revenue through data exchange (example CAMDx in Cambodia). Early identification of right technology partner, design and data architecture and open-source technologies and coordination framework will provide a conducive environment for continuation of project activities beyond the grant timelines. The institutional sustainability will be fostered through the close partnerships with respective ministries/agency during implementation.

25. Other aspects:

The grant in the longer run may integrate with IFAD supported AgroWeb3 technology to support enhanced interoperability, data security, and efficiency in data management based on rising opportunities in the country. AgroWeb3 leverages blockchain technology to create a decentralized

and immutable ledger, ensuring the integrity and verifiability of farmer data. This enhances trust among stakeholders by providing transparent and tamper-proof records. The use of verifiable credentials in AgroWeb3 significantly reduces certification costs and administrative burdens, streamlining the registry process. In the short term, this integration will enable real-time data sharing and validation across various platforms, improving coordination among different agricultural programs and financial institutions. In the long term, it will foster a resilient and scalable digital infrastructure that supports the sustainable growth of agricultural value chains. By aligning with global standards such as the ISO protocol, AgroWeb3 ensures seamless interoperability with other systems and technologies, future-proofing diversity of use cases the grant outcomes will promote and maximizing its impact on rural development.

There are several examples of DPI globally and include India's Unified Payment Interface for interoperability in payments, AgriStack for Agriculture data, CamDX- Cambodia Data exchange, and Singapore's -SingPass among others.

Similarly, DPI's can be built on available digital public goods such as:

- Modular Open-Source Identity Platform (MOSIP), a customizable digital identity system built by researchers in India that has been adopted by 11 countries, including nine in Africa.
- Mojaloop, an open-source digital payment system that countries like Malawi and Rwanda are using as a core DPI technology.