



Case Study

A Digital Vision for the Livestock Sector in the Central African Republic

JengaLab



TechChange



DEVELOPMENT
GATEWAY
An IREX Venture

A DIGITAL VISION FOR THE LIVESTOCK SECTOR IN THE CENTRAL AFRICAN REPUBLIC A CASE STUDY

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LIST OF ABBREVIATIONS

ACFPE	Central African Agency for Vocational Training and Employment
AFD	French Development Agency
ANDE	National Livestock Development Agency
ANGAC	National Association of Central African Poultry Farmers Groups
BEAC	Bank of Central African States
CEMAC	Economic and Monetary Community of Central Africa
EU	European Union
FNEC	National Federation of Livestock Breeders of the Central African Republic
GSMA	Global System for Mobile Communications
PAPEUR	Support Program for the Promotion of Entrepreneurship in Rural Areas
RCPCA	National Recovery and Peacebuilding Plan
MADE	Ministry of Agriculture and Rural Development
MESA	Ministry of Livestock and Animal Health
MFB	Ministry of Finance and Budget
MMAISP	Ministry of Modernization of Administration and Public Sector Innovation
MPT	Ministry of Posts and Telecommunications
ONFR	National Organization of Rural Women
PFI	Partner Financial Institutions
PRAPAM	Project to Strengthen Productivity and Access to Product Markets
PREPAS	Project for the Revival of Agropastoral Production in the Savannahs
SIAD	Sustainable Agricultural Industries Society
VC	Value Chain

SECTION I: EXECUTIVE SUMMARY

According to the Food and Agriculture Organization (FAO), agriculture is the main source of livelihood for one-third of the world's population. In Sub-Saharan Africa, more than half the population keep livestock, and one in three of these livestock keepers are from low-income households. Experts estimate that the demand for animal-source foods in Africa will grow exponentially in the next few decades due to the growth of the human population, which is predicted to double by 2050.¹

Additionally, the uptake of digital tools, including digital financial services, is on the rise in Africa, and governments and stakeholders should actively onboard rural farmers into the digital age.

In the Central African Republic (CAR), a joint initiative of the International Fund for Agricultural Development (IFAD) and the CAR government was established in 2023. This initiative is known as The Livestock and Youth Support Project (PEAJ).² The project aims to improve the food and nutrition security and the resilience of vulnerable households in four sub-prefectures of the country: Bamingui-Bangoran, Nana-Grébizi, Ouham, and Ouham-Pendé.

To ensure the mainstreaming of digital tools and systems in the implementation of PEAJ, the Digital Advisory Support Services for Accelerated Rural Transformation (DAS) Program conducted an assessment of the available digital agriculture ecosystem in CAR. The assessment identified the following:

1. There are at least five organisations that are working to integrate digital literacy and digital development in entrepreneurship through training, capacity building, and production techniques. These include [QUALIKETTE Association](#), [Horus Impact](#), [Mamboko Na Mamboko](#), [La Maison de l'Entrepreneur](#), and WALI TIC, among others.
2. There are at least three agritech solutions that are operational, including [JMR Infotech](#), [LandViewer](#), and [Fieldy](#).

The assessment proposed the adoption and scaling of the following digital tools during and after the implementation of PEAJ:

1. Establish an **e-advisory and extension service** to provide **farmers** training, mentoring, and coaching sessions. **Advisory support** in animal health and production techniques will be delivered through **video, audio, image, and text** content.
2. Scaling existing financial and payment solutions to link farmers, aggregators, and service providers in the livestock industry. These solutions, backed by mobile money providers, cooperatives, and banks, should **increase access to and uptake of digital financial services** by supporting the provision of funding, loans, and insurance to farmers.

¹ <https://www.ifad.org/documents/38711624/39485424/Central+African+Republic+2000004022+PEAJ+Project+Design+Report+October+2023.pdf>

3. Establishing a livestock farmers registry and database that aggregates farmers, service providers, extension officers, and other stakeholders and informs targeted interventions and messaging. Other digital systems, such as a database of innovators that create tailored solutions for different livestock value chains (VCs), should also be created. Some of the recommended systems include a farmers' registry, an institutional registry, and a livestock market information system.

These recommendations are beneficial to actors in the CAR livestock VCs and players in other countries that have largely rural and agro-pastoral populations with low access to digital infrastructure. Readers are encouraged to adapt and customise these recommendations to their unique circumstances and requirements.

SECTION II: INTRODUCTION AND BACKGROUND

2.1 CENTRAL AFRICAN REPUBLIC

2.2.1 Geography

CAR is situated in Central Africa and borders Chad, Cameroon, the Democratic Republic of Congo, Congo-Brazzaville, Sudan, and South Sudan. A former French colony, the country gained independence in 1960. CAR is a member of the African Union, the Economic Community of Central African States, the Community of Sahel-Saharan States, and the Francophonie (notably the Agence Universitaire de la Francophonie).

2.2.2 Population

The country has a population of about 6.1 million living in a land area of 623,000 km.² The population growth rate, which stands at 2.24% per year, is one of the highest in the world. The country has a high fertility rate of 4.7 children per woman and a low life expectancy of 54 years. CAR has a very young population, with a median age of 15.2 years. About 42.8% of the population is under the age of 15, and only 3.4% is above the age of 65. The youth (15-24 years) make up 19.7% of the population. According to the latest estimates from 2020, around 71% of the population lives below the international poverty line.³

² Central African Republic - Digital Economy Assessment. Washington DC : World Bank, 2020.

³ *République centrafricaine - vue d'ensemble*. World Bank (2023)
<https://www.banquemondiale.org/fr/country/centralafricanrepublic/overview>

2.2.3 Economy and Industry

CAR is one of the poorest countries in the world, ranking 188 out of 191 on the Human Development Index in 2022.⁴ According to the World Bank, CAR's gross domestic product (GDP) was \$2.38 billion in 2022, ranking it 163rd in the world. The GDP per capita was \$448, ranking it 181st in the world. The GDP growth rate was estimated at 0.5% in 2020, down from 4.5% in 2019, due to the impact of the COVID-19 pandemic and political instability.

Agriculture, livestock, forestry, mining, and trade are the main sources of livelihood for the population. Agriculture accounts for about 55% of the GDP and employs about 70% of the labour force. The main agricultural products are cassava, peanuts, sorghum, millet, maize, sesame, plantains, cotton, coffee, and tobacco. Timber and diamonds are the main export commodities, accounting for about 70% of the country's export earnings. Agriculture, livestock, and forestry account for more than 45% of GDP. The number of people working in agriculture in the country was estimated at 2.6 million in 2021, out of a total labour force of 3.7 million. This means that about 70% of the workers were engaged in agricultural activities. The number of vaccinated livestock in CAR was estimated at 42.1 million in 2015, according to the FAO of the United Nations.⁵ The main types of livestock are cattle, sheep, goats, pigs, poultry, and horses. Livestock production improves the food security, income generation, and social cohesion of many rural households. CAR is also highly dependent on the export of raw materials, specifically oil, uranium, and diamond mining. Its climate is tropical, with a dry season and a wet (rainy) season.

2.3.4 Digitalisation and Literacy

CAR is one of the least developed countries in the world, with low levels of linguistic and digital literacy among its population.

According to the World Bank, the adult literacy rate in CAR was 37.4% in 2018, ranking it 186th out of 200 countries. The digital literacy rate, which measures the ability to use digital devices and applications, is estimated to be even lower, as only 7.1% of the population had access to the internet in 2019. The main barriers to digital literacy include the lack of infrastructure, poor affordability, shortage of skills, and low awareness of technology. According to the GSM Association (GSMA), the mobile phone penetration rate in CAR was 29% in 2019, compared with the Sub-Saharan Africa average of 45%. The mobile broadband penetration rate was 9%, compared with the regional average of 26%. Moreover, the mobile money penetration rate was 11%, compared with the regional average of 21%.

Mobile money has the potential to increase financial inclusion and resilience in CAR, especially in rural and remote areas, but it faces challenges such as low trust, low literacy, limited interoperability, and high taxation.

⁴ République centrafricaine - vue d'ensemble. World Bank (2023)

⁵ <https://www.fao.org/3/bq798e/bq798e.pdf>

2.2 THE LIVESTOCK AND YOUTH SUPPORT PROJECT (PEAJ)

PEAJ will be implemented in nine CAR districts. The project aims to benefit approximately 30,000 low-income households, mainly young people and households headed by women. PEAJ targets small-scale livestock farmers (mainly meat, dairy, small ruminant and poultry farmers), beekeepers, veterinary service providers, livestock farmers, and small entrepreneurs.

Investments will lead to sustainable improvements in livestock production and productivity as well as enhance household access to necessary services, appropriate financial products, technologies, training, and education. Investments will also create employment opportunities that allow women and young people to increase their incomes.

In particular, the project will strengthen communities' capacities and resilience as well as the population's adaptability and social cohesion, which is in line with CAR's national recovery and peace-building plan. The project activities, which will focus on the digitalisation of agricultural services, will lead to improved access to information and inclusive financial services and increased use and adoption of digital agricultural solutions.

In this context, an assessment of the digital entrepreneurship ecosystem in CAR was conducted. Practical interview guides were designed to gather information from farmers, public institutions, and private companies developing digital solutions for agriculture. The information gathered was used to formulate the project's contribution to digitalisation.

SECTION III:

DIGITAL ENVIRONMENT ASSESSMENT

3.1 METHODOLOGY

The assessment aimed to identify entrepreneurship development opportunities and risks in the country's digital ecosystem by mapping existing policy and regulatory frameworks, public and private investments, and relevant stakeholders. The assessment took place in March 2023 during the preliminary research phase to inform the project design.

The assessment involved interviews with 17 stakeholders from the digital entrepreneurship ecosystem, including entrepreneurs and incubators. More general information about policies, regulations, and infrastructures was gathered through desk research. The assessment was followed by an on-site field mission that helped integrate digital solution-oriented inputs to respond to the design project challenges and needs.⁶

3.2 KEY FINDINGS

Since the COVID-19 crisis, digital inclusion has been recognized as an aspect that needs to be enhanced for CAR government institutions and the whole population. Currently, the majority of digital tools are available in Bangui, the capital city. However, concrete actions and attempts have been launched and implemented to promote digital development in different areas of society. Some of these actions include the following:

➤ Digital Development to Improve Connectivity

Through European Union and World Bank financing, the CAR government is implementing the national fibre optic backbone (initiated in February 2023) to increase internet connectivity and access.

According to the World Bank, the current internet penetration rate in CAR is 11.4% (compared with 5.4% at the beginning of 2020). A majority of the population, 97.8%, accesses the internet through smartphones. The number of internet-compatible phones has grown rapidly in recent years, with an estimated 1,500,000 people holding connected phones—roughly 30% of the population.

Three telephone operators dominate the CAR market: Orange, Telecel, and Moov⁷ offer largely 3G, or even 3G+, connectivity.⁸

⁶ More details on the stakeholders interviewed during the assessment are detailed in the Annex 1.

⁷ [Corbeaunews Centrafrique. \(2021, October 12\). Les opérateurs mobiles en Centrafrique. Corbeaunews Centrafrique ou si b il LPP et actualités en République centrafricaine.](#)

⁸ [3G Orange. \(n.d.\). L'internet haut débit 3G+ d'Orange. Orange Centrafrique.](#)

The leader, Orange, in an effort to democratise access to the internet, introduced the first "made in CAR" smartphone at the end of 2019, targeting consumers in rural areas.

➤ **Digital Development to Improve the Entrepreneurship Ecosystem**

CAR is largely dependent on satellite services, which makes the cost of connectivity high. The installation and operationalisation of fibre optic networks during 2023 should help reduce costs. CAR plans to introduce a digital training centre and an incubator within the University of Bangui to increase training and capacity building for digital skills. To optimise this initiative, the Ministry of Digital Economy, Posts, and Telecommunications will create the Central African Agency for Digital Development. Nevertheless, the deployment of the fibre optic backbone will not cover the remote provinces outside of Bangui.⁹ The improvement of internet connectivity will thus be a key factor in boosting digital entrepreneurship in the country.

Since April 2022, the CAR government has launched its own Sango cryptocurrency and the upcoming "first African crypto hub" with "zero taxation." These initiatives have not yet impacted the economy, especially the rural economy with an agricultural audience.

➤ **Digital Development to Improve Access to Finance**

Orange and Telecel offer mobile money payment services that are available in some rural areas. There are also rural telecom operators' branches dedicated to agricultural financing. Still, the number of accounts remains very limited, and Orange attributes this high inactivity rate to the lack of digital literacy. Notably, 40% of Orange Money accounts are located outside of Bangui.¹⁰

As a member state of the Economic and Monetary Community of Central Africa (CEMAC), the regulatory environment for payment systems in CAR is defined by the Bank of Central African States (BEAC). In the CEMAC zone, the BEAC has made the development of an electronic money ecosystem possible thanks to two major frameworks:

- **Regulation No. 01/11/CEMAC/UMAC** of September 18, 2011, relating to the activity of issuing electronic money. It defined the basic conditions for the deployment of mobile money initiatives from 2011 onward;
- **Regulation No. 04/18/CEMAC/UMAC/COBAC** of January 2019, relating to payment services within the CEMAC zone. It repealed (cancelled and replaced) Regulation No. 01/11/CEMAC/UMAC relating to the activity of issuing electronic money issued in 2011.¹¹

Article 38 of the latter regulation states that an individual should provide an official identity document prior to opening a payment account or subscribing to a payment service. This article may present an obstacle to the development of mobile money transactions in the short and medium term. However, this potential problem is mitigated in Article 63 of the same regulation, which authorises distributors to establish contracts and provide certain services. This provides an opportunity for banks to deploy agency banking solutions (banking agents) which offer more flexible and affordable deployment terms and costs than traditional banking agencies.¹²

⁹ World Bank, 2023

¹⁰ 3G Orange, consulted in March 2023

¹¹ World Bank Group. 2020. Central African Republic - Digital Economy Assessment. Washington DC : World Bank.

¹² Ibid

➤ Digital Solutions to Support Entrepreneurship Development Projects

Between 2014 and 2023, **the French Development Agency (AFD) funded two projects aimed at supporting youth entrepreneurship** and created a corresponding training centre for the Société des Industries Agricoles Durables (SIAD). The established training centre uses digital video models, wherein trainers explain the processes of agricultural/agro-food techniques on film. Each learning module is disseminated in the training centre as videos. Ten villages in the Bobangui area are presently involved in the centre.

Moreover, AFD funded a project to support the Central African Agency for Vocational Training and Employment (ACFPE). Through this project, the AFD deployed training officers from ACFPE to educate former private sector employees in the use of basic digital functions.

To revive economic activities and spur rural development, **Enabel, through the EU's Bêkou Fund, helps train young people in trades related to agropastoral activities.** A cross-cutting approach is used to provide young learners with basic digital skills.

Within the framework of this fund, *Programme d'Appui à la Promotion de l'Entreprenariat en milieu rural* (PAPEUR Rural) provides technical assistance throughout the VCs of select sectors, ranging from production to marketing and processing.

➤ Digital Development to Improve the Entrepreneurship Ecosystem

This study identified organisations that are working to integrate digital literacy and digital development into entrepreneurship through training, capacity building, and production techniques. Some of the identified organisations are listed in the table below.

NAME	DESCRIPTION
<u>QUALIKETTE Association</u>	This organisation, which is an initiative by the Central African diaspora, creates a space for training on digital technology (mobile payments, digital tontine, agritech solutions, drones, etc.). The space is focused on the agriculture (Songhai type) and creative industries. The training centre is located 90 minutes from Bangui.
<u>Horus Impact</u>	This social enterprise works on regenerative agriculture and uses innovative approaches to amplify social (training and job creation), environmental (crop and risk forecasting), and economic (speculation) impacts. The enterprise uses a database to manage agricultural production, and cross-cutting digital tools are likely used to improve work (e.g., drones).
<u>Mamboko Na Mamboko</u>	This organisation offers digital incubation and agricultural entrepreneurship training classes. It operates in Bangui and the surrounding area.
WALI TIC	This association works in the fields of agriculture, livestock, environment, health, education, and technology. It offers training on basic digital skills (Word, Excel, Zoom, WhatsApp, Facebook, etc.) to empower women in entrepreneurship.
<u>La Maison de l'Entrepreneur</u>	This incubator, based in Bangui, delivers training in digital entrepreneurship, digital marketing, and community management. It works with a team from the

	diaspora that is interested in investing in the country. The incubator supports 15 entrepreneurs working in the agriculture, livestock, and digital services domains.
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Regarding digital solutions for the private sector in agriculture, only three **agritech solutions** operating in the country have been identified:¹³

NAME	DESCRIPTION
<u>JMR Infotech</u>	JMR's AgriNET is a smart agritech platform that brings together all the stakeholders of the agricultural VC through transformative digital technology. The platform helps stakeholders exchange farming-related information and facilitates business transactions throughout the crop cycle.
<u>LandViewer</u>	LandViewer is a digital satellite-driven tool created by EOS Data Analytics, a trusted global provider of satellite imagery analytics. The service allows for the on-the-fly searching, visualising, and processing of data by applying more than ten indices and extracting insights from satellite data to tackle real business tasks and challenges. It serves as a catalogue of satellite imagery obtained from multiple data sources. The software allows users free access to medium-resolution images (10 free images per day).
<u>Fieldy</u>	Fieldy quantifies the acreage of selected crops at a near-national level and provides a smallholder monitoring service for organisations supporting 100+ farms. Users get crop and weather statistics per field per month without cost or limit.

3.3 BARRIERS TO A SUPPORTIVE, DIGITAL ENABLING ENVIRONMENT

Significant investments are required for CAR's digital foundations, given the country's low connectivity rate and significant gaps in most segments of the broadband VC. While CAR is home to nascent digital financial services, consumption of digital platforms and digital services is low. Additionally, several cross-cutting structural barriers hinder the emergence of a strong digital ecosystem. These include a) an unfavourable business environment, b) low density/quality of infrastructure, c) a weak national identification system, d) a poor education system, e) widespread insecurity, and f) limited institutional capacity.¹⁴

¹³ These solutions were sourced after the assessment and field mission.

¹⁴ Ibid.

3.3.1 Policy Framework

CAR's development strategy is described in the *Plan national de relèvement et de consolidation de la paix (RCPCA)*.¹⁵ This plan has three fundamental pillars: (i) supporting peace, security, and reconciliation; (ii) renewing the social contract between the State and its citizens; and (iii) ensuring economic recovery and revitalisation of the productive sectors. The RCPCA provides for the establishment of new broadband infrastructure, combined with the development of e-government services that improve the coverage of public services and regional connectivity.

In relation to Pillar III of the RCPCA, the economic diversification strategy and the national prospective studies of the RCA Vision 2050 place digital development as a priority in CAR's economic recovery and growth. These strategies focus on improving CAR's connectivity infrastructure to support the ongoing peacebuilding initiatives and unlock the country's long-term economic potential.¹⁶

Although the government is committed to the development of digital platforms and new technologies, the political and legal framework is not the most favourable for the development of a global digital strategy in CAR. Currently, the country does not have a digital strategy. Most projects are implemented by each sectoral ministry, resulting in vertical digital solutions that are implemented in response to sectoral challenges (instead of following a coherent and transversal approach).

The ministries involved in leveraging digital solutions are:

- The Ministry of Finance and Budget, which has led the majority of digital initiatives introduced in CAR to date, mainly focused on government digitalisation;
- The Ministry of Digital Economy, Posts, and Telecommunications, which focuses on supporting the deployment of digital infrastructure. The ministry has requested technical assistance to support the development of a global strategy for the "Digital CAR";¹⁷
- The Ministry of Modernization of Administration and Public Sector Innovation (MMAISP), was recently entrusted by the Prime Minister to coordinate a committee for the administration and public service sector. The MMAISP coordinates the digital agenda for the public sector.

Despite the government's efforts to invest in the digital economy, there is a need to clearly define the roles and responsibilities of each stakeholder and improve interministerial coordination.¹⁸

¹⁵ [Plan national de relèvement et de consolidation de la paix \(RCPCA\)](#)

¹⁶ Ibid.

¹⁷ This collaboration is funded as part of the Central African Backbone (CAB) project, funded by the Union European Union (EU) and the African Development Bank (AfDB), and which concerns the "National Strategic Plan for Digital Central African Republic by 2025" (PNS CD 2025).

¹⁸ World Bank, 2020.

3.3.2 Legal Framework

There is a regulatory framework for electronic communication (Law 18002). The framework defines the obligations of operators and the mandate of the Autorité de Régulation des Communications Électroniques et des Postes (ARCEP), which acts as the telecommunications regulator. That said, there are limited or no cybersecurity, cybercrime, or data protection and privacy frameworks that shield consumers who use e-commerce platforms or make electronic transactions. This lack of laws can slow down digital development, especially in terms of end-user protection.¹⁹

Different reviews of sector regulations show that many laws need to be updated, and enforcement capacity needs to be stronger. The weakness of legal remedies and law enforcement can stifle business development in CAR. Likewise, the regulatory and legal frameworks guiding the ICT industry in CAR are either outdated or in conflict.²⁰

3.3.3 Infrastructure and Digital Accessibility

Today, CAR has one of the lowest coverage rates in the world. Only about 15.7% of the population has access to electricity.²¹ The internet penetration in the country was around 11.3% at the end of 2021,²² with only 34% of the population having access to mobile phones.²³ The cost of connectivity services is also relatively expensive. Outside the capital, network coverage is unequal, which limits its use by the population. According to the GSMA, the population covered by 2G and 3G networks stands at 55% and 40%, respectively.²⁴

Mobile bandwidth is affected by poor network quality and slow speeds, partly due to weaknesses in CAR's middle and last link networks. Capacity is limited by the need for a fibre optic backbone and faster 4G networks. Poor network quality is also partly a result of frequency interference from neighbouring countries.²⁵

Finally, CAR is the third-most expensive telecommunications market in the world after the Democratic Republic of Congo and Chad. Although the price of mobile broadband has fallen over the years, it remains out of reach for most households in CAR, especially low-income households.²⁶

3.3.4 Digital Education and Limited Digital Skills

Roughly 74% of people in CAR are active farmers who mostly reside in rural areas with limited internet access. It is estimated that 63% of the population is illiterate, which limits the use and understanding of

¹⁹ World Bank, Évaluation de l'écosystème des paiements numériques pour les programmes de transferts monétaires des filets de protection sociale.

²⁰ World Bank, 2020

²¹ World Bank Data: The Central African Republic.

²² Kenmogne, R. (2021). Internet Freedom in Central African Republic (CAR). Paradigm Initiative.

²³ World Bank Data: The Central African Republic,

²⁴ World Bank, 2020

^{25, 26} Ibid.

digitalisation and digital tools.²⁷ The use of social networks also needs to be improved. Only 4% of the population uses Facebook.²⁸

However, in 2022, the World Bank approved a \$35 million grant for the *Public Sector Digital Governance Project* and \$30 million for the *Investment and Business Competitiveness for Employment Project*. The latter will strengthen private workers' capabilities in management, marketing, finance, and business planning. Approximately 1,900 graduates and interns will benefit from this project, with at least 514 local companies offering specific vocational training or employment.²⁹

3.3.5 Lack of Incubators Combining Digital Solutions, Agricultural Entrepreneurship, and Agri-Food Processing

There are several business incubators in CAR, notably the *Maison de l'Entrepreneur*. However, none of them are designed to support agricultural start-ups in their digital transition or take into account agri-food processing outlets. Any incubator training initiative must be aligned with the needs of the private sector.

Supporting the digitalisation of business projects in the agricultural VC has the potential to help increase the country's economic development and combat malnutrition and the effects of climate change. According to the FAO, different factors contribute to food insecurity, including rising prices for staple foods and imported goods, conflict and population displacement, disruption of food supply chains, and environmental challenges such as climatic shocks, which have led to crop losses and reduced agricultural production.³⁰ Organisations specialising in supporting business ideas and integrating digitalisation to address these challenges are also necessary to boost the local entrepreneurship ecosystem and drive innovation across the country.

Concerning the availability of data and information on the agriculture and agri-food sector, public and private platforms are limited to websites with little information. These websites do not provide a comprehensive understanding of agriculture entrepreneurship advances in the country. Moreover, there are no platforms in CAR that list all the actors in the agricultural and agri-food sectors. Digital platforms could play a much more important role in facilitating economic activity and networking, mainly by stimulating the development of agricultural entrepreneurship. Support for accessibility, both social and economic (through infrastructure), could facilitate the integration of digital technology in society and the agricultural sector. Many solutions of this type already exist on the African continent.

²⁷ [UNESCO UIS. \(2017\). République centrafricaine.](#)

²⁸ [Fridolin Ngoulou, 2021, Oubangui media:](#)

²⁹ [World Bank Group. \(2022, May 5\). Central African Republic: Supporting Digital Governance and Competitiveness \[press-release\]](#)

³⁰ [FAO, 2023](#)

3.4 PROJECT CHALLENGES

The main challenges affecting livestock farming include low household incomes in rural areas, transhumance, and lack of adequate support for other VC actors due to insecurity and other crises (including climate change). Due to these challenges, the production and distribution channels for critical agricultural goods and services are weak. The government is thus committed to helping farmers rebuild their livelihoods.³¹ VCs need to be better organised and access to goods and services more equitable, particularly for youth, women, and other vulnerable groups.

Overall, due to the risks created by insecurity and less organised VCs, financing institutions are not inclined to offer financial services to VC actors. The management of infrastructure and equipment, often offered by project owners and farmer organisations, remains a challenge, and more appropriate institutional arrangements need to be set up to ensure good governance and sustainability. The weak capacity of public institutions, and more specifically, the weakness of the country's epidemiological surveillance system, prevent the institutions from efficiently facing health crises, including livestock and crop health crises.³²

To help address these challenges, PEAJ will undertake several interventions. Digitalisation will play a crucial role in improving the livestock and agriculture economy sectors and support IFAD with better monitoring and decision-making processes.

The following interventions, proposed during Jengalab's IFAD project design field mission, provide ICT4D expertise in the context of the DAS program.

³¹ IFAD, Livestock and Youth Support Project (PEAJ) - Concept Note, 2022

³² Ibid.

SECTION IV: PROPOSED DIGITAL SOLUTIONS

4.1 E-ADVISORY AND DIGITAL FINANCIAL SERVICES

E-advisory

Within Component 1 of the PEAJ project design, *Strengthening the Production and Productivity of Livestock and Beekeeping Value Chains*, a focus has been placed on the development of inclusive, nutrition-sensitive local supply chains through training, advisory support, close follow-up, mentoring, and coaching sessions.

The project will support the creation of **video, audio, image, and text content** for **advisory support** in animal health, production techniques, food safety, nutrition, small and medium-sized farm management, environment management, and agro-climatology. The content will be made available to beneficiaries via various distribution channels and media, including training kits for animators, community radio stations, social networks, thematic groups, networks of breeders, members of the National Federation of Livestock Breeders of the Central African Republic (FNEC), National Association of Central African Poultry Farmers Groups (ANGAC), and National Organization of Rural Women (ONFR), youth associations, and the Ministry of Livestock and Animal Health (MESA) and National Livestock Development Agency (ANDE) websites.

The extension services will send breeders weather, disease, and safety alerts **via SMS, call centres, or thematic WhatsApp broadcast groups** identified in collaboration with FNEC. The project will also equip extension workers with **digital educational kits** (for projecting content designed by MESA), training modules, videos, or images designed to raise farmers' awareness of **e-advice services** in rural areas. The kits include a projector, tripod, speaker, battery, solar charger, and customised proprietary software. The system operates in non-electrified villages with no internet connection.

Digital Financial Services

Within Component 2 of PEAJ project design, *Promoting Sustainable Access to Financial Services and Strengthening Market Linkages*, and Sub-component 2.2, *The Development of Productive Partnerships Within the Breeding and Beekeeping Value Chains*, a focus has been placed on the promotion of sustainable financial services and facilitation of access to promoted financial mechanisms.

The project will leverage mobile payment methods available in CAR and accessible to beneficiaries in the intervention zones. Each beneficiary with a loan from one of the project's partner financial institutions (PFIs) will have a **mobile payment account** interfaced with their bank account. The aim is

to encourage money transfers and circulation between merchants, thereby overcoming problems linked to security and the lack of cash withdrawal points or bank branches in rural areas.

The project will support the promotion of digital financial services by **raising awareness** and **training** beneficiaries to adopt the service, particularly if the PFI already has a digital finance solution connected to a mobile payment system (such as Ecobank and Orange Money). In cases where the PFIs do not have digital financial solutions, the project will provide technical assistance to design and develop a digital financial service with a link to aggregators and mobile payment operators. In both cases, the project will support raising awareness, communicating, and training in the effective use of digital finance solutions through **community radio stations** and **animators**.

4.2 NATIONAL REGISTRY FOR THE LIVESTOCK SECTOR

Within the same Sub-component, a focus has been placed on the development of productive partnerships, including the **development and implementation of a register of breeders, beekeepers, poultry farmers, and farmers**. These partnerships and registers will enable MESA to have an up-to-date **database of VC actors**.

4.2.1 The National Register for Institutions

The data register will provide statistical data at the national level on the number of breeders, producers, beekeepers, processors, and distributors, as well as their production capacities and locations. This platform will also identify the organisational dynamics of stakeholders in associations, cooperatives, and federations across all VCs. The data will be collected by facilitators using the **tablets** and **smartphones** that the project will make available to MESA. The service providers, selected through a tendering and contracting process for the development and deployment of MESA's data register, will be responsible for training ministry staff in effective digital solutions. MESA will then have to **set up an IT department** that will be responsible for maintaining and updating the data register as required.

The ministry's IT department will also train facilitators, representatives of producer organisations such as FNEC and ANGAC, and representatives of women's and youth organisations in the use of digital tools, applications, and smartphones to ensure reliable **data collection** and **feedback**. The data register will be completed in collaboration with the federations and umbrella organisations (FNEC, ANGAC, ONFR), which already have a list of VC players at a national level. The **call centre**, which will be set up in the local language, will also be a place where stakeholders can call and register directly to benefit from technical services and agricultural advice.

Data collected for the national register will be subject to a data confidentiality policy defined by MESA's legal department. The service provider will be responsible for clearly specifying the protection of personal data on the data collection media and tools. The data confidentiality policy will stipulate the reasons for which MESA collects the data and the period for which it retains them. It will also describe MESA's legal rights and how to exercise them in full compliance with the general regulations on data protection, pending an application by the Central African National Assembly.

4.3.2 A Platform to Enhance Partnership and Commerce

Through the data register of agricultural players to be set up by the project, **a module for putting producers, suppliers, processors, distributors, and banks in touch with each other** will be developed to overcome the lack of communication and knowledge of VC opportunities. The **agricultural and livestock market information system** will enable MESA and MAER to identify the prices of farm products and livestock on the reference markets in real time. The two institutions can after that inform breeders, producers, distributors, and any other player in the agricultural VCs listed in the data register about these prices. Product price information will be collected by market coordinators assigned to a specific market, who will then send a text message to the market information system from their telephones. This platform will also facilitate access to communication and product marketing for youth, women's, and livestock organisations (FNEC, ANGAC, and ONFR).

The data register, the stakeholder networking platform, and the agricultural and livestock market information system will form an initial basis for digitising the MESA information system supported by the project. This information system will support both PEAJ beneficiaries and IFAD portfolio projects underway in CAR, such as PRAPAM and PREPAS, to ensure their continuity and sustainability.

To further facilitate the marketing of agricultural products, the project will link beneficiaries with e-commerce platforms. Through these linkages, beneficiaries can promote and market products developed in CAR. The support will consist of listing beneficiaries and good-quality products on the platforms, training the target group in using sales services, and raising the awareness of consumers or any other VC player. This awareness raising will be done through **SMS notifications, community radio broadcasts** on market access, and **targeted campaigns on social networks**. In this way, the project will stimulate a new digital entrepreneurial dynamic between young entrepreneurs and producers in rural areas.

SECTION V: CONCLUSION

This document describes the main factors to consider when implementing a digital livestock intervention within low-income countries with poor digital infrastructure and large rural communities.

To summarise:

- **Government (National/Subnational) Information Systems** - The existence of national databases or information systems for agriculture is a key success factor.
Project implementers should create mechanisms to support the establishment of these systems or improve existing systems.
- **Digital Literacy** - Digital literacy is directly linked to the access and use of digital tools. The choice of technology should be based on the literacy levels of target communities. An SMS-based system is most appropriate for rural communities with low literacy levels. Mobile applications and websites are applicable to communities with high literacy levels. In most contexts, a hybrid approach consisting of SMS platforms and applications/websites is most appropriate.
Project implementers designing projects in contexts with low digital literacy should leverage the right mix of technologies and digital tools.
- **Digital Infrastructure**—Digital tools are readily accessible in communities that have significant digital infrastructure, including electricity (grid/off-grid), mobile internet, and telecommunication networks. For contexts with low digital infrastructure, implementers should explore the use of social networks within communities to facilitate access to data and information. For example, in rural communities without electricity or internet services, cooperative movements can use existing communication channels to disseminate information on technologies.
Project implementers working in contexts with minimal digital infrastructure should pursue partnerships with local community leaders, local businesses, and civil society organisations to complement digital infrastructure with existing social systems.
- **Policy and Institutional Capacity** - Governments bear the overall responsibility of providing services and facilitating entrepreneurship and agriculture. Contexts with firm policy and institutional capacity to support digital tools are more receptive to new technologies.
Project implementers in contexts with weak policy and institutional capacity should allocate resources to train policy actors and institutions on using digital tools for livestock management and VCs.

Overall, by embracing digital innovation, agricultural communities can overcome challenges, optimise productivity, and pave the way for a more sustainable and inclusive future in livestock production.

ANNEX 1 - INTERVIEW LIST

Stakeholders Remotely Interviewed

Structure	Function
Maison de l'entrepreneur	Founder
MANBOKO NA MANBOKO	President
OUALIKETTE	Founder
Horus Impact	Founder
Freelance	Digital development manager in CAR
Small agribusiness entrepreneurs	Three agricultural entrepreneurs
Pamessoua Consulting	Agricultural entrepreneur
	Agricultural entrepreneur
Coordination Nationale Climat	Agricultural entrepreneur and consultant in natural resources of the environment
Forest business owner	Agricultural entrepreneur/Forest manager

Stakeholders Interviewed During the Field Trip

Structure	Function
MADE (Ministry of Agriculture and Rural Development)	Project officer
EAJ/ MESA (Ministry of Livestock and Animal Health)	Chef de production animale
PREPAS (Project for the Revival of Agropastoral Production in the Savannahs)	Assistant IT
BGFI (Banque Privée)	Chef de service PME/PMI
Orange Centrafrique	Chef secteur grand comptes et comptes stratégiques
Fédération Nationale des Eleveurs Centrafricains (FNEC)	Chargé de programme
Fédération Nationale des Eleveurs Centrafricains (FNEC)	President et Membres
Orange Centrafrique	Chef de service des ventes
ICASES (Institut Centrafricain des Statistiques et des Etudes Economiques et Sociales)	Chef de service laboratoire Statistique
Ecobank	General Director
Sofia Credit	General Director
Chambre de l'agriculture	President
OUALIKETTE	Entrepreneur finance digitale
Moov Africa	
Telecel	
Maison de l' entrepreneur	
Beafrica Kamba	
Wali TIC	
Revotech- innovation	

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