Public Disclosure Authorized

Project Information Document (PID)

Concept Stage | Date Prepared/Updated: 15-May-2020 | Report No: PIDC28800

BASIC INFORMATION

A. Basic Project Data

Country	Project ID	Parent Project ID (if any)	Project Name
Cameroon	P173240		Program for the Acceleration of the Digital Transformation of Cameroon (P173240)
Region	**Estimated Appraisal Date**	**Estimated Board Date**	**Practice Area (Lead)**
AFRICA	Nov 02, 2020	Feb 15, 2021	Digital Development
Financing Instrument	**Borrower(s)**	**Implementing Agency**	
Investment Project Financing	Ministry of Finance	Ministry of Posts and Telecommunications, Ministry of Agriculture	

Proposed Development Objective(s)

The Project Development Objectives (PDO) are to increase digital inclusion and the use of digital agricultural solutions by selected agricultural value chain actors.

PROJECT FINANCING DATA (US$, Millions)

SUMMARY

Total Project Cost	100.00
Total Financing	100.00
of which IBRD/IDA	100.00
Financing Gap	0.00

DETAILS

World Bank Group Financing

International Development Association (IDA)	100.00
IDA Credit	100.00

Environmental and Social Risk Classification	Concept Review Decision

Substantial	Track II-The review did authorize the preparation to continue

Other Decision (as needed)

B. Introduction and Context

Country Context

1. **Cameroon is a lower-middle-income country with a gross domestic product (GDP) per capita of (current) US$ 1,534 and a population of about 25.9 million in 2019**.[1] Between 2006 and 2012, the country experienced an annual average economic growth of 3.7 percent, which accelerated to 5.7 percent between 2013 and 2015 owing to large public investments in infrastructure, particularly in energy and transport. However, GDP growth started to decrease in 2016 due to declining crude oil prices, a global slowdown in commodity prices, and cross-border insecurity in the North and East regions. It last stood at 4.0 percent in 2019[2], and may decline further in 2020 because of the economic impact of the COVID-19 pandemic.

2. **Despite a sustained economic growth, Cameroon's poverty rate has remained almost unchanged and the absolute number of poor people has increased in recent years**. According to the most recent available data[3], poverty as a percentage of the population decreased slowly from 40.2 percent in 2001 to 37.5 percent in 2014. The slow progress results from the fact that the considerable drop in the incidence of poverty experienced in the East, West, Center and Littoral regions has been offset by an increase in poverty in the three northern regions. The growing gap is due to a clustering of investments in the two most populated urban cities (Yaoundé and Douala) and the eruption of insecurity concerns in northern Cameroon. With fast population growth, the number of poor individuals increased between 2007 and 2014 by 12 percent to 8.3 million people, of whom 90 percent live in rural areas and 69 percent in the agroecological zones of the North region.[4] In addition, Cameroon is highly exposed to natural hazards such as floods, sea levels rise and droughts, which are amplified by climate change.[5]

3. **Cameroon's growth pattern reflects an economy that is little diversified, gender-imbalanced, and unattractive to private sector investment.** Despite significant natural assets and land potential, the primary sector's contribution to GDP growth is only around 1 percent per year and dominated by food crops that are grown by smallholder farmers. Agricultural productivity is below its potential, mainly due to the low use of mechanization, inputs, and irrigation. The secondary sector's contribution to GDP growth is also quite limited, relying mostly on extractives and light manufacturing. The largest contributor to GDP growth is the tertiary sector, driven by large public investments and relatively unsophisticated retail trade and food services activities, but tertiary activities such as information and

[1] The World Bank, *World Development Indicators (WDI), 2019.* Retrieved from https://data.worldbank.org/country/cameroon.

[2] The World Bank, *WDI, 2019, GDP (current US$) – Cameroon.* Retrieved from https://data.worldbank.org/indicator/NY.GDP.MKTP.CD?locations=CM.

[3] The World Bank Group, *Poverty & Equity Brief*, October 2019.

[4] 80 percent of the poor belong to the three agroecological zones: the Sudano-Sahelian, the Western Highlands, and the Guinean Savannah zones *(*Source: Systematic Country Diagnostic for Cameroon).

[5] The World Bank, *Climate Change Knowledge Portal.* Retrieved from https://climateknowledgeportal.worldbank.org/country/cameroon/vulnerability.

communications technologies (ICT) remain underdeveloped[6] with negative spillover effects: Cameroon ranked 123rd out of 141 countries on the 2019 Global Competitiveness Index[7], largely because of weak infrastructure, low ICT adoption, and poor innovation capability. Cameroon also faces a range of socioeconomic disparities between women and men. With respect to economic opportunity, women predominate in agriculture (52 percent, versus 42 percent for males)[8], while men participate at higher rates in both industry and services.[9] Although women participate at higher rates in agriculture, they tend to cultivate food crops, such as maize, cassava, rice and plantains, while men cultivate cash crops, including coffee and cacao. This division is also evident in livestock breeding, where men typically breed cattle while women rear smaller animals, such as chickens. Cameroonian women also tend to possess fewer agricultural assets, such as land, fertilizers, seeds, as well as less financing, due to the lack of property ownership for collateral.[10] In addition, women in agriculture must split their time between farming and household chores. In fact, women dedicate a much larger share of their time (16 percent) to unpaid domestic and care work than men do (5 percent)[11]. There are also gaps in financial inclusion, with 31 percent of men having access to financial accounts[12] versus 23 percent of women.

4. **Cameroon has become increasingly vulnerable to the instability and violence that have characterized neighboring countries**. The country has experienced several destabilizing developments in recent years: since 2012, recurrent Boko Haram attacks in the Far North region have killed over 1,800 civilians and 175 soldiers, displaced hundreds of thousands, and severely disrupted the local economy. In addition, the country has been dealing with an armed anglophone secessionist movement in the Northwest and Southwest regions, and a security situation due a refugee crisis in the East and Adamaoua regions.[13] As of October 2019, there are around 799,000 internally displaced people in Cameroon and over 387,000 refugees from neighboring countries, of whom 72% are from the Central African Republic.[14] The United Nation's Food and Agriculture Organization (FAO) estimates that 1.1 million Cameroonians were severely food-insecure between June and August 2019, and projects that 324 000 people will face acute food insecurity during the 2020 lean season (June–August).[15]

5. **Cameroon also lacks resilience to crises such as the COVID-19 pandemic,** which will further test the country's political and economic ability to weather a situation of such scale and whose effects remain difficult to predict. This crisis is also expected to disrupt food supply and demand in Cameroon: supply will be disrupted due to the disease's health impacts on supply chain workers, the limitations imposed on mobility, and the higher costs of doing business that stem from restricted supply chains and a tightening of credit. Demand will likely suffer from higher uncertainty and a precautionary spending behavior, in addition to containment efforts that reduce people's ability to spend. Moreover, border closures, quarantines, and disruptions to supply chains and trade are likely to restrict people's access to adequate food sources, exacerbating the high levels of food insecurity that already characterize Cameroon.

[6] The World Bank Group, *Country Partnership Framework for the Republic of Cameroon for the period FY17–FY21*, Report No. 107896-CM, February 28, 2017.

[7] World Economic Forum, *The Global Competitiveness Index Report*, 2019.

[8] 2018 figures. The World Bank, *Gender Data Portal*. Retrieved from https://datatopics.worldbank.org/gender/.

[9] 2018 figures. The World Bank, *World Development Indicators (2018)*. Employment in services (41%M; 38%F) and industry (17%M; 11%F).

[10] Japan International Cooperation Agency (JICA) and TAC International, Inc., *2015 Country Report of Gender Profile (Cameroon) (English)*, December 2015.

[11] 2014 figures. The World Bank, *Gender Data Portal*. Retrieved from https://datatopics.worldbank.org/gender/.

[12] The World Bank, *The Global Findex Database 2017*.

[13] International Crisis Group, *Watch List 2018*. Retrieved from https://www.crisisgroup.org/global/10-watch-list-2018.

[14] Food and Agricultural Organization of the United Nations, *Response Overview for Cameroon*, October 2019.

[15] Food and Agricultural Organization of the United Nations, *Humanitarian Response Plan 2020 for Cameroon*.

In this setting, digital technologies offer a means for governments, individuals and businesses to cope with social distancing, ensure business continuity, and prevent service interruptions.

Sectoral and Institutional Context

6. **The contribution of the digital sector to Cameroon's GDP is still very small**. The sector's[16] revenues increased significantly between 2012 and 2015 and reached an estimated XAF 576 billion (US$ 933 million) – or 2.9% of GDP – in the most recently reported year of 2016[17] [18]. This percentage puts Cameroon behind comparable African countries, where the digital sector's contribution to GDP is twice (Benin, Côte d'Ivoire, and Mali) or three times (Senegal) as high. While the mobile telephony market matured progressively between 2011 and 2019 (Figure 1), Cameroon's fixed and mobile broadband Internet market had limited growth, with the number of subscriptions increasing slowly and the penetration rate stagnating since 2016 (Figure 2). The insufficient development of the broadband Internet market is impeding the in-country development of digital goods and services. The export of digital goods and services is extremely low, representing only around 0.02 percent of total exports (XAF 0.4 billion, or US$ 648,000), while the import of digital goods and services amounted to XAF 221 billion (US$ 358 million) in 2016.[19]

Figure 1: Growth of mobile telephony subscriptions and penetration rates in Cameroon[20] [21]

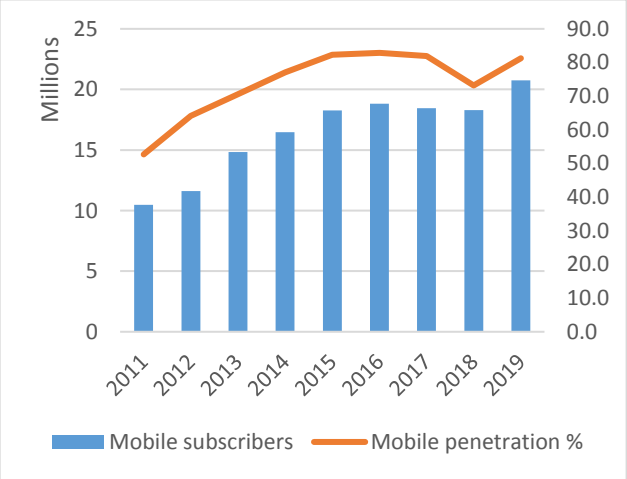
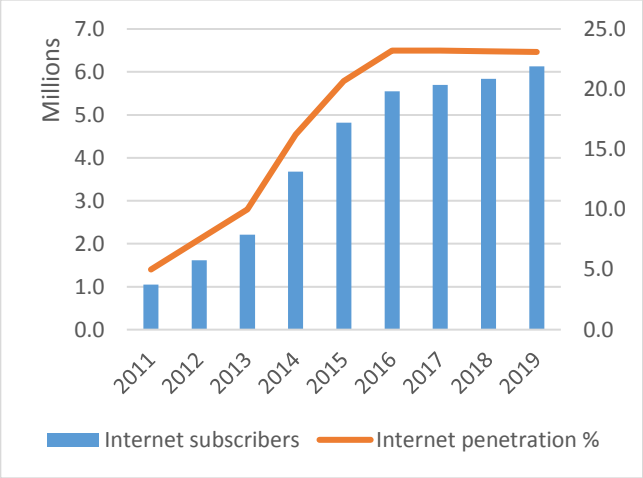


Figure 2: Growth of (fixed+mobile) broadband Internet subscriptions and penetration rates in Cameroon



[16] Mobile and fixed telecommunications operators, Internet service providers, and telecommunications value-added services providers.

[17] MINPOSTEL, *Annuaire statistique des télécommunications et TIC au Cameroun*, Edition 2017.

[18] The World Bank, *World Development Indicators (WDI), 2016.* Retrieved from https://data.worldbank.org/country/cameroon.

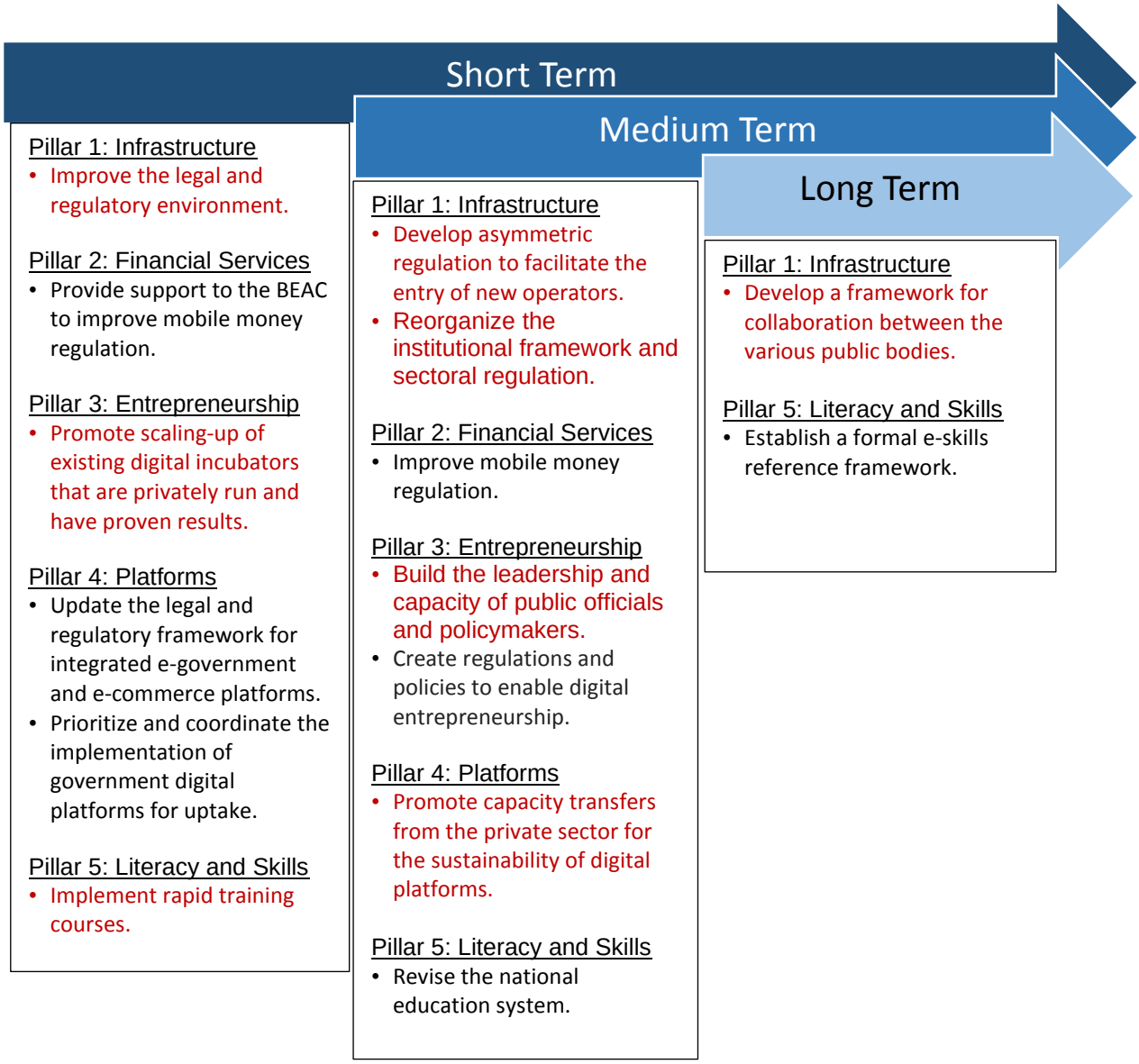
[19] MINPOSTEL, *Annuaire statistique des télécommunications et TIC au Cameroun*, Edition 2017.

[20] Adapted from:
TeleGeography, April 2020
International Telecommunication Union (ITU). Retrieved from https://www.itu.int/en/ITU-D/Statistics/Pages/stat/default.aspx.
Internet World Stats 2020. Retrieved from https://www.internetworldstats.com/stats1.htm;
MINPOSTEL, *Annuaire statistique des télécommunications et TIC au Cameroun*, Edition 2017;
The World Bank, *World Development Indicators (2019).* Retrieved from https://data.worldbank.org/country/cameroon.

[21] The market contraction between 2017 and 2018 is due to new regulations on the identification and registration of subscribers.

7. **A diagnostic of Cameroon's digital economy conducted in FY19 as part of the Digital Economy for Africa (DE4A) initiative[22] [23] reviewed the key building blocks of Cameroon's digital economy, assessed progress made so far, and highlighted the challenges ahead**. Overall, Cameroon still has a long way to go in terms of accelerating digital transformation and fostering the emergence of an advanced digital economy (see Annex 2). The proposed project will aim to address some of the high-priority areas that have been identified in the DE4A assessment of Cameroon (Figure 3), with a focus on increasing digital inclusion by unleashing broadband Internet access and usage.

Figure 3: Timeline for high-priority activities for each of the 5 digital economy pillars identified in the Digital Economy for Africa (DE4A) Assessment



[22] Digital Economy for Africa (DE4A) initiative: https://www.worldbank.org/en/programs/all-africa-digital-transformation.

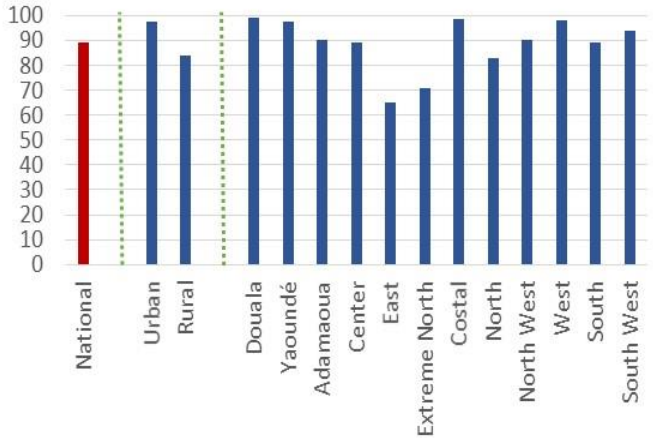
[23] Key findings were shared in a large workshop with public and private stakeholders before they were publicly disseminated by MINPOSTEL.

Note: in red, high-priority areas selected for the proposed project

Increasing digital inclusion by unleashing access to affordable and good-quality broadband Internet

8. **Telephony devices are widely available in Cameroon, but a large portion of the population does not have Internet access, especially in rural areas.** As shown in Figure 4, fixed or mobile phones were available in almost 90 percent of households nationwide in 2017 (98 percent in urban areas and 84 percent in rural areas), with similar percentages observed through 2019[24]. In terms of mobile network coverage, the GSM networks of the only three **private** operators (MTN, Orange and Viettel) each reached around 90 percent of the population in 2019, while MTN's and Viettel's 3G and 3.5G networks reached 80% and 89% of the population, respectively. In 2019, MTN's 4G network covered 22 cities and towns (40% of the population), while Orange's 4G network covered 5 cities and 16 out of 58 arrondissements[25]. Despite high mobile broadband (3G, 3.5G and 4G) coverage, only 23 percent of households nationwide had an Internet connection – mobile or fixed – in 2019 (Figure 2), and this percentage is much lower in rural areas, especially in the Center, Northwest, and Adamawa regions[26]. The wide gap between broadband coverage and broadband subscriptions suggests that affordability and digital literacy might be the most critical bottlenecks for Internet adoption in Cameroon.

Figure 4. Percentage of Households with a Fixed or Mobile Phone in 2017 [27]



9. **Despite the presence of several competing retail operators, the growth of the broadband market appears stalled primarily by relatively high retail prices that cascade from high wholesale prices applied to these retail players.** Cameroon's overall digital performance ranks poorly on the global scale (113th out of 121 countries in the 2019 Network Readiness Index[28]). Broadband usage lags that in many other countries in the region, due to relatively high retail market prices that stem from high wholesale prices (according to private operators) imposed on retail operators

[24] TeleGeography, April 2020;
International Telecommunication Union (ITU). Retrieved from https://www.itu.int/en/ITU-D/Statistics/Pages/stat/default.aspx.
The World Bank, *World Development Indicators (2019).* Retrieved from https://data.worldbank.org/country/cameroon.

[25] TeleGeography, April 2020.

[26] MINPOSTEL, *Annuaire statistique des télécommunications et TIC au Cameroun*, Edition 2017.

[27] MINPOSTEL, *Annuaire statistique des télécommunications et TIC au Cameroun*, Edition 2017.

[28] The Portulans Institute and the World Information Technology and Services Alliance (WITSA), *Network Readiness Index 2019*. Retrieved from https://networkreadinessindex.org/nri-2019-countries/.

by the government-owned fixed operator Cameroon Telecommunications (CAMTEL). According to the ITU[29], the price of 5 gigabytes of fixed-broadband Internet was 22.3 percent of GNI per capita in Cameroon (global rank: 154th out of 175 countries) in 2019, while the price of 1.5 gigabytes of mobile-broadband Internet was 4.67% of GNI per capita (global rank: 137th out of 184 countries). These high retail prices have a negative effect on broadband penetration in Cameroon. For example, the country had only 51,000 fixed broadband subscribers on December 31, 2017 – a drop from 94,000 a year earlier – according to the figures most recently published by the regulator (Agence de Régulation des Télécommunications, or ART).[30] The market total is estimated to have fallen further to 43,000 customers by 30 June 2019, which translates into a household penetration of less than 1%, behind both the regional average (around 8%) and the rate for lower-middle income countries (around 5%)[31]. Sex-disaggregated data in this area is limited; nevertheless, available figures point to some disparities. A small survey published by the Web Foundation suggests that 36 percent of women and 45 percent of men are Internet users, and that one in five women report online harassment; however, this study was limited to poor urban areas.[32] Other data that covers a broader geographic range suggests that more women own mobile phones in Cameroon; however, the difference was not statistically significant. More women also report knowing what the Internet is than men, and they participate equitably in terms of email and Internet usage.[33] The available data skews heavily towards urban areas, but given that rural women typically have less access to education, skills development and income generation, it is likely that they have more difficulties accessing affordable Internet, mobile services and devices.

10. **The ineffective regulation of the Internet sector – especially of the broadband backbone and of access to international landing stations – translates into a lack of efficient competition at the wholesale level and leads ultimately to high retail prices.** These constraints are exacerbated by ART's inability to implement appropriate reforms on several important regulatory matters, such as radio spectrum, service licensing, and universal service. Implementing key reforms to increase competition is necessary to reduce prices, improve service quality, provide incentives for private sector led innovation, to achieve increased digital inclusion and create spillover effects on other sectors (e.g., transport, energy, agriculture, and health).

Fostering the development and implementation of digital services in the high-potential agricultural sector

11. **Cameroon's high-potential agricultural sector can greatly benefit from the introduction of digital services over affordable and good-quality broadband Internet to enhance production, productivity, and marketability.** Cameroon's agricultural sector continues to be of vital importance, employing around 46 percent of the total population (male employment stands at 41.2 percent and female employment at 51.5 percent) [34]. Despite employing nearly half of the labor force, the sector's productivity still lags far behind the rest of the economy. The agricultural sector's average contribution to the GDP from 1965 to 2018 was 21.9 percent, while amounting to 14.4 percent[35] in 2018. One of the main obstacles to the development of Cameroon's agricultural sector is inadequate access to information by rural farming communities due to poor infrastructure and connectivity. Coupled with investments in infrastructure, the development and promotion of tailored digital agricultural products and services can unlock the

[29] International Telecommunication Union, *World Telecommunication/ICT Indicators Database 2019*.

[30] Agence de Régulation des Télécommunications (ART). Referenced from TeleGeography, April 2020.

[31] TeleGeography, April 2020.

[32] 2015 figures. Internet Sans Frontières, *Women's Rights Online: Report Card Cameroon*, 2016.

[33] Gillwald et al., *Gender Assessment of ICT Access and Usage in Africa*, 2010.

[34] The World Bank, World Development Indicators (2019). *Employment in agriculture (% of population) in Cameroon*. Retrieved from https://databank.worldbank.org/Employment-in-agriculture-(-of-population)-in-Cameroon-2019/id/daca08a2.

[35] The World Bank, World Development Indicators (2018), *Agriculture, forestry, and fishing, value added (% of GDP)*. Retrieved from https://data.worldbank.org/indicator/NV.AGR.TOTL.ZS?locations=CM.

potential of agriculture by improving productivity, reducing the cost of marketing, and improving the agricultural sector's competitiveness.

12. **Africa has witnessed substantial growth in digital transformation of agriculture, with over 70 percent of Digital Agriculture Technology (DAT) enterprises founded in the last ten years and quite a few serving the Cameroonian market**[36]. Recent innovations include farm management software, e-marketplaces, advisory services, and pest and disease tracking systems. For instance, Jangolo is a farm management mobile application that supports farm productivity, serves 8,000 farmers in Cameroon, and provides a platform for bookkeeping, logistics, sales, training, and access to the market prices.[37] AgroSpaces and AGRO-HUB provide market linkages (e.g., pricing data) to remove price asymmetry between farmers and buyers, making it possible for farmers to earn more by connecting them to importers, buyers, and processors. The support ecosystem around entrepreneurship has also been growing, and Cameroon now ranks fifth in West Africa in the number of technology hubs, with 18 reported in 2019.[38] The growing number of technology hubs is beneficial to early-stage startups because these one-stop shops provide coworking spaces, mentorship, connections, legal and financial support, business guidance, training courses, prototyping assistance, and early-stage capital to the innovators. For the DAT sector to grow in Cameroon, these incubators and accelerators will need to recruit DAT technical experts, mentors, and seasoned executives to help DAT startups build and grow their businesses.

Relationship to CPF

13. **The proposed project's areas of interventions are consistent with Cameroon's National Policy for Growth and Employment 2010–2020 (*Document de Stratégie pour la Croissance et l'Emploi 2010–2020*, DSCE).** This national policy sets specific and ambitious targets for the digital sector to achieve by 2020: fixed telephony density of 45 percent; mobile telephony density of 65 percent; access to modern communication tools in 40,000 villages; increase of international capacity to 3.8 gigabits per second; and ultimately, an ambitious 50-fold increase in direct and indirect digital jobs. The most recent data from 2018 and 2019 shows that some of these targets are still far from being achieved (e.g., fixed telephony density still at 3.58 percent), while others have already been surpassed (mobile telephony density at 81.3 percent and international bandwidth at 92.5 gigabits per second).[39] [40] The DSCE also recognizes the need for agricultural diversification, increased productivity, and large-scale public investment projects in the agricultural sector, aiming for the latter to contribute over 20 percent of the country's GDP and to become a major source of employment.

14. **Furthermore, the proposed project is aligned with Cameroon's vision and strategy for the digital sector, as presented in 2016 in MINPOSTEL's *Plan Stratégique Cameroun Numérique 2020,* and with Cameroon's 2015–2020 Rural Sector Development Strategy.** In its strategic plan, the Ministry of Posts and Telecommunications of Cameroon (MINPOSTEL) sets ambitious targets for 2020, such as doubling the digital economy's contribution to GDP and increasing its fiscal contribution by over 100 percent. The plan also recognizes the urgent need for significant reforms of the digital sector as a prerequisite for broader economic and social development. To guide and implement this vision, the plan identifies priority changes to the sector's structure, regulation, and institutional capacity, including

[36] The World Bank, *Scaling up Disruptive Agricultural Technologies in Africa*, August 2019.

[37] African Harvesters Agribusiness Hub and Serah Odende, *We provide the farmer what the market needs- Jangolo Farms*, July 2018. Retrieved from https://africanharvesters.com/2018/07/13/provide-farmer-market-needs-jangolo-farms/.

[38] GSMA, Dario Giuliani and Sam Ajadi, *618 active tech hubs: The Backbone of Africa's Tech Ecosystem*, July 2019. Retrieved from https://www.gsma.com/mobilefordevelopment/blog/618-active-tech-hubs-the-backbone-of-africas-tech-ecosystem/.

[39] The World Bank, *World Development Indicators (2019).* Retrieved from https://data.worldbank.org/country/cameroon.

[40] Hamilton Research, *Africa Bandwidth Maps*, 2020.

the liberalization of key markets and the stimulation of competition. The proposed project is closely aligned with several strategic objectives of this plan: disseminating broadband Internet access to citizens, businesses, and households; providing attractive content that is produced and hosted locally; accelerating the digital transformation of government and enterprises to ensure better efficiency, transparency, competition, and productivity; developing local digital goods and services; and ensuring the availability of highly qualified talent to supply the needs of the digital economy. Finally, the promotion of modern, sustainable and competitive agriculture through digital technologies is also closely aligned with *Cameroon's 2015–2020 Rural Sector Development Strategy, which* envisages the modernization of rural infrastructure as the priority line of action.

15. **The proposed project will contribute directly to three objectives of the FY17-21 Country Partnership Framework (CPF) related to digital services and agriculture productivity,** namely**:**
    - *CPF Objective 7: Improved transport and ICT services.* As noted in the CPF, digital services remain unaffordable and inaccessible to a large segment of the population, limiting inclusive growth and resilience to shocks. The proposed project aims to improve affordability (by unleashing competition), promote inclusive industrialization (by extending the reach of digital services to low-income and rural populations), and foster innovation (by stimulating private investments).
    - *CPF Objective 1: Increased productivity and access to markets in the agricultural and livestock sectors***.** Digital technologies will contribute to increasing productivity, mainly by enhancing access to information and facilitating its exchange through dedicated platforms and services. Increased transparency and information exchange could lead to better trade and marketing: for instance, the introduction of digital services to address price information asymmetry has a well-established development impact in the agricultural and fishery sectors, reducing rent-seeking and improving the performance of relevant markets. By using targeted e-vouchers and matching grants and by supporting productive partnerships, the project will contribute directly to CPF indicators related to this objective, namely, *target farmers and livestock owners reached with agriculture assets or services* and i*ncremental sales of targeted commodities*.
    - *CPF Objective 8: Improved business environment and access to financial services*. The project brings together the public sector, entrepreneurs, consumers, and organized farmer groups as partners to accelerate digital solutions in agriculture. This is a powerful catalyst for improving the business environment for local agritech startups that will create multiplier effects through expanded market access, digital payment-enabled trade, and a regional innovation ecosystem. Timely support and catalytic funding by the public sector can send a strong signal to private investors to take on the residual risks in investing in market-led solutions for digital innovations in agriculture.

16. **The project is also fully aligned with the World Bank's Digital Economy for Africa (DE4A) initiative, which is supporting the implementation of the African Union's Digital Transformation Strategy for Africa.** The Digital Transformation Strategy for Africa sets out a bold vision that calls for every African individual, business, and government to be digitally enabled by 2030, in order to drive the digital transformation of Africa and ensure its full participation in the global digital economy.

17. **Finally, in a context characterized by fragility and conflict, the project will contribute to reducing poverty and the risk of radicalization by improving access to jobs and will mitigate the effects of natural disasters, climate change events, and disease outbreaks.** The Recovery and Peace Building Assessment for Cameroon considers youth as an important factor of fragility in the context of a rising crisis[41]. Marginalized and out-of-school young people are confronted with challenges that stem from exclusion and lack of economic opportunities, and they are particularly

[41] The World Bank Group, the European Union, and the United Nations. *Recovery and Peace Consolidation Strategy for Northern and East Cameroon*, 2018-2022.

exposed to the consequences of crises (e.g., increased juvenile delinquency rates, risk of radicalization and enrollment in Boko Haram, and reintegration issues). The proposed project will contribute to promoting inclusion and integration of marginalized youth through (i) social and digital inclusion and (ii) employment and entrepreneurship. In addition, the improvement in digital connectivity will mitigate the effects of natural disasters, climate change events, and disease outbreaks (e.g., COVID-19) by enabling governments to ensure public service continuity, businesses to adapt to home-based work, schools to shift to distance learning, health specialists to diagnose patients remotely through telemedicine, and citizens to cope with social distancing by using digital communication tools.

C. Proposed Development Objective(s)

The Project Development Objectives (PDO) are to increase digital inclusion and to increase the use of digital agricultural solutions by selected agricultural value chain actors.

Key Results (From PCN)

18. **The proposed results indicators for the project are the following:**
    - Broadband penetration (number of broadband subscribers per 100 people), disaggregated by gender and urban/rural;
    - Retail prices of mobile broadband services;
    - Number of end users and public servants reached through targeted trainings on digital services, including the percentage of women;
    - Number of beneficiaries who have adopted DAT solutions to improve their access to agricultural markets, including the percentage of women;
    - Number of productive partnerships established between DAT startups and farmer groups of the selected value chains namely cassava, maize, and sorghum.

19. **Intermediate indicators could include:**
    - Wholesale prices for national and international broadband services;
    - Mobile broadband geographic coverage in rural areas (percentage of rural areas covered by a mobile broadband infrastructure);
    - Broadband connections to key public entities (such as hospitals, schools, and governmental offices) in unserved or underserved areas, established through the project;
    - Number of DAT startups supported by the project, including the percentage of women entrepreneurs.

D. Concept Description

20. **The proposed project is designed to accelerate country-wide digital transformation through four complementary components on the supply and demand sides of the digital economy.** These components are designed to improve the foundational enabling environment for the digital economy (strategy, policy, and regulation), fill digital infrastructure gaps in rural areas that the private sector could not tackle alone, and develop digital services in the strategic agricultural sector.

21. **The potential impact of climate change will be addressed throughout the project, and mitigation measures will be incorporated.** The project will assess the effects of heavy rainfall, floods, heat waves, severe droughts and geophysical hazards, and incorporate appropriate mitigation measures within the proposed activities, including the

installation of the last-mile physical infrastructure and the rollout of digital agricultural technologies. The choice of technologies will incorporate climate change mitigation measures (e.g., the use of renewable energy for equipment).

Component 1: Enabling Strategy, Policy, and Regulation for Digital Inclusion and Transformation (US$15 million)

22. **This component will support the Government of Cameroon (GoC) in improving the strategic, policy, and regulatory environment for the emergence of a vibrant, safe, and inclusive digital economy.** Specifically, this component aims to establish an enabling environment for the development of a vibrant broadband market, expand the reach and coverage of digital broadband networks in rural areas, ensure last-mile connectivity to key public entities in these areas, foster an enabling environment for the safe and resilient development of digital services, and strengthen the digital sector's institutional structure and capacity. Component 1 is articulated around three subcomponents, as detailed below.

Subcomponent 1.1: Enabling environment for the development of a vibrant broadband market (US$8 million)

23. **This subcomponent will provide support for the review and strengthening of the legal, regulatory and policy framework that governs the telecommunications sector – a critical step to increase access to quality, affordable broadband by addressing current market failures.** Specifically, this subcomponent will finance:

a) Technical assistance (TA) focused on:
- Sectoral strategies and policies: These TA activities will help the GoC with i) The revision of the telecommunications sector's licensing policy framework, in order to promote the migration of existing licenses to a simpler framework and to place operators on a level-playing field; ii) The definition and enactment of spectrum management reforms, including the optimization of frequency usage and the reallocation of frequencies used by analogue television; iii) The extension and effective operationalization of Universal Service through the preparation of tenders for the deployment of broadband in rural areas to be identified, including the targeting of women as well as the use of funds to promote and finance shared access to active and passive radio infrastructure (e.g., towers, antennae, fiber) in Cameroon's remote areas, the locations of targeted public institutions to be served in rural areas, and the user requirements for Internet bandwidth[42]; iv) The development of an e-waste management strategy to reduce the digital sector's carbon and environmental footprint through e-waste collection, dismantling, refurbishing and recycling; v) The development of a digital strategy for the next 5-10 years, with the integration of gender equality considerations; and v) The development of a strategy to leverage ICT to mitigate and adapt to threats such as health crises (e.g., COVID-19), natural disasters and climate change, acknowledging that digital technologies can help to monitor and analyze short- and long-term climate trends, raise awareness, help protect the environment and reduce carbon emissions.
- Sectoral regulations: TA under this heading will assist the GoC in i) The definition of an asymmetric sector regulation approach based on international best practices to facilitate the entry of new private sector players, as technology and market development opens up opportunities for new services and new service delivery approaches; ii) The development of an appropriate regulatory framework for Over-The-Top (OTT) operators ; iii) The effective regulation of the wholesale markets, in particular international and national fiber optic connectivity; iv) The implementation of efficient cross border interconnections (such as the operationalization of interconnection with the fiber optic backbone rolled-out through the Central African

[42] This activity will rely on the development of geospatial data. The project will cooperate with the World Bank's Geospatial Operations Support Team (GOST) to develop detailed technical specifications.

Backbone Phase 4 – Gabon project P122776) and v) The effective monitoring – and as needed, regulation – of prices and service quality of retail markets.

- Cross-sectoral strategies and policies: TA activities will support i) The establishment of a framework for public rights of way to help ensure fiber deployment under harmonized technical requirements and at reasonable costs; and (ii) The development of a collaborative framework between governmental agencies to facilitate access to other public infrastructure (e.g., electricity grid, pipelines, roads…) in order to lower the cost of fiber deployment across the territory.

b) Training sessions and capacity building programs to MINPOSTEL, ART and ANTIC [43] (the national ICT agency/regulator handling cybersecurity and domain names).
c) The acquisition of critical equipment for ART (e.g. for quality service or traffic monitoring).

Subcomponent 1.2: Enabling environment for the safe and resilient development of digital services (US$4 million)

24. **This subcomponent will provide support for the review and strengthening of the online trust environment, critical to securing digital services.** Specifically, this subcomponent will finance:
    a) Technical assistance on: i) The development of a privacy and data protection law; ii) The modernization of the cybersecurity and cybercrime law, including a focus on online violence iii) The modernization of the law on electronic transactions and e-signatures; iv) The assessment of the resilience and vulnerability of critical infrastructure in times of crisis (e.g., COVID-19[44]), and the evaluation of long-term climate change impacts ; and v) The development of incident response plans.
    b) Training sessions and capacity building programs, especially for: i) The reinforcement of the capacity of dedicated network security entities such as ANTIC's Computer Emergency Response Team (CERT); ii) The delivery of training sessions on computer security to governmental agencies.
    c) The acquisition of critical equipment for ANTIC, especially dedicated and secure information systems and platforms geared toward cybersecurity.

Subcomponent 1.3: Strenghtening the digital sector's institutional structure and capacity (US$3 million)

25. **This subcomponent will support the GoC's efforts in developing a comprehensive, strategic vision adopted at the highest political levels for digital reform, especially the strategic repositioning of key public stakeholders in the digital sector.** A successful, strategic reorganization of the digital sector will translate into improved quality of service[45], lower service costs, wider adoption of digital services, and higher fiscal revenues for the GoC. Critical for the success of this strategic reorganization is the repositioning of state-owned operator CAMTEL that has already been initiated by the GoC: the Government of Cameroon has awarded three operating licenses to CAMTEL in March 2020 for the fixed, mobile, and electronic communication transport businesses (i.e., international and national fiber optic backbone, landing stations and satellite Earth stations), which are expected to trigger organizational challenges at CAMTEL[46]. Simultaneously, the African Development Bank (AfDB) is financing the expansion of CAMTEL's optical fiber backbone along 900 kilometers and across five major sections to cover missing links and ensure interconnection

[43] Agence Nationale des Technologies de l'Information et de la Communication.

[44] As experienced during the COVID-19 crisis, the surge in demand put a strain on network capabilities and cyberattacks increased.

[45] In terms of unit prices of internet bandwidth (related to communications traffic speeds), as well as reliability of service

[46] The concessions awarded open the way to a proper regulation of the operations of Camtel on those markets, and in longer term, to a functional separation of Camtel for a more efficient and transparent management and forceful regulations. Challenges potentially include the reorganization into separate divisions, the change in staffing allocations, the split of management and accounting systems, and the creation of coordination layers.

with neighboring countries. Strong regulatory reforms supported under Subcomponent 1.1, particularly those related to national connectivity[47] and international connectivity,[48] will also curb the current monopolistic positioning of CAMTEL and trigger the need to change the strategic positioning of the operator. Specifically, this subcomponent will finance:

a) Technical assistance for: i) The review of the objectives, mandates, and strategic positioning of several key stakeholders (e.g., state institutions, CAMTEL, technology parks, research and training centers) to converge toward the definition of a common, forward-looking vision for digital transformation in Cameroon; ii) The reorganization of the institutional arrangements for the regulation of the telecommunications sector; and iii) The support to key state institutions in the implementation of this vision, based on the needs identified.
b) Technical assistance provided at the strategic, organizational, operational and marketing levels to help state-owned CAMTEL adapt to the new regulatory environment, embrace technological innovation, and address legacy organizational difficulties.
c) Targeted support (equipment, capacity building, etc.) to entities promoting digital skills and digital entrepreneurship (technology parks, training centers, incubators, etc.), leveraging existing or planned initiatives led by the public and/or private sector , and in line with the vision established through the related technical assistances (see a) above).
d) Scholarships for a cohort of PhDs in engineering and computer science in areas linked to data infrastructure for the future (including AI, big data, machine learning and IoT).
e) Training sessions and capacity building programs in digital transformation for government officials.
f) Technical assistance to support the adoption of several digitally-enabled "frontier technologies" related to climate change adaptation and mitigation (e.g., connected street lightening, green cloud computing, smart grids).

Component 2: Digital Connectivity and Inclusion (US$45 million)

26. **This component will support the GoC in reducing the geographic and societal digital divides.** Specifically, this component aims to extend the reach and coverage of digital broadband networks in rural areas, ensure last-mile connectivity to key public entities in these areas, and invest in demand-side interventions that would accelerate the uptake of broadband usage. Higher access and usage of broadband across the territory will increase the profitability of investments in international and national broadband connectivity. This component will be fostered by the digital strategy, policy, and regulation measures supported in Component 1 to stimulate private-sector-led investment to expand the geographic coverage of broadband networks and to better serve government institutions across the country – especially rural areas – under a Maximizing Finance for Development (MFD) approach. Component 2 is divided into three subcomponents, as detailed below.

27. **Increased availability of affordable and good quality broadband connectivity across the territory will help support citizens and emergency responders during crises (e.g., civil unrest, disease outbreaks such a COVID-19, climate-related disasters).** This component will include the key elements of "resilient connectivity", such as sufficient bandwidth for peaks in demand, the ability to restore service access, strong network resilience, good management of network congestion, continuity of government and critical service functions, and available connectivity to strategic entities, such as hospitals, pharmacies, emergency centers, and transportation hubs.

[47] This is the terrestrial fiber optic backbone network operated by CAMTEL that distributes connectivity throughout the country, for which other operators face regulatory impediments to lay down their own infrastructure.

[48] All landing stations for fiber optic submarine cables (SAT-3/WASC, WACS, ACE and SAIL) that link Cameroon to the global Internet are operated by CAMTEL.

Subcomponent 2.1: Extension of digital networks under an MFD approach (US$20 million)

28. **This subcomponent aims to fill the gaps in the last-mile digital infrastructure, notably in rural areas where telecommunications and broadband operators are unwilling or unable to invest without public support.** Typically, connecting citizens living in rural regions with low population density, difficult terrain and no major highways is not economically justifiable to telecommunications and broadband operators, as many of them cannot generate a return on their investment. In addition, rural populations are also often the most economically disadvantaged and, hence, have a lower ability to pay than city dwellers, making it even harder for business cases to be built for private investment. Addressing these accessibility challenges is key to reducing the geographic digital divide, allowing the generalization of digital services throughout the country. The extension of digital networks to rural areas will require strong coordination between the public stakeholders (i.e., ministries, state and local institutions, regulators, CAMTEL) and the private sector (i.e., private telecom providers, private businesses and universities). Based on consultations with MINPOSTEL, ART, and telecommunications/broadband operators, the project will identify the most relevant areas for intervention during preparation, in order to maximize impact while accounting for localized impediments. The areas of intervention will be selected according to the following factors: i) the lack of current infrastructure and future expansion plans by telecommunications/broadband operators; ii) sizeable and unsatisfied demand for broadband services[49]; and iii) the feasibility and safety of engaging in on-site interventions, taking into account the areas affected by civil unrest, conflict, terrorism, natural disasters and climate change. It is expected that the services proposed in the Agriculture component of the project (Component 3 below) would contribute to increased demand for broadband services in these areas.

29. **Consistent with the MFD approach, this subcomponent will finance the public investment in last-mile broadband coverage – mostly through mobile broadband technologies – that would be combined with private funding under a Public-Private Partnership (PPP) framework**. The project will determine during preparation the option to be implemented for the PPP, reflecting on recent and emerging technological business model innovations in broadband service delivery and financial resources to incentivize and enable the private sector to deploy affordable broadband Internet services in rural areas. An option would be to establish a wholesale, open-access broadband infrastructure, whereby various retail operators are able to obtain access to the wholesaler's network facilities on equal, transparent terms. By sharing the costs of the civil infrastructure and fiber installation costs, the business case for each retail operator is significantly improved. Another option would be to finance established operators using a reverse auction mechanism managed by the ART (who has the mandate for universal service), and to implement national roaming obligations[50]. The impact of climate change will be incorporated in the design of technical solutions, for instance to increase resilience to landslides and accelerated erosion, and to ensure the sustainability of these solutions by preventing environmental degradation and reducing greenhouse gas emissions (e.g., the use of solar power or other renewable energy sources for active equipment, overall compliance with "Green ICT standards"[51]).

Subcomponent 2.2: Last-mile connection to key public entities (US$15 million)

30. **This subcomponent will support the expansion of broadband connections to key public entities (e.g. hospitals, local governmental offices, schools and universities).** Using the provision of services to public institutions as an anchor tenant for wider geographical service provision is expected to further incentivize private sector investment in expanding coverage for Internet connectivity.

[49] For example, making an arbitrage between partially covered areas with a high population density and uncovered areas with a low population density will be required.

[50] Agreements among operators to use each other's networks to provide services in geographic areas where they have no coverage.

[51] ITU-T, *Green ICT Standards and Supplements*. Retrieved from https://www.itu.int/net/ITU-T/lists/standards.aspx?Group=5&Domain=28.

- Connecting rural hospitals to broadband can enable telemedicine, facilitate instant diagnosis by city-based specialists, give medical staff the opportunity to enroll in online training sessions, and allow patients to access and control their health information online.
- Connecting local governmental offices to broadband can assist government agencies in improving efficiency, boosting service quality, lowering costs, and increasing transparency; it can also foster inclusive governance by building trust and involving citizens in the policy process.
- Connecting rural schools and universities to broadband can: i) enable access to instructional offerings that are unavailable locally due to cost constraints, small class sizes, or lack of subject area teachers; ii) improve instructional effectiveness through more engaging, customizable, and interactive activities; iii) enhance access to quality educational services via online and distance learning modules; iv) facilitate data collection and analysis to track student performance more accurately; v) provide educators and adult learners with access to professional development opportunities; vi) streamline and automate administrative functions through the use of cloud computing services. Connecting rural schools and universities to broadband will be a strong enabler for ongoing Education projects, namely Cameroon Education Reform Support Project (P160926) and Cameroon -- Equity and Quality for Improved Learning Project (P133338).

31. **Specifically, this subcomponent will help the GoC make an upfront commitment to the pre-purchase of Internet bandwidth from telecommunications/broadband operators under indefeasible right of use (IRU) contracts, over a period of 5-10 years.** The locations of targeted public institutions to be served and the user requirements for Internet bandwidth will be determined based on a feasibility study during project preparation, and in consultation with the relevant sectoral ministries.

Subcomponent 2.3: Demand-side interventions (US$ 10 million)

32. **This subcomponent will finance interventions that seek to increase the demand for broadband services in rural areas.** Supply-side interventions and network infrastructure alone will not drive broadband to scale. The creation and boost of demand for broadband services and products is vital to increase usage, expand socioeconomic benefits, and revenue to support continued investments in broadband infrastructure rollout and upgrades. Specifically, this subcomponent will finance:
    - The acquisition of broadband-enabled devices and terminals such as PCs, laptops, mobile phones, and tablets, and their installation in selected locations such as public schools, universities, libraries, community centers, and governmental offices, while incorporating specific needs to ensure business continuity for key government functions during crises such as COVID-19. Power-charging units that rely on solar panels could also be procured when relevant.
    - The acquisition of digital equipment such as antennae, modems, hotspot routers, wireless routers, access points, and repeaters (powered by renewable energy when possible) to enable indoor Wi-Fi at all public locations and outdoor Wi-Fi at selected locations such as school campuses, parks, and playgrounds.
    - Trainings and capacity building programs to increase digital technology and Internet literacy rates for key public entities and end users, especially the youth, women, and people with disabilities. These activities could leverage “women in technology” networks to target women and girls, as well as NGOs and associations whose aim is to help people with disabilities to: (i) ensure their equitable participation; and (ii) design training programs to better suit their needs. Design features will work to alleviate a range of constraints as needed, such as financing, care, and transportation. The programs will also pay attention to the timing and flexibility of the sessions as well as to the group’s composition – designing single-gender sessions as appropriate.
    - Impactful communication campaigns to enhance awareness about digital services and the myriad of possibilities and opportunities they enable, including the development of attractive, media-rich, language-specific content

and services tailored to rural communities. Such content and services could be pushed out to end users through Web portals and mobile applications. They will be developed in closed interaction with sector stakeholders.

Component 3: Facilitating the implementation of data-driven solutions in the agricultural sector (US$30 million)

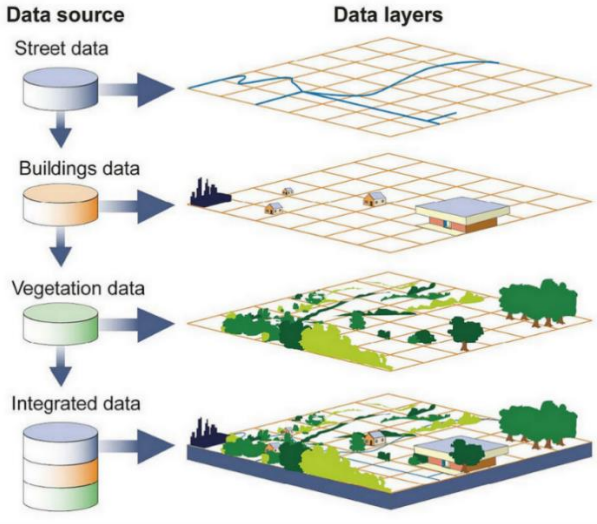
33. **This component will support the GoC in facilitating the implementation of data-driven solutions in agriculture, allowing Cameroon to expand the development of its digital offerings and to boost innovation in a strategic economic sector.** Core beneficiaries of this component will include a subset of beneficiary groups of the existing agricultural programs in Cameroon, namely the Agriculture Investment and Market Development Project (PIDMA, P143417) and the Livestock Development Project (PRODEL, P154908). Similarly, this project will target the same value chains targeted by the existing agricultural project namely, cassava, maize, and sorghum. Targeted interventions in agroecological rural areas will contribute to enhancing resilience to climate change by using climate-smart farming technologies and livestock management systems to improve farm and business management and facilitate knowledge exchange with small farmer groups. For example, farmers could be provided with timely information on climate variability and droughts though tools that map and respond to climate-related risks, such as early weather warnings and real-time weather monitoring systems, and agricultural disease tracking systems to prevent the spread of disease due to indirect, climate-related effects. Component 3 is articulated around three subcomponents, as detailed below. The first two subcomponents address supply- and demand-side interventions that aim to increase the adoption of modern digital technologies in agricultural investments. The third subcomponent's objective is to accelerate the growth of high-potential agritech startups by matching their services to organized farmer groups for post-harvest marketing activities, including bulk selling and processing.

Subcomponent 3.1: Development of the supply-side foundations for data-driven agriculture (US$ 8 million)

34. **This subcomponent is composed of three activities that build the foundational datasets and reinforce the strong supply-side support to e-agriculture.** To enable data-driven e-agriculture, Cameroon needs rich and accurate datasets to serve as the building blocks for the acceleration of the digital transformation of agriculture. The following activities will contribute to building these datasets:
    - *Agricultural census for selected value chains*. The agricultural census will include a module of crop acreage measurement through remote sensing of target crops, covering major agricultural areas throughout Cameroon. Using satellite imagery, this activity will produce the cropland data layer that will enable the identification of crop types and the estimation of future production volumes.
    - *National digital agriculture information system*. The project will provide support for the development of a centralized digital agriculture information system that integrates high-resolution imagery, field observations, and real-time crop and price data. This information system will allow producers, local districts, and the Ministry of Agriculture and Rural Development (MINADER) to collect, maintain, and analyze agricultural market and infrastructure data. The platform will provide geospatial data on rural road networks, formal and informal markets, product basins of target commodities (cassava, maize, sorghum), population and farm households, farm sizes, and mobile penetration rates in targeted regions. To mitigate the impact of the COVID 19 crisis on global food supply and food security for these staple crops, the logistical operations of regional agricultural and food supply chains will be closely monitored in order to invest in longer-term prevention of food supply disruptions and food safety surveillance. Collecting this data (Figure 5) will enable a comprehensive analysis of market access and marketability, and an understanding of the multidimensional spatial variability that is inherent to the farming landscapes of the selected agricultural markets. The project will cooperate with the World Bank's Geospatial Operations Support Team (GOST) to develop detailed technical specifications for the development of this central platform.

- *Enabling environment, capacity building, and coordination* between ministries and affiliated agencies. This activity will support the setup of the basic platforms and enabling environment for the development and adoption of digital technologies within the agricultural ministries and affiliated agencies. Support will be provided to: (i) develop an open-access platform for data sharing, including the harmonization of existing digital databases at the agricultural ministries and related agencies; (ii) improve the regulatory framework for digital agricultural technologies (e.g., authorize the rollout of IoT technologies in agricultural areas); (iii) build the capacity of human resources at the agricultural ministries and affiliated agencies to enable the optimal use of digital technologies in agricultural programs.

Figure 5. Geospatial data layers of agricultural road, markets, and product basins[52]



Subcomponent 3.2: Facilitation of smallholder engagement in productivity-enhancing, data-driven digital agriculture (US$ 18 million)

35. **This subcomponent will stimulate the uptake of digital agricultural services by targeting beneficiary farmers, with a special focus on women and young farmers.** The adoption of disruptive, digital agricultural technologies (DAT) can foster innovation and correct market and institutional failures. The use of well-designed e-voucher systems as instruments for public agricultural subsidy programs has proven effective in expanding target beneficiaries' access to improved technologies, and in enabling greater adoption of productivity-enhancing technologies and practices by farmers. For example, in the West Africa Agricultural Productivity Program (WAAPP)[53], beneficiary farmers who adopted new crop varieties, improved crop management practices, and small-scale food processing technologies offered through the e-voucher instrument were able to increase yields and income by at least 30 percent, reduce the hunger period by half and improve nutritional standards. In this project, e-vouchers will serve as financial credits for the purchase of the DAT solutions that are pre-identified and selected in Subcomponent 3.3, under the following activities:

[52] U.S. Government Accountability Office | GAO-15-193. Retrieved from https://www.gao.gov/assets/670/668494.pdf.

[53] The World Bank, *West Africa Agricultural Productivity Program (WAAPP)*. Retrieved from https://projects.worldbank.org/en/projects-operations/project-detail/P094084.

- *Development of the e-voucher platform*. This entails: (i) developing a digital platform; (ii) creating a reliable database of electronically registered farmers[54]; and (iii) creating a directory of DAT startups.
- *Implementation of the e-voucher program*. A specialized technical agency will be hired to assume the general operation, management, and maintenance of the e-voucher system, the adequate utilization of the corresponding mobile application, and the technical and financial administration of the e-voucher program. The Ministry of Agriculture and Rural Development (MINADER) and the Ministry of Livestock, Fisheries, and Animal Industries (MINEPIA) and their related agencies will be responsible for ensuring coordination among the various actors within the e-voucher platform, including mobile network operators, farmers, and agricultural input dealers. A training program will provide digital capacity building for target beneficiaries and farmer organizations on e-voucher support. An e-voucher will have a value of approximately US$ 180.00[55] at the prevailing exchange rate, and farmers will receive e-vouchers for three consecutive agricultural seasons to acquire digital agricultural services and products designed to increase production and productivity. Examples of such products and services include e-extension and advisory services, as well as real-time agro-weather and alert systems. To be able to benefit from the e-voucher program, a producer must meet the following eligibility criteria: i) be a member of producer groups (including cooperatives focused on women smallholders) within the productive partnership framework of PIDMA; (ii) have access to basic infrastructure such as electricity and a mobile phone; (iii) possess proven agricultural production potential; (v) have established market links with value chain actors such as traders and processors; and (vi) complete the digital capacity building training programs offered by this project.
- *Protection of vulnerable groups and provision of employment services*. Scaled-up support for food-insecure groups is needed during the COVID-19 livelihood recovery phase. Under this subcomponent, the project will provide direct livelihood support to vulnerable groups to develop kitchen gardens, small-scale livestock, and other agricultural activities. Support could be delivered in the form of e-vouchers or time-bound cash transfers to food-insecure households. To create sustainable livelihood measures and generate income opportunities for severely affected groups during the COVID-19 recovery phase, community-led Labor-Intensive Public Works (LIPW) – including community tractor hires and labor hires – could be incorporated in land openings.

36. **The gender disparities for women in agriculture will be addressed by the project through intermediation and training, among other interventions.** Firstly, this subcomponent will identify existing women cooperatives and provide support for women smallholders to help them connect with these organizations. Secondly, the project aims to include ambitious targets[56] for the participation of women farmers in training and for their access to e-vouchers. To meet these targets, a range of interventions will be explored, including establishing better linkages to existing value chains for women smallholders and engaging female extension workers where appropriate.

Subcomponent 3.3: Strengthening Digital Innovation and Entrepreneurial Capacity (US$ 9 million)

37. **Through this subcomponent, MINADER and MINEPIA will seek to invest in the entrepreneurial ecosystem for digital agritech, notably in high-potential local DAT startups, with the aim of increasing access to DAT services by organized farmer groups for post-harvest marketing purposes.** To accelerate innovation in agriculture, investing in Cameroon's startup ecosystem is critical: timely support and early funding by the public sector can send a strong signal to private investors to invest in local DAT startups, facilitating the broader adoption of DATs and improving

[54] Note: land ownership (and land title) will not be a condition for registration.

[55] This corresponds to the estimated cost of farm inputs for one acre of farmland. This estimate will be refined during project preparation and ultimately guide the subsidy value of the e-voucher.

[56] To be defined.

food system outcomes. Examples of DAT solutions include "uberized" tractor hire services during the planting season and a matching service for buyers and sellers post-harvest.

38. **This subcomponent will support the acceleration of DAT solutions by helping startups secure performance-based contracts and offering matching grants to selected farmer groups.** Special attention will be given to the inclusion of young and female entrepreneurs and farmers. This component will promote innovative private-sector participation in the agricultural and food value chains through two avenues: farmers/farmer groups and DAT entrepreneurs. Farmer groups, when well-organized, are influential and powerful private partners whose demand influences the agricultural input markets. Providing matching grants will nudge the behavioral change of farmer groups toward buying digital agricultural solutions. At the same time, signaling public support (e.g., matching grants, e-vouchers) will encourage private-sector investment by DAT entrepreneurs in remote rural areas. The activities considered are the following:
    - *The acceleration of DAT startups*. This activity will be carried out through a three-pronged approach: i) Landscape analysis: conduct an analysis of Cameroon's agricultural landscape and entrepreneurial ecosystem to determine the agricultural sector's needs, identify the existing DAT startups, and highlight the key features that Cameroonian farmers look for in DAT solutions; ii) Startup selection: following the successful models of Kenya and Uganda, launch the DAT Innovation Challenge to select the best startups to onboard into the DAT acceleration program; iii) Acceleration program: following Kenya's 'One Million Farmer Platform', establish an acceleration program in collaboration with local partners such as the agricultural ministries and universities to provide physical space, funding, mentorship, access to networks, and technical, legal and financial services to DAT entrepreneurs. The acceleration program will allow the selected startups to scale up their solutions and adapt them to the needs of the beneficiary farmers identified through Subcomponent 3.2.
    - *Performance-based contracts and matching grants for productive partnerships*. The acceleration program will help DAT startups secure performance-based contracts to provide customized solutions to the selected farmer groups focused on the commercialization of smallholder production (the project will support the cost of technology customization). The beneficiary farmer groups will be selected based on a set of qualification criteria[57] and will be awarded matching grants[58] to help them implement their business plans and reach the commercialization stage. The project will support a series of DAT expos to match DAT startups with farmer groups in target areas. Matching grants will finance two-thirds of the purchase cost of equipment and facilities to organized farmer groups and women-led enterprises. The ceiling amount of the matching grants will be determined upon the evaluation of business proposals.

Component 4: Project management and citizen engagement ($5 million)

39. **This component will finance project management and coordination, including procurement, financial management (FM), monitoring and evaluation (M&E), as well as environmental and social (E&S) safeguards management.** This includes the setup and staffing of a Project Implementation Unit (PIU) that comprises a coordinator, a fiduciary team, a GEMS[59]/M&E specialist, a social and environmental safeguards specialist, and experts recruited on an ad hoc basis. This component will also include funding for project communication, audit, and logistics.

[57] To be defined.

[58] The beneficiary farmer groups will co-finance one third of the total purchase price of DAT solutions.

[59] Geo-Enabling Initiative for Monitoring and Supervision: the GEMS method was developed by the FCV Group and enables project teams to use open source tools for in-field collection of structured digital data that automatically feeds into a centralized M&E system and Management Information System (MIS). The integrated data can include any kind of indicators based on tailor-made forms, photos, audio, videos, time and date stamps, and GPS coordinates that allow for automated geo-mapping of the information.

40. **In addition, this component will foster citizen engagement through the inclusion of digitally-enabled feedback loops – including GEMS – to allow for real-time input on project activities.** In close collaboration with local authorities, the project will support the development of a location-based feedback system that enables project beneficiaries and targeted communities to register their feedback, grievances, and concerns. For real-time data collection and analysis, the project will implement the GEMS method to enhance the transparency and accuracy of project planning as well as M&E and third-party monitoring throughout the project cycle. GEMS allows for the establishment of a digital platform for remote supervision, the monitoring of real-time safeguards, and portfolio mapping for coordination across project components as well as with other operations in the region. The opportunity to also resort to Iterative Beneficiary Monitoring (IBM) will be explored during project preparation, especially given the fragile (and, in some regions, conflictual) status of the country.

Component 5: Contingent Emergency Response Component" (US$0 million)

41. **In the context of a rapidly developing COVID-19 emergency, a Contingent Emergency Response Component (CERC) is added to the project structure to allow for quick disbursement of uncommitted balances as a crisis response measure for this COVID-19 situation or any future ones.** This will have an initial zero value but may be financed during the implementation of the project to allow for an agile response to emerging events, with funds redirected from other components. Including CERC at the preparation stage – albeit with zero funding – provides for flexibility to respond to an imminent or actual emergency (such as COVID-19). The crisis response expenditures could cover, for instance, the facilitation of emergency humanitarian payments to vulnerable population groups using mobile money; measures to ensure the business continuity of core government functions when civil servants are required to continue home-based work, and support for digital startups and SMEs to address their immediate liquidity challenges, reduce layoffs, and avoid bankruptcies.

Legal Operational Policies	Triggered?
Projects on International Waterways OP 7.50	No
Projects in Disputed Areas OP 7.60	No

Summary of Screening of Environmental and Social Risks and Impacts

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