



RESTRUCTURING PAPER  
ON A  
PROPOSED PROJECT RESTRUCTURING  
OF  
CI: CÔTE D'IVOIRE E-AGRICULTURE PROJECT  
APPROVED ON MAY 25, 2018  
TO THE  
REPUBLIC OF CÔTE D'IVOIRE

APRIL 26, 2021

DIGITAL DEVELOPMENT GLOBAL PRACTICE  
WESTERN AND CENTRAL AFRICA REGION

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**ABBREVIATIONS AND ACRONYMS**

ADERIZ	<i>Agence Pour Le Développement de La Filière Riz / Agency for the Development of the Rice Sector</i>
AGERROUTE	<i>Agence de Gestion des Routes / Roads Management Agency</i>
ANADER	<i>Agence Nationale d'Appui au Développement Rural / National Agency for Rural Development Support</i>
ARTCI	<i>Autorité de Régulation des Télécommunications de Côte d'Ivoire / Telecommunications Regulatory Authority of Côte d'Ivoire</i>
CERC	Contingent Emergency Response Component
COVID-19	Coronavirus Disease 2019
ESMF	Environmental and Social Management Framework
FRR	Financial Rate of Return
FY	Fiscal Year
GDP	Gross Domestic Product
GoCIV	Government of Côte d'Ivoire
ICT	Information and Communication Technology
IDA	International Development Association
IPRAVI	<i>Inter-Profession Avicole Ivoirienne / Inter-Profession Poultry Ivory Coast</i>
ISDS	Integrated Safeguards Datasheet
M&E	Monitoring and Evaluation
MENUP	<i>Ministère de l'Economie Numérique et de la Poste / Ministry of Digital Economy and Post</i>
MIRAH	<i>Ministère des Ressources Animales et Halieutiques / Ministry of Animal and Fisheries Resources</i>
NGO	Non-Governmental Organization
NPK	Nitrogen, Phosphorus, and Potassium
NPV	Net Present Value
OIA-Riz	<i>Organisation Inter Profession Agricole Riz / Rice Interprofessional Body</i>
OCPV	<i>Office d'Aide à la Commercialisation des Produits Vivriers / Office of Assistance for the Marketing of Food Products</i>
PDO	Project Development Objective
PIU	Project Implementation Unit
PPP	Public Private Partnership
RAP	Resettlement Action Plan
RF	Results Framework
RVP	Regional Vice President
TA	Technical Assistance
WBG	World Bank Group



**BASIC DATA**

**Product Information**

Project ID P160418	Financing Instrument Investment Project Financing
Original EA Category Partial Assessment (B)	Current EA Category Partial Assessment (B)
Approval Date 25-May-2018	Current Closing Date 30-Jun-2023

**Organizations**

Borrower Republic of Cote d'Ivoire	Responsible Agency Ministry of Digital Economy and Post
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**Project Development Objective (PDO)**

Original PDO

The Project Development Objective is to increase access to digital services and leverage digital platforms to improve farm productivity and access to markets.

**Summary Status of Financing (US\$, Millions)**

Ln/Cr/Tf	Approval	Signing	Effectiveness	Closing	Net Commitment	Disbursed	Undisbursed
IDA-62440	25-May-2018	21-Jun-2018	14-Nov-2018	30-Jun-2023	70.00	16.72	50.62

**Policy Waiver(s)**

Does this restructuring trigger the need for any policy waiver(s)?

No



## I. PROJECT STATUS AND RATIONALE FOR RESTRUCTURING

### A. Summary

1. In a letter dated July 28, 2020, the Government of Côte d'Ivoire (GoCIV) requested a restructuring of IDA Credit 6244-CI – Côte d'Ivoire E-agriculture Project<sup>1</sup> (the Project) – as part of its response to the Coronavirus disease (COVID-19) pandemic. This restructuring paper seeks to: (i) add a new component (US\$20.00 million equivalent to be reallocated from existing components) in the Project for COVID-19 Related Support to Farmers to contribute to the GoCIV's response to the COVID-19 crisis in the agriculture sector; (ii) adjust and streamline the existing components as a result of this request; (iii) align the Project Development Objective (PDO) to reflect the new activities; (iv) adjust the Project's Results Framework (RF) due to addition of the new component and scaling down of overall scope of components; (v) modify implementation arrangements due to introduction of new component and new activities (with the introduction of three new agricultural agencies in charge of the implementation for the new component for COVID-19 Related Support to Farmers); and (vi) adjust the social and environmental analysis to reflect the new activities.
2. As it entails a change to the PDO, this restructuring will require Regional Vice President (RVP) approval.

### B. Project Status

3. The Project was approved and became effective on May 25, 2018 and November 14, 2018 respectively. The initial IDA Credit 6244-CI amounted to €56.8 million (US\$70.00 million equivalent at the date of approval<sup>2</sup>). The proposed restructuring will not modify the amount of the credit.
4. The Project has been under implementation for over 29 months and has experienced implementation delays. These are partly due to: (i) a change of all the senior management team of the Project Implementation Unit (PIU) decided unilaterally in March 2020<sup>3</sup>, and which was fully resolved in July 2020; (ii) a lack of familiarity by the previous PIU staff with the World Bank's internal policies and procedures; and (iii) COVID 19 pandemic impact which has slowed down activities since March 2020. The Project performance towards achievement of PDO and overall implementation progress is currently rated Moderately Satisfactory (MS) and Moderately Unsatisfactory (MU) respectively.<sup>4</sup> As of April 2021, the disbursement ratio is 24.8 percent mainly related to an advance made to the delegated Roads Management Agency (*Agence de Gestion des Routes*, AGEROUTE) for the implementation of Component 3 (Rehabilitation and maintenance of rural access roads) and on the implementation of Component 2 (Digital services for sustainable agricultural).
5. Financial Management, Project Management, Procurement, and Monitoring and Evaluation (M&E) are all rated Satisfactory (S). There are no overdue audit report and no overdue Interim Financial Report (IFR).<sup>5</sup>

<sup>1</sup> In French *Projet de Solutions Numériques pour le Désenclavement des Zones Rurales et l'e-Agriculture – PSNDEA* (Digital Solutions Project for the Opening-Up of Rural Areas and e-Agriculture).

<sup>2</sup> US\$64.2 million equivalent at the current exchange rate (set at EUR 1.00 = US\$1.13 in this restructuring paper)

<sup>3</sup> The MENUP informed the World Bank of the change in a letter dated March 17., 2020.

<sup>4</sup> The ratings are provided in the latest Implementation Status and Results Report, April 13, 2021.

<sup>5</sup> The Implementation Manual of the Project has been shared with the World Bank in June 2020. The World Bank sent on July 2020 a series of comments to be integrated in three sections (Presentation of the Project, Personnel Management, and Procurement Procedures). It was agreed with the PIU that the Implementation Manual would include these comments and would be fully revised after the restructuring to reflect all the changes provided. The updated Implementation Manual is expected to be shared with the World Bank by mid-May 2021.



### C. Status of Project Components

6. The status of the Project components is as follows:

- a. **Component 1 (Extending digital connectivity in rural and remote areas, US\$31.5 million under the initial project and proposed US\$17.9 million after the restructuring) is rated as Moderately Unsatisfactory (MU)** due to limited progress and persisting delays in establishing the final "reverse auction" subsidy model and in launching the call for tenders for expanding broadband coverage. After an initial reversal from the "reverse auction" scheme agreed in the Project Appraisal Document (PAD), the Ministry in charge of Digital Economy (*Ministère de l'Économie Numérique et de la Poste*, MENUP) has now confirmed that it will move forward with the "reverse auction" model. The amount allocated to this component will be reduced following the restructuring, and the Project will therefore cover less areas. A first draft call for tender for the "reverse auction" model should be finalized and shared with the World Bank by early May 2021 and the tendering process should start soon afterwards.
- b. **Component 2 (Digital services for sustainable agricultural development, US\$12.5 million under the initial project and proposed US\$8.5 million after the restructuring) is rated Moderately Unsatisfactory (MU) due to continuing delays in the enrollment of all targeted actors (especially farmers) in the pilot phase.** The Project organized two application challenges "CivAgriHack" to date – one in 2018 and one at the end of 2019. The Project has been advised to consolidate experience coming out of these initiatives before organizing new ones. In addition, a pilot enrollment phase of value chain actors to be covered under this component has been completed in 2019. The first scale-up phase of enrollment, covering the Haut Sassandra and Marahoue regions, was launched in August 2020. It is expected to be completed by end April 2021. A digital ecosystem platform<sup>6</sup> has also been developed. However, few transactions have been observed so far. The new PIU team has rightly decided to reconsider some of the arrangements around the digital ecosystem platform so that it can be further streamlined, and its effectiveness enhanced.
- c. **Component 3 (Rehabilitation and maintenance of rural access roads, US\$19.5 million under the initial project and proposed US\$9.9 million after the restructuring) is rated Moderately Satisfactory (MS).** All potential roads to be rehabilitated have been identified. The tenders for selection of contractors have been launched in December 2020, and the selection of the construction companies is being finalized. However, the Resettlement Action Plan (RAP) studies are considerably behind schedule due to the poor quality of the study reports submitted for review. This situation is preventing the start of road works. The PIU has taken steps to make quality RAP reports available by end of April 2021 by addressing the comments shared by the WB Safeguards Team on April 19, 2021.
- d. **Component 4 (Program implementation and monitoring, US\$6.5 million under the initial project and proposed US\$7.9 million after the restructuring) is rated Moderately Satisfactory (MS) due to the high spending in the first two years of the Project.** After the unilateral change of the senior management team of the PIU in March 2020, the new PIU team became operational in July 2020 and has registered some significant progress (see components above).

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<sup>6</sup> The digital ecosystem platform provides a virtual network for actors in the agricultural sector to interact with each other in order to facilitate private win-win partnerships. It encompasses individual producers, producer's groups, inputs retailers, traders, transporters, commercial banks, microfinance institutions, private and public advisory services providers, etc.



#### D. Rationale for Restructuring

7. **Following an initial surge in COVID-19 cases which led to a swift and drastic response from the Government of Côte d'Ivoire, the pandemic has stabilized at a lower level but is now on an upward trend since January 2021.** As of April 16, 2021, the Ministry of Health and Public Hygiene (MSPH) had confirmed 45,444 cases and 273 deaths (a mortality rate of 0.60 percent). Since early March, the country has observed a steady rise in the rate of positive cases among those tested, hinting to a second high-scale wave of contaminations affecting the country.
8. **The economy experienced a significant downturn in 2020 because of the pandemic, with significant impact on the agricultural sector.** Social-distancing and containment measures caused a sharp deceleration in economic activity, particularly in the hospitality, construction, transportation, and retail sectors, which account for almost half of gross domestic product (GDP) and employment. Economic growth is projected to have fallen sharply to 1.8 percent in 2020, compared to 6.7 percent projected pre-COVID-19, while GDP per capita is projected to have contracted by 0.7 percent. Furthermore, the global crisis has reduced external demand for Ivorian exports, especially agriculture commodities. Declining international commodity prices are hurting exports, mainly cocoa, cashew and cotton. Increased local cost of transportation, as a result of the social-distancing measures, have negatively impacted the supply chain of the agriculture sector, especially food crops which are highly perishable.
9. **The agriculture sector has been impacted by the COVID-19 crisis.** The poultry sector has been severely affected by the COVID 19 crisis with the suspension of restaurants and *maquis*<sup>7</sup> activities which absorbs sixty percent of the domestic poultry production. It is estimated that overall containment measures at the onset of the crisis has caused a fall in domestic demand for poultry by seventy percent, leaving local producers with poultry stocks in hand and causing a halt in new production activities. In the rice supply chain, containment measures have caused a six-week lag in the production cycle and a drop in domestic production by 21 percent, as a result of the decrease in yields due to a reduced access to seeds and imported fertilizers. While rice imports disruptions favored a growing demand for locally produced rice, retail prices of domestic milled rice have increased by close to 19 percent during the crisis.
10. **The economic fallout from the pandemic has induced an increase in poverty and unemployment.** The national poverty rate increased from 39.4 percent pre-COVID to 41.5 percent in October 2020 and employment dropped by 41 percent in the private formal sector while an estimated 687,922 informal employees were suspended or laid off (Rapid COVID-19 survey by the National Institute of Statistics).
11. **To counter the immediate human, social and economic impact of the COVID-19 crisis, the Government is implementing a large-scale emergency response package, including measures to ensure transparency and accountability.** This includes a range of measures designed to protect poor and vulnerable households, preserve jobs, and sustain firms. However, there is not yet a dedicated large-scale allocation mechanism targeting the agricultural food crop sector, although this sector employs the majority of agricultural workers and represents a key pillar of the local economy, playing an essential role in national food security.
12. **While the economy remains vulnerable to the shocks and uncertainty surrounding the COVID-19 crisis in 2021,** the proposed restructuring, especially the introduction of Component 5 (COVID-19 Related Support to Farmers) should support the GoCIV taking timely and adequate measures to counteract the impact of COVID-19 on the agricultural sector for a gradual recovery over the medium to long term.

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<sup>7</sup> Local outdoor restaurants serving affordable dishes.



13. **Following the request by the Government of Côte D'Ivoire, the Project's activities, components, as well as the PDO and RF need to be adjusted:**

- a. Revision of the PDO due to the introduction of a new Component 5 and the reallocation of budget within existing components.
- b. Reallocation of EUR 17.7 million (US\$20 million equivalent at the current exchange rate<sup>8</sup>) towards the new "Component 5" added to the Project to cover new activities with the objective of supporting the agricultural and animal resources sectors to face the COVID-19 pandemic. Activities for each agriculture sector will be carried out in agreement with three agricultural agencies in charge of the implementation, namely:
  - i. Poultry sector: IPRAVI (*Inter-Profession Avicole Ivoirienne*, Inter-Profession Poultry Ivory Coast) with an allocation of €12.4 million (US\$14.0 million equivalent);
  - ii. Rice/paddy sector: ADERIZ (*Agence Pour Le Développement de La Filière Riz*, Agency for the Development of the Rice Sector) with an allocation of €3.5 million (US\$4.0 million equivalent); and
  - iii. Staple food crops sector: OCPV (*Office d'aide à la Commercialisation des Produits Vivriers*, Office of Assistance for the Marketing of Food Products) with an allocation of €1.8 million (US\$2.0 million equivalent).

**II. DESCRIPTION OF PROPOSED CHANGES**

**A. Change to PDO**

14. The restructuring introduces new activities linked to mitigating the impact of the COVID-19 crisis on the agriculture sector. It also adjusts and streamlines existing components as a result of the restructuring request. To reflect these changes, the PDO is adjusted as follows:
- a. **Existing PDO.** "The PDO is to increase access to digital services and leverage digital platforms to improve farm productivity and access to markets."
  - b. **Proposed new PDO.** "The PDO is to increase access to digital services and farmers' access to markets through digital platforms and rural roads, and mitigate the impact of the COVID-19 crisis on the agriculture sector."

**B. Change to Components and Cost**

15. A total of €17.7 million (US\$20.0 million equivalent at the current exchange rate) is being reallocated from existing components into a new "Component 5 – COVID-19 related support to farmers" to include COVID-19 response activities. The original components as described in the Financing Agreement are being adapted to reflect the reduced budget and simplify and streamline existing activities. A description in the changes for each component is presented in the table below. A detailed cost table of all the activities supported is provided in the Annex 1.

Table 1: Summary of changes

<b>Original Components</b>	<b>Revised Components</b> <b>Total Financing Available: €56.8 million</b>
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<sup>8</sup> Set at EUR 1.00 = US\$1.13 in this restructuring paper.



<p><b>Total Financing Available: €56.8 million</b> (US\$70.0 million equivalent at the time of the Project approval and US\$64.2 million equivalent at the current exchange rate)</p>	
<p><u>Component 1. Extending digital connectivity in targeted rural and remote areas</u></p> <p><b>€25.5 million</b> (US\$31.5 million equivalent at the time of the Project approval and US\$30.2 million equivalent at the current exchange rate)</p> <ol style="list-style-type: none"> <li>1. Review and improvement of the digital services enabling environment; Provision of technical assistance (TA) to strengthen capacity of key stakeholders in defining, enhancing and enforcing an enabling environment conducive to providing digital services in rural areas, by funding a legal review of the current environment and identify bottlenecks that hamper private investment.</li> <li>2. Supporting the extension of digital infrastructure in rural areas.</li> </ol>	<p><u>Component 1. Extending digital connectivity in targeted rural and remote areas</u></p> <p><b>€15.8 million</b> (US\$17.9 million equivalent at the current exchange rate)</p> <p>The general scope of and description in the Financing Agreement remains unchanged, but the reduction in the budget available has led to a reduction in:</p> <ol style="list-style-type: none"> <li>1. The number of TA studies to focus on the ones directly related to achieving the PDO (the budget for TAs decreasing from €2.7 million to €0.9 million and several studies being merged into a general study to assist the MENUP in establishing its digital strategy);</li> <li>2. The extent of the mobile coverage to be financed, as the budget to subsidize mobile coverage decreases from €22.9 million to €15.0 million.</li> </ol>
<p><u>Component 2. Digital services for sustainable agricultural development</u></p> <p><b>€10.1 million</b> (US\$12.5 million equivalent at the time of the Project approval and US\$12.0 million equivalent at the current exchange rate)</p> <p><b>Sub-Component 2.1. Smart agriculture and producer organizations</b> Strengthening capacity of farmers in climate smart production management and marketing and facilitating the formation or consolidation of farmer groups into more formal structures.</p> <p><b>Sub-Component 2.2. Capacity building in digital solutions in agriculture</b> Strengthening the capacity of the MARD and relevant agricultural agencies by providing TA to: (i) identify the various institutions involved in the data to decision making value chain in the agricultural sector; (ii) support the capacity strengthening of MARD staff and such relevant agencies in digital tools and applications for data collection and management; (iii) improve the enabling environment for agricultural data, including a review of current status of policies, laws and regulations, and recommend the revision of laws and regulations; and (iv) review and upgrade as needed the current strategy and action plan for the development, dissemination and use of agricultural data.</p>	<p><u>Component 2. Digital services for sustainable agricultural development</u></p> <p><b>€7.5 million</b> (US\$8.5 million equivalent at the current exchange rate)</p> <p>This Component is revised and streamlined as follow:</p> <p><b>Previous Sub-Component 2.1 (“Smart agriculture and producer organizations”) is kept unchanged.</b> The scope of this activity remains to enlist 300,000 actors in the agricultural value chain in the Project regions.</p> <p><b>Previous Sub-Component 2.2 is adjusted as “Strengthening the digital capacities of the beneficiaries and communication actions.”</b> The aim of this component is now to increase the digital capacities of the beneficiaries by: (i) providing training and sensitization of 400 organizations of Project beneficiaries including informal associations on the use of digital agricultural services by non-governmental organizations (NGOs) in the Project areas; (ii) creating 1,256 relay points in 628 villages to provide permanent assistance to beneficiaries in the use of the tools and services developed; (iii) ensuring the dissemination of agricultural messages by local radio stations; and (iv) disseminating the digital solutions for agriculture resulting from the CivAgriHack competition.</p>





<p><b>Sub-Component 2.3. Digital Platform for the Ministry of Agriculture and Rural Development</b> Strengthening the MARD communication system by refurbishing it and enabling the free flow of data, information and knowledge throughout all Project stakeholders.</p> <p><b>Sub-Component 2.4. Digital ecosystem and e-agricultural services</b></p> <ol style="list-style-type: none"> <li>1. Provision of close to real time agricultural advisory services to small-scale farmers in the Project areas for increased productivity by (i) establishing and operationalizing call centers and voice message services for agricultural information and knowledge in the selected value chains; (ii) promoting awareness and information campaigns for small-scale farmers in selected value chains and targeted end-users of the e-agriculture services; (iii) acquiring necessary equipment and materials, including computers, software and communication materials necessary for the good functioning of the e-extension platform; (iv) providing the relevant agricultural agencies with a toll-free number for a more efficient outreach from farmers</li> <li>2. Promotion of digital innovation systems for agriculture through: (i) the design and operationalization of an agricultural observatory; (ii) the design and organization of app challenges to develop or enhance digital solutions for agriculture e-services; and (iii) TA and financial support to scale up and mainstream relevant digital solutions emerging for the app challenges.</li> </ol>	<p><b>Previous Sub-Component 2.3 is adjusted as “Definition, realization and operationalization of agricultural digital platforms.”</b> The aim of this component is now to design and implement an integrated agricultural digital services platform with the objective to provide agricultural digital services to the farmers.</p> <p><b>Previous Sub-Component 2.4 (“Digital ecosystem and e-agricultural services”) is kept unchanged but the scope is reduced.</b></p> <p>The aim of this component is now to support incubation and acceleration of the applications identified by the CivAgriHack and establish agreements with other agriculture agencies in Côte d’Ivoire (SODEXAM, National Agency for Rural Development Support (<i>Agence Nationale d’Appui au Développement Rural</i>, ANADER)) to provide agro-meteorological services and agricultural advice to farmers.</p>
<p><u>Component 3. Rehabilitation and maintenance of Rural Access Roads</u></p> <p><b>€15.8 million</b> (US\$19.5 million equivalent at the time of the Project approval and US\$18.7 million equivalent at the current exchange rate)</p> <p>Financing the technical feasibility studies, environmental and social assessments and works related with the rehabilitation and maintenance of 758 km of critical rural roads allowing access to targeted production zones and markets in Divo, Daloa, Gagnoa and Bouna.</p>	<p><u>Component 3. Rehabilitation and maintenance of Rural Access Roads</u></p> <p><b>€8.7 million</b> (US\$9.9 million equivalent at the current exchange rate)</p> <p>The general scope of and description in the Financing Agreement remains unchanged, but the reduction in the budget available has led to a reduction in the length of road rehabilitated and maintained.</p> <p>The Project will rehabilitate 256.4 km of rural roads (in Divo, Daloa, Gagnoa, and Bouna) and these will be maintained each year for a total of two years. Given the reduced scope of works under Component 3, the convention of AGEROUTE will be amended with regards to the (i) internal fees; (ii) scope of activities; (iii) mission duration; and (iv) other related expenses will be accordingly revised.</p>



<p><u>Component 4. Program implementation and monitoring</u></p> <p><b>€5.3 million</b> (US\$6.5 million equivalent at the time of the Project approval and US\$6.2 million equivalent at the current exchange rate)</p> <p>Support the setting up of the Project Coordination Unit and cover the cost of Training, office equipment, Operating Costs, audits and communications as well as M&amp;E, environmental and social studies and their implementation and monitoring.</p>	<p><u>Component 4. Program implementation and monitoring</u></p> <p><b>€7.0 million</b> (US\$7.9 million equivalent at the current exchange rate)</p> <p>The general scope of and description in the Financing Agreement remains unchanged, but the budget is increased given the proposed new activities in the Project and the increased monitoring needs.</p>
<p style="text-align: center;">/</p>	<p><u>(NEW) Component 5. COVID-19 Related Support to Farmers</u></p> <p><b>€17.7 million</b> (US\$20.0 million equivalent at the current exchange rate)</p> <p>This new component aims at supporting the agricultural sector to face the COVID-19 crisis, especially for the poultry sector, the rice/paddy sector, and the fresh food products sector. The new activities will involve (i) an extension of the geographic area of the Project by including new regions; and (ii) a change in the nature of the activities to be implemented, particularly the support in terms of subsidies or supply of production inputs (poultry, rice/paddy) to small farmers.</p>
<p style="text-align: center;">/</p>	<p><u>(NEW) Component 6. Contingent Emergency Response Component (CERC)</u></p> <p><b>€0.00 million</b> (US\$0.00 million equivalent)</p> <p>This new Component will have an initial zero value but may be financed during the course of the Project to allow for agile and flexible response to emerging events.</p>

16. The new Component 5 (COVID-19 related support to farmers) aims at supporting the agricultural sector to face the COVID-19 crisis. It will be carried out in agreement with three agricultural agencies in charge of the implementation for the targeted agriculture sectors<sup>9</sup>, namely:

- a. **Sub-Component 5.1 (Poultry sector): IPRAVI** with a budget of €12.4 million (US\$14.0 million equivalent) to provide: (a) Non-Cash Subsidies for cold rooms storage for excess poultry production, affected poultry farmers and poultry breeding farms<sup>10</sup>, and poultry slaughtering; (b) farm disinfection; (c) sero-monitoring in the context of vaccination against low pathogenic avian influenza/H9N2; (d) supervision of poultry

<sup>9</sup> Partnership agreements and implementation protocols have been signed between the PIU and each of the three agricultural agencies in December 2020 and approved by the World Bank.

<sup>10</sup> Acquisition of hatching eggs, one-day old chicks and poultry feeds.



producers; (e) acquisition of disinfection equipment for processing infrastructures; (f) Cash Subsidies for consumer price support for frozen and preserved poultry<sup>11</sup>; and (g) M&E of IPRAVI activities.

- b. **Sub-Component 5.2 (Rice/paddy sector): ADERIZ** with a budget of €3.5 million (US\$4.0 million equivalent) to: (a) acquire and distribute inputs (urea and NPK fertilizers<sup>12</sup>); (b) improve paddy processing; and (c) improve the distribution of milled rice.
- c. **Sub-Component 5.3 (Staple food sector): OCPV** with a budget of €1.8 million (US\$2.0 million equivalent) to enhance: (i) the collection and grouping centers for food products; and (ii) the system for collecting information and data on the marketing chain for food products. The activity will provide: (a) equipment and materials for digitalization and data collection processing; (b) motorcycles and vehicles for an improved mobility of field agents; and (c) training of OCPV staff in crops stocks assessment, data collection and processing, etc.

17. **A new Component 6: “Contingent Emergency Response Component” (CERC) is also added to the Project structure (US\$0.0 million).** This new Component 6 will have an initial zero value but may be financed during the course of the Project to allow for agile response to emerging events.

### C. Technical Analysis

18. For the restructured **Component 1**, the technical analysis presented in the initial PAD remains relevant. Component 1 builds on lessons learned and best practices of similar projects that have been implemented in other countries<sup>13</sup>, as well as the recent 2018 report on "Innovative Business Models for expanding Fiber-Optic Networks and Closing the Access Gaps" funded by The Digital Development Partnership Trust Fund<sup>14</sup>. The infrastructure component is designed around four core principles (evidence of market failure, general interest as set out by the PDO, public capital funds limited to the minimum necessary, and open access Public Private Partnerships - PPPs) aligned with the Maximizing Finance for Development (MFD) approach. The bidding specifications will be technology neutral in order to allow as many operators as possible to participate in the bid and will not have a technology-based bias that could favor one operator over the others<sup>15</sup>. The bidding will request only minimum specifications, such as minimum internet speed, number of locations to be covered, size of population to be covered, and standard telecommunications services to be delivered such as voice and messaging services. The private operators will be able to select the design of their choice, which could include, among others: (i) passive telecom towers to facilitate the deployment of active mobile antennas by mobile network operators; (ii) a fully

<sup>11</sup> As a result of containment measures and closure of restaurants during the crisis, the demand for poultry plunged. This forced many poultry producers to store their production in hand. They then faced lower buying prices with excess poultry on the market when businesses reopened. These subsidies are aimed to producers who sold their stored stocks at lower prices than the actual cost prices. It is expected that around 400 poultry farmers will benefit from this subsidy mechanism (see below Paragraph 21.a for more details).

<sup>12</sup> NPK stands for "nitrogen, phosphorus, and potassium," the three nutrients that compose fertilizers.

<sup>13</sup> Nicaragua Rural Telecom (P089989), Madagascar Regional Communications Infrastructure Program (P094103), Tanzania Regional Communications Infrastructure Program (P111432), Uganda Energy for Rural Transformation Project (P069996), and Papua New Guinea 3G Network Upgrade (P107782).

<sup>14</sup> Available here: <http://documents1.worldbank.org/curated/en/674601544534500678/pdf/Main-Report.pdf>

<sup>15</sup> The project will nevertheless focus mostly on wireless network access. As in most other Sub-Saharan African countries, the wired network is lagging well behind the wireless infrastructure in the delivery of digital infrastructure and services in Côte d'Ivoire. Wireless networks, especially mobile telecommunications networks, are thus the most relevant technology to ensure access to digital services in rural areas. Another wireless technology worth considering is satellite broadband, even though it may not provide the reliability and bandwidth of a mobile network.



active Radio Access Network deployed by a mobile network operator, who provides a local roaming access to other mobile network operators; (iii) low-cost 'microsite' alternative deployed by third-parties for rural areas targeted by the Project who then sell their services to mobile network operators; and (iv) other types of wireless access such as satellite access. The technical design is consistent with international best practice. Lastly, the design of the Project is based on a model of competitive, private-sector delivery wherever possible. This is fully consistent with international experience which shows that this is a more cost-effective way of delivering digital services than the Government becoming directly involved in service delivery itself. The PIU will share the draft call for tender to extend the connectivity on or around early May 2021, with the objective to launch the bidding by end of May 2021, select service providers by November 2021 and have new connectivity sites fully operational on or around July 2022.

19. For the restructured **Component 2**, the technical analysis in the PAD remains valid. Component 2 will face the challenge of keeping abreast with the rapid advances in information technology tools and applications – whose costs are declining and increasing in functionality and efficiency especially in the consumer space. Emphasis will be placed on close monitoring of the contract implementation for compliance with the terms and conditions of the bidding documents and contracts. The digital enrollment of all targeted actors (especially farmers) in the pilot phase (59.5 percent completion rate as of February 2021) is expected to be completed by end April 2021 and the development of the main digital agricultural services platform is closely monitored by the PIU for effective launch within project's timeframe.
20. **Component 3** consists in rehabilitation and maintenance of rural roads and the World Bank has developed ample expertise on that field that will support the implementation of the activities. As of April 2021, the PIU has already selected the construction companies and the supervision and technical control mission is being finalized. The PIU has also completed the preliminary technical studies and will finalize the required environmental and social impact assessment studies by end April 2021. The start of the civil works is planned for June 2021, pending the finalization of corresponding safeguard documents (RAPs) that will need to be reviewed through an external audit before the civil works' launch. The rehabilitation of the selected rural roads should be completed during the first quarter of the calendar year 2022.
21. The new **Component 5** (COVID-19 related support farmers) will support the mitigation of short-term impacts of the COVID-19 pandemic on priority agricultural sectors and sustainability for medium and long term. Partnerships agreements and implementation protocols have been signed between the PIU and each of the three agricultural agencies in charge of the implementation in December 2020, and approved by the World Bank. The priority areas are as follow:
  - a. **Sub-Component 5.1 (Poultry sector; agricultural agency in charge of the implementation: IPRAVI)** will mainly support: (i) mitigating poultry production losses at farm level due to market closures by supporting the cost of slaughtering and cold storage of poultry products; (ii) providing subsidized inputs (chicks and feeds) to prevent a breaking up of poultry production; (iii) conducting the sero-monitoring of existing farms in the context of vaccination against low pathogenic avian influenza/H9N2; (iv) providing advisory service to poultry producers; and (v) acquiring disinfection equipment for farms and processing infrastructures. It will be implemented by the poultry inter-professional body IPRAVI. IPRAVI will liaise with the Ministry of Animal and Fishery Resources (*Ministère des Ressources Animales et Halieutiques*, MIRAH) to identify the list of poultry producers who will benefit from this support. Poultry farmers will be given access to these facilities for the storage of their products for a period of three months for a target of 1,400 tons or 467 ton/month. Non-cash subsidies will be provided to small producers through approved local inputs suppliers.



It is expected to provide about 4.7 million chicks, 9,700 tons of feed and 1,068 veterinary kits to 1,249 registered poultry producers, of which 95 percent are small-scale poultry producers with less than 10,000 heads per band. All the sero-monitoring of poultry farms will be the responsibility of the Veterinary Services Directorate of the Ministry. Disinfection kits will also be distributed to eligible farmers and processing plants through IPRAVI/MIRAH-approved local suppliers. Private veterinary agents together with existing Sanitary Defense Organizations will assist farmers in the disinfection of their units. Disinfection activities at processing plants will be carried out by IPRAVI in liaison with Veterinary Services Directorate. Cash subsidies will be provided to around 400 poultry farmers<sup>16</sup>, on the basis of a subsidy of XOF 500 (around US\$0.92 equivalent) per kilogram of poultry (i.e. an average subsidy of around US\$3000 equivalent per producer). Targeted producers for cash subsidies are very small scale poultry farmers with less than 5000 poultry heads.

- b. **Sub-Component 5.2 (Rice/paddy sector; agricultural agency in charge of the implementation: ADERIZ)** will support the ongoing Special Emergency Rice Program (*Programme Spécial d'Urgence Riz- PSUR*) in the strengthening of the capacity of local actors of the value chain, namely producers, processors and retailers. It consists in non-cash subsidies with: (i) the provision of urea and NPK fertilizers to rice farmers for improved productivity; (ii) the acquisition of equipment and purchasing kits for local processors; (iii) the improvement of access to markets of locally produced rice retailers. The Project will help acquire 2,000 tons of urea and 3,000 tons of NPK to be distributed to local small famers at a cost of FCFA 20,000 per hectare. The financial amount equivalent to the quantity of urea and NPK received will be reimbursed through deduction from proceeds of paddy sales to processing companies. This sub-component will be implemented by the national agency for the development of the rice value chain ADERIZ in coordination with the rice interprofessional body (*Organisation Inter Profession Agricole Riz, OIA-Riz*) for the organization of the beneficiaries and the national agency in charge of rural development (ANADER) for farmers advisory services. The list of eligible farmers for subsidized urea and NPK will be established by local ADERIZ, ANADER and OIA-Riz field agents in close consultations with local communities prior to the start of the 2021 cropping season.
- c. **Sub-Component 5.3 (Staple food sector; agricultural agency in charge of the implementation: OCPV)** will support enhancing the collection, processing and diffusion of data on production, stocks and prices of staple crops. This activity will be implemented by the OCPV. OCPV's capacity will be strengthened with: (i) equipment and materials for data collection processing; (ii) motorcycles and vehicles for an improved mobility of field agents; and (iii) training of OCPV staff in crops stocks assessment, data collection and processing, etc.

#### D. Economic Analysis

22. For the restructured **Component 1**, the economic and financial approach presented in the initial PAD remains relevant. The economic and financial analysis is updated with the reduction in the funds available to cover the targeted rural areas (from US\$27.00 million to US\$15.5 million) and the reduction of two years to deploy the digital infrastructures (as the Closing Date is June 30, 2023). The results of this analysis when the project is without public capital support are: (i) the Financial Rate of Return (FRR) is 9 percent; (ii) the break-even point occurs in 12 years; and (iii) the Net Present Value (NPV) is -US\$2.2 million (with a discount rate of 10 percent). These results show that although FRR is positive, telecommunication operators would not invest in this project alone because it would not provide the minimum rate of return that private mobile operator companies usually expect (around 10 to 16 percent depending on the socio-economic context). Therefore, public Government

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<sup>16</sup> IPRAVI holds a registry of local poultry producers identifying them.



financing is needed to make the project possible. With public capital support, the new results are: (i) the FRR is 13 percent; (ii) the break-even point occurs in 10 years; and (iii) the NPV is US\$10.1 million (with a discount rate of 10 percent). These updated results show that the project becomes acceptable for private operators and the public capital support is key. Further details on the results are available in the Annex 2.

23. For the restructured **Component 2**, the economic and financial approach presented in the initial PAD remains valid. Component 2 will face the challenge of keeping abreast with the rapid advances in information technology tools and applications – whose costs are declining and increasing in functionality and efficiency especially in the consumer space. Emphasis will be placed on close monitoring of the contract implementation for compliance with the terms and conditions of the bidding documents and contracts.
24. For the restructured **Component 3**, the economic and financial approach presented in the initial PAD remains valid. To preserve the social and economic impacts with less km after the restructuring, the PIU prioritized road sections with higher social and economic returns with: (i) strong agricultural production with large areas of food production and cash crops; (ii) a higher populations density; and (iii) the presence of several local roads connecting several localities with significant road traffic emanating from population movements. Moreover, roads in these regions are in an advanced state of degradation due to heavy rainfall.
25. For the new **Component 5**, the COVID-19 crisis has dramatically affected the agricultural sector productivity in Côte d'Ivoire as staple food crops, poultry, and other agricultural products have been wasted due to social restrictions and closures in the existing agro-business supply chain. The closures of catering businesses (such as restaurant and bars) have dramatically hurt the agricultural producers, as these accounted for a large amount of the commercial sales. For example, these accounted for 80 percent of fresh chicken sales. The three additional sub-components – to support the poultry, rice/paddy, and staple food crops sectors (respectively supervised by IPRAVI, ADERIZ and OCPV) – will enable to mitigate job and product losses in the agricultural sector, while stabilizing cost of products; and creating for the first time a data-driven approach to gathering and analyzing agricultural product prices in the different markets, both retail and wholesale.
26. **Sub-Component 5.1** - supporting the poultry sector (IPRAVI) - will relieve the poultry farmers, and their products. The poultry farmers can no longer sell to hotels, and are seeing an excess of their products grow, and go to waste. It is critical to minimize poultry waste and enable access to freezers, sanitizing equipment and kits, and preserve the live poultry from contagious diseases. This component will provide stocking and freezing of poultry in industrial freezers that will enable their conservation and transportation, as well as price control on chicken products, to protect small farmers/producers.
27. Support to poultry producers will maintain about 10,000 direct jobs in rural areas (of which 80 percent are youth or/and women); and will enable self-sufficiency in poultry products for the country – stabilizing the local cost of chicken and avoiding further imports. On the long term, the IPRAVI<sup>17</sup> estimates that the activities will: (i) help generate revenues in the poultry sector up to FCFA 400 billion by 2024-2025; (ii) enable self-sufficiency and production of around 90,000 tons/year (or 3.2kg/person/year); and, (iii) create 300,000 jobs along the value chains, of which 100,000 direct and 200,000 indirect jobs.

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<sup>17</sup> IPRAVI's estimates are based on projections of the poultry sector growth based on observed trends in poultry consumption and expansion of local production capacity before the crisis. The time horizon is within the next five years. The scenario without project support would hamper these expected outcomes. The project will help secure the promising expansion of the sector, along with the direct and indirect economic benefits in terms of job creation and poultry self-sufficiency.



28. **Sub-Component 5.2** - supporting the rice/paddy sector (ADERIZ) - will support the strengthening of capacity of local actors of the value chain, namely producers, processors and retailers. It will provide adapted production factors responding to their immediate needs to ensure resilience to the pandemic. This consists in: (i) the provision of urea and NPK to rice farmers; (ii) the acquisition of equipment and purchasing kits for local processors; and (iii) sensibilization activities for improved access to markets and marketing of locally produced rice retailers. The supply of urea and NPK will occur at the beginning of the cropping season at a cost of FCFA 20,000 per hectare, which will be reimbursed through deduction from proceeds of paddy sales to processing companies. Urea and NPK inputs are expected to improve rice productivity from 4.5 to 5.5 tons/ha per cropping cycle, thus improving farmers' revenues. Farmers will benefit from extension services to ensure the adoption of good agricultural practices. Local processors will be provided with kits for the purchase of quality paddy rice at adequate prices for an improved turnover of rice milling to 67 percent and a better rentability of processing plants.
29. **Sub-Component 5.3** - supporting the staple food sector (OCPV) - is estimated to support 45,000 agricultural producers of which two third are estimated to be women (31,000 women) allowing some operational improvements and efficiency gains, as well as accurate data collection via digital technologies - as opposed to paper-based data collection and tracking. The OCPV component is estimated to benefit 17 cooperative unions and 450 associations by training their staff on professional commercialization of their products - through use of accounting, electronic, archiving, use of emails/messaging and other digital applications as needed.
30. In terms of efficiency gain, the use of tablets for data collection will enable savings in time (instantaneous access to information, versus having to wait for a week) for all of the OCPV beneficiaries. Use of SMS to communicate and collect will enable reaching at least three thousand farmers and producers in less than two days - whereas OCPV agenda need weeks for the same data collection process.

#### ***E. Social and Environmental Analysis***

31. The overall environmental and social safeguards compliance is currently rated Moderately Satisfactory (MS). The Integrated Safeguards Datasheet (ISDS) has been updated to describe the additional activities and has been disclosed on the World Bank website on February 5, 2021.
32. For Component 3, the Project has prepared Environment and Social Impact Assessments (ESIAs) and the documents have been disclosed in the country on December 17, 2020. Four RAPs have been prepared for the rural roads (Component 3) in the regions of Haut-Sassandra (Daloa), Lôh-Djiboua (Divo), Gôh (Gagnoa), and Boukani (Bouna) and are under review by the World Bank.
33. The new activities to be financed as part of the Component 5 (COVID19 support related to farmers), will involve (i) an extension of the geographic area of the Project by including new regions; and (ii) a change in the nature of the activities to be implemented, particularly the support in terms of subsidies or supply of production inputs (poultry, rice/paddy) to small farmers.
34. Due to the nature, characteristics and scope of activities considered in this restructuring, the Project is potentially associated with moderate environmental and social risks and impacts. Therefore, the environmental safeguard category "B" of the restructured Project remains unchanged.



35. Furthermore, the proposed component supports poultry activities (farm disinfection) and rice/paddy production (provision of urea). These activities could lead to the use of chemicals. The Project will not finance directly any pesticide; however, the proposed activities may lead to an increase in the use of pesticides and this will be monitored under OP 4.01 (see below). On that basis, this restructuring will not trigger a new safeguard policy.
36. The update of the Environmental and Social Management Framework (ESMF) (including the Environmental and Social Management Plan ESMP) of the Project has been finalized early February 2021 to: (i) consider the analysis of potential impacts and risks associated with the new activities; (ii) adequately address the risks associated with the use of fertilizers, disinfecting chemicals and possibly pesticides under the OP 4.01, and (iii) propose appropriate measures to mitigate risks and impacts that will be identified New activities such as farm disinfection are likely to cause toxic chemical risks. Likewise, the use of fertilizer (urea) in irrigated rice perimeters developed within inland wetlands could be potentially associated with some environmental risks and impacts, in terms of soil, water and air pollution. However, no potential indirect or long term or cumulative impacts are foreseen. The adoption of good agricultural practices will be ensured through the provision of extension services to farmers. New activities do not require any land acquisition and no negative social impacts are expected. The ESMF was published in country on February 15, 2021 and on the World Bank website on February 24, 2021
37. The ISDS has been updated to describe the additional activities and was disclosed on February 5, 2021. The updated grievance redress mechanism (GRM) reflecting the changes made to the project, including Component 5 activities, will be finalized by the PIU by early May 2021.

#### **F. Changes to Results Framework**

38. The indicators are being revised to add core and intermediate indicators linked to the new part of the PDO and the new Component 5, and adjust the target indicators for the existing components, to reflect the change in Project activities and the reduced budget for each component. The revised indicators and targets are presented in the 'Summary of changes' section below.

#### **G. Institutional Arrangements, Financial Management, and Disbursement Arrangements**

39. Implementation arrangements will need to be updated for the new Component 5 as these activities will be carried out by new counterparts into the Project setup. It will be carried out in agreement with specific agricultural agencies in charge of the implementation, namely: **IPRAVI** for the poultry sector, **ADERIZ** for the rice/paddy sector, and **OCPV** for the food products sector.
40. The initial Financial Management, and Disbursement arrangements will remain unchanged. No IDA funds will be transferred to those agencies involved in the implementation of the Project activities for them to make payments of expenditures under their respective activities. Thus, the fiduciary arrangements (procurement, financial management and funds flow) would continue to be the sole responsibility of the PIU, but partnership protocols ("*protocoles de partenariat*") have been signed in December 2020 between the PIU and each of the agricultural agency in charge of the implementation (IPRAVI, ADERIZ and OCPV) as the technical management of the additional activities will be the responsibility of these agricultural agencies. However, the PIU will supervise the environmental and social safeguards activities in close collaboration with each agricultural agency in charge of the implementation according to the supported sector.
41. Under Component 3, the convention with AGEROUTE will also be amended given the reduced scope of works. The AGEROUTE's (i) internal fees; (ii) scope of activities; (iii) mission duration; and (iv) other related expenses will be revised accordingly. This change will not impact the FA.





- 42. Given the short term/emergency nature of the activities to be added under Component 5, it is considered that no change is needed on the composition of the Project Steering Committee (PSC), as the current members as detailed in the Financing Agreement can already cover these aspects (as per Schedule 2, Section I, A.2, the PSC “shall be chaired by the Minister in charge of digital economy and post, and the deputy chair shall be the Minister in charge of agriculture and rural development”).
- 43. Under Component 5.1, the PIU has confirmed their capacity to make the direct payments for the cash subsidies (in close collaboration with IPRAVI). The fund flow arrangements from the Designated Account to the final beneficiary will consist in direct payments to eligible beneficiaries. The cash subsidies will be covered under the audit as they are financed by the project’s funds (the Terms of Reference for the audit will need to be updated accordingly).

**H. Changes to Reallocation between Disbursement Categories**

- 44. The changes to disbursement categories are as follow (see Table 1 above for the details on the amounts):
  - a. Category 1 still covers expenses for Components 1, 2, 3 and 4 of the initial project and the amount is reduced for the new Component 5 (under Categories 3 and 4);
  - b. Undisbursed balance of Project Preparation Financing (in Category 2) is reallocated to the new Categories 3 and 4;
  - c. A new Category 3 is created for Component 5 (except the cash subsidies);
  - d. A new Category 4 is created for the cash subsidies activities under Component 5;
  - e. A new Category 5 is created for the Contingent Emergency Response under Component 6 (with an amount of zero, see Paragraph 17 above).

**I. Changes to Disbursement Estimates**

- 45. The disbursement projections were revised, as per the amounts in Section IV, to take into account the current implementation progress.

**J. Changes to Overall Risk Rating**

- 46. As part of the Systematic Operations Risk Rating Tool (SORT) recalibration exercise, the Macroeconomic risk is downgraded to Moderate to reflect the current level of risk after considering mitigating factors. Risks associated with Component 5 are assessed as Moderate. The technical design and implementation arrangements for the component are fairly simple, featuring few new sub-components and agricultural agencies in charge of the implementation. It builds on a satisfactory implementation capacity of an existing coordination unit with a well-established mechanism for activities monitoring and evaluation. The other risks currently remain unchanged and the overall risk remains Substantial.

**III. SUMMARY OF CHANGES**

	Changed	Not Changed
Project's Development Objectives	✓	
Results Framework	✓	



Components and Cost	✓	
Reallocation between Disbursement Categories	✓	
Disbursement Estimates	✓	
Overall Risk Rating	✓	
Institutional Arrangements	✓	
Implementation Schedule	✓	
Economic and Financial Analysis	✓	
Technical Analysis	✓	
Social Analysis	✓	
Environmental Analysis	✓	
Implementing Agency		✓
DDO Status		✓
PBCs		✓
Loan Closing Date(s)		✓
Cancellations Proposed		✓
Disbursements Arrangements		✓
Safeguard Policies Triggered		✓
EA category		✓
Legal Covenants		✓
Financial Management		✓
Procurement		✓
Other Change(s)		✓

**IV. DETAILED CHANGE(S)**

**PROJECT DEVELOPMENT OBJECTIVE**

**Current PDO**

The Project Development Objective is to increase access to digital services and leverage digital platforms to improve farm productivity and access to markets.

**Proposed New PDO**

The Project Development Objective is to increase access to digital services and farmer's access to markets through digital platforms and roads, and mitigate the impact of the COVID-19 crisis on the agriculture sector.

**COMPONENTS**

Current Component Name	Current Cost (US\$M)	Action	Proposed Component Name	Proposed Cost (US\$M)
Extending digital connectivity in rural and remote areas	31.50	Revised	1. Extending digital connectivity in rural and remote areas	17.90
Digital services for sustainable agricultural development	12.50	Revised	2. Digital services for sustainable agricultural development	8.50
Rehabilitation and maintenance of rural access roads	19.50	Revised	3. Rehabilitation and maintenance of rural access roads	9.90
Program implementation and monitoring	6.50	Revised	4. Program implementation and monitoring	7.90
	0.00	New	5. Support for the COVID-19 Emergency Program in the Agriculture Sector	20.00
	0.00	New	6. Contingent Emergency Response Component	0.00
<b>TOTAL</b>	<b>70.00</b>			<b>64.20</b>

**REALLOCATION BETWEEN DISBURSEMENT CATEGORIES**

Current Allocation	Actuals + Committed	Proposed Allocation	Financing % (Type Total)	
			Current	Proposed
IDA-62440-001   Currency: EUR				
iLap Category Sequence No: 1	Current Expenditure Category: GD,WK,NCS,CS,OC,TN expt. Pt.5 and Pt.6			
55,000,000.00	9,756,161.55	37,544,799.00	100.00	100.00
iLap Category Sequence No: 2	Current Expenditure Category: PPF REFINANCING			



	1,800,000.00	1,575,200.23	1,575,201.00	100
iLap Category Sequence No: 3		Current Expenditure Category: GD,NCS,CS,TN Pt.5 expt. Pt.5.1(f)		
	0.00	0.00	16,680,000.00	100
iLap Category Sequence No: 4		Current Expenditure Category: Cash subsidies Pt5.1(f)		
	0.00	0.00	1,000,000.00	100
iLap Category Sequence No: 5		Current Expenditure Category: Emergency expenditures Pt.6		
	0.00	0.00	0.00	100
<b>Total</b>	<b>56,800,000.00</b>	<b>11,331,361.78</b>	<b>56,800,000.00</b>	

**DISBURSEMENT ESTIMATES**

Change in Disbursement Estimates

Yes

Year	Current	Proposed
2018	0.00	0.00
2019	4,150,580.00	12,117,305.64
2020	6,707,820.00	2,403,879.73
2021	13,262,760.00	9,709,904.52
2022	22,088,430.00	24,000,000.00
2023	23,790,410.00	22,768,910.11

**SYSTEMATIC OPERATIONS RISK-RATING TOOL (SORT)**

Risk Category	Rating at Approval	Current Rating
Political and Governance	● Substantial	● Substantial
Macroeconomic	● Substantial	● Moderate
Sector Strategies and Policies	● Moderate	● Moderate



Technical Design of Project or Program	● Substantial	● Substantial
Institutional Capacity for Implementation and Sustainability	● Substantial	● Substantial
Fiduciary	● Moderate	● Moderate
Environment and Social	● Substantial	● Substantial
Stakeholders	● Moderate	● Moderate
Other		
Overall	● Substantial	● Substantial



Results framework

COUNTRY: Cote d'Ivoire

CI: Cote d'Ivoire E-Agriculture Project

Project Development Objectives(s)

The Project Development Objective is to increase access to digital services and leverage digital platforms to improve farm productivity and access to markets.

Project Development Objective Indicators by Objectives/ Outcomes

Indicator Name	PBC	Baseline	End Target
<b>Increase access to digital services in rural areas</b>			
People provided with access to the Internet (CRI, Number)		5,000,000.00	5,200,000.00
<i>Action: This indicator has been Revised</i>	<i>Rationale: Target revised by the PIU to reflect budget reduction.</i>		
Number of people that benefitted from new access to Internet service. (CRI, Number)		0.00	200,000.00
<i>Action: This indicator has been Revised</i>	<i>Rationale: Target revised by the PIU to reflect budget reduction.</i>		
Number of people that benefitted from the improved Internet service. (CRI, Number)		0.00	1,000,000.00



Indicator Name	PBC	Baseline	End Target
<i>Action: This indicator has been Marked for Deletion</i>	<i>Rationale: Target revised by the PIU to reflect budget reduction.</i>		
People provided with access to the Internet - Female (CRI, Number)		400,000.00	440,000.00
<i>Action: This indicator has been Revised</i>	<i>Rationale: Target revised by the PIU to reflect budget reduction.</i>		
<b>Leverage digital platforms to improve farm productivity and access to markets</b>			
Farmers reached with agricultural assets or services (CRI, Number)		0.00	200,000.00
<i>Action: This indicator has been Revised</i>	<i>Rationale: Target revised by the PIU to reflect budget reduction.</i>		
Farmers reached with agricultural assets or services - Female (CRI, Number)		0.00	120,000.00
<i>Action: This indicator has been Revised</i>	<i>Rationale: Target revised by the PIU to reflect budget reduction.</i>		
Beneficiaries that feel project investments reflected their needs (%) (Percentage)		0.00	80.00
Percentage increase in revenues of the targeted beneficiaires (Percentage)		0.00	10.00
<i>Action: This indicator has been Marked for Deletion</i>			



**Intermediate Results Indicators by Components**

Indicator Name	PBC	Baseline	End Target
<b>Component 2 - Digital services for sustainable agricultural development</b>			
Beneficiaries of job-focused interventions (CRI, Number)		0.00	10,000.00
Beneficiaries of job-focused interventions - Female (CRI, Number)		0.00	7,000.00
Share of women within the newly established cooperatives/producers organizations (led by women) (Percentage)		0.00	90.00
Increase in share of women in leadership roles (among the targeted beneficiaries) (Percentage)		0.00	20.00
<b>Component 3 - Rehabilitation and maintenance of rural access roads to access production areas</b>			
Roads rehabilitated (CRI, Kilometers)		0.00	256.40
<i>Action: This indicator has been Revised</i>		<i>Rationale: Target revised by the PIU to reflect budget reduction.</i>	
Roads rehabilitated - rural (CRI, Kilometers)		0.00	256.40
<i>Action: This indicator has been Revised</i>		<i>Rationale: Target revised by the PIU to reflect budget reduction.</i>	
Roads maintained (Kilometers)		0.00	256.40
<i>Action: This indicator is New</i>			
<b>Component 5 - Support for the COVID-19 Emergency Program in the Agriculture Sector (Action: This Component is New)</b>			





Indicator Name	PBC	Baseline	End Target
Poultry stored in cold rooms (Metric ton)		0.00	1,400.00
<i>Action: This indicator is New</i>			
Number of one-day old chicks distributed (Number)		0.00	4,700,000.00
<i>Action: This indicator is New</i>			
Number of poultry farms disinfected (Number)		0.00	1,068.00
<i>Action: This indicator is New</i>			
Tons of urea distributed (Metric ton)		0.00	2,000.00
<i>Action: This indicator is New</i>			
Tons of paddy collected from farmers (Metric ton)		0.00	100,000.00
<i>Action: This indicator is New</i>			
Tons of NPK distributed (Metric ton)		0.00	3,000.00
<i>Action: This indicator is New</i>			



Annex 1: Updated Cost Table

Table 1.1: Detailed new Project design

	Final activities after restructuring	Previous budget (€m)	New total budget (€m)	Budget Total (US\$ million)
<b>1</b>	<b>Extending digital connectivity in targeted rural and remote areas</b>	<b>€25.6</b>	<b>€15.84</b>	<b>US\$17.9</b>
1.1	<b>1.1 Review and assessment of the information and communication technology (ICT) enabling environment: legal and institutional framework</b>	<b>€2.7</b>	<b>€0.86</b>	<b>US\$1.0</b>
1.1.1	TA to diagnose legal bottlenecks that hinder increased private investment in ICTs		€0.08	US\$0.1
1.1.2	TA to increase the capacity of the Telecommunications Regulatory Authority of Côte d'Ivoire ( <i>Autorité de Régulation des Télécommunications de Côte d'Ivoire</i> , ARTCI) regulatory authority to define, monitor and enforce coverage obligations of mobile operators		€0.38	US\$0.4
1.1.3	TA to support the MENUPI in the establishment of its digital strategy		€0.30	US\$0.3
1.1.4	TA for preparatory studies		€0.10	US\$0.1
1.2	<b>1.2 Supporting the extension of ICT coverage in targeted rural areas using Open Access PPP arrangements</b>	<b>€22.9</b>	<b>€14.98</b>	<b>US\$16.9</b>
1.2.1	TA to map the availability of ICTs in the country, particularly in targeted rural areas		€0.91	US\$1.0
1.2.2	TA to segment the targeted rural areas into different categories of private sector profitability and identify appropriate regulatory and financial incentives		€0.08	US\$0.1
1.2.3	TA for the development of an "Operations Manual" for the use of public funds in support of open access PPP projects in rural areas		€0.09	US\$0.1
1.2.4	TA for the revision and strengthening of the "Operations Manual".		€0.01	US\$0.0
1.2.5	TA for the development of an "Open Access PPP Strategy" for the use of public funds for the deployment of digital access infrastructure in rural areas		€0.17	US\$0.2
1.2.6	Financing digital infrastructure in targeted rural areas	€21.9	€13.72	US\$15.5
<b>2</b>	<b>Digital services for sustainable agricultural development</b>	<b>€10.1</b>	<b>€7.49</b>	<b>US\$8.5</b>
2.1	<b>2.1 Smart agriculture and producer organizations</b>	<b>€1.2</b>	<b>€2.01</b>	<b>US\$2.3</b>
2.1.1	Enlist 300,000 actors in the agricultural value chain in the Project regions		€2.01	US\$2.3
2.2	<b>Strengthening the digital capacities of the beneficiaries and communication actions</b>	<b>€1.9</b>	<b>€1.97</b>	<b>US\$2.2</b>
2.2.1	Provide training and sensitization of 400 organizations of Project beneficiaries including informal associations on the use of digital agricultural services by NGOs in the Project areas.		€0.32	US\$0.4



	Final activities after restructuring	Previous budget (€m)	New total budget (€m)	Budget Total (US\$ million)
2.2.2	Create 1,256 relay points in 628 villages to provide permanent assistance to beneficiaries in the use of the tools and services developed.		€0.06	US\$0.1
2.2.3	Ensure the dissemination of agricultural messages by local radio stations (33).		€0.06	US\$0.1
2.2.4	Popularize the digital solutions for agriculture resulting from the CivAgriHack competition		€1.19	US\$1.3
2.2.5	Popularize the use of the agristore digital platform			-
2.2.6	Make information on prices, agrometeorology, agricultural advice, etc. accessible.			-
2.2.7	Produce 03 tutorials, institutional films			-
2.2.8	Produce 01 success story of the winners of the first edition of the CIVAGRIHACK			-
2.2.9	Communication actions (Messages in proximity radios, communication)		€0.11	US\$0.1
2.2.10	Awareness-raising actions and local support for the population		€0.09	US\$0.1
2.2.11	Actions to support the training of beneficiaries		€0.14	US\$0.2
<b>2.3</b>	<b>Definition, realization and operationalization of agricultural digital platforms</b>	<b>€2.0</b>	<b>€2.89</b>	<b>US\$3.3</b>
2.3.1	Digitize and electronically archive the agricultural data produced in the 10 RDs and at headquarters and set up a digital library.		€0.17	US\$0.2
2.3.2	Select a consultant firm for the Elaboration of the functional and technical specifications of the integrated platform of agricultural digital services.		€0.27	US\$0.3
2.3.3	Select a consultant firm for the Development of the change management strategy for the integrated platform of digital agricultural services.		€0.08	US\$0.1
2.3.4	Select an individual consultant for the drafting of agreements with SODEXAM, ANADER and OCPV in the framework of the provision of agrometeorological data services, agricultural advice and prices and stocks of food products.		€0.04	US\$0.0
2.3.5	Elaborate a manual for the operationalization of the digital platform of transactions of the agricultural ecosystem		€0.06	US\$0.1
2.3.6	Develop a business model for the Project's digital platform		€0.08	US\$0.1
2.3.7	Ensure the operating costs of the Agristore platform		€0.07	US\$0.1
2.3.8	Implementation of the integrated agricultural digital services platform		€1.22	US\$1.4
2.3.9	Infrastructure base (managed service) and Hosting		€0.18	US\$0.2
2.3.10	Contractualization for the operation and operationalization of the digital services platform		€0.73	US\$0.8
2.3.11	Maintenance and Technical Support on infrastructures		-	-
<b>2.4</b>	<b>Development of the digital ecosystem for e-agriculture services</b>	<b>€4.9</b>	<b>€0.63</b>	<b>US\$0.7</b>



	Final activities after restructuring	Previous budget (€m)	New total budget (€m)	Budget Total (US\$ million)
2.4.1	Recruit a consultant for the incubation and acceleration of the five (05) applications of CivAgriHack		€0.06	US\$0.1
2.4.2	Recruit a consultant for the incubation and acceleration of the six (06) applications of CivAgriHack		€0.07	US\$0.1
2.4.3	Sign an agreement with SODEXAM to provide agro-meteorological services to farmers.		€0.09	US\$0.1
2.4.4	Sign an agreement with ANADER to provide agricultural advice to farmers.		€0.26	US\$0.3
2.4.5	Identification and integration of existing third party digital services		€0.08	US\$0.1
2.4.6	Identification and pooling of data and services from existing platforms		€0.08	US\$0.1
<b>3</b>	<b>Rehabilitation and maintenance of rural access roads</b>	<b>€15.8</b>	<b>€8.74</b>	<b>US\$9.9</b>
<b>3.1</b>	<b>Technical feasibility studies and environmental and social assessments</b>		€1.31	US\$1.5
3.1.1	Technical studies		€0.25	US\$0.3
3.1.2	Environmental and social studies		€0.21	US\$0.2
3.1.3	Studies of RAPs		€0.15	US\$0.2
3.1.4	AGERROUTE's fees		€0.70	US\$0.8
<b>3.2</b>	<b>Carrying out rehabilitation and maintenance work on rural roads</b>		€7.43	US\$8.4
3.2.1	Realization of RLTPC Works: Divo, Daloa, Gagnoa, and Bouna, 256.4 km		€6.51	US\$7.3
3.2.2	Realization of the RLEP works 512.8 km		€0.39	US\$0.4
3.2.3	Work control		€0.53	US\$0.6
<b>4</b>	<b>Program implementation and monitoring</b>	<b>€5.3</b>	<b>€7.04</b>	<b>US\$7.9</b>
4.1	Properties		€0.88	US\$1.0
4.2	Workshops, seminars and training		€0.96	US\$1.1
4.3	Consultants		€0.25	US\$0.3
4.4	M&E		€0.44	US\$0.5
4.5	Social Development		€0.68	US\$0.8
4.6	Environment		€0.87	US\$1.0
4.7	Communication		€0.39	US\$0.4
4.8	Operating cost		€2.58	US\$2.9
<b>5</b>	<b>COVID-19 related support to farmers [NEW]</b>	<b>-</b>	<b>€17.68</b>	<b>US\$20.0</b>
<b>5.1</b>	<b>Poultry sector - IPRAVI</b>		<b>€12.38</b>	<b>US\$14.0</b>
5.1.1	Non-cash subsidies for cold rooms storage of excess poultry currently in farms		€0.93	US\$1.1
5.1.2	Non-cash subsidies for the acquisition of inputs (one-day old chicks, chicken feeds, and others) for affected poultry farmers		€8.88	US\$10.0
5.1.3	Non-cash subsidies for the acquisition of inputs (hatching eggs, chicken feeds, and others) for breeding farms		€0.76	US\$0.9



	Final activities after restructuring	Previous budget (€m)	New total budget (€m)	Budget Total (US\$ million)
5.1.4	Non-cash subsidies for the acquisition of farm disinfection kits		€0.40	US\$0.5
5.1.5	Sero-monitoring in the context of vaccination against low pathogenic avian influenza/H9N2		€0.15	US\$0.2
5.1.6	Supervision of poultry producers		€0.17	US\$0.2
5.1.7	Acquisition of disinfection equipment for processing infrastructures		€0.07	US\$0.1
5.1.8	Cash subsidies in support of consumer price for excess in-storage poultry		€0.99	US\$1.1
5.1.9	M&E of IPRAVI activities		€0.03	US\$0.0
<b>5.2</b>	<b>Rice/paddy - ADERIZ</b>		<b>€3.54</b>	<b>US\$4.0</b>
5.2.1	Acquire and disseminate inputs (urea)		€ 2.39	US\$2.7
5.2.2	Improving paddy processing		€ 0.59	US\$0.7
5.2.3	Improving the distribution of milled rice		€ 0.56	US\$0.6
<b>5.3</b>	<b>Staple food crops marketing - OCPV</b>		<b>€1.77</b>	<b>US\$2.0</b>
5.3.1	Provision of equipment and materials for digitalization and data collection processing		€0.16	US\$0.2
5.3.2	Provision of motorcycles and vehicles for an improved mobility of field agents		€1.32	US\$1.5
5.3.3	Training of OCPV staff in crops stocks assessment, data collection and processing		€0.29	US\$0.3
<b>6</b>	<b>Contingent Emergency Response Component [NEW]</b>	-	-	-
	<b>TOTAL</b>	<b>€56.80</b>	<b>€56.80</b>	<b>US\$64.2</b>



## Annex 2: Updated Economic Analysis for Component 1

47. For the restructured Component 1 (Digital Infrastructures in Rural Areas), the economic and financial approach presented in the initial PAD remains relevant. The economic and financial analysis is updated with the reduction in the funds available to cover the targeted rural areas (from US\$27.00 million to US\$15.5 million) and the reduction of two years to deploy the digital infrastructures (as the Closing Date is June 30, 2023). Results are updated in the Annex.

48. The results for the project without public capital support are: (i) the Financial Rate of Return FRR(C) is 9 percent; (ii) the break-even point occurs in 12 years; and (iii) the NPV is -US\$2.2 million (with a discount rate of 10 percent). These results show that although FRR(C) is positive, telecommunication operators would not invest in this project alone because it would not provide the minimum rate of return that private mobile operator companies usually expect (around 10 to 16 percent depending on the socio-economic context). Therefore, public Government financing is needed to make the project possible.

49. The results for the project with public capital support are: (i) the FRR(K) is 13 percent; (ii) the break-even point occurs in 10 years; and (iii) the Net Present Value NPV(K) is US\$10.1 million (with a discount rate of 10 percent). These results show that the project becomes acceptable for private operators. Moreover, the fact that after taking into account the public capital, the FRR(K) is in the low average of the expected rate of return for standard mobile telecommunications projects and that the break-even point occurs in the long-term (10 years) show that the public capital support is not over-proportionate.

50. Although last-mile operators were consulted in advance, there is a high level of uncertainty with regards to the revenues that will be generated by the infrastructure. This is acknowledged in the design of the project, which requires the inclusion of a claw-back mechanism into the PPP contract that would apply in case revenues are higher than originally foreseen.

51. A sensitivity analysis is performed on the assumptions for the supply-side (unit cost of a site, and Operational Expenditures estimated as a percentage rate of Capital Expenditures), the demand-side (penetration rate and ARPU), and the discount factor. It shows that the business model is sensitive to the assumptions and could be overly profitable, thus reinforcing the need of a claw-back mechanism.

52. The economic analysis can be performed on a macroeconomic level (estimate the local GDP growth generated by additional mobile and broadband users) or a microeconomic level (such as household consumer surplus or time and cost savings derived from the use of online services). However, the economic analysis cannot be performed by using these methods due to: (i) the coverage expansion areas (white zones) being scattered rather than consisting in one single administrative area; and (ii) a lack of local data for the target areas (such as local GDP and local travel time and cost).



**Table 2.1: Financial cash flows and financial performance indicators of the project**

Income statement and FRR	Unit	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10	Y11	Y12	Y13	Y14	Y15	Y16	Y17	Y18	Y19	Y20
<b>Market assumptions</b>																					
Cumulated number of sites deployed	#	25	125	240	240	240	240	240	240	240	240	240	240	240	240	240	240	240	240	240	240
CAPEX - Cost of deploying a site	k\$	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250
OPEX - Cost of O&M as % of Capex	%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%
Population covered by site	#	3,000	3,060	3,121	3,184	3,247	3,312	3,378	3,446	3,515	3,585	3,657	3,730	3,805	3,881	3,958	4,038	4,118	4,201	4,285	4,370
Mobile penetration (target areas, mid-yr)	% pop.	13%	27%	40%	45%	50%	55%	55%	55%	55%	55%	55%	55%	55%	55%	55%	55%	55%	55%	55%	55%
Blended monthly net ARPU	\$/mo.	\$ 3.0	\$ 3.0	\$ 3.0	\$ 3.0	\$ 3.0	\$ 3.0	\$ 3.0	\$ 3.0	\$ 3.0	\$ 3.0	\$ 3.0	\$ 3.0	\$ 3.0	\$ 3.0	\$ 3.0	\$ 3.0	\$ 3.0	\$ 3.0	\$ 3.0	\$ 3.0
<b>Cost</b>																					
Annual number of sites deployed	#	25	100	115	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Annual CAPEX (initial investment)	m\$	\$ 6.3	\$ 25.0	\$ 28.8	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Cumulated CAPEX	m\$	\$ 6.3	\$ 31.3	\$ 60.0	\$ 60.0	\$ 60.0	\$ 60.0	\$ 60.0	\$ 60.0	\$ 60.0	\$ 60.0	\$ 60.0	\$ 60.0	\$ 60.0	\$ 60.0	\$ 60.0	\$ 60.0	\$ 60.0	\$ 60.0	\$ 60.0	\$ 60.0
Annual OPEX	m\$	\$ 0.9	\$ 4.7	\$ 9.0	\$ 9.0	\$ 9.0	\$ 9.0	\$ 9.0	\$ 9.0	\$ 9.0	\$ 9.0	\$ 9.0	\$ 9.0	\$ 9.0	\$ 9.0	\$ 9.0	\$ 9.0	\$ 9.0	\$ 9.0	\$ 9.0	\$ 9.0
Total annual cost	m\$	\$ 7.2	\$ 29.7	\$ 37.8	\$ 9.0	\$ 9.0	\$ 9.0	\$ 9.0	\$ 9.0	\$ 9.0	\$ 9.0	\$ 9.0	\$ 9.0	\$ 9.0	\$ 9.0	\$ 9.0	\$ 9.0	\$ 9.0	\$ 9.0	\$ 9.0	\$ 9.0
<b>Income</b>																					
Population covered	k pop.	75	383	749	764	779	795	811	827	844	860	878	895	913	931	950	969	988	1,008	1,028	1,049
Subscriber base (mid-yr)	k pop.	10	102	300	344	390	437	446	455	464	473	483	492	502	512	523	533	544	554	566	577
Subscriber income	m\$/yr.	\$ 0.4	\$ 3.7	\$ 10.8	\$ 12.4	\$ 14.0	\$ 15.7	\$ 16.1	\$ 16.4	\$ 16.7	\$ 17.0	\$ 17.4	\$ 17.7	\$ 18.1	\$ 18.4	\$ 18.8	\$ 19.2	\$ 19.6	\$ 20.0	\$ 20.4	\$ 20.8
<b>Financial Rate of Return without public capital (C)</b>																					
CAPEX without public capital	m\$	\$ (6.3)	\$ (25.0)	\$ (28.8)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
OPEX	m\$	\$ (0.9)	\$ (4.7)	\$ (9.0)	\$ (9.0)	\$ (9.0)	\$ (9.0)	\$ (9.0)	\$ (9.0)	\$ (9.0)	\$ (9.0)	\$ (9.0)	\$ (9.0)	\$ (9.0)	\$ (9.0)	\$ (9.0)	\$ (9.0)	\$ (9.0)	\$ (9.0)	\$ (9.0)	\$ (9.0)
Revenues	m\$	\$ 0.4	\$ 3.7	\$ 10.8	\$ 12.4	\$ 14.0	\$ 15.7	\$ 16.1	\$ 16.4	\$ 16.7	\$ 17.0	\$ 17.4	\$ 17.7	\$ 18.1	\$ 18.4	\$ 18.8	\$ 19.2	\$ 19.6	\$ 20.0	\$ 20.4	\$ 20.8
Free cash flow (FCF)	m\$	\$ (6.8)	\$ (26.0)	\$ (27.0)	\$ 3.4	\$ 5.0	\$ 6.7	\$ 7.1	\$ 7.4	\$ 7.7	\$ 8.0	\$ 8.4	\$ 8.7	\$ 9.1	\$ 9.4	\$ 9.8	\$ 10.2	\$ 10.6	\$ 11.0	\$ 11.4	\$ 11.8
Cumulated FCF	m\$	\$ (6.8)	\$ (32.8)	\$ (59.8)	\$ (56.4)	\$ (51.4)	\$ (44.7)	\$ (37.6)	\$ (30.2)	\$ (22.5)	\$ (14.5)	\$ (6.1)	\$ 2.6	\$ 11.7	\$ 21.1	\$ 30.9	\$ 41.1	\$ 51.7	\$ 62.7	\$ 74.0	\$ 85.8
<b>FRR (C)</b>	<b>9%</b>	(20 yrs)		<b>Break Even Point (Payback period in years)</b>						<b>12</b>	<b>NPV 10%</b>						<b>\$ (2.2)</b>				
<b>Financial Rate of Return with Public Capital (K)</b>																					
Public capital	m\$	\$ 1.6	\$ 6.5	\$ 7.4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Private CAPEX after public capital	m\$	\$ (4.6)	\$ (18.5)	\$ (21.3)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
OPEX	m\$	\$ (0.9)	\$ (4.7)	\$ (9.0)	\$ (9.0)	\$ (9.0)	\$ (9.0)	\$ (9.0)	\$ (9.0)	\$ (9.0)	\$ (9.0)	\$ (9.0)	\$ (9.0)	\$ (9.0)	\$ (9.0)	\$ (9.0)	\$ (9.0)	\$ (9.0)	\$ (9.0)	\$ (9.0)	\$ (9.0)
Revenues	m\$	\$ 0.4	\$ 3.7	\$ 10.8	\$ 12.4	\$ 14.0	\$ 15.7	\$ 16.1	\$ 16.4	\$ 16.7	\$ 17.0	\$ 17.4	\$ 17.7	\$ 18.1	\$ 18.4	\$ 18.8	\$ 19.2	\$ 19.6	\$ 20.0	\$ 20.4	\$ 20.8
Free cash flow	m\$	\$ (5.2)	\$ (19.6)	\$ (19.5)	\$ 3.4	\$ 5.0	\$ 6.7	\$ 7.1	\$ 7.4	\$ 7.7	\$ 8.0	\$ 8.4	\$ 8.7	\$ 9.1	\$ 9.4	\$ 9.8	\$ 10.2	\$ 10.6	\$ 11.0	\$ 11.4	\$ 11.8
Cumulated FCF	m\$	\$ (5.2)	\$ (24.8)	\$ (44.3)	\$ (40.9)	\$ (35.9)	\$ (29.2)	\$ (22.1)	\$ (14.7)	\$ (7.0)	\$ 1.0	\$ 9.4	\$ 18.1	\$ 27.2	\$ 36.6	\$ 46.4	\$ 56.6	\$ 67.2	\$ 78.2	\$ 89.5	\$ 101.3
<b>FRR (K)</b>	<b>13%</b>	(20 yrs)		<b>Break Even Point (Payback period in years)</b>						<b>10</b>	<b>NPV 10%</b>						<b>\$ 10.1</b>				



Table 2.2: Sensitivity analysis on supply-side and demand-side assumptions (penetration rate for Y3) for the project without public capital support FRR(C)

SUPPLY SIDE	FRR (C)						Break even period (years)					
	\$ 150	\$ 200	\$ 250	\$ 300	\$ 350	Cost of site (k\$)	\$ 150	\$ 200	\$ 250	\$ 300	\$ 350	Cost of site (k\$)
5%	40%	28%	21%	16%	13%		6	7	8	9	10	
10%	33%	22%	15%	10%	6%		6	8	9	12	14	
<b>15%</b>	27%	16%	<b>9%</b>	4%	-1%		7	9	<b>12</b>	16	21+	
20%	22%	11%	3%	-3%	-10%		8	11	17	21+	21+	
25%	16%	5%	-3%	-14%	-100%		9	15	21+	21+	21+	
OPEX (as % of CAPEX)						OPEX (as % of CAPEX)						

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DEMAND SIDE	FRR (C)						Break even period (years)					
	\$ 2.0	\$ 2.5	\$ 3.0	\$ 3.5	\$ 4.0	Penetration (% pop.)	30%	35%	40%	45%	50%	Penetration (% pop.)
	-3%	-3%	-3%	-3%	-2%		21+	21+	21+	21+	21+	
	4%	4%	4%	4%	5%		17	16	16	16	16	
	9%	9%	<b>9%</b>	10%	10%		13	12	<b>12</b>	12	12	
	13%	14%	14%	15%	15%		10	10	10	10	10	
	17%	18%	19%	19%	20%		9	9	9	8	8	
ARPU (\$)						ARPU (\$)						

Table 2.3: Sensitivity analysis on discount-rate factor for NPV of the project without (NPV(C)) and with (NPV(K)) public capital support

NPV (C) at discount rate (US\$ m)					
	8%	9%	10%	11%	12%
\$	6.2	\$ 1.7	\$ (2.2)	\$ (5.6)	\$ (8.5)

  

NPV (K) at discount rate (US\$ m)					
	8%	9%	10%	11%	12%
\$	19.2	\$ 14.3	\$ 10.1	\$ 6.5	\$ 3.4