



Project Information Document/ Identification/Concept Stage (PID)

Concept Stage | Date Prepared/Updated: 19-Feb-2019 | Report No: PIDC178997



BASIC INFORMATION

A. Basic Project Data

Project ID	Parent Project ID (if any)	Environmental and Social Risk Classification	Project Name
P170130		Low	Support to the Data Science Institute at the Institut National polytechnique Houphouet Boigny
Region	Country	Date PID Prepared	Estimated Date of Approval
AFRICA	Cote d'Ivoire	19-Feb-2019	
Financing Instrument	Borrower(s)	Implementing Agency	
Investment Project Financing	Ministère de l'Enseignement Supérieur et de la Recherche Scientifique	National Polytechnic Institute Houphouet-Boigny (INP-HB), Data Science Institute	

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PROJECT FINANCING DATA (US\$, Millions)

SUMMARY

Total Project Cost	0.40
Total Financing	0.40
Financing Gap	0.00

DETAILS

Non-World Bank Group Financing

Trust Funds	0.40
Trust Fund for Statistical Capacity Building	0.40

B. Introduction and Context

Country Context

In the 20 years following its independence in 1960, Côte d'Ivoire enjoyed political stability and experienced sustained growth thanks to its good agricultural base and natural resources. From 1981 to 1992, following a series of economic shocks, economic growth stagnated. During the period 1993 to 1999, the country experienced heightened social polarization, resulting from the marginalization of certain socio-cultural



groups and the competition for increasingly scarce national resources, particularly agricultural land. During the 1999-2011 period, Côte d'Ivoire had among the lowest growth rates in Africa, averaging less than 2 percent. The country entered a period of political unrest following the 2010 Presidential Elections. The refusal of some groups to recognize the elections led to a violent post-election crisis that lasted five months.

Since the presidential inauguration of Alassane Ouattara in May 2011, the Government has paid extra attention to social cohesion and reconciliation. Côte d'Ivoire's recovery has since then been robust. The economy grew at an average of 9.7 percent from 2012 to 2013 before moderating slightly to 7.8 percent in 2017. The poverty incidence in Côte d'Ivoire slightly diminished from 48.9 percent in 2008 to 46.3 percent in 2015 (findings of the 2015 Living Standards monitoring Survey LSMS – ENV2015). The overall security situation has improved dramatically and is now stable. The country has made an impressive transition from crisis to relative stability, and from fragility to aspiring emerging economy status.

The Government's current priorities are to modernize the economy and eliminate long-standing disparities aggravated by a decade of multifaceted crisis. The Government expects to accelerate implementation of measures designed to improve social cohesion, develop human capital, build a resilient economy, support territorial development and promote regional synergies towards integration.

Sectoral and Institutional Context

The volume and diversity of socioeconomic data is growing at a fast pace, which gives data analytics a critical importance to the advancement of economies in Africa, as it does in the rest of the world. In developing its current and future economic and social plans, the Government of Côte d'Ivoire has been informed by considerable analytical work. The development of the private sector also relies increasingly on good data and analytics. But the local and regional expertise needed to exploit these data is still largely insufficient.

The Government – and to some extent the private sector - can count on cohorts of statisticians and demographers trained at the Ecole Nationale Supérieure de Statistique et d'Economie Appliquée (ENSEA) in Abidjan and Institut de Formation et de Recherche Démographiques (IFORD) in Cameroon. But this supply does not fully meet the expanding and diversifying demand. For that reason, the INP-HB established a Data Science Institute in 2017, in collaboration with the ENSEA and external partners (the Polytechnic School of Paris as an academic partner and advisor, and the Orange telecommunications company as a private sponsor). The Institute delivers a master's in data science designed to meet the needs of private and public organizations who need experts in data analytics and big data at the master level. The master's in data science was designed for (i) statisticians, mathematicians, econometricians, computer scientists, or equivalent having completed a bachelor's degree, and (ii) for professionals from the private or public sector who need a specialized training in big data and data analytics. The INP-HB Data Science Institute provides these students and professionals with a possibility to acquire the required skills and qualifications for being effective data analysts in multiple industries. Several institutions in Côte d'Ivoire and elsewhere in Africa have been teaching statistics for a long time, but the INP-HB specialized training program in data science is needed to fill a gap in the data science sector. No such program existed until then in francophone Africa.



Relationship to CPF

The CPF reflects two pathways for Côte d'Ivoire identified in the Systematic Country Diagnostic to achieve the goals of eliminating extreme poverty and boosting shared prosperity. The first pathway entails creation of better quality jobs through sustainable private sector-led growth in agriculture, agribusiness and the non-agribusiness sectors. The second pathway to attain inclusive growth is to build human capital, which entails improving the efficiency and quality of spending in education, health and social protection and improving access and equity to basic services, while strengthening the quality of labor needed for private sector growth.

Education and market-responsive skills are critical for the economic transformation sought by the Government, and for ensuring that benefits from growth reach the poorest and are equitably shared. Côte d'Ivoire's education system, including technical and vocational training, has suffered from weak governance, lack of a clearly defined mission, and poor linkages with private sector stakeholders and labor market needs.

The WBG plans to support the Government in improving the relevance, quality and performance of the education and vocational training systems. This will ensure better insertion and integration of youth into the labor market and will be pursued through targeted support to educational services at primary, secondary and higher levels. For higher education, the WBG will support the Government to improve employability of tertiary education graduates by focusing on strengthened and improved (i) governance of the institutions and participation of the private sector, (ii) quality and relevance with a better alignment with market needs and (iii) efficiency and equity. Furthermore, to support Côte d'Ivoire's attainment of its economic transformation goals, the WBG will support the strengthening of science and technology skills and applied research capacities to accelerate absorption and increase productivity. With rising interest from African governments in higher education policy reform, a regional approach offers a cost-effective strategy to build responsiveness and excellence in Côte d'Ivoire's higher education in priority areas. Through the support under this CPF, Côte d'Ivoire will participate in the regional Centers of Excellence program, thus helping to make its human natural capital more viable for economic activities.

C. Project Development Objective(s)

Proposed Development Objective(s)

The proposed development objective is to increase the availability of highly-skilled data scientists in Côte d'Ivoire and in the region, in response to a fast-growing demand from the public and the private sectors. This will be done in a sustainable manner by supporting the operation and expansion of the Data Science Institute at the Institut National Polytechnique Felix Houphouet Boigny (INP-HB) of Yamoussoukro.

Key Results

The key results of the project will be:



- A data science master’s curriculum that meets the requirements of a “Center of Excellence” as defined by the Africa Centers of Excellence for Development Impact (ACE), a regional program for West and Central Africa. This program will build new capacity in the region in the analysis and management of currently under-exploited data of multiple types and sources.
- High-quality, openly available and practical training materials with an INP-HB branding. These training materials will comprise technical documents, pre-packaged reproducible programs and scripts written in R / Python / SQL, and documented practical assignments to students. They will focus on thematic priorities identified by the Data Science Institute and its partners, and that will (i) guarantee the relevance of the training to solving real issues, and (ii) allow students to exploit data from multiple sources and types, including surveys and censuses, administrative and transactional data, time series data, geospatial data, and others. For the project period, the thematic area will be the problematic of small producers of cocoa and coffee in Côte d’Ivoire.
- Two cohorts of data scientists will graduate during the period of the project (40 students at master level). This number will increase in subsequent years.

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D. Preliminary Description

Activities/Components

The project has seven components:

1. **Curriculum assessment.** The current curriculum was developed by the Data Science Institute in collaboration with the *Ecole Polytechnique de Paris*. The program organizes the training in four semesters. The first three consist of classroom training in Yamoussoukro. The fourth one consists of an internship in a public or private organization. When the TFSCB project starts in early 2019, the first cohort of students will have completed the first three semesters of the program. This will be a good time to proceed to an evaluation of the program (quality and relevance of the curriculum, satisfaction of students, quality of the delivery of training and training materials). The evaluation will include a review of similar programs delivered in other regions of the world.
2. **Development of branded training materials.** Data scientists must master numerous techniques and build expertise and experience in using data of multiple kinds. Their training must be highly practical, “solutions oriented”, to be relevant. To ensure such relevance, the Data Science Institute will identify themes that the training program will focus on (the themes will change over time). The theme identified for the project period is the problematic of small cocoa and coffee producers in Côte d’Ivoire. This sector is critical in the country’s economy but remains vulnerable. Understanding the problems faced by this group of population will require analysis of data from household surveys, administrative data, time series (price) data, and geo-spatial data (climate, infrastructure, etc.) The training materials will be produced to cover the core skills to be acquired by the students, but also to familiarize them with the integrated use of actual, diverse – and imperfect – data of different types and from multiple sources.



3. **Specialized training for students.** The project will provide funding for inviting professors or experts from abroad to facilitate highly-specialized training sessions. This will cover topics for which no specific expertise exists (yet) in Côte d’Ivoire. All external facilitators will be seconded by local trainers.
4. **Specialized training for trainers.** In addition to training trainers by pairing them with external invited facilitators, the project will support some training of trainers abroad.
5. **Promoting self-learning.** The Data Science Institute’s curriculum includes classes in Python, R, and SQL programming. A high level of proficiency in these tools is essential to data scientists. Students of the first cohort have demonstrated a good level of proficiency in the use of these tools, and a strong motivation to further develop this expertise. To allow students and the staff of the Data Science Institute to acquire a stronger expertise in the use of these tools, the program will finance, for a pilot period of two years, a subscription to a self-learning platform (such as the DataCamp, or equivalent).
6. **Data library.** The data Science Institute does not have the mandate to become an academic data center. However, the data science training program will benefit from having a small data library where relevant data will be made easily accessible to students and researchers. A (modest) data library will be established for that purpose using tools and practice developed by the World Bank’s Microdata Library team.
7. **Equipment and library** – Yamoussoukro is a relatively isolated place for data scientists. To facilitate exchanges with experts and facilitators outside the INP-HB, the project will contribute to the reinforcement of the video conferencing equipment, and provide some other computer as needed for the data library. The project will also finance the purchase of books for the Institute’s Library.

Environmental and Social Standards Relevance

E. Relevant Standards

ESS Standards		Relevance
ESS 1	Assessment and Management of Environmental and Social Risks and Impacts	Relevant
ESS 10	Stakeholder Engagement and Information Disclosure	Relevant
ESS 2	Labor and Working Conditions	Not Currently Relevant
ESS 3	Resource Efficiency and Pollution Prevention and Management	Not Currently Relevant
ESS 4	Community Health and Safety	Not Currently Relevant
ESS 5	Land Acquisition, Restrictions on Land Use and Involuntary Resettlement	Not Currently Relevant
ESS 6	Biodiversity Conservation and Sustainable Management of Living Natural Resources	Not Currently Relevant
ESS 7	Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities	Not Currently Relevant



ESS 8	Cultural Heritage	Not Currently Relevant
ESS 9	Financial Intermediaries	Not Currently Relevant

Legal Operational Policies

Safeguard Policies	Triggered	Explanation (Optional)
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
 The project is considered low risk as it focuses mainly on developing training materials and providing training in data management.

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