ANNUAL REPORT 2018

BOAD

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MESSAGE FROM THE PRESIDENT

The West African Development Bank (BOAD) celebrated its 45th anniversary in 2018. To mark the occasion, it held a forum in Lomé on 14 and 15 November on the theme "Solar energy in the WAEMU economies: overview of the situation, challenges and policies". The event was very revealing; the lessons learned and recommendations made will be put to good use through the policies and actions that the Bank's member countries, with support from community institutions, agencies and partners, will be keen to promote.

The opening ceremony of the forum was chaired by the current President of the WAMU Conference of Heads of State and Government, His Excellency Mr. Alassane Ouattara, President of the Republic of Côte d'Ivoire. It was also attended by His Excellency Mr. Komi Sélom Klassou, Prime Minister of Togo, representing his country's Head of State. I would like, in this regard, to reiterate my sincere gratitude to the Conference of Heads of State and Government for the strong and renewed support for BOAD on this occasion.

The Bank's activities in 2018 took place in a conducive economic and social environment. The economic dynamism that began in 2012 in the WAEMU region continued during the year, with a growth rate of 6.6 percent. This performance was driven both by the service sector (banking, trade) and by the implementation of national or regional development programmes, particularly in agricultural investment and the modernization of keyinfrastructure.

It is against this background that the Bank continued to support the economies by providing financing totaling XOF426.8 billion. The loans and other assistance thus granted will foster the implementation of investment projects in various sectors, including transport facilities, agriculture, energy, industry and promotion of SMEs/SMIs. Financing for the year brought the Bank's total net commitments to XOF5,311 billion as of 31 December 2018, covering a total of 1,149 operations, with a cumulative disbursement rate of 62.3%.

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In terms of resource mobilization, the investment grade ratings, confirmed by Moody's and Fitch, at the end of the 2018 annual review, gives the Bank access, under good conditions, to the international financial market. Nevertheless, the Bank continues to maintain fruitful cooperative relationships with its development partners. In this regard, two bilateral agreements were been signed, worth a total of US$45 million (XOF 25.4 billion). The Bank also continued to mobilize grants from international environmental funds (GEF, AF and GCF), which were used to develop and finance low-carbon and climate change projects.

In terms of internal governance and risk management, the year was marked by the adoption of IFRS 9 and a new benchmarking of the internal rating models for counterparties. Work is also underway on developing the "Risk Appetite Framework", the "economic capital" and a modern financial management system.

Finally, I would like to reiterate my deepest gratitude to the high authorities of WAEMU for their continued support to BOAD. I would also like to thank our partners very much for their commitment and support. Finally, I would like to congratulate the Bank's staff on the results achieved and encourage them to continue their relentless efforts in the service of the development of the member countries.

CHRISTIAN ADOVELANDE
President, BOAD

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LIST OF ACRONYMS AND ABREVIATIONS

AFD : Agence Française de Développement (French Development Agency)

AIBD : Aéroport International Blaise Diagne

AfDB : African Development Bank

BADEA : Arab Bank for Economic Development in Africa

BCEAO : Central Bank of West African States

EIB : European Investment Bank

IDB : Islamic Development Bank

EBID : ECOWAS Bank for Investment and Development

BOAD : West African Development Bank

BTP : Construction, Public works

UNFCCC : United Nations Framework Convention on Climate Change

ECOWAS : Economic Community of West African States

COP : Conference of Parties

CPCS : Canadian Pacific Consulting Services

RCC : Regional Collaboration Centre

CFAF/XOF : Franc de la Communauté Financière Africaine (Franc of the African Financial Community)

FDC : Development and Cohesion Fund

FDE : Energy Development Fund

EDF : European Development Fund

GEF : Global Environment Facility

IMF : International Monetary Fund

IAS/IFRS : International Accounting Standards / International Financial Reporting Standard

ICOR : Incremental Capital Output Ratio

HDI : Human Development Index

IPP : Independent Power Producer

IRED : Regional Initiative for Sustainable Energy

IRENA : International Renewable Energy Agency

KfW : Kreditanstalt für Wiederaufbau (German State-owned development bank)

XOF'B : Billions of XOF

OECD : Organization for Economic Co-operation and Development

OMVS : Organization for the Development of the Senegal River

PACITR : Community Action Programme for Road Infrastructure and Transport

CDP : ECOWAS Community Development Programme

REP : Regional Economic Programme

RIP : Regional Indicative Programme

LDC : Least Developed Countries

SME-SMI : Small and M edium Enterprises - Small and Medium Industries

PPIAF : Public-Private Infrastructure Advisory Facility

PPP : Private-Public Partnership

TFP : Technical and financial partner

SAP : Systems, Applications and Products for data processing

EU : European Union

WAEMU : West African Economic and Monetary Union

URDPPP : Regional Public-private Partnership Project Development Unit

WAPP : West African Power Pool

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SYNOPSIS ON BOAD AND LOANS GRANTED IN 2018

Date of establishment	14 november 1973 Commencement of operations in 1976
Shareholders	- WAEMU member countries: Benin, Burkina, Côte d'Ivoire, Guinea Bissau, Mali, Niger, Senegal, Togo - BCEAO (Central bank) - Non-regional shareholders: Germany, AfDB, EIB, Belgium, France, India, People's Republic of China, Kingdom of Morocco
Mission	Promoting the balanced development of member countries and contributing towards the economic integration of West Africa
Vision	BOAD: A solid development bank for the economic integration and transformation of West Africa
Authorized capital as at 31 December 2018	XOF1,155 billion
Subscribed capital as at 31/12/2018	XOF1,103.6 billion
Total balance sheet as at 31/12/2018	XOF2,568.2 billion
Operational staff of the Bank as at 31/12/2018	295 employees
Loans granted in 2018	**43 operations involving a total of XOF426.8 billion in the form of:**
	Direct loans : XOF393.3 billion, representing 92.1%
	Indirect loans : XOF20.0 billion, representing 4.7%
	Equity investment : XOF13.5 billion, representing 3.2%
	Breakdown of loans per sector:
	Non-commercial sector : XOF246.7 billion, representing 57.8%
	Public commercial sector : XOF70.6 billion, representing 16.5%
	Private sector : XOF109.5 billion, representing 25.7%
	Breakdown of loans per category
	National projects : XOF388.1 billion, representing 90.9%
	Regional projects : XOF38.7 billion, representing 9.1%
Cumulative approvals, 1976 - 2018	XOF5, 311 billion (€ 8.1 billion) covering 1,149 operations.

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2 January
Adoption of IFRS 9 and calibration of internal rating models

9 January
Holding of a regional workshop on the promotion of climate-smart agriculture

21 March
108th Board Meeting

27 March and 4 April
Maintaining the Bank's investment grade ratings

10-11 April
Holding of a workshop to launch the preparation of the regional project to support sustainable waste management and reduce emissions of persistent organic pollutants (POPs) and mercury in WAEMU countries.

7 June
Participation in an EU-organized high-level conference in Brussels on job creation, growth and competitiveness in West Africa

27 June
109th Board Meeting

27 June
Approval of the agro-food processing project in Togo (Kara Region)

5-10 July
Participation in the 7th meeting of the High Level Committee on Food and Nutritional Security

27 August - 2 September
Launch of 2 BOAD competitions: the first on "Footprints of BOAD", and the second for start-ups operating in renewable energies in the WAEMU region

18-19 September
Workshop on the restitution and dissemination of the study on capacity building for PPP development in WAEMU

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19 September
110th Board Meeting

2-3 October
BOAD Open Days in Dakar (Senegal)

20 September
Official launching of the World Bank/WAEMU Project to promote affordable housing finance in WAEMU

13 November
Inauguration of BOAD residential area

20 November
Validation workshop of the evaluation report of the portfolio of non-market projects financed by BOAD in Togo from 2000 to 2015

14-15 November
Commemoration of BOAD's 45th anniversary and Forum on solar energy in WAEMU economies

5-6 December
Maintenance of ISO 27001 certification of the Information Security Management System

17 December
Participation in the meeting of the Senegal Consultative Group on the financing of Phase II of the Emerging Senegal Plan (PSE)

19 December
111th Board Meeting

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2 January

Adoption of IFRS 9 and calibration of internal rating models

In order to comply with international standards, the Bank adopted the IFRS 9 accounting standard starting in January 2018. This approach prompted a review of its method for depreciating financial instruments. The impairment of these instruments is now based on the probabilities of default associated with each rated counterparty.

The Bank also calibrated its internal rating models, changing from three to six rating models and establishing an internal masterscale based on that of the Global Emerging Markets Consortium (GEMS). This is a repository shared by several multilateral or European development banks.

9 January

Holding of a regional workshop on the promotion of climate-smart agriculture

The Bank held a regional workshop at its headquarters in Lomé, Togo, to validate the full proposal for the project to promote climate-smart agriculture in West Africa.

This project was the outcome of collaboration between the Bank and other subregional institutions or bodies such as the ECOWAS Commission and the WAEMU Commission.

The programme will be deployed in five countries (Benin, Burkina Faso, Ghana, Niger, Togo) and will foster inclusive growth, food security and the mobilization of concessional or grant resources from the financial mechanisms under the United Nations Framework Convention on Climate Change (UNFCCC).

27 June 2018

108th Board Meeting

The Board of Directors of the West African Development Bank (BOAD) met at Dakar in Senegal and approved new operations totaling XOF190 billion and an equity investment of XOF5 billion.

27 March and 4 April

Maintaining the Bank's investment grade ratings

The Bank hosted the annual review missions of two international rating agencies, Moody's and Fitch. At the end of their review, the two agencies confirmed the ratings assigned since 2015, namely Baa1 stable (for Moody's) and BBB stable (for Fitch).

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10 -11 April

Holding of a workshop to launch the preparation of the regional project to support sustainable waste management and reduce emissions of persistent organic pollutants (POPs) and mercury in WAEMU countries.

The workshop was held at the Bank headquarters in Lomé to launch the preparation of the project.

This was part of the procedures for project formulation and submission to the Global Environment Facility. The project is aimed at supporting the promotion of a circular economy in the area of solid waste management (biomedical, electrical and electronic waste, etc.) and the reduction of greenhouse gas emissions from the misuse of such waste in the target countries.

7 June

Participation in an EU-organized high-level conference in Brussels on job creation, growth and competitiveness in West Africa

The President of BOAD participated in the high-level conference on job creation, growth and competitiveness in West Africa on the sidelines of the 5th EU-West Africa RIP Strategic Steering Committee meeting, held in Brussels. Organized jointly by the European Union Commission and the ECOWAS and WAEMU Commissions, this conference brought together many representatives of the private sector, development banks, as well as government authorities from West African countries. The event was held to discuss ways to improve business climate in support of the private sector, with a view to fostering the emergence of new business and employment opportunities for young people.

27 June

109th Board Meeting

The Board of Directors of the West African Development Bank (BOAD) held its 109th ordinary meeting at its headquarters in Lomé (Togo). At this meeting, the Board approved eleven (11) new operations including seven (7) medium and long-term loans totaling XOF90.8 billion, a refinancing facility involving XOF10 billion, a short-term loan in an amount of XOF5 billion and equity investments involving XOF6 billion.

27 June

Approval of the agro-food processing project in Togo (Kara Region)

As part of a program to develop 10 agropoles in Togo, the Bank co-financed the implementation of the first phase of the agro-food processing project in Togo.

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The project is aimed at creating, within a limited and developed area, as many favorable economic, legal and logistical conditions as possible for private investors to take an interest in and establish themselves in the agricultural sector.

It involves the development of a 46 ha agropark, the construction of dams, the development of planned farming areas, lowlands, tracks, electrification of villages and the establishment of agricultural processing centres, among other things.

5-10 July

Participation in the 7th meeting of the High Level Committee on Food and Nutritional Security

Chaired by the Head of State of Niger, H.E. Mr. Issoufou Mahamadou, the High-Level Committee on Food and Nutrition Security held its 7th meeting on July 10 in Niamey. The main objective of the meeting was to renew dialogue on appropriate ways to promote food security and sustainable processing of agriculture in the WAEMU region.

27 August - 2 September

Launch of 2 BOAD competitions: the first on "Footprints of BOAD", and the second for start-ups operating in renewable energies in the WAEMU region

BOAD organized both competitions as part of the commemoration of its 45th anniversary. The first resulted in the selection of photos of BOAD-funded projects in its member countries. The second involved the innovative initiatives and projects promoted by start-ups in renewable energy, particularly solar energy. This second competition aimed to promote the skills of local developers and promote green jobs.

The top prize awarded to a Malian, for a photo of the Segou interchange in Mali.

Two prizes were awarded for the start-up competition, given the respective strengths of the two best entries: the first to a Togolese, promoter of a KYA-SoP electro-solar power plant project, and the second to a Senegalese for a "smart solar water pump project, with a digital training and marketing platform".

The two award-winning start-ups will also receive support from a Danish equipment manufacturer over a period of six months, as well as a week training at the Entrepreneurship Centre of the Danish Technical University.

18-19 September

Workshop on the restitution and dissemination of the study on capacity building for PPP development in WAEMU

The Regional Public-Private Partnership Project Development Unit (URDPPP), in partnership with the WAEMU Commission and PPIAF, held a workshop on 18 and 19 September at BOAD headquarters in Lomé to present and disseminate the World Bank-funded study on this topic.

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The workshop was attended by representatives of the various PPP Units or Directorates in the WAEMU member countries, other representatives of member countries, the World Bank, PPIAF, AfDB, EBID, AFD and OMVS.

The study was to: i) strengthen the regional institutional framework for the implementation of PPPs in the WAEMU region, ii) support the harmonization of PPP strategies within the WAEMU region, iii) and facilitate greater frequency and implementation of PPP projects at the regional or even national level.

19 September

110th Board Meeting

The Board of Directors of the West African Development Bank (BOAD) held its 110th ordinary meeting in Abidjan (Côte d'Ivoire). At this meeting, Board members approved nine (9) new operations including six (6) medium and long-term loan proposals totaling XOF74 billion, two (2) short-term loans amounting to XOF16 billion and one equity investment of XOF2.5 billion.

20 September

Official launching of the World Bank/WAEMU Project to promote affordable housing finance in WAEMU

The President of the WAMU Council of Ministers, Mr. R. Wadagni, Minister of Economy and Finance of Benin, officially launched the project. The event, which was held in Abidjan, was also attended by WAMU Ministers of Finance or Housing, Heads of WAEMU institutions, and representatives of TFPs, including the World Bank.

The project is intended to broaden access to long-term housing finance in the WAEMU region. The project implementation will involve the granting of loans and provision of technical assistance (see BOAD 2017 Annual Report).

2-3 October

BOAD Open Days in Dakar (Senegal)

The Bank organized Open Days in Dakar, Senegal.

The purpose of the event was to raise awareness of the Bank's products and services, promote its image, and strengthen the close relationship with the target audience in that Member country.

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The meeting featured two main sessions: i) an information workshop for journalists and local authorities on BAOD's strategy and commitment to climate finance; and ii) an open forum with private sector operators.

The event brought together more than 100 participants representing public sector, national and international financial institutions, public and private organizations, companies and media professionals.

13 November

Inauguration of BOAD residential area

The President of BOAD and the Togolese Minister of Economy and Finance inaugurated the BOAD Housing Project in Lomé, which was built by the Bank for its staff pursuant to a decision by its Board of Directors.

The launch of this major housing project is part of the Bank's policy of incentivizing of encouraging its staff, as well as part of its social actions aimed at providing a safe living environment for its employees. It is also part of a move to support the host country's national housing and urban development policy.

The project located at Baguida, 14 km from the city centre, sits on a 7.62 ha site owned by the Bank. The project has: i) 134 fully secured and connected villas, ii) 3.50 km of roads and various networks (asphalt roads, covered drains, electricity and public lighting, drinking water supply, connection to optical fibre), iv) sports and social infrastructure (leisure centre) on a 8,000 m² site provided by the Togolese Government, and iv) 1.26 km of adjacent asphalted roads.

14-15 November

Commemoration of BOAD's 45th anniversary and Forum on solar energy in WAEMU economies

The opening ceremony of this event was attended by His Excellency Mr. Alassane Ouattara, President of the Republic of Côte d'Ivoire, current President of the WAEMU Conference of Heads of State and Government, as well as by Mr. Komi Sélom Klassou, Prime Minister of Togo, representing the Togolese President.

The forum featured three panel discussions on: i) boosting and developing the solar economy in the WAEMU region, ii) climate finance and resource mobilization, and iii) cross-references based on experience.

Conclusions from this forum are reflected in the thematic section of this annual report.

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20 November

Validation workshop of the evaluation report of the portfolio of non-market projects financed by BOAD in Togo from 2000 to 2015

The workshop, attended by some forty (40) participants, was held at the Bank headquarters to stimulate discussion on the main conclusions and recommendations of the evaluation report. It also provided a platform for participants to share their experiences on the issues raised by the evaluation, and to ultimately agree on the conditions for validating the report.

At the end of the discussions, the participants commended the initiative of such an evaluation and validated the report submitted.

5-6 December

Maintenance of ISO 27001 certification of the Information Security Management System

The Bank successfully underwent the second supervision audit of its information security management system, conducted by the AFNOR Certification Body. This enabled it to maintain its ISO 27001 Version 2013 Certification.

17 December

Participation in the meeting of the Senegal Consultative Group on the financing of Phase II of the Emerging Senegal Plan (PSE)

The Bank participated in the meeting of the Advisory Group for the financing of Phase II of the ESP on 17 December in Paris. The event, which was held at the World Bank Regional Office, was organized by the Government of Senegal.

The meeting, which brought together Senegal's development partners, as well as other public and private investors, to finance the second phase of the programme, was a great success.

19 December

111th Board Meeting

During this meeting held in Dakar (Senegal), 3 projects involving XOF15.21 billion were approved, thereby bringing BOAD's cumulative commitments (all operations combined) to XOF5,308.71 billion, since the commencement of its operational activities.

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ECONOMIC AND SOCIAL ENVIRONMENT

Farmer at Molodo, Mali

World economic growth was estimated at 3.7% in 2018

Growth in the WAEMU region is expected to reach 6.6% in 2018

The African Union, through its agenda 2063, hopes for "a prosperous Africa based on inclusive growth and sustainable development".

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1 INTERNATIONAL ECONOMIC ENVIRONMENT

Growth in sub-Saharan Africa was expected to reach 2.9% in 2018, same as in 2017, partly driven by improved growth prospects in Nigeria following a recovery in oil production and prices.

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Global economic growth was estimated at 3.7% in 2018, down from 3.8% in 2017. This slight decline reflected a slowdown in activity, particularly in Germany, as a result of the introduction of new emission standards in the automobile industry, and in Italy, where sovereign and financial risks weighed heavily on domestic demand. Tariff increases in the United States and China in 2018 also had negative impacts on the global economy.

Growth in advanced countries reached 2.3% in 2018 compared with 2.4% in 2017, in line with the decline in activity in the euro zone, which was 2.4% in 2017 and 1.8% in 2018. The United States economy, on the other hand, grew by 2.9% in 2018 compared to 2.2% in 2017.

Emerging and developing countries also recorded a slight decline in their growth, which stood at 4.6% in 2018 compared to 4.7% in 2017, in spite of the accelerated growth recorded in India (7.3% in 2018 compared to 6.7% in 2017). China's growth slowed from 6.9% in 2017 to 6.6% in 2018, mainly due to tighter financial sector regulations, weaker external demand and trade tensions with the United States.

Growth in sub-Saharan Africa was estimated at 2.9% in 2018, as in 2017. This situation was partly due to an improvement in Nigeria's growth prospects (1.9% in 2018 compared to 0.8% in 2017), under the positive influence of a recovery in oil production and prices. In South Africa, however, growth was estimated at 0.8% in 2018 compared to 1.3% in 2017, in line with the climate of uncertainty in the run-up to the 2019 general elections.

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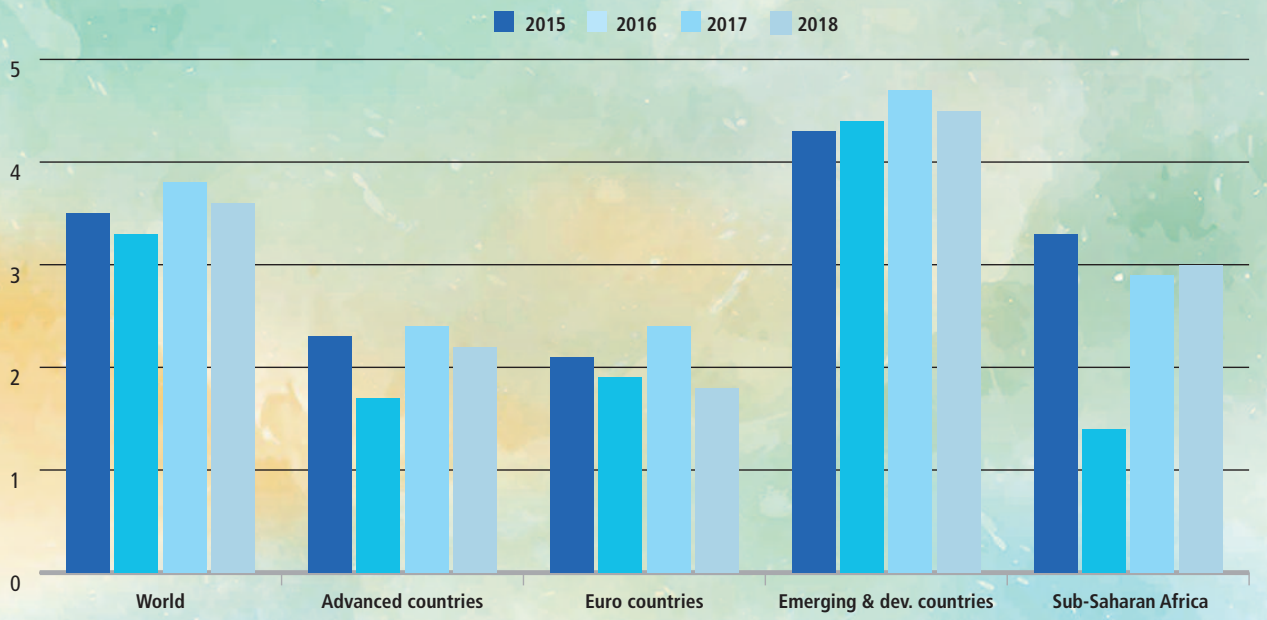
Graph 1
Evolution of economic activity between 2015 and 2018



Sources: WEO (IMF, January 2019)

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2 ECONOMIC ENVIRONMENT IN WAEMU

"Since 2012, the WAEMU region has achieved significant economic performance, in a context of controlled price trends, with an average annual growth rate of 6.3%, significantly higher than the rest of sub-Saharan Africa".

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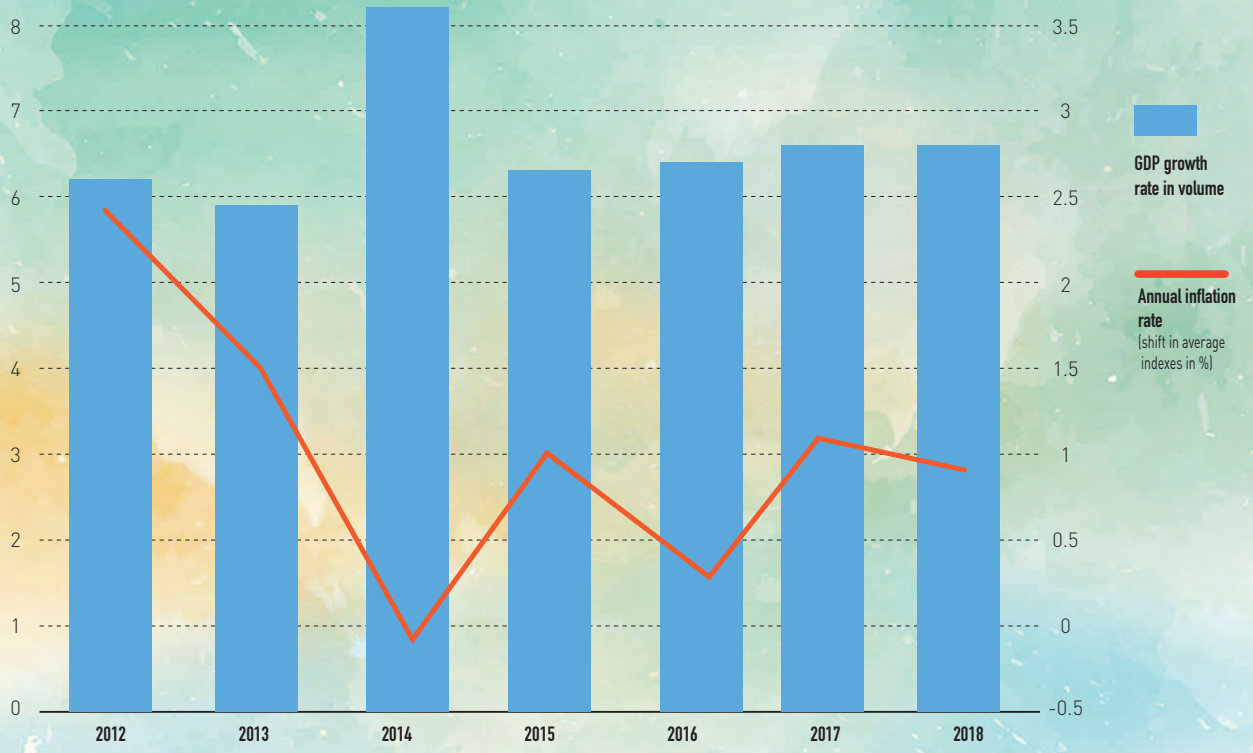
2.1. ECONOMIC SITUATION

Since 2012, economies in the WAEMU region have performed siginificantly, with an average annual growth rate of 6.3%, significantly higher than the rest of sub-Saharan Africa, which stands at 3.3%. These performances are part of a context of price control (see graph below).

Graph 2

Evolution of growth and inflation and the WAEMU region



Source: WAEMU Commission, Multilateral Surveillance Report, Dec. 2018

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Growth in the area in 2018 was expected to reach 6.6%, as it was in 2017. All Member States were expected to record a higher growth rate, driven by improved performance in all sectors.

The strong performance recorded by the primary sector was driven by favorable climatic conditions and continued investment in national agricultural development programmes in the Member Countries. The secondary sector was boosted by strong performance in construction and public Works, coupled with continued construction of basic infrastructure and improved results in the extractive industries. Performance in the service sector was driven largely by trade, transport and telecommunications.

Growth rates by country in 2018 are as follows: Benin (6.8%), Burkina (6.7%), Côte d'Ivoire (7.7%), Guinea-Bissau (3.8%), Mali (5.1%), Niger (5.2%), Senegal (6.8%) and Togo (4.8%).

Prices increased moderately in 2018, reflecting changes in international food prices, increases in the price of crude oil and the prospects for food production in the region.

The growth outlook for 2019 is 7.0%, slightly above the 6.6% recorded in 2018.

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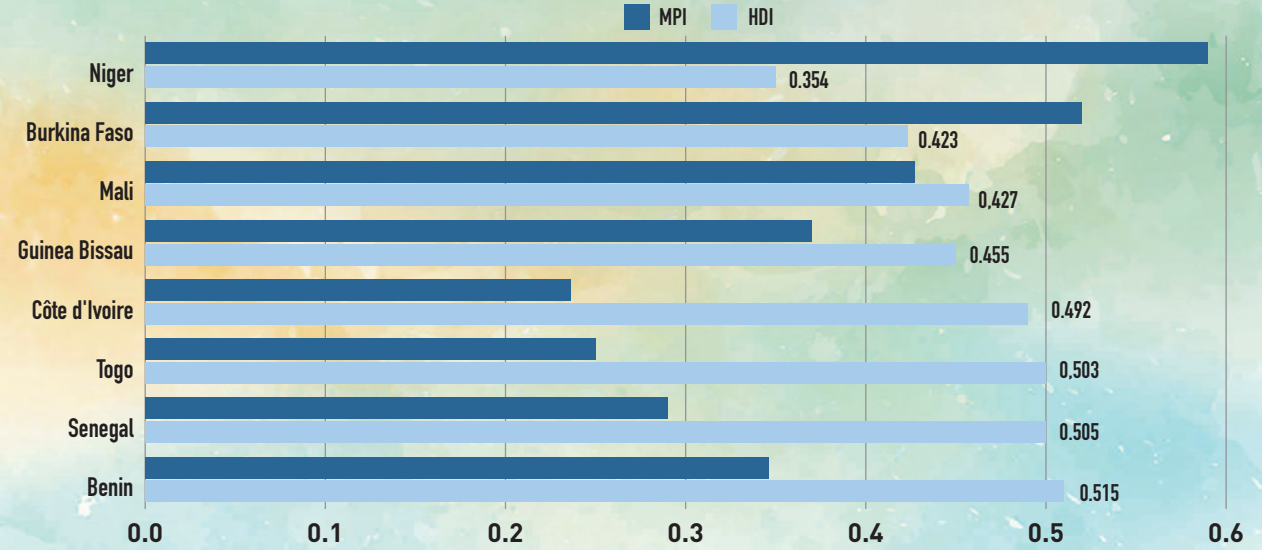
2.2. HUMAN DEVELOPMENT

In spite of the sustained growth recorded in the last seven years, averaging 6.3%, the WAEMU region, like many other African countries, is faced with persistent poverty, which hinders the sustainable development of the continent's economy.

The UNDP Human Development Report 2018 indicates that among the main factors explaining the above-mentioned stagnation are the lack of decent jobs, particularly for young people, gender inequalities, population growth, limited access to basic social services (education, health, drinking water and sanitation, etc.) and means of production. Since 1990, member countries have been ranked among countries with low human development; in 2017, with a human development index[1] (HDI) ranging from 0.354 in Niger to 0.515 in Benin (see graph below), below the sub-Saharan average (0.537). Countries with a higher HDI also have lower levels of multidimensional poverty, as shown in Figure 3 (Benin, Senegal and Togo).

Graph 3

HDI and Multidimensional poverty index[2] (MPI) in WAEMU



Source: UNDP Human Development Report 2018.

[1] The Human Development Index is a composite index, which takes into account three fundamental dimensions of human development: life expectancy at birth; access to education; and gross national income per capital.

[2] The Global Multidimensional Poverty Index (MPI) identifies multiple deprivations at the household level in health, education and living standards.

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Conscious of the challenges facing African countries, the African Union, through its Agenda 2063 adapted in 2015, hopes for "a Prosperous Africa based on Inclusive Growth and Sustainable Development". Thus, in 2018, it produced, in collaboration with the OECD, a report on the dynamics of development in Africa, with a view to stimulating policy dialogue and deepening reflection.

The report on the theme "Growth, employment and inequality" highlights the persistent inequalities and the shortage of quality jobs on the continent, despite solid growth. This report also proposes new development strategies.

The report indicates that growth in the WAEMU region is supported by private consumption and public investment. However, private consumption remains heavily dependent on imports as the local supply of goods and services is very limited, without industrialization and processing.

The labor market is dominated by the informal sector, characterized by largely unstable and low-productivity jobs. The agricultural sector remains the largest employer in the Union, followed by the service sector.

A vast majority of the youth are unemployed. This phenomenon is explained not only by structural and socio-political factors,[3] but also by a mismatch between skills and market needs, as well as by a low level of training.

In terms of inequality, the average gap between the HDI (0.46) and the HDI (0.30) reflects a loss in human development caused by inequality. However, income inequalities have declined slightly in the WAEMU area, with the GINI index[4] declining on average from 0.43 over the period 1990-1995 to 0.41 between 2010 and 2015. Gender inequalities persist, particularly in access to economic and social opportunities, notwithstanding policies implemented to address them.

As a means of ensuring sustained, sustainable and inclusive growth in the WAEMU region, the following development strategies are proposed for implementation in three main areas :

- **Developing rural-urban links** to create jobs by stimulating local economies through:

i) The formulation and implementation of industrial strategies that promote activities that link rural agricultural producers, industrial producers and urban consumers, particularly as part of agro-food value chains,

ii) Strengthening infrastructure and national and transboundary corridors,

iii) Securing land tenure and equitable access to land to reduce the risk of conflict and slow the rural drift of young people,

iv) Good policies for redistributing wealth.

- **Upgrading local supply capacity in consumer products and services** through:

i) A grouping of companies,

ii) Microfinance, training and innovation support programmes to help microenterprises improve their productivity and income. Education policies should support investment in human capital and integrate entrepreneurial training into formal education, in order to foster entrepreneurship among young people. The local economy could also improve, by changing the structure and destination of exports (dominated by raw materials), as well as imports (dominated by final consumption goods).

- **Improving institutional capacity, regulatory framework for business and taxation to attract investment:** Governments should continue to create a conducive environment for business, investment and capital accumulation (fight against corruption, fraud, tax evasion and embezzlement of public funds).

[3] These include factors such as: obstacles to the creation and development of businesses, distortions in the labour market, political instability, etc.

[4] Index that makes it possible to assess inequalities in the distribution of a country's wealth. It is between zero (situation of perfect equality) and one (situation of perfect inequality).

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2 ACHIEVEMENTS IN 2018

Pharmivoire production unit (Côte d'Ivoire)

XOF426.8 billion in financing was provided by the Bank in 2018.

XOF252.3 billion was invested in strengthening basic infrastructure.

30% of cumulative commitments at the end of 2018 were made to regional economic integration projects

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Womey Bridge construction site in Benin

1 GENERAL PICTURE

In 2018, the Bank provided financing totaling XOF426.8 billion, including XOF380 billion in the form of medium and long-term loans and XOF31.0 billion in short-term financing.

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Financing by sector for the year was as follows:

Table 1

APPROVAL[5] (LONG, MEDIUM AND SHORT TERM) PER SECTOR IN 2018

	Approvals (XOF'bln)	Number of operations	% Approvals
NON-COMMERCIAL SECTOR (a)	246.7	22	57.8
COMMERCIAL SECTOR (b = i + ii)	180.1	21	42.2
Public commercial (i)	70.6	8	16.5
Private (ii)	109.5	13	25.7
TOTAL (a+b)	**426.8**	**43**	**100**

[5] Including equity investment

Direct financing totaling XOF393.3 billion (92% of approved loans) were provided to support new investment projects, particularly in transport, electrification, safe drinking water, sanitation, food security, industry and services.

The refinancing facilities stand at XOF20 billion, or 4.7% of the year's financing and went into strengthening the productive capacities of SMEs through national financial institutions.

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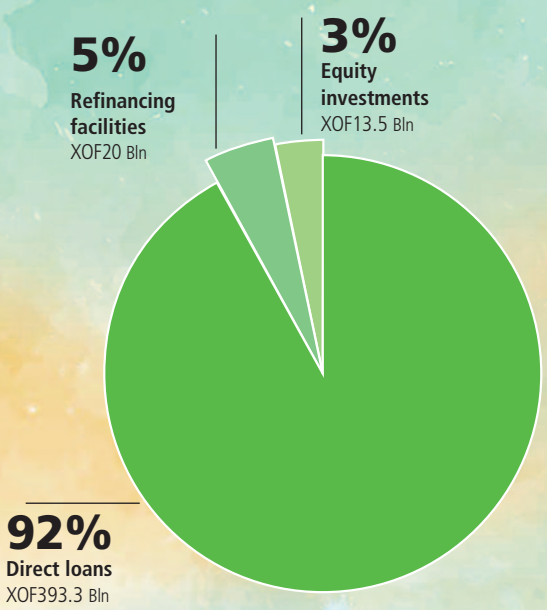
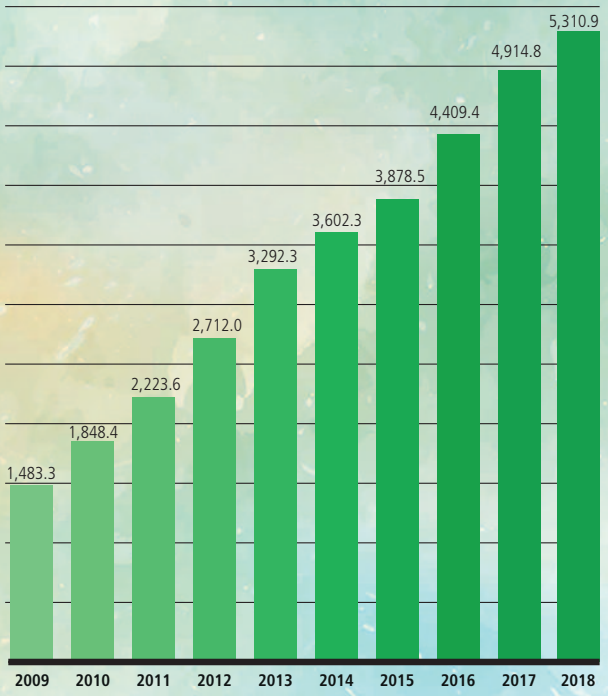
Graph 4

BREAKDOWN OF APPROVALS PER TYPE OF FINANCING IN 2018 (XOF'bln)



Graph 5

EVOLUTION OF BOAD'S CUMULATIVE NET COMMITMENTS (XOF'bln)



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Four equity investments, involving a total of XOF13.5 billion, were made in investment funds operating in the region, namely CAURIS IV, AFIG II, ECP Africa IV and ADIWALE I. The Bank also acquired a stake in the capital of Banque Régionale des Marchés (BRM) Holding SA, which is being created for XOF326.4 million, through the partial transfer of shares held in the capital of BRM.

The new loans granted brought the Bank's total net commitments to XOF5,311 billion as at 31 December 2018, involving 1,149 operations.

Cumulative financing for regional economic integration projects stood at XOF1,601.8 billion, representing 30.2% of commitments at the end of December 2018.

As regards financing arrangements, requests for fundraising resulted in the mobilization of XOF68 billion for the principals.

Technical assistance for project preparation involved a total amount of XOF2.3 billion for feasibility studies. This brought the total amount of this category of assistance to XOF31.2 billion at the end of December 2018.

INSERT 1

Financing of project studies

In 2018, in response to requests for cash advance for studies, the Bank financed seven public project appraisals, with a total amount of XOF2.3 billion. This type of financing was granted to the following member countries at a rate of 1.5%: Benin, Burkina Faso, Côte d'Ivoire, Mali, Niger and Senegal.

The studies in question were intended to prepare the projects for possible financing by the Bank. These made is possible to bring projects to maturity, particularly in the fields of craft entrepreneurship, hydro-agricultural development, river transport, water resource protection and enhancement.

Between 2013 and 2017, the Bank granted WAEMU member countries cash advances totaling XOF11.2 billion to finance 41 operational studies in various sectors.

The status of the studies referred to above is as follows: i) eight (8) studies have been completed, with a total amount of XOF2.3 billion; ii) seventeen (17) studies are ongoing, with a total amount of XOF3.6 billion; iii) fourteen (14) studies, with a total amount of XOF4.8 billion, are at the consultants pre-qualification stage; and iv) while two (2) studies, involving a total amount of XOF440 million are being withdrawn following funding by another financier.

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▶ INSERT 1 (continued)

The completed studies have resulted in the preparation of: i) seven (7) projects that are being financed by BOAD, for which previous cash advances have been or are being integrated into the corresponding project loans; ii) one (1) project financed by other funders and for which the cash advance granted will be repaid by the Borrower, in accordance with the agreement.
Out of a total amount of XOF11.2 billion granted to member countries between 2013 and 2017 to finance operational studies, a total amount of XOF2.3 billion has been recovered to date, under studies completed and integrated into loans.

The studies financed by the Bank in 2018 bring to XOF13.5 billion the total amount allocated for the financing of studies over the last six (6) years*.

Between 2013 and 2018, XOF13.5 billion were spent on financing public project studies.

In terms of lessons learned, the Bank's monitoring and evaluation activities reveal that the conduct of quality studies at the beginning of the project cycle reduces difficulties in project implementation and promotes the sustainability of infrastructure.

The Bank's continued financing of studies to strengthen the quality of implementation and sustainability of infrastructure is therefore a necessity. In December 2018, the WAMU Council of Ministers renewed the six-year endowment in order to support the Bank's activities in this area.

* The allocation of funds for this category of activities is based on allocation chains renewed every 6 years.

As at 31 December 2018, annual disbursements stood at XOF292.5 billion, compared to XOF309.6 billion in 2017.

At the same date, the total cumulative disbursements amounted to XOF3,308.0 billion, corresponding to a cumulative disbursement rate of 62.3% (cumulative disbursements/cumulative commitments).

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2 ACHIEVEMENTS PER STRATEGIC AREA

The Bank's achievements in 2018, based on its areas of intervention in the 2015-2019 strategic plan, are presented below.

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2.1. ACCELERATING REGIONAL INTEGRATION THROUGH SUSTAINED INFRASTRUCTURE INVESTMENT

As part of its support for efforts to integrate the Union's economies, two complementary categories of actions are generally carried out: the financing of regional projects and the monitoring of regional activities, in synergy with the other Community institutions or bodies.

A. DEVELOPMENT AND INTERCONNECTIVITY OF TRANSPORT INFRASTRUCTURE

In the area of transport infrastructure, the Bank granted loans totaling XOF38.7 billion for the implementation of three integrative road projects in Mali, Niger and Burkina Faso.

- **Financing in the road transport sub-sector totaling XOF35 billion has been granted**, in Mali, for the construction of an interchange and an overpass, as well as for the development of roads in the city of Sikasso, and in Niger, for the asphalting of the Zinder road, which forms a link in the trans-Saharan road linking Algiers to Lagos.

These funds will facilitate the construction of an overall stretch of 18.4 km, contributing to progress in regional integration, particularly by i) improving traffic on Community roads included in the PACITR, a component of the PER 2, and ii) developing intra-regional trade.

- **In the port sub-sector**, a contribution of XOF3.7 billion was made for the extension of the Bobo Dioulasso dry dock in Burkina Faso. This project will support the growth of trade flows between the landlocked countries and the seaports.

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B. IMPLEMENTATION OF REGIONAL STRATEGIES AND PROGRAMMES

In collaboration with the other Community institutions or bodies of the Union, the Bank contributes to the initiation and subsequent monitoring of various programmes selected at Community level. These programmes include: PER II, IRED, the Food Security Programme, the ECOWAS Community Development Programme (CDP), the 11th EDF Regional Indicative Programme (RIP) and the WAEMU High Level Specialised Care Centres Project (HSSHN).

Under PER II, the Bank is participating in the process of establishing a multi-donor trust fund to support the financing of projects under the PER. In this regard, the Bank has proposed a draft Resolution for the creation of the Fund. The document sent to other members of the ad hoc Steering Committee is currently being reviewed for finalisation and adoption of the regulations of the fund (Decision to create and advocacy document with the TFPs). Work is also ongoing on the development of a new phase of the PER.

Some PER projects have been granted an interest rate subsidy as part of France's Budget Support (GBS) to WAEMU. The Bank finalized the draft tripartite grant agreements for Benin, Burkina Faso, Mali, Senegal and Togo (Commission-BOAD-Member countries). All these tripartite agreements have been signed.

The Bank also participated in the validation workshop of the interim evaluation report on France's overall budget support to WAEMU, held from 10 to 14 December 2018 in Lomé (Togo). Part of this support was used to subsidize BOAD loans granted to the member countries.

The Bank's actions in relation to IRED have involved the management of the EDF and the continued implementation of projects financed by the EDF. Disbursements as at the end of December 2018 stood at XOF132.1 billion, or 76.9% of the total amount pledged.

The Bank also contributed to the preparation and organization of meetings of the Technical Committee, the Steering Committee and the Donors' Council.

Under the food security programme, the Bank participated in the 7th meeting of the High Level Panel of Experts on Food and Nutritional Security (HLPE) in the WAEMU region, chaired by the President of Niger, H.E. Mr. Issoufou Mahamadou. The said meeting was held from 5 to 10 July 2018 in Niamey, Niger, with the objective of identifying appropriate ways of promoting food security and sustainable agricultural processing in the WAEMU region.

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Some of the key recommendations that emerged were as follows: i) support the regional mechanism for monitoring, evaluation and impact analysis of national response plans, with a view to better guiding decision-making in this area; ii) promote effective institutional and regulatory frameworks for the supervision and coordination of interventions in the field of food and nutrition security and resilience (code of good conduct); iii) assist Member countries in mobilizing resources for the implementation of National Response Plans and Transhumance Management Plans; iv) assist Member countries in mobilizing the necessary resources to intensify the implementation of key programmes.

With regard to the ECOWAS Community Development Programme (CDP), following the adoption of the Regional Strategy Paper, the ECOWAS Authority of Heads of State and Government had instructed the ECOWAS Commission to initiate actions to mobilize the required funding. This led to the adoption of the principle of organizing a Round Table.

The Bank took part in the 5th meeting of the Strategic Orientation Committee (COS) of the 11th European Development Fund (EDF) in Brussels in June 2018 under the **Regional Indicative Programme (RIP) of the 11th EDF.**

During the meeting, the COS reaffirmed its willingness to see the development banks participate in the delegated management of EU funds, if they satisfy the requirements for the "7 pillar assessment".

Lastly, as part of the **WAEMU high-level specialized healthcare centre project (PCSSHN),** the Bank and the WAEMU Commission decided, at a meeting in January 2018, to set up a consultative framework. A draft terms of reference for the framework was submitted to both institutions. The two institutions also held a meeting in Lomé on 25 and 26 October 2018 to formalize the consultative framework and draw up a roadmap for the implementation of the project.

BOAD study fund and the funds that may be provided by partners were identified as two sources of funding for the studies required to carry out the project. BOAD is expected to provide cash advances totaling XOF2.3 billion in 2019 for the studies. Given the limited amount available, BOAD approached the Japan International Cooperation Agency (JICA), considering its operations in this type of initiative. Consultations are ongoing.

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2.2. SUPPORT FOR INCLUSIVE GROWTH, FOOD SECURITY AND SUSTAINABLE DEVELOPMENT

As in the previous year, the Bank's financing for inclusive and sustainable growth was significant. Interventions in this area included strengthening basic infrastructure and promoting sustainable development.

A. DEVELOPMENT OF BASIC INFRASTRUCTURE

A total of XOF252.3 billion has been provided to strengthen basic infrastructure. These funds will be used to: i) develop hydro-agricultural facilities, as well as roads and sanitation, ii) promote electrification in both urban and rural areas, iii) increase access to drinking water for the population, iv) build social amenities (social housing, education) and, v) boost local economies.

Two hydro-agricultural development projects, worth a total of XOF25.5 billion, were approved for Côte d'Ivoire and Togo respectively. These projects will involve the development and rehabilitation of approximately 11,546 ha of farmland, to increase food production capacity by approximately 12,600 tonnes, as well as the creation of 6 dams.

The funds provided will help achieve food and nutritional security, as well as alleviate poverty in the project areas. This is expected to result in: i) an increase in agroforestry and fisheries production, ii) capacity building for stakeholders, as well as iii) the creation of 43,471 direct or indirect jobs.

In the area of urban roads, inter-urban roads and sanitation, six projects have received support, for a total amount of XOF99.5 billion. These include: i) the rehabilitation of the Kédougou-Fouladou road in Senegal, ii) the development and asphalting of the Zinder urban road network in Niger, iii) the development and asphalting of the Blouf loop in Senegal, iv) the Cotonou rainwater sanitation programme, v) the storm drain of the Bangr Wéogo Park in Burkina Faso, vi) and the integrated rehabilitation and development of the Gorou watershed in Côte d' Ivoire.

The road projects referred to above cover a total distance of 152 km and will improve the living environment and transport conditions in the affected areas. This will lead to an improvement in the competitiveness of the areas concerned, improve access to such areas and enhance their economic potential. Sanitation projects will provide the necessary investments to sustainably mitigate flooding in cities across the Union and to improve the urban environment. Approximately 13,410 linear metres (ml) of primary collectors will be built.

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In the area of urban and rural electrification, a total of XOF22.9 billion has also been provided for the construction of a 15 MW diesel thermal power plant in Bor, Guinea Bissau and the rehabilitation of power distribution facilities in Burkina Faso.

These projects, expected to create around 7,600 direct and indirect jobs, are intended to boost the country's energy production capacity and improve access to electricity.

With respect to improving access to safe drinking water, a total of XOF30 billion has been allocated to two projects to strengthen drinking water supply systems. The objective of these projects, one in Côte d'Ivoire and the other in Togo, is to ensure a sustainable supply of safe drinking water to certain populations in the city of Abidjan and semi-urban centres in Togo respectively.

Three projects in other social sectors (social housing, real estate development and education) were financed to the tune of XOF44.4 billion.

In Benin, 944 social housing units were built in the municipality of Abomey-Calavi. The project will contribute to an improvement in the living environment of about 7,300 people in the middle-income bracket.

Two of such projects in Senegal involve the construction of 500 classrooms to replace temporary shelters and the construction of a 20-storey multifunctional tower. These projects will strengthen the quality of education in the country on the one hand and the supply of office space on the other hand, benefiting at least 2,300 employees working in Dakar.

As part of a revitalization of local economies, an amount of XOF30 billion has been granted to Burkina Faso to finance its Programme to Support the Development of Local Economies. The financing will make it possible to: i) provide integrated local development kits, ii) arrange a credit facility of XOF25 billion for a credit programme, iii) build the capacity of 48,000 informal production units.

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INSERT 2

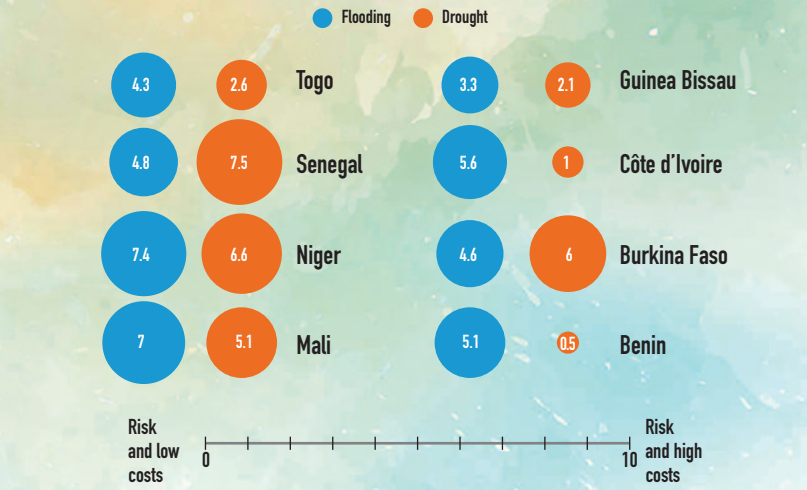
Sanitation and combating flooding in WAEMU member countries

Some of the recurring natural disasters in the WAEMU region, which impede development programmes and cause significant losses, both in the public domain and on private property, are droughts and floods. Floods often have less impact than droughts, but they remain just as devastating and costly. A visualization proposed by an international reinsurer can be summarized as follows, in terms of risks per country.

In 2012, a WHO study indicated that for every dollar (about XOF570) invested in sanitation, $5.5 (XOF3,135) is obtained in return from lower health expenditures, productivity gains and fewer premature deaths.

Sanitation is therefore a factor of development. For this reason, it is included in the sustainable development goals, particularly in relation to SDG 6. Countries in the WAEMU region are regularly confronted with flooding that occurs during the rainy season, making people very vulnerable. Only 26% of these populations had access to basic sanitation in 2015[6].

In line with its objective of supporting sustainable development and inclusive growth, particularly by contributing to the strengthening of basic infrastructure, BOAD contributed, during 2018, to the financing of three sanitation projects, for a total amount of nearly XOF60 billion. The projects involved are as follows: i) the "rainwater sanitation programme for Cotonou in Benin", ii) the "integrated development and management of the Gourou watershed in Côte d'Ivoire", and iii) the "project to strengthen the



Source : Swiss Re data, Rating according to the index for Risk Management sponsored by Inter-Agency Standing Committee (IASC)

[6] Source : World Health Organization report on " Progress in water, sanitation and hygiene: 2017 update and SDG estimates "

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INSERT 2 (continued)

stormwater drainage network in Ouagadougou: drainage of the Bangr Wéogo Park in Burkina Faso".

The purpose of the Cotonou stormdrain rehabilitation project is to build approximately 13,410 linear metres of primary collectors in Cotonou, in eleven (11) catchment areas between Cotonou East and Cotonou West, as well as to pave some sections supporting the said collectors.

Investments to be made are aimed at preventing flooding in the watersheds concerned in a sustainable way and at improving the urban environment, in order to facilitate the movement of users and the conduct of economic activities in the areas concerned. The Bank's contribution to the implementation of the emergency phase of the project is XOF20 billion.

In Côte d'Ivoire, the objective of the integrated development and management programme for the Gourou watershed is to contribute to strengthening and securing the sanitation network in the Abidjan District by improving the socio-economic and health conditions of the populations of the four (4) communes covered by the Guru watershed, namely Abobo, Adjamé, Cocody and Plateau. The implementation of this project will make it possible to solve the problems of recurrent flooding in the heart of Abidjan, through the installation of a wastewater treatment system, stormdrain and the construction of a road network. The Bank contributed XOF29.5 billion to the financing of the first phase of the project..

Finally, with regard to **the project to strengthen the rainwater sanitation network in Ouagadougou**, divided into four (4) phases, the Bank had already set up two (2) loans for a total amount of XOF18 billion, in 2010 and 2012. The third phase, financed to the tune of XOF10 billion in 2018, aims to develop the outlet inside and downstream of the Bangr Wéogo Park, by recalibrating several pond. It will significantly reduce the impact of flooding in the Bangr Wéogo park, while strengthening the sustainability of investments already made.

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B. SUSTAINABLE DEVELOPMENT

Various activities were pursued with a view to operationalizing the Bank's accreditation to the UNFCCC financial mechanisms.

The Bank, together with the **Adaptation Fund (AF),** developed and submitted the following comprehensive financing documents for the following operations:

i) the regional project to promote climate-smart agriculture in West Africa (USD14 million), in partnership with the ECOWAS Regional Agency for Agriculture and Food (RAAF);

ii) the project to increase the resilience of farmers in Manouri, Togo (USD10 million).

The grant allocated for the 1st project was finally approved by the AF Board of Directors in July 2018 for the amount announced above. The grant agreement between BOAD and the AF was signed on 26 December 2018.

Two projects were submitted to **the Global Environment Facility (GEF)** for approval, following the Bank's accreditation in 2015. These include:

i) the project to hybridize diesel engines from multifunctional platforms to solar systems in Togo, which was approved in 2017 for grant funding of USD2.7 million. The project grant management agreement was signed between the Bank and the Togolese Government on 12 October 2018;

ii) the regional project to support sustainable waste management and reduce POPs emissions. A grant of USD18.9 million is expected to be provided for the project. Studies and a full financing proposal for this project are being prepared for submission and final approval in the first quarter of 2019.

Application for grants from the Green Climate Fund (GCF), for the preparation of development and scaling of 1,500 ha of hydro-agricultural facilities, with practices resilient to climate change in Niger, was approved for an amount of USD439.134. In addition, two projects were prepared and submitted for financing by the Fund. These are: i) the solar rural electrification project in Mali, for a total amount of €46.2 million, and ii) the regional climate financing mechanism project, aimed at intensifying the use of solar energy in the least developed countries (LDCs) of French-speaking West Africa, for a total amount of €247 million.

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Other environmental and climate finance actions were also implemented during the year. This includes the Bank's participation in the following events or rounds of negotiations:

i) A cycle of two structured Green Climate Fund dialogues with Africa in Bamako, Mali, and with LDCs in Addis Ababa, Ethiopia.

BOAD's participation in these meetings was aimed at strengthening its engagement with the Fund and member countries, and facilitating interactions on potential project pipelines at the national and regional levels. It also enabled a better understanding of the priorities of the different stakeholders and to share the views and experiences of other partners in the preparation and implementation of climate projects.

ii) The 24th COP on climate change held in Katowice, Poland.

In addition, the environmental and social dimension was taken into account in the evaluation of the projects financed, in accordance with the guidelines of the institution's policy in this area.

At the same time, the Regional Collaboration Centre (RCC[7]) supported the Bank's actions in developing carbon projects and climate finance, as well as in seeking to mobilize climate finance resources.

As part of the development of carbon projects and climate finance, the RCC continued its assistance to the development of standardized baselines, in particular, by updating the non-renewable biomass factor in Benin.

In the area of climate finance resource mobilization, the RCC provides assistance to WAEMU countries to finance projects with a climate component. It also contributed to the Bank's accreditation as an observer to the International Capital Market Associations, as part of the green bond issuance project.

The RCC, in collaboration with the Nairobi Framework Partnership, held the 1st edition of the African Climate Week in April 2018 in Nairobi, Kenya. With the UNFCCC and Young Volunteers for the Environment (JVE), the Centre signed a memorandum of understanding for the establishment of a training academy for young African leaders on climate change issues, including the negotiation aspects contained in climate change agreements.

[7] An entity hosted by BOAD, and stemming from cooperation with the United Nations Framework Convention on Climate Change.

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2.3. SUPPORT FOR BUSINESSES AND GOVERNMENTS, DEVELOPMENT OF FINANCIAL ENGINEERING AND SERVICES

A. PROMOTING PUBLIC-PRIVATE PARTNERSHIPS (PPP)

As part of the promotion of public-private partnership projects, the Regional PPP Project Development Unit (URDPPP) implemented the following actions: i) participation in regional projects; ii) preparation of a study to propose innovative financial instruments to facilitate PPP financing in the WAEMU region; iii) capacity building for PPP actors at member country level; iv) creation of an information and consultative platform; v) appraisal and promotion of PPP projects; vi) organization of meetings of the Advisory Committee on PPP (CO-PPP).

As part of the regional projects, the URDPPP participated, as a member of the WAEMU Commission's PPP Working Group (PPP-WG), in meetings of sectoral experts and of ministers involved in the approval of draft PPP strategies and the Community PPP Directive. In addition, it finalized the first version of two draft Regulations, on the institutional framework and operations of the Unit at regional level'' as well as on the Units implementation of regional PPP projects'. These two draft Regulations were the subject of inter-institutional consultations between Community institutions, before their submission to the WAEMU Commission for submission to the Council of Ministers in 2019.

A limited shopping is also under way with respect to the study to propose innovative financial instruments to facilitate the financing of PPPs in WAEMU. Similarly, a consultant was recruited by the Bank to set up an information and exchange platform.

With regard to capacity building for PPP actors, sectoral technical experts working in the PPP Units of Mali and Senegal have received training in the following areas: i) socio-economic evaluation of projects; ii) financial analysis of projects; iii) quantitative analysis for the selection of the project implementation scheme and the use of the financial benchmarking model; iv) qualitative analysis of the different modes of project implementation.

The URDPPP also participated, as a trainer, in the training session organized by the Regional Higher School of Magistracy (ERSUMA), which was targeted at PPP players in the OHADA area.

With regard to the appraisal and promotion of PPP projects, the dry dock projects in Kayes and Sikasso (Mali) and the Environmental and Natural Resources Management Support Project (Senegal) underwent qualitative and quantitative analysis. The exercise resulted in a pre-selection and a comparative analysis of the implementation methods of these projects.

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In addition, the URDPPP held a workshop to validate the Preliminary Summary Project (PSA) studies for the construction of parking facilities for heavy duty and cargo trucks on both sides of the Benin-Togo border (i.e. Sanveecondji and Hillacondji). The conclusions and recommendations of the study were forwarded to the authorities of Togo and Benin for decisions to be taken before the possible continuation of the project.

At the same time, the Unit continued its work on the PCSSHN project, participating in the work of the Consultation Framework set up between the Bank and the WAEMU Commission.

Lastly, **the URDPPP held the seventh session of the Advisory Committee on PPPs (CO-PPP),** a forum for sharing experience on PPPs in the Union. It also held a workshop on the sidelines of the meeting, in partnership with the WAEMU Commission, to present and disseminate the study on capacity building for PPP development in WAEMU.

INSERT 3

Building capacity to develop PPPs in WAEMU

The World Bank financed a study on this issue with the active participation of BOAD.

The study seeks to: i) strengthen the regional institutional framework for PPP implementation, ii) contribute to the harmonization of PPP strategies, and iii) facilitate the development and implementation of PPP projects in the WAEMU region.

It has been divided into three distinct components: i) institutional strengthening; ii) building a portfolio of PPP projects; iii) financing strategy.

Work on the first component includes an assessment of the disparities between the draft regional directive and the national laws governing PPPs. The analysis of the current practice made it possible to assess the experience and skills of the institutions involved in the implementation of PPPs in each country and to identify capacity building needs. The component report recommended the definition of an institutional framework for the development and implementation of regional projects, as well as the establishment of a flexible legal framework that could be adapted to

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the specific features of each project and that is compatible with national regulations.

The second component made it possible to build a portfolio of projects likely to be developed under PPPs in WAEMU, and also identify two priority projects. However, the analysis carried out only made it possible to identify a regional project within the meaning of the definition contained in the draft Directive. In addition, the 18 MW Gourbassi hydroelectric power project in Mali, which is being carried out by OMVS, has undergone extensive financial study.

The third component studies the modalities of PPP financing in the WAEMU region, in order to develop recommendations for the mobilization of resources tailored to each phase of project development. In addition to reviewing the sources of funding available in the region, this component includes, as such, a detailed analysis of the funding instruments for project preparation.

The recommendations include:

- aligning the country definitions of PPPs with the regional definitions;
- improving project preparation;
- strengthening the analysis of the budgetary sustainability of PPP projects;
- strengthening the measurement of countries' commitments;
- training and providing technical support to the various countries in the structuring of their projects;
- handling the first phases of project development, from identification to feasibility study;
- promoting competition and handling informal offers, in accordance with the regional strategy;
- mobilizing dedicated teams with good experience in PPP structuring;
- leveraging on the resources of Development Finance Institutions, which remain the main financiers of infrastructure projects in sub-Saharan Africa;
- seeking alternative sources of financing (green finance, resources from emerging countries, particularly Islamic finance and Asian financing);
- using blending finance instruments that are tailored to project profitability and risk (provision of investment grants, mobilization of guarantee or risk hedging tools);
- examining the profitability of each project in order to define an appropriate financing scheme.

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B. SUPPORT FOR THE DEVELOPMENT OF INDUSTRIES AND EMERGENCE OF REGIONAL COMPANIES

In terms of **industrial development and the emergence of regional companies**, four (4) direct loans totaling XOF57.5 billion were granted. These include i) the refurbishing works at the Hôtel 2 Février in Togo, ii) the expansion of shea butter production plant in Burkina Faso, iii) the establishment of a cement factory in Côte d'Ivoire, and iv) the expansion of the production capacity of a cement plant in Senegal.

Three (3) refinancing facilities totaling XOF20 billion were granted to financial institutions in the Union. These will increase the capacity to offer products adapted to SMEs. In addition, a subordinated loan of XOF6.5 billion was granted to NSIA Bank Benin.

The Bank's **equity investments** include four operations for a total amount of XOF13.5 billion. These operations include CAURIS IV, AFIG Funds II, ECP Africa Fund IV and ADIWALE I. The Bank also acquired a XOF326.4 million stake in Banque Régionale des Marchés (BRM) Holding SA, which is being created, through the partial transfer of shares held in the capital of BRM.

Five **short-term operations** worth a total of XOF31 billion were negotiated. These include:

- a XOF5 billion loan to a Malian state-owned textile company to finance operating needs;

- a XOF6 billion loan to a company in Burkina Faso for the import of raw materials (clinker, limestone and gypsum) for cement production;

- a XOF10 billion credit facility to a bank in Burkina Faso to support the import of agricultural inputs;

- a XOF5 billion credit facility to a Senegalese financial institution to refinance operations for the 2018-2019 agricultural year;

- A XOF5 billion credit facility to a Senegalese bank to help finance the groundnut season.

Short-term financing is provided to strategic sectors, most of which is directed towards agriculture, energy and industry.

In the area of **financing arrangements**, the Bank mobilized XOF68 billion for the following principals: i) Caisse des Dépôts et Consignation (CDC), for the construction of a

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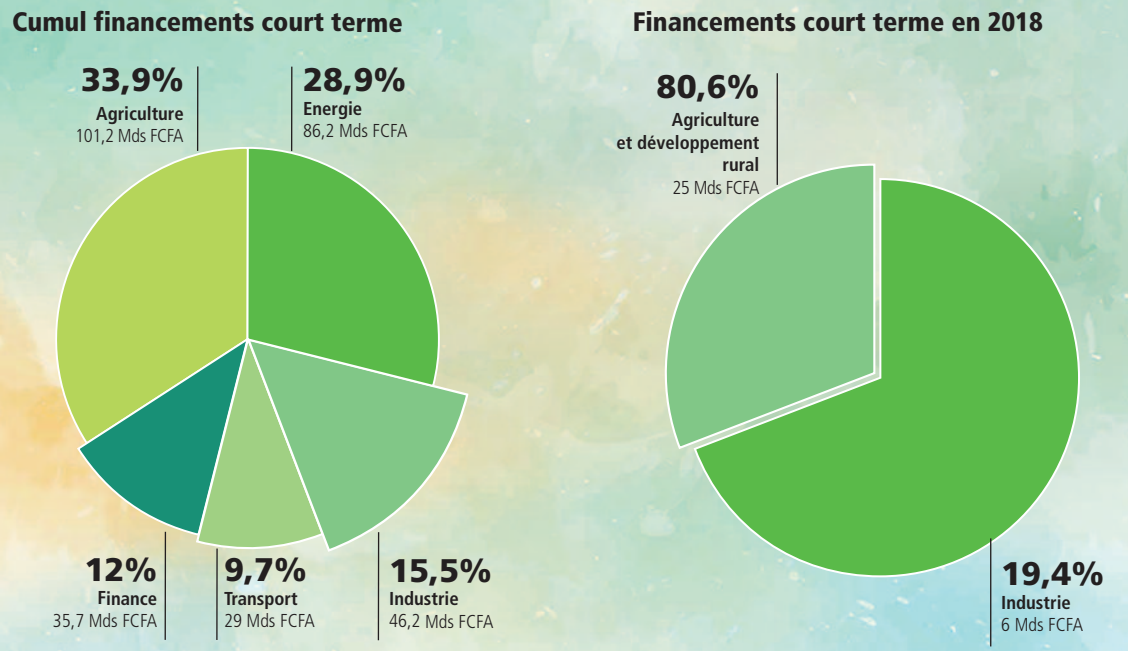
Graph 6

RÉPARTITION PAR DOMAINE DES FINANCEMENTS DE COURT TERME AU 31 DÉCEMBRE 2018 (EN MDS)



20-storey multifunctional tower in Dakar, ii) PFO Africa Côte d'Ivoire, for the construction of a water treatment plant for Abidjan, iii) the Senegalese government for the construction of road and utility networks in Diamniadio.

Also, steps are being taken to mobilize approximately XOF270 billion for various borrowers: i) the Government of Senegal, to finance the construction of the roads and various networks in Diamniadio; ii) Eranove SA, to build a 65 MW thermal power plant in Togo; iii) Phoenix Properties Investment, to build a 4-star hotel in Abidjan, under the "Radisson Red" brand; iv) MK Construction and the Government of Côte d'Ivoire, for the reinforcement of the Kanawolo-Korhogo road axis; v) the Government of Niger, for additional works relating to the Hamani Diori interchange and the development of the Katako market area.

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Support for the expansion of cement production capacity in Senegal and Côte d'Ivoire

In 2018, BOAD committed a total amount of XOF50 billion to support two cement projects in Côte d'Ivoire and Senegal, with a total capacity of more than five (5) million tonnes and a total cost of XOF320.6 billion.

The first of the two projects involves the expansion of the production capacity of Les Ciments du Sahel (CDS) SA, in Kirène, Senegal. This includes the installation of a third integrated and autonomous clinker and cement production line with a capacity of 2.7 million tonnes of cement per year. BOAD's provided XOF25 billion for this project, which is expected to create about 2,500 jobs during implementation and 4,200 jobs during operation.

The second project involves the installation of a cement production unit by CIMENTS DE CÔTE D'IVOIRE (CIMIVOIRE), in Abidjan, Côte d'Ivoire. The clinker crushing capacity of the installed unit will be 3 million tonnes of cement per year. The Bank's provided an amount of XOF25 billion to the project, which is expected to create 387 jobs during implementation and 440 during operation.

These projects are intended to increase supply to meet the growing demand at the national and regional level, and to substitute competitive domestic production for imports. BOAD's collaboration in their implementation confirms its commitment to further work in the infrastructure and construction sector. Indeed, in the subregion, the targeted sector faces major challenges, both in terms of the construction and upgrading of road infrastructure and in terms of people's access to decent housing, through housing projects or private individual housing.

The implementation of the two projects will also lead to an improvement in tax revenues in the two countries directly involved.

BOAD provided a total of XOF159.8 million in grants as financial assistance to member countries and regional institutions.

The projects supported include: i) capacity building, ii) organization of steering committee meetings, document validation workshops, fora and iii) work on the preparation of programming documents.

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2.4. DEEPENING THE RESOURCE MOBILIZATION PROCESS

Key resource mobilization actions included the mobilization of credit facilities from partners and the strengthening of cooperation.

A. AGREEMENTS SIGNED IN 2018

With regard to the credit facilities, two agreements were signed with the Arab Bank for Economic Development in Africa (BADEA). These facilities were in respect of:

- the first loan of USD30 million (XOF16.9 billion) for one year and intended exclusively to finance imports of WAEMU member countries from Arab countries;

- the second, involving an amount of USD15 million (XOF8.5 billion) and repayable in 10 years, is intended to refinance private sector projects.

B. LOANS APPROVED BY THE BOARD OF DIRECTORS

During the year, two loan proposals were approved by the Board of Directors. These are as follows:

- the proposal for a €30 million (XOF19.678 billion) credit facility, repayable in 10 years, from the Austrian Development Bank to finance infrastructure projects and productive private sector investments in WAEMU countries;

- the proposal for a €50 million (XOF32.797 billion) credit facility from the Belarus Development Bank, repayable in 10 years, for the refinancing of projects using goods and services of Belarusian origin.

C. RESOURCE MOBILIZATION ON CAPITAL MARKETS

The Bank has been considering ways to explore other opportunities in the international financial market and to set up a mechanism for the repayment of its Eurobonds. It has worked on the implementation of a "Negotiable European Commercial Paper (NEU-CP)" programme, which involves issuing short securities on the French money market. It has also engaged with external partners issuing green bonds, as well as with some regional financial market players, with a view to issuing a medium-term green bond.

In addition, in order to better control the conditions for the repayment of its Eurobonds, the Bank has decided to create a sinking fund.

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D. SUBSIDIES

The Bank has since December 2015 obtained approval from its Board of Ministers to set up a subsidy mechanism for its concessional financing. In 2018, this mechanism was increased by XOF28 billion, bringing the total subsidy resources to XOF81.2 billion over the last three years (2016-2018).

E. COOPERATION AND PROMOTION OF PARTNERSHIPS

Various discussions and reviews were conducted with traditional partners on the upcoming organization of bilateral thematic meetings. This was the case with AFD, KfW and BADEA.

The Bank has also initiated technical discussions with KfW on two operational issues: the establishment of a concessional loan programme adapted to natural disasters (PACAN) and the creation of a fund for digital transformation in West Africa. These two initiatives are expected to be supported by the German Government.

The sinking fund is intended to help governments in French-speaking West African countries to develop their IT systems in order to improve their productivity and services to the public. The Bank is expected to be an major player in the implementation of the project, as well as the Fund Manager. An identification mission to WAEMU countries is scheduled for the first half of 2019, in order to carry out a first summary assessment of digitization needs.

In addition, the Bank is pursuing its efforts to submit to an audit of the 7 pillars in order to be eligible for indirect management of European Union financing.

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2.5. ALIGNING MANAGEMENT AND GOVERNANCE

A. LEGAL CERTAINTY OF OPERATIONS

As part of the legal security of operations, the actions focused mainly on the following points:

As part of the legal security of operations, the actions focused mainly on the following points:

- regulatory monitoring to align the Bank's activities with the normative frameworks applicable to international financial institutions;
- management of guarantees taken to hedge financing, particularly, by continuing the global review and evaluation of the Bank's hedges in the various WAEMU countries;
- legal procedures to clean up the downgraded loan portfolio;
- review of BOAD's environmental and social compliance verification system and grievance procedure, which is one of the mechanisms for the structured and continuous management of risks and environmental and social impacts associated with projects financed by the Bank.

Furthermore, with a view to aligning risk management related to money laundering and terrorist financing with the relevant regional and international recommendations, an updated version of the Bank's financial security policy was adopted by its Board of Directors in December 2018.

B. MARKETING AND COMMUNICATION

In the area of communication, the Bank has updated its communication and public relations strategy by adopting a modus operandi for its presence on social networks. The new communication strategy is designed to "affirm and promote BOAD's leadership" in financing major development projects in the WAEMU region.

In keeping with this ambition, the Bank has developed and implemented a media plan based on three types of media; those with a broad audience, those that can be used as a complement and those that offer opportunities for visibility. The objective is to have a more structured presence of BOAD in various media spaces, thus making it possible to intensify and better organize the dissemination of information on its activities and products, both in the WAEMU region and for its international partners.

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The media presence thus enabled the Bank's management to participate effectively in high-profile TV programmes, in particular "Réussite" by Canal Plus, "Décryptage" by Africa 24 and "Focus" by Africanews. The same applies to the regular publication of editorial content in pan-African news media such as Jeune Afrique, Financial Afrik, La Tribune Afrique, Ecofin, as well as in-flight magazines on Brussels Airlines, Ethiopian Airlines, Air Côte d'Ivoire, Asky Airlines.

The Bank also produced monthly reports in the 8 WAEMU countries, as well as radio reports on various projects financed in Senegal, Côte d'Ivoire and Togo, which gave an opportunity to the project beneficiaries to highlight the impact of BOAD financing on their daily lives. The Bank also produced a new corporate video, with short versions in radio and television spots on its areas of intervention and products.

As part of its digital strategy, the Bank carried out an SEO (Search Engine Optimization) audit in order to improve the referencing of its website. It also focused on using social networks (Facebook, Twitter, Youtube) to extend the reach of its publications to new targets, generate interest and attract audience on these pages.

As part of its press relations and non-media promotional activities, the Bank held open days in Dakar, Senegal. This was in the form of an information workshop for journalists and local authorities on "BOAD's strategy and involvement in climate finance". The event also featured an open forum with private sector stakeholders.

The Bank reviewed and updated its marketing strategy with a view to improving its sales approach and customer relations.

The Bank also continued to promote its products and services through participation in trade fairs, fora and other thematic meetings. As part of efforts to increase its visibility, poster campaigns on advertising spaces and in business lounges at some WAEMU airports have been initiated.

C. HUMAN RESOURCES

Previously undertaken actions in the area of human resources management policy modernization have been continued. Thus, the implementation of the system for setting objectives and evaluating staff performance has been strengthened. The same was true of targeted individual or collective training actions, all aimed at capacity building.

As at 31 December 2018, BOAD had a total staff complement of 308, including 295 operational staff, 10 seconded staff and 3 on leave of absence.

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Table 2

STAFF STRENGTH OF BOAD BETWEEN 2016 AND 2018

Category	Staff strength as at 31.12.2016	Staff strength as at 31.12.2017	Staff strength as at 31.12.2018
PROFESSIONAL STAFF	153	164	170
SUPPORT STAFF	119	112	125
TOTAL	272	276	295

The change in the number of employees in 2018 is due to the implementation of the multi-year employment and skills forward-planning programme. This plan, developed on the basis of the 2015-2019 strategic plan, takes into account i) the resourcing of staff, ii) the needs of the various units and departments, iii) as well as the special skills required in the management of new activities.

Thus, 34 new staff members, including 33 new recruits and one (1) on return from secondment, joined the Bank this year, while there were 15 departures for various reasons, representing an increase in the number of operational staff of 19 in comparison to 2017.

Also, as part of its "Young Graduates" programme to foster smooth succession of its staff, the Bank recruited fourteen (14) young graduates from the community area and the diaspora, who are on professional internships in the organizational units.

D. ASSET MANAGEMENT AND SAFETY OF PERSONS AND PROPERTY

Actions undertaken in this area have focused on improving the working environment, continuing or completing certain building programmes and implementing the energy efficiency programme.

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In terms of improved working environment, changes have been made, including: i) the rehabilitation of various halls at headquarters and the creation of new workspaces, ii) the cladding of the headquarters building, iii) the enhancement of fire safety and access control systems, iv) the renovation of the video surveillance system, v) further standardization of furniture in headquarters offices and resident missions..

With regard to the real estate program, the construction work on 134 housing units in the BOAD residential area for staff members, as well as those related to the amusement centre, has been completed.

The implementation of the energy efficiency program continued with the replacement of office lamps with brighter and more compliant LED lamps.

E. MONITORING AND EVALUATION OF OPERATIONS AND KNOWLEDGE MANAGEMENT

In the area of ex-post project evaluation, the Bank organized the portfolio evaluation validation workshop in Togo, which covered nineteen (19) projects spread over four (4) sectors of intervention. The Bank has also started country portfolio evaluation in Benin. This second evaluation exercise involves sixteen (16) operations, divided into four (4) areas of intervention, namely: i) rural development, ii) energy, iii) road infrastructure and iv) drinking water supply.

The overall objective of the country portfolio[8] evaluation is to assess the development outcomes of projects financed by the Bank. The specific objectives include: i) assessing the impact of projects financed in each of the sectors concerned; ii) identifying the factors that have affected the performance of the projects; iii) making recommendations on the various interventions.

With regard to socio-economic impact assessments and thematic assessments, the Bank continued, in collaboration with the International Initiative for Impact Evaluation (3ie), the socio-economic impact assessment of the Matam agricultural development project, phase 2 "extension" in Senegal, as well as the M'Bahiakro hydro-agricultural development project in Côte d'Ivoire. The second surveys and analyses have been conducted.

The Bank's efforts in monitoring and evaluating development outcomes has led to activities designed to contribute to i) a better assessment of the prospective impacts of nineteen projects and ii) the establishment of a system for collecting and analysing development outcome indicators. In addition, the Bank provided various partners (AFD, KFW, AfDB, etc.) with the values of development outcome indicators for projects financed.

[8] Refers to a set of projects/programs from one or more sectors of intervention within the same geographical area

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INSERT 5

Quality of public investment expenditure in WAEMU member countries (*)

Since the start of the decade, WAEMU member countries have been developing key infrastructure in order to reduce deficits in this area and sustainably improve living conditions for their populations.

In this regard, some countries are aiming to scale up their investment from a current average of around 24.5% to at least 35% in order to place real growth on a sustainable footing above the 7-8% threshold required to create jobs and reduce poverty . This explains the ambition of the development plans adopted during the decade.

The Bank on its part is supporting these efforts. Over the last ten years, it has granted, on average, XOF420 billion in yearly loans to its member countries.

However, the Bank, like the international financial community, does not lose sight of the fact that the investments necessary to achieve the above-mentioned objectives require significant amounts of borrowing resources, and that the sustainability of the resulting repayment conditions deserves attention.

Moreover, the overall quality of investments, as well as their real effects on growth, are matters of concern for both governments and funders. It is to help address this issue that the WAEMU Commission, in collaboration with other Community institutions (notably BCEAO and BOAD), commissioned a study on the quality of Member States' public investment expenditure. The study was to examine the structural conditions that must accompany an increase in public investment expenditure in order to promote strong economic growth. Some of the findings or conclusions from this study are as follows:

Current state of public capital expenditure

i) There is a significant proportion of recurrent expenditure in countries qualified "capital" expenditure. This is particularly the case with expenses related to the operation of the project management units;

ii) Domestic financing is growing compared to external financing, in all countries except Guinea Bissau where external resources account for 94% of investments due to government's recourse to the (regional) capital market;

iii) Four sectors account for the bulk of investments: production support infrastructure, rural development, education and health;

iv) The content of public capital expenditure is not harmonized across WAEMU.

Macro-econometric analysis of the quality of public investment expenditure

Analyses show that investments, both public and private, have a significant and positive effect on economic activity in most member countries. The effect is mixed for some countries, due mainly to crowding-out effects and/or poor management of public capital expenditure.

(*)Study on the quality of public capital expenditure in WAEMU member countries

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▶ INSERT 5 (continued)

Expenditure on human capital formation is also a component with a direct positive effect on growth. However, given the scale of needs, their share in public investment remains low.

Moreover, studies have showed that investments are less effective in WAEMU countries than in reference countries. This shows a stagnation, or even a decline in marginal capital productivity over the recent period.

These analyses confirm the findings of other studies conducted by BCEAO and the IMF. **The IMF study indicates, for example, that about 40% of the potential impact of public investment is lost.**

Recommandations

With the exception of Côte d'Ivoire, which has achieved 80% of its priority investment programme (PIP), the other WAEMU countries have low rates. These countries should put in place mechanisms to remove barriers to the successful implementation of their PIP projects and programmes. A strengthening of public expenditure management could also improve their efficiency and impact on growth.

In any case, all member countries should continue their investment efforts, particularly in energy and transport infrastructure, in agricultural mechanization and training of quality human capital in order to support value chains in industry, agriculture and services alike.

In terms of knowledge management, the Bank has continued to operationalize its information monitoring, visibility and image tools. In this regard, it has maintained the monitoring of relevant information sources, collected useful knowledge on the areas of interest of its structures, and analyzed information relating to its reputation on Internet and social networks. The Bank has also strengthened its monitoring system by setting up a monitoring system for its counterparties.

F. GOVERNANCE, CONTROL SYSTEMS AND RISK MANAGEMENT

Year 2018 saw a strengthening of the Bank's governance and the continued upgrading of management tools.

Internal audit and financial control: in accordance with the programme approved by the Audit Committee, audits were carried out on internal processes and ongoing projects in the member countries. The recommendations

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made make it possible to strengthen the internal control system, risk management and the improvement of the project execution process.

All transactions for the acquisition of goods and services as well as the disbursement of funds have been checked for compliance and legality.

The Bank has also continued to update its internal audit procedures in the light of developments in international standards and best practices in this area.

Bank Audit Committee: the Audit Committee held its three regular meetings during which it examined: i) the financial statements for the year ended 31 December 2017; ii) the summary statement of financing proposals examined by the Bank in 2017; iii) the interim financial statements of BOAD as at 30 June 2018 before their approval by the Board of Directors; iv) the outcome of the call for tenders for the appointment of the Bank's External Auditor for 2019 to 2021 inclusive; v) the balance sheet of activities for 2018 and the draft programme of internal audit activities for 2019; vi) the situation of the Bank's portfolio as at 30 September 2018; vii) the Bank's interim financial statements as at 30 September 2018; viii) the status of follow-up on its recommendations; and ix) the status of follow-up on the implementation of the recommendations of the External Auditor.

The Bank will continue to strengthen its control mechanisms in 2019. As part of its continuous assurance and quality improvement program (PAAQ), the internal audit department will be evaluated by an external auditor to improve its services.

External audit: PRICEWATERHOUSECOOPERS (PWC), the External Auditor has reviewed and certified without qualification the Bank's, FDC and FDE accounts for the 2017 financial year. These accounts have been approved by the Council of Ministers. The firm also carried out a limited review of the interim financial statements as at 30 June 2018, in accordance with IAS 34 of the IFRS accounting framework.

Ethics, prevention and fight against fraud and corruption: the Bank continued to consolidate its measures to combat fraud and corruption. This has been achieved by i) increasing the number of staff in the Ethics Division, ii) conducting training/sensitization sessions for staff of that division, and iii) improving working tools. The Ethics Division dealt with various cases of compliance with the Staff Code of Ethics, as well as allegations of fraud, which gave rise to recommendations for improving the prevention system.

Procurement control: This involved both contracts financed as part of the Bank's operations and internal procurement. Training sessions were held on the Bank's procurement procedures for stakeholders in the public procurement chain in two member countries (Mali and Niger). Côte d'Ivoire, Togo and Guinea Bissau will receive the same training in 2019, following Benin, Senegal and Burkina Faso.

Result and performance-based management: the main pillars of the Bank's results and performance-based management system, namely the programme budget approach, budgetary control, performance evaluation, the network of dashboards and management cost accounting, were consolidated during the year.

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The cost accounting management system was revitalized during the period, with the effective production of the 2016 and 2017 annual reports.

As part of its efforts to continuously improve its information system, the Bank has developed and deployed a new dashboard network management application.
As part of the monitoring of the Bank's overall performance, quarterly key performance indicators (KPI) analysis notes were produced, as well as summary notes of the evaluations of responsibility centre performance contracts.

The Bank continued to manage its credit, market and operational risks.

In order to improve current practices, the portfolio rating models have been calibrated according to best practices, with the development of new models for project finance, sovereign portfolio and equity investments. The reading of the rating system was thus linked to that of the international rating agencies. In terms of impairment of receivables, IFRS 9, which came into force internationally in 2018, has been implemented.

G. UPGRADING THE IT SYSTEM

During the year, the Bank continued to modernize and secure its information system.

In terms of modernization, it has finalized the project to interconnect its resident missions with headquarters through the implementation of an internal communication network based on VSAT technology. New collaboration and communication tools such as SKYPE FOR BUSINESS have been deployed. The various platforms concerned enable the Bank's users to securely optimize communication amongst themselves and with their external correspondents.

In addition, the banking operations management application was reviewed and optimized on a more modern technological platform in order to prepare for an easy transition to SAP Banking. The Bank's staff has also continued with the stabilization and appropriation of the SAP modules already in operation. These include: finance and management control (FICO), human resource management (HR) and supply management (MM).

The deployment of a high value-added module for personnel management, "Employer Self Service/Managers Self-Service (ESS/MSS)", continued with the implementation of functionalities such as i) the online publication of pay slips, and ii) the online consultation of personnel information.

In terms of security, the Bank monitored technological developments and subsequently trained and certified some of its staff to ISO 27001 and ISO 27005 standards. All due diligence (intrusion test, IS security audit, etc.) was carried out in order to maintain the Bank's ISO 27001 certification of its WSIS.

H. FINANCIAL MANAGEMENT

Pricing and financial management: the Bank's pricing model ensures greater flexibility in the pricing of operations subject to financing.

Also, the financial steering project launched in 2017 continued in 2018. The changes expected as part of this project include i) an improvement in the management of both on and off-balance sheet risks, ii) a strengthening

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of financial reporting, combined with financial management control.

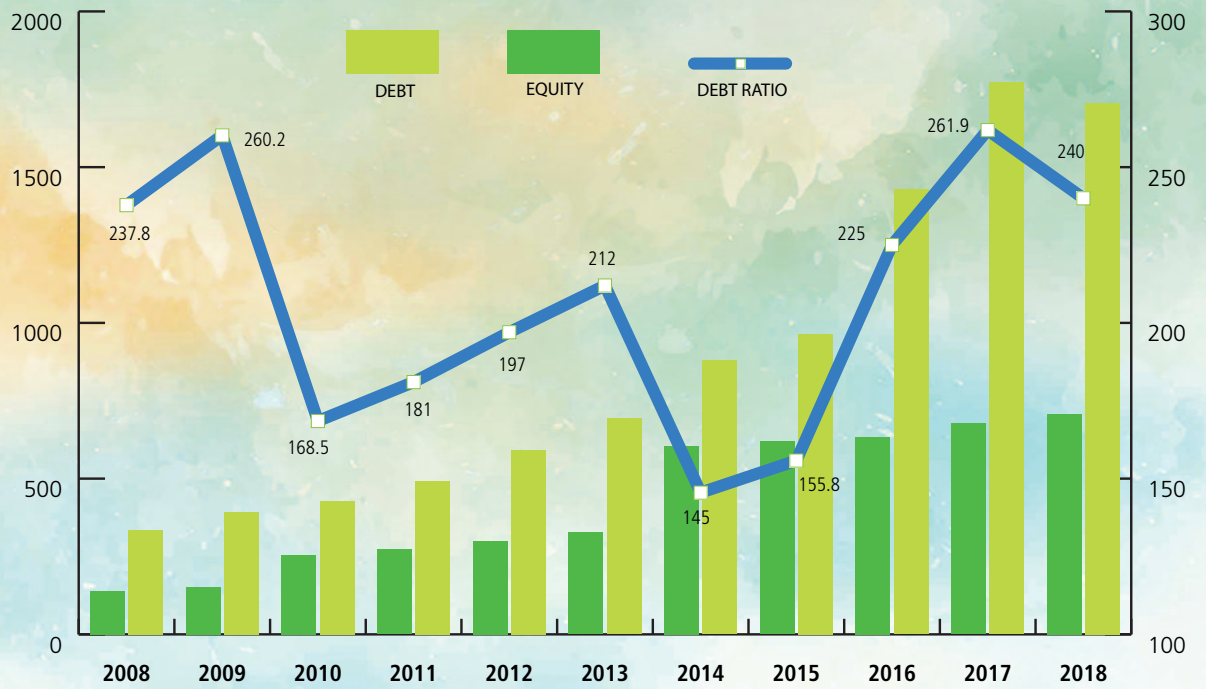
The feasibility study conducted as part of the first phase of the project was completed at the end of 2017. The second phase relating to the operationalization of the financial management system began in the first half of 2018 and is expected to be completed in the second half of 2018.

Financial situation: the Bank's total balance sheet increased from XOF2,573.5 billion as at 31 December 2017 to XOF2,568.2 billion as at 31 December 2018.

The Bank's financial situation remains sound, with a balanced financial structure. At the end of December 2018, shareholders' equity represented approximately 27.6% of the balance sheet total and the ratio "outstanding borrowings/shareholders' equity" (debt ratio) stood at approximately 240.9% for a 300% statutory threshold.

Graph 7

Evolution of equity, debt (XOF'bln) **and debt ratio**



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The operation is characterized by the following key features:

- a dominant share of loan income, which is the Bank's main activity (75.02% of the budget income generated);

- a generally controlled cost of borrowing resources (4.23% on average, market resources and concessional resources combined);

- a net banking income of XOF54.3 billion as at 31 December 2018 as against XOF37.4 billion as at 31 December 2017;

- a prudent cash management in accordance with the liquidity policy;

- the application of a prudent and proactive provisioning policy with the implementation of IFRS 9 based on the principle of "expected losses".

The overall gross deterioration rate of the portfolio stood at 2.21% at the end of December 2018 compared to 2.34% at the end of December 2017. The Bank intends to continue to monitor and improve the quality of the portfolio.

The Bank's operations continue to yield positive results, despite the loss of embedded margins over the past few years due to the lack of sustainable concessional resources. Net profit at the end of 2018 stood at XOF18.2 billion compared to XOF13.2 billion at 31 December 2017. Part of this result will contribute to the replenishment of the subsidy mechanism, but a major part will be allocated to strengthening equity capital.

The Bank will continue to control its spending in order to maintain an attractive interest rate that meets the requirements of development financing.

It should also be noted that the capital adequacy ratio (internal approach) is 22.9%. The level of the Bank's capital remains in line with its risk level.

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THEME FOR THE YEAR

Solar energy in the WAEMU economies:

overview of the situation, challenges and prospects

Solar radiation on horizontal plane reaches 2200 kWh/m²/year in WAEMU.

More than 600 MW of grid-connected solar and wind power are being generated in the area.

The development of solar energy is constrained by the structure of the energy sector.

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As part of the commemoration of its 45th anniversary, BOAD held a forum on 14 and 15 November 2018 on the theme "Solar energy in the WAEMU economies: overview of the situation, challenges and policies".

The aim of this forum was to promote an emerging regional renewable energy economy, in general, and solar energy, in particular. The choice of theme also reflected the Bank's commitment to contribute to the implementation of the objectives of the Regional initiative for sustainable energy (IRED) adopted by the WAEMU Conference of Heads of State and Government in 2009.

One of these objectives is to significantly increase, over the next few years, the rate of access to electricity and the share of renewable energies in the energy mix of WAEMU member countries.

Currently, the rate of access to electricity in these countries is about 40.1% on average, and 14.7% for rural areas. These rates are even lower than the sub-Saharan averages of 42.8%, in general, and 24.8% for rural areas.

However, energy is a crucial driver of economic growth and improved quality of life. The conditions of its production, distribution or accessibility increasingly determine the relevance of public ambitions and policies aimed at inclusive and sustainable economic development. This may also help to explain why access to energy is an integral part of the sustainable development goals.

Power generation is one of BOAD's priority sectors of intervention. The Bank is involved first and foremost in financing projects, but also in the formulation of regional strategies, in synergy with community bodies or institutions such as the WAEMU Commission, BCEAO, WAPP, CEB and various technical and financial partners.

At the end of December 2018, BOAD's commitments to energy projects stood at XOF1,069.5 billion for 133 projects. These included fifteen (15) renewable energy projects, financed with a total of XOF138.7 billion (13% of the Bank's financing in the energy sector), and more specifically, seven solar energy projects totaling XOF84 billion. However, the Bank has a lot to achieve in the area of renewable energies, and especially solar energy.

The November 2018 forum concluded that the WAEMU countries can, with solar energy, quickly achieve very competitive kWh costs, in line with developments observed at the international level.

In an increasing number of countries, solar energy is now the cheapest source of electricity, and examples of solar installations exist in all sectors, with proven reliability for all power levels, from Watt to GW, kW and MW. As for the steady decline in the cost of solar energy, it is expected to continue, and a further halving is expected by 2030.

Apart from the attractiveness of a lower cost for power generation, there could also be a de-correlation of this cost with hydrocarbon prices, as well as advances in terms of energy independence. In addition, an improvement in the solar energy rate, in the countries' energy mix, would ease public finances in the face of the structural deficits of public electricity supply companies.

A trend such as the one mentioned above could even, in the long run, generate a certain attraction of energy-consuming industrial companies to areas in Africa with low-cost solar energy production.

This second part of the BOAD annual report contains a combination of information from a literature review conducted for the forum and views collected during the discussions held during the forum. It consists of four sections relating successively to the following sub-themes: i) solar energy in the WAEMU space ecosystem, ii) the main obstacles to the take-off of solar energy in the WAEMU, iii) private investment and production, iv) the prospects for solar development in the WAEMU area.

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Installation of solar panels

1 SOLAR ENERGY IN THE ECOSYSTEM OF THE WAEMU REGION

West Africa's solar potential is very high. The WAEMU region, in particular, enjoys good sunshine

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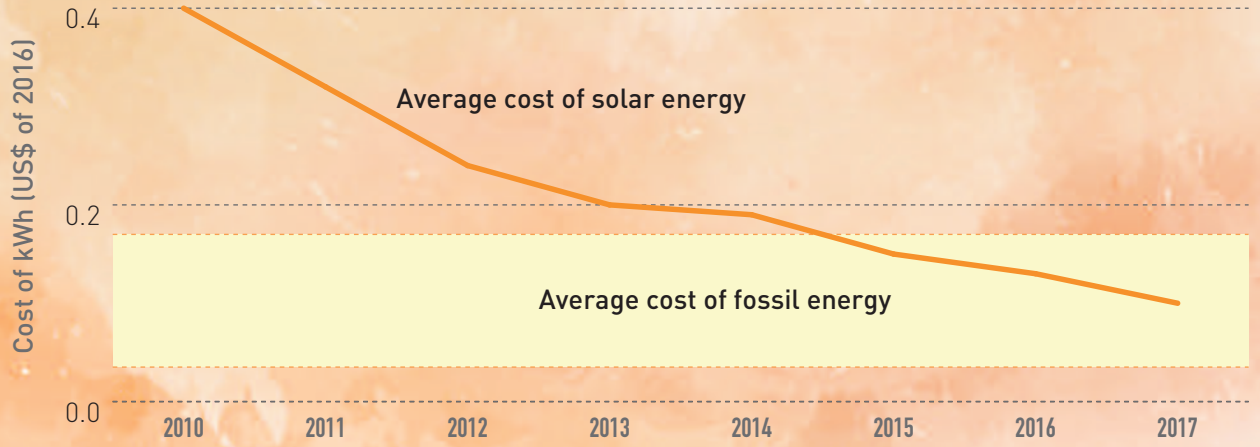
1.1. GENERAL OVERVIEW

West Africa's solar potential is very high. The WAEMU region, in particular, enjoys good sunshine conditions: horizontal radiation exceeds 2200 kWh/m²/year in Niger and often varies between 1800 and 2100 kWh/m²/year in Senegal, Mali, Burkina Faso and northern Benin. However, the sun's resource is still largely underexploited throughout this area.

It would be possible to obtain very competitive costs in the short term, in line with international trends, with prices per kWh estimated, in some European countries, at around 4 euro cents, or XOF25. Photovoltaic solar technology thus offers a real opportunity to increase the access of populations and companies to clean and competitive energy, whether grid or off-grid.

Graph 1

Average cost of solar energy and fossil energy



Source: Canadian Pacific Consulting Services (CPCS) based on IRENA 2017 data

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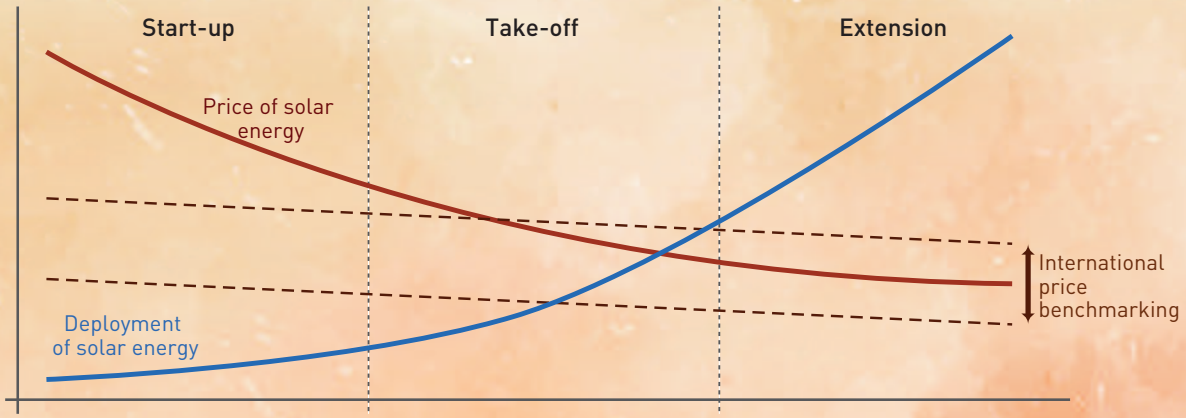
The cost of solar energy is expected to continue to fall steadily, and further halving is expected by 2030. In addition, the cost of storage appears to be increasingly affordable, with a reduction in the price of batteries to around 40% over the next five years.

The graph below shows that the drop in the price of solar energy is an accelerator of its deployment and generalization. This development is supported by the implementation of supportive public policies.

Graph 2

Development phase of the solar market and corresponding support policies



Start-up phase

- First private projects appear
- A strong public support is necessary to encourage the first investors
- The regulatory framework (authorization procedure, etc.) is still under development.

Take-off phase

- The market is growing fast
- The role of public players is to foster convergence to external prices
- The regulatory framework is getting improved and fine-tuned

Extension phase

- The market has grown significantly
- Prices are in line with external prices
- Grid integration is the major constraint.

Source: International Energy Agency.

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Recent successes and ongoing experiences in WAEMU countries should therefore be encouraged and replicated. In total, there are more than 600 MW of solar and wind power connected to the grid, currently being closed or under construction. However, there is still a need to reduce the implementation time of solar projects in the region (5 to 7 years) in order to achieve a duration of around 2 years, in line with technological advances.

Table 1

SOLAR POWER PLANTS IN OPERATION AS AT END 2018

Country	Project	Type of project	Installed capacity	Date commissioned
Burkina Faso	Zagtouli 1	Public	33 MW	2017
Burkina Faso	Ziga	Public	1.1 MW	2017
Niger	Malbaza	Public	7 MW	2018
Senegal	CICAD	Public	2 MW	2014
Senegal	Senergy II (Dagana, Bokhol)	IPP	20 MW	2016
Senegal	Malicounda	IPP	22 MW	2016
Senegal	Senergy (Santhiou, Mekhe)	IPP	30 MW	2017
Senegal	Ten Merina / Cheikh Anta Diop	IPP	30 MW	2017
Senegal	Sakal (Barale Ndiaye, Louga)	IPP	20 MW	2018
Senegal	Energy ressources (Kahone)	IPP	20 MW	2018
TOTAL			**185 MW**	

Source : CPCS, 2iE research

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Table 2

SOLAR POWER PLANTS UNDER CONSTRUCTION OR IN AN ADVANCED STAGE OF DEVELOPMENT

Country	Project	Type of project	Installed capacity	Implementation status
Benin	DEFISSOL	Public	25MW	Financing agreement signed with AFD & EU
Benin	Solar projects within the framework of the Compact MCC	IPP	45MW	Development stage
Burkina Faso	Zagtouli 2	Public	17 MW	RFP being prepared. Financing by the European Investment Bank
Burkina Faso	Koudougou	Public	20 MW	RFP being prepared. Financing by the World Bank
Burkina Faso	Kaya	Public	10 MW	RFP being prepared. Financing by the World Bank
Côte d'Ivoire	Korhogo Solaire	IPP	25 MW	Under development, the start of construction has been announced
Côte d'Ivoire	Boundiali	Public	37,5 MW	Construction under way. Co-financing KfW/EU/Ivorian Government
Guinea Bissau	Bissau, Gabu and Canchungo power plants	Public	22 MW	Funding provided by BOAD
Mali	Kita / Akuo Energy	IPP	50 MW	Development stage
Mali	Sikasso / Power Pro	IPP	50 MW	Development stage
Mali	Ségou solaire (Scatec)	IPP	33 MW	Development stage
Mali	Koutiala	IPP	25 MW	Development stage
Niger	Agadez Hybrid Power Plant	Public	13 MW	Construction expected in 2019
Niger	Gorou Banda	Public	20 MW	Financing agreement signed at the end of 2018 (EU/AFD)
Senegal	Kahone et Kaël (Scaling Solar)	IPP	60 MW	Power purchase agreement signed at the end of 2018
Senegal	Diass	Public	23 MW	Under construction
TOTAL			**440 MW**	

Source: CPCS, 2iE research

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1.2. THE AMBIVALENT INTEREST OF OFF-GRID SOLAR APPLICATIONS

Given the high cost of expanding existing networks, decentralized systems have been developed to ensure that people in rural areas have access to electricity. These systems are based on rapid deployment of solar energy for accelerated energy inclusion.

Several solutions are now available on the market, from mini-solar lamps to autonomous solar installations of several kilowatts. These solutions are based on lower solar panel costs, technological advances in battery performance and longevity, the development of energy-efficient electrical devices and the development of appropriate marketing and payment solutions (mobile money and pay-as-you-go model). For example, solar kits distributed according to the pay-as-you-go model make a significant contribution to increasing access to electricity for disadvantaged populations, particularly in Senegal, Burkina Faso, Côte d'Ivoire and Mali.

Table 3

SALE OF AUTONOMOUS SOLAR SYSTEMS IN THE FIRST HALF OF 2018 (UNITS

Country	Sale of autonomous solar systems in the first half of 2018 (units)
Benin	5 700
Burkina Faso	23 000
Côte d'Ivoire	17 000
Mali	16 000
Niger	4 000
Senegal	31 000
Togo	4 500

Source : CPCS

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However, one of the major challenges is to be able to define a balanced regulation that is strict enough to protect consumers from bad practices, flexible enough not to stifle market dynamics, and flexible enough to adapt to future innovations.

In Senegal, mini-grids are governed by the same legal and regulatory framework as large operators. They are required to sign a distribution concession contract with the Ministry of Energy and obtain a license to sell power.

Benin, on the other hand, adopted on 3 October 2018 a "decree regulating off-grid electrification". According to this text, only mini-grids over 500 kVA will have to obtain a concession, smaller systems requiring only a simple authorization.

Although off-grid solar energy is capable of improving people's living conditions, it is not competitive for low-power uses, such as engines. The productive use of electricity - crafts, conservation or processing of agricultural products, carpentry, welding, etc. - is thus limited in localities that only have off-grid systems or mini-networks. Off-grid therefore generally does not allow the emergence of income-generating activities, which would stimulate a dynamic of economic development.

Solar, photovoltaic or thermal energy has many other autonomous applications: solar ovens, solar dryers, cold production, industrial heat production, etc. However, the most convincing and relevant applications in the context of WAEMU countries are in public lighting, solar pumping and solar hot water.

1.3. TECHNICAL CAPACITY AND TRAINING

The solar energy market in WAEMU faces two major difficulties related to the qualification of the workforce and the quality of equipment on the market.

A study[10] commissioned by SNV (Dutch Cooperation) in Burkina Faso found a failure rate of 71%, especially on domestic installations. The same study found that there is a link between qualification and quality of facilities. We are therefore faced with a challenge both in terms of the qualification of technicians and the quality of equipment.

To address these challenges, it is important to provide the WAEMU region with good expertise and a skilled workforce, by promoting technology and skills transfers. There should also be market regulation through appropriate regulation (certification of installers) and the establishment of quality control systems.

[10] Study on the link between the qualification and quality of renewable energy services in Burkina Faso, SNV, CEAS Burkina, OCADES, AGEREF, March 2018

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Ultimately, training opportunities in solar energy should be strengthened and diversified. Admittedly, there are already some qualifying or diploma training modules of various kinds, but serious challenges lie in providing adequate equipment for training centres (educational laboratories, etc.). There are also concerns about the training of trainers, the need to strengthen the synergy of actions between the various institutions involved in training, as well as the development of relevant standards that meet the needs.

1.4. LOCAL MANUFACTURING OF SOLAR EQUIPMENT

About 90% of solar module production takes place in Asia, with China accounting for 66% of the total. Europe holds 6% of the market, while the United States holds 2%. In Africa, local manufacturing capacity remains limited, but several plants have been established in recent years in Kenya, Senegal, Ghana, Burkina Faso and South Africa.

Local and regional demand is expected to have a significant impact on plant profitability, while conditioning any economies of scale necessary for the production of competitively priced solar modules.

While it is difficult to compete with China, several assembly plants in Africa have focused on the quality of their products and enjoy the preference of some buyers for modules made by local companies.

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Installation of solar panels.

2 MAIN OBSTACLES TO SOLAR ENERGY DEVELOPMENT IN WAEMU

"Institutional, regulatory, legal, technical and financial impediments will have to be overcome in order to maintain the momentum towards a real take-off of solar energy in the WAEMU countries."

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Several hurdles will have to be overcome in order to maintain the momentum and achieve a real take-off of solar energy in the WAEMU countries. These obstacles are institutional, regulatory, legal, technical (or related to the very nature of solar energy) and financial.

2.1. LACK OF INSTITUTIONAL ORGANIZATION

The development of solar energy potential is constrained by the way the electricity sector is structured. In West Africa, the top-down integrated monopoly model has long been the norm. However, a certain openness has been observed since the late 1990s, with the emergence, alongside the top-down integrated monopoly of the independent production model with a single buyer. For the former, only one company, usually state-owned, has the right to generate, transmit and sell power. With this type of organization, only public projects led by the national electricity company can see the light of day.

With the recent model independent power production is allowed, but only the national company can purchase the power generated.

The table below presents the different organizational models of the power sector in the WAEMU region.

Table 4

STRUCTURE OF THE POWER SECTOR IN WAEMU

Country	Type of organization
Burkina Faso Guinée Bissau	Vertically integrated public monopoly
Niger	Independent Power Producer (IPP) + Single Buyer in charge of power generation, transmission and distribution. Unregulated market
Côte d'Ivoire Mali Senegal	IPP + Single buyer in charge of power generation, transmission and distribution. Regulated market
Togo Benin	PP + Single buyer in charge of power generation, transmission and wholesale

Source : ERERA 2017

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The lack of coordination between the various institutional players and a lack of precision in defining the role of each, make it difficult to implement private projects that are also confronted with a lack of experience in the field of solar technology. This often explains the delays in the examination of applications and the very long development times of large projects.

The lack of institutional framework for projects is also one of the most important impediments. There is no coordination of the work of the various stakeholders (ministries, regulators, etc.). In addition, negotiations and decisions generally take time: it takes on average seven (7) years to develop a solar IPP project. For example, projects in Senegal began their development in 2008-2009, in Burkina Faso around 2009-2010, in Mali in 2012. These development times, which are too long, explain the high rates of return expected from investors as well as the high development costs of projects.

2.2. LEGAL AND REGULATORY UNCERTAINTIES

In recent years, there has been significant progress in regulation, with the introduction of independent power generation. Nevertheless, it is still imperfect.

There is a lack of clarity in the way over-the-counter (OTC) contracts are awarded, leading to contractual complications. OTC transactions remain the most widely used mode of transaction in the WAEMU region, while legislation prohibits bilateral negotiations between private developers and governments. The same applies to the community directives on public procurement procedures, which recommend calls for tenders.

However, national regulations allow OTC contracts for specific cases (emergency concepts, pilot project, technical requirements, etc.); these cases often do not apply to renewable energies. In the case of over-the-counter transactions, the terms and conditions must be described in decrees which, unfortunately, are not always available. This leads to many delays and additional costs for independent power generation projects.

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INSERT 1

Definition of legal, regulatory and institutional frameworks

Laws are enacted to define the main parameters of the sectoral organization.

The legal framework i) specifies which entities are authorized to produce electricity, and how, ii) lays down the principles of possible support or incentive measures for solar energy production and iii) defines the role of sectoral institutions (ministry, regulator, etc.).

The regulatory framework specifies i) the conditions for obtaining the permits, licences, authorizations, approvals and contracts for the production of renewable energy, ii) any financial support measures for renewable energy (e. g. investment subsidies or preferential feed-in tariffs) and iii) the procedures for access and connection to the grid for renewable energy projects, iv) the technical parameters to be met for injecting renewable electricity into the national grid, generally under the network code.

The frequent discrepancy between a principle laid down by law and its translation into regulation is an obstacle to the development of solar projects.

The institutional framework varies from one country to another, depending on national political and sectoral choices. As a general rule, the following stakeholders are present in most WAEMU countries: the Ministry of Energy, the National Electricity Company, the Regulatory Authority, the Rural Electrification Agency and the Renewable Energy Agency. Other actors include the Ministry of Finance (tax incentives, payment guarantees, subsidies, compensation), the Ministry of the Environment (permits and authorizations), the Investment Promotion Agency (investor support), the Standards Agency (definition of norms and standards for solar equipment). Here again, there may be a gap between the mandates of these different institutions as laid down by law or by their statutes, and actual practice.

Thus, at the institutional level, experience shows that the main challenges for a private solar project developer include:

- good coordination of the actions of institutional actors and clarity in the definition of their roles. This problem can be solved by setting up a single window, which becomes the project developer's sole point of contact, and then coordinates the procedures of the institutional actors involved;
- strengthening the capacities and human resources of the various institutions in order to reduce delays in the processing of requests;
- reinforcement of solar-specific experience of institutional players. The first solar projects often pay the price of institutional learning.

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For off-grid solar energy, certain features of the legal and regulatory framework now represent obstacles to the full development of the market. Indeed, some WAEMU countries (Senegal) treat mini-grids in the same legal and regulatory way as large operators. This lack of flexibility threatens to stifle the dynamics of the off-grid solar market.

The relaxation of the regulatory framework for private mini-grids, a finer targeting of subsidies for rural electrification, and the generalization of tax and customs incentives could help to accelerate the progress of off-grid solar energy.

2.3. CONSIDERABLE TECHNICAL CONSTRAINTS

- **Saturation of the power grid**

Solar power plants are heavily dependent on sunlight and generate electricity during the day, while it is in the evening, at nightfall, that demand is highest. Solar power production can also vary rapidly depending on the weather: when the sky gets cloudy, other means of power generation must be mobilized to compensate for drop in solar power generation. The limits observed are therefore both on the generation side and on the transmission and distribution side.

The increase in the share of solar energy in the energy mix of WAEMU countries is hampered by the frequent grid saturation. Indeed, WAEMU networks are fragile and small, and often already saturated. Studies carried out on the grids point to the need to strengthen the transmission lines in order to achieve the objectives set by the Union in terms of the energy mix. Thus, while solar can provide the answer to the energy demand, the achievement of the objectives will remain constrained by the constraints of power transmission from the power producer to the consumer.

- **Solar energy storage constraints**

Given the intermittent nature of solar power generation, its integration into the grid requires the addition of storage batteries. The electricity produced during the day can thus be consumed at night. The challenge facing the WAEMU countries is how to manage this intermittency, particularly by procuring reliable batteries that are suited to the climatic conditions of the area. In Senegal, for example, solutions are being deployed. The addition of storage batteries of several tens of megawatts is being considered to solve the intermittency of solar power generation, while the dispatching centre plans to equip itself with weather forecasting and control-command tools to manage weather hazards.

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2.4. DIFFICULTIES FOR OPERATORS TO ACCESS FINANCING

Factors that hinder the participation of commercial banks include: i) the risky profile of entrepreneurs, combined with the lack of a mechanism to guarantee credit to SMEs and start-ups, ii) the generally high cost of financing for operators, iii) the lack of long-term resources for financing solar energy projects (10 to 20 years).

Indeed, one of the greatest risks in the development of grid-connected solar projects in sub-Saharan Africa is the buyer's risk of non-payment, particularly if the buyer is a national electricity company without deep pockets. For their part, while SMEs and start-ups active in off-grid solar energy (solar kits and lanterns) represent an opportunity for commercial banks to intervene, such ventures remain quite risky. Also, banks and investors require the establishment of securities and financial guarantees to cover i) defaults by the operator and ii) the termination clause.

Although countries have similar profiles, it is surprising to see the diversity of financial structuring. Furthermore, governments are often not prepared for the implementation of these guarantees, so negotiations are often very lengthy, leading to delays and higher costs per kWh. Several mechanisms can be used to mitigate risk and thus reduce the cost of financing:

- sovereign guarantees to secure payments (Senegal has set up such guarantees for all IPPs);

- partial risk guarantees from development finance institutions (DFIs);

- political risk insurance by institutions such as MIGA, EIB, African Trade Insurance Agency (ACA) and Overseas Private Investment Corporation (OPIC).

The participation of DFIs, which provide concessional financing (or grants) and credibility to projects, is very useful to keep the cost of financing down.

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Solar panel installation site.

3 PRIVATE INVESTMENT AND PRODUCTION
roles of the private sector and government

"The advent of solar energy as a clean and competitive source of energy has coincided with a broad movement towards liberalization of the electricity sector and increased private sector participation in infrastructure development."

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3.1. IPPs IN WAEMU

The advent of solar energy as a clean and competitive source of energy has coincided with a broad movement towards liberalization of the electricity sector and increased participation of the private sector in infrastructure development.

In fact, most of the solar capacity installed in the area has been developed by independent power producers. They are granted long-term (15-20 years) concessions and power purchase agreements (PPAs[11]). These contracts are concluded respectively with governments and national electricity companies, which are generally single buyers (or mining and industrial companies) and often have payment guarantees (sovereign guarantees and escrow accounts).

In the WAEMU region, the first IPP was launched in Côte d'Ivoire with the construction of the Vridi thermal power plant, but it was in Senegal in 2016 that the first solar IPP appeared as part of the construction of the Bokhol power plant, with a capacity of 20 MW. Since then, many power plants have developed in the form of IPP.

In Côte d'Ivoire, a 37.5 MW solar power plant project in the northern town of Boundiali was announced in 2018. In Mali, the Kita IPP (50MW) co-financed by BOAD just reached financial closing in October 2018.

Public authorities in the WAEMU region have played a vital role in the take-off of solar energy projects, in particular by defining the organizational arrangements for the electricity sector and setting up instruments to support solar energy (subsidies, tax or customs facilities, sovereign guarantees, etc.). The organizational arrangements are generally laid down by legal and regulatory texts and have an impact on the development of the sector. Several modalities exist, but the most dominant type in the WAEMU region is the type that allows for independent power generation and sale to a single buyer who has a monopoly on transmission and distribution (usually the national electricity company).

In Senegal, discussions are underway to establish an organizational model for the sector based on third party access to the grid. This model will end SENELEC's monopoly as sole buyer. It is intended to foster the emergence of entirely private initiative projects, which will sell their power, not to SENELEC, but directly to private, industrial or large consumer buyers. Theoretically scheduled for 2019, the implementation of this model could be delayed for a few years due to the lack of a specific regulatory framework.

[11] A power purchase agreement defines the price at which the electricity will be sold, possibly with price revision clauses.

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3.2. ENTREPRENEURSHIP IN SOLAR ENERGY

The development of renewable energies in West Africa has fostered the emergence of a real solar energy economy, with a growing number of companies operating in this sector. In addition to limited liability companies and public limited companies, the OHADA Uniform Act offers the opportunity to create simplified joint stock companies, which should contribute to the development of start-ups in the field of renewable energies, this form of organization better meeting the expectations of start-ups in terms of flexibility and contractual freedom.

Benin and Senegal seem to be the countries with a vibrant renewable energy companies. These countries are followed by Côte d'Ivoire, Burkina Faso, Togo, Mali and Guinea Bissau. The SMEs and start-ups thus created promote the development and diversification of jobs, as well as innovation and value creation (see insert 2).

INSERT 2

Award-winning innovative start-ups at BOAD's 45th anniversary forum

The BOAD Competition for start-ups in WAEMU with the most innovative renewable energy project, particularly solar, was to encourage innovation and enhance the skills of local African developers.

One hundred and twenty-three (123) applications were received. The initiatives cover several forms of renewable energy: biogas, biofuels, wind energy and solar photovoltaic energy.

The selection process was conducted by the CPCS-2iE consortium. Two outstanding proposals by project developers were identified, an evidence of the great innovative potential in the WAEMU region.

In order to guarantee impartiality and ensure a cross-review of the review of the proposals, two (2) different panels sat at each of the three stages of the process.

The two (2) applications selected at the end of the process were: i) the "KYA-SoP Solar Power Units" project and the "Solar Modernization and Digitization of Peasant Agriculture: Smart Solar Water Pump and Digital Training and Marketing Platform for Sub-Saharan Africa" project.

The KYA-Energy Group's "**KYA-SoP Solar Power Units**" project proposes to move from the expensive, centralized system of power

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supply, to a much more affordable, decentralized system (individual or community) using standardized hybrid mobile cabinets, through KYA-SoP® solar power units. KYA-SoP® solar power units are likely to position themselves in the market for access to energy services, such as high value-added solar products, which can have a significant impact on people's lives.

Designed, assembled and marketed by KYA-Energy Group, a young Togolese company with a sub-regional outlook, created in July 2015 and based in Lomé (Togo), KYA-SoP solar power units are standardized into (6) ranges, including three (3) for households, with powers ranging from 1kVA to 5kVA, and three other ranges for SME/SMI, with powers ranging from 5kW to 10kW.

The aim of the project promoter is to move towards semi-industrialization of the KYASoPs, by setting up a local assembly line, with the capacity to produce 1000 KYA-SoP units in the first year. Through this project, more than 150 direct jobs and several dozen indirect jobs will be created. More than 30,000 households would have access to electricity in less than five (5) years of production. The project will also prevent, over the first five years, the emission of 3,429 tonnes Eq-CO2, the equivalent of 136,000 trees planted.

The project on "Solar modernization and digitalization of peasant agriculture: intelligent solar water pump and digital training and marketing platform for sub-Saharan Africa" is proposed by Nadji Bi Senegal, a start-up specializing in the development and production in Africa of lighting systems and production tools based on solar energy, for the rural economy. Nadji.Bi Senegal proposes the development of an intelligent and connected solar pump solution, supported by Android software for online marketing management.

The promoters' objective is to boost the development of the rural economy in sub-Saharan Africa through an integrated and innovative solution. This should allow an efficient use of water resources, through solar energy. It would significantly increase agricultural yields, while promoting efficient marketing of production, through a multiservice digital platform adapted to informal structures.

In addition, the challenges to be addressed in the context of promoting SMEs and start-ups include: i) strengthening seed, innovation and venture capital funds adapted to start-ups, ii) strengthening support structures and training centres for renewable energy, iii) regulating the solar market (creating a quality reference for solar products and business certification).

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Developers and special investment funds

The financing of private solar projects is characterized by a significant initial investment, with a stable return over a long period (15 to 25 years). The financing structure is generally made up of equity (25-30%) and debt (70-75%). The equity[12] comes from developers and investment funds, while debt comes from commercial or development banks. Equity and debt are invested or lent through a special purpose vehicle (SPV)

The development of solar projects in Africa can take 2 to 8 years (feasibility studies, negotiation of purchase contracts). Developers generally finance early stages of development with their own funds, thus assuming a higher level of risk. As a result, they require a higher return on investment. Some developers enter the pre-construction stage to help finance construction. Others wait until construction is completed to buy the project, allowing the initial developers to exit the project. Lenders are involved at a later stage of the process, where financial flows are more certain.

When the solar project is operational, it becomes less risky at this stage. The developer can therefore refinance his debt by renegotiating the terms, so as to obtain a more favorable loan rate.

According to the International Renewable Energy Agency (IRENA), between 2013 and 2017, project developers contributed on average 40% of global private investment in renewable energy. These investments are attributable to developers in China, Japan, the United Kingdom and the United States. In 2016, the 15 largest international solar developers accounted for 26.4 GW of installed capacity and more than 40 GW is expected. In 2015, the five largest international developers (criteria based on installed capacity or under development) were: GCL New Energy, First Solar, Canadian Solar, Total (SunPower and Eren), and SunEdison.
Most of their investments are in established markets such as the United States and Japan. But international developers are also interested in large commercial projects in emerging economies. Latin America, the Middle East, North Africa and sub-Saharan Africa accounted for 12% of operational projects and 28% of renewable energy development projects.

[12] Amounts invested by an investor in exchange for shares in the project company.

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Many international developers operate in Africa: Berkeley Energy, Biotherm Energy, EDF, Enel Green Power, Engie, Gigawatt Global, Greenwish Partners, JCM, Lekela Power, Neoen, ResponAbility, Scatec Solar, SolarReserve.

Partnerships between international and local developers are frequent. They enable international developers to acquire local market knowledge and share risk.

Investment funds worldwide remain a minor player in renewable energy. They accounted for about 2% of total investments between 2013 and 2017. In sub-Saharan Africa, the participation of mainstream investment funds in solar power projects is still low due to the high risk profile of these projects.

However, some specialized funds have chosen to focus on infrastructure, energy and renewable energy, with a particular focus on sub-Saharan Africa. These funds often invest alongside development banks and developers, and take advantage of mechanisms such as grants and guarantees.

Specialized funds, active in developing solar projects in sub-Saharan Africa, and seeking opportunities and better returns on investment, include: Meridiam, IFC Infraventures (IFC's global infrastructure development fund), Access Infra Africa, Africa Infrastructure Investment Managers (AIIM), Emerging Africa Infrastructure Fund, Helios Private Equity, Africa50, Norfund, and the Sovereign Fund for Strategic Investments (FONSIS) in Senegal.

In the WAEMU region, more and more funds are being created. Sometimes existing funds also reduce their tickets in order to reach start-ups. This for instance is the case of SINERGI in Niger and Burkina Faso, Teranga Capital in Senegal, Initiative Ouagadougou in Burkina Faso, the Afric'Innov Start-Up Fund, on pilot and operational phases in Burkina Faso, Niger, Senegal and Guinea and, in Benin, of Partech Africa.

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Winners of BOAD's photo and start-up contests.

4 PROSPECTS FOR SOLAR IN THE WAEMU REGION

The WAEMU countries face several regulatory, institutional and financial challenges and constraints in spite of their huge solar energy potential.

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STRENGTHS AND WEAKNESSES OF WAEMU COUNTRIES IN SOLAR ENERGY DEVELOPMENT

Pays	BENIN	BURKINA FASO	CÔTE D'IVOIRE	GUINEA BISSAU	MALI	NIGER	SENEGAL	TOGO
Significant solar resource	★	★ ★	★	★	★ ★	★ ★	★ ★	★
Potential for rapid increase in demand	★ ★	★ ★	★ ★	★	★ ★	★	★ ★	★ ★
Enabling environment for private sector participation in power generation	★	★	★ ★	-	★ ★	-	★ ★	★
Competitiveness of solar energy compared to other available power sources	★ ★	★ ★	★	★ ★	★ ★		★ ★	★ ★

Strengths (★★ : High, ★ : Moderate, - : Absent)

Lack of experience in private participation in power generation	##	##	-	##	#	##	-	#
Lack of experience with solar technology, especially for large projects	##	-	#	-	#	##	-	##
Small size of the power grid	##	##	-	##	#	##	-	##
Financial constraints of the national electricity company	#	#	-	##	##	##	-	#
Political instability and/or generally unfavorable business environment	-	-	-	##	-	##	-	-

Weaknesses (## : High, # : Moderate, - : Absent)

Source : CPCS

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4.1. INITIATIVES TO PROMOTE SOLAR

Several actors have initiated projects or programs to support solar energy. It is desirable that, in the WAEMU area, future actions should, as far as possible, be coordinated with existing ones. The most important of these initiatives, which have real hopes for the virtuous development of solar energy in the area, are summarized below:

- **BOAD**: while it is increasing its investment and involvement is this area, has already invested XOF 84 billion. It intends to place particular emphasis on the implementation of the recommendations of the November 2018 forum.

- **The "New Deal" initiative for energy in Africa**: this initiative is scheduled for 2015-2025, and is led by the African Development Bank (AfDB). It aims to promote universal access to energy on the African continent by 2025. The promoters of the programme intend to mobilize private capital, through innovative financing mechanisms and promoting Public-Private Partnerships.

- **The Sustainable Energy Fund for Africa (SEFA)**: it supports small and medium-sized renewable energy and energy efficiency projects in Africa. This multi-donor trust fund (Denmark, United States, Italy and United Kingdom), administered by the AfDB, addresses the difficulty of accessing financing for the initial development of small renewable energy projects.

- **The Lighting Africa programme**: it is part of the World Bank Group's contribution to Sustainable Energy for All (SEforAll). It is implemented in partnership with the Energy Sector Management Assistance Programme (ESMAP), the Global Environment Facility (GEF) and 16 Governments. This initiative aims to provide more than 250 million people in sub-Saharan Africa, living without electricity, with access to clean, affordable and quality lighting by 2030 through clean off-grid systems.

- **The Scaling Solar Initiative**: this initiative brings together a range of services from the World Bank Group, as part of a unique commitment to create viable markets for solar energy in each client country. The programme aims to make grid-connected, privately financed solar projects operational within two years at competitive rates.

- **The ROGEP (Regional Off-Grid Electrification Project):** it is promoted by ECREEE and the World Bank. It aims to promote access to basic electrification services for households, micro and small businesses, schools and health centres in 19 countries[13] in West and Central

[13] Benin, Burkina Faso, Chad, Central African Republic, Cameroon, Côte d'Ivoire, Cape Verde, Gambia, Ghana, Guinea, Guinea Bissau, Liberia, Mali, Mauritania, Nigeria, Niger, Senegal, Sierra Leone, and Togo.

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Africa. The project ecosystem is built on private actors. Indeed, private companies, specialized in solar energy and approved, will be able to benefit from financing to acquire equipment and offer tailor-made solutions to end users. Financing will be provided to companies or end users by local banks in the project area. In this context, BOAD was selected to act as a financial intermediary between the World Bank and local banks, which would have to finance service delivery companies.

- The Energy Sector Management Assistance Programme (ESMAP): this programme is a partnership between the World Bank Group and 18 other stakeholders. It aims to help low- and middle-income countries reduce poverty and stimulate growth through environmentally friendly energy solutions.

- The African Renewable Energy Initiative (AREI): it aims to promote the installation of large-scale renewable energy capacity on the African continent by 2020. This would have a significant impact on reducing the continent's greenhouse gas emissions. This initiative is led by the African Union Commission, the New Partnership for Africa's Development Agency (NEPAD), the African Negotiators Group, the African Development Bank, the United Nations Environment Programme (UNEP), and the International Renewable Energy Agency (IRENA).

- The International Solar Alliance (ISA): it is based on a desire to combine the efforts of developing countries to attract investment and technology in this sector and to develop the use of solar energy in countries between the Tropics of Cancer and Capricorn. A stated objective is to install 1,000 GW of solar power and invest 1,000 billion dollars in this sector by 2030.

- WAPP: it is a major player in the integration of power grids and the development of renewable capacities.

There are also many climate funds that offer concessional financing or grants for the implementation of solar projects in sub-Saharan Africa. Some of these funds include the Climate Investment Fund, the Green Climate Fund, the IRENA/ADFD Project Facility, the ECOWAS Renewable Energy Facility, the Global Environment Facility. Most of these stakeholders were present at the Bank's 45th anniversary forum.

Furthermore, green bonds, which are one of the financing solutions for climate and environment-related investments (i.e. solar energy), have recently been introduced in Africa and the World Bank supports CREPMF in the implementation of green bond regulation in WAEMU. These new instruments will help to ease financing constraints and investor mistrust.

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4.2. SOME RECOMMENDATIONS AND IDEAS FOR REFLECTION

• Continue to implement an appropriate framework

Most countries in the region have established, or are in the process of establishing, a legal framework that promotes the emergence of IPP projects in solar energy. However, legislation alone is not enough. Implementing regulations are also needed, as well as the various regulations governing practice. It is therefore necessary to strengthen the capacities of government agencies in the development of energy policies and the operationalization of implementing decrees, as well as in the area of legal and financial arrangements for projects.

Apart from the legal and regulatory framework, the institutional framework may also require adjustments, whether in terms of defining the mandates of the institutions involved in solar energy, facilitating coordination, or capacity building.

• Making private investment less risky

The initial stages of project development are also the most risky for a private investor, especially in poorly developed markets where experience with solar projects is still limited or non-existent. Public sector operators can help to reduce this risk, particularly by: i) financing upstream studies (identification of sites, analysis of their solar potential); ii) facilitating procedures for obtaining the required permits and licences; iii) managing procedures for land acquisition and compensation of affected persons; and iv) using standard power purchase agreements, known in advance.

There is also the need to establish sovereign guarantees to mitigate the risk of non-payment by national electricity companies. For example, the government may offer a guarantee to investors in a solar power plant in the event that the national electricity company is no longer able to honor payments for the production of solar energy. The earlier these guarantees are put in place, and the earlier the terms are known in advance, the more likely it is that the project will be developed quickly.

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• **Strengthening power transmission infrastructure at national and regional level**

The power systems in the WAEMU countries are very small. Some national grids are unstable or obsolete. This means that the intermittent renewable energy absorption capacity can be saturated with a single 20 or 30 MW solar power plant. This could significantly reduce the attractiveness for international investors.

The strengthening of transport infrastructure will remove this obstacle. This will be achieved through several actions, including: i) interconnections between neighboring countries; ii) improvements to national dispatching centres and regional harmonization of dispatching procedures; and iii) the addition of storage capacity connected to solar plants or located at key points in the grid. WAPP is the main regional organization for strengthening regional transport infrastructure.

• **Focus on capacity building**

Local capacity building is essential to accelerate the development of solar energy. Public authorities could, on the basis of analyses of the needs of the environment, develop standards to ensure the availability of relevant training. This training effort should be continuous, to enable the various actors (technicians, consumers, institutions, etc.) to keep up with the latest technologies.

As innovation is still necessary to take full advantage of this solar resource in the WAEMU region, the creation of laboratories with state-of-the-art research equipment, as well as specialized test equipment, is required.

Sharing experience at the regional level will also contribute to capacity building. Less advanced countries in terms of solar energy could benefit from sharing experience with more advanced neighboring countries (visits to solar power plants, sharing of standard contractual documents, etc.).

Multilateral development banks and development finance institutions, in co-financing projects with commercial banks, could also contribute to the capacity building of these local banks, in terms of understanding the characteristics of solar energy projects and assessing the risks inherent to them.

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