EBAFOSA is supporting countries to domesticate the 16th AMCEN decision and UNEA 3 resolution on Innovative environmental solutions to establish a trajectory of Nationally Determined Contributions (NDCs) implementation based on integrating the catalytic sectors of clean energy & EBA-Driven Agriculture for complementarity and synergy & linking these with other market enablers to establish clean energy powered agro-processing enterprises for maximized impacts. This is ensuring that countries upscale clean energy & land based climate resilience actions to fulfil Paris Agreement objectives while simultaneously actualizing socioeconomic priorities—especially food & income security. EBAFOSA is catalysing integration of off-grid small-hydro directly to power sustainable EBA to facilitate processing of varied product lines. This is offsetting carbon in energy generation & supply chain linkages and building ecosystems resilience by incentivizing use of EBA approaches.

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Paris Agreement and Africa: Unlocking Opportunities to Scale out Clean Energy

Based on the latest scientific findings which include the 2017 UN Environment Emissions Gap Report, the globe is on a warming trajectory set to exceed the 2°C warming thresholds set by the Paris Agreement. 2016 was the hottest year in recorded history. The projected impacts of this trajectory translate into unprecedented adaptation costs for Africa. Accordingly, the 2015 UN Environments Africa Adaptation Gap Report 2 notes astronomical adaptation costs of $50 billion annually by 2050 for an ideal case of holding warming below 2°C. This impending financing gap is not matched by current resource mobilization which is mostly international. Given the slow pace and unpredictability of international funds, reliance on international public finance alone is a risky strategy. Africa needs to look internally to complement international sources. The 2015 Africa Adaptation Gap Report concluded that Africa could raise up to $3 billion annually domestically for adaptation by 2020.

Innovative climate finance for Africa

Many countries in Africa have ratified the Paris Agreement and deposited their Nationally Determined Contributions (NDCs) with the UNFCCC. Up to 60% of these NDCs are land based, focusing on Ecosystem based Adaptation-Driven Agriculture and on Clean Energy, focusing on harnessing the continents clean energy potential. This strategic focus of Ecosystem based Adaptation-Driven Agriculture and Clean Energy which can be amalgamated to actualize clean energy powered agro-industries in Africa represent a catalytic approach to implement Africa’s NDCs. This novel approach is critical to building both biophysical resilience by enhancing ecosystems and offsetting future carbon emissions, as well as socioeconomic resilience by creating income opportunities especially for the youth who currently constitute above 60% of the continent’s population.

Fintech: the combination of the Information Communication technology (ICT) and financial services, popularly known as fintech, provides a test case of innovatively financing Article 4 on mitigation by offsetting carbon from electricity generation through prioritizing clean electricity as targeted by the NDCs. For example in Kenya, M-Kopa, a pay-as-you-go decentralized solar solutions company, is leveraging on the M-Pesa mobile money solution to provide flexible payment options based on client financial transaction records for acquisition of domestic solar lighting solutions. Through this model, M-Kopa has electrified up to 400,000 rural homes across East Africa in direct fulfillment of the NDC priority to expand clean energy use while offsetting carbon in line with Article 4 of the Paris Agreement.

Building on this success, off-shoots of viable models to finance off-grid clean energy for industrial applications should be targeted for powering EBA-driven agriculture value addition.

Optimize Africa’s agro-value chains

Land & ecosystems degradation means Sub-Saharan Africa food loss due to agro-ecosystem degradation is estimated as high as 6.6 million tonnes of grain annually, enough to meet annual calorific needs of approximately 31 million people. Low value addition means Africa’s average annual cereal grain loss is high, estimated at $4 billion annually. In 2010, the UN FAO estimated Africa’s cumulative PHLs of cereals, roots and tubers, fruits and vegetables, meat, milk and fish to be about 100 million tonnes with total value of $48 billion. When juxtaposed with Africa’s $35 billion food import bill in 2011, recovering these losses would essentially eliminate the need for imports without increasing production while injecting an extra $35 billion to capitalize other sectors of the continent’s economy. Amalgamating on-farm Ecosystems Based Adaptation approaches (EBA) with clean energy for value addition will mean the region eliminates current losses along the entire agro-value chain to potentially save up to $35 billion in annual food imports.

Read More
Agriculture: energy consumer and producer

Universal access to energy in sub-Saharan Africa is still clearly insufficient. Only a third of the population in this region – excluding South Africa – has an electrical connection, but this percentage drops by more than half when taking rural areas into account. It is not easy to quantify the agricultural sector’s energy needs. Agriculture in sub-Saharan countries is still largely represented by smallholder farmers, 90% of which are based on family labour and animal traction.

Small farms, however, require energy for some mechanised farm activities, as well as for irrigation, seed storage, processing, transport, etc. Only 4% of all cultivated land in sub-Saharan Africa is currently irrigated, and 10-20% of crops are lost every year due to a lack of appropriate crop storage and preservation. The high reliance of rural populations on biomass energy is another trait of sub-Saharan agriculture, with 80-90% of households consuming wood-based fuels (firewood, charcoal, green waste, etc) for domestic energy.

Added to family farming energy requirements are the growing irrigation, storage, processing and transportation needs of large commercial export-oriented farms. According to some experts, this situation calls for an integrated farm-scale approach, even in the current climate change setting. Energy transition – which should free our economies of fossil fuels before the end of this century and thus mitigate global warming – is a major challenge for modern agriculture, which is largely dependent on non-renewable fuels. “Our agriculture is very energy-intensive, with an energy efficiency rate of less than one, which means it consumes more calories than it produces. Mechanisation is the culprit, along with the use of nitrogen, phosphate and crop protection products,” says Benoît Davigron from the French agricultural research organisation, CIRAD. This situation is echoed in many discussions on “agroecology and the need to reintegrate crop and livestock production to complete the energy cycle on farms,” states Daviron.

Farms are nevertheless able to generate their own energy through animal traction, but also by implementing new techniques such as biogas generation from agricultural waste, or having space to install solar panels to power a pump, for instance. Sarah Best, researcher at the International Institute for Environment and Development, stresses the importance of meeting the needs of small farms and processing companies at the local scale rather than thinking in terms of global requirements.

Which energy choices would be effective in addressing these issues? Many are heralding a massive shift to renewable energy. The French development agency, AFD, for instance, claims that, “energy transition in Africa will involve development of its renewable energy potential while ensuring energy access for everyone.”

The dual advantage of this choice is that it will overcome the reliance on fossil fuel and contribute to Africa’s energy independence. According to the International Renewable Energy Agency (IRENA), “Africa’s renewable energy production potential is substantially higher than the current and estimated electrical consumption of the whole continent.” Hydropower already accounts for 60% of Africa’s power production, and many other sources of energy are dispersed throughout the continent.

Renewable energy filling the fuel gap

Climate negotiations have also prompted developing countries to apply compatible development models in a shift away from fossil fuel use. In the Pacific Islands, there has been a spectacular turn around.

Although largely dependent on imported oil, these countries have set very high renewable energy targets for 2020. This goal is in line with their very determined discussions during the climate negotiations in the face of the impending danger of rising sea levels for their islands. In Africa, the African Development Bank is committed to working closely with African countries to help them cope with climate change challenges. According to IRENA, almost half of all African countries have already undertaken an assessment of one or several available national renewable energy resources...Read more
Access to electricity is important for improving everything from education and agricultural productivity to employment. Even though Africa is endowed with inexhaustible raw energy potential, over 640 million people do not have access to electricity. Electrification of Africa will also help its people get rid of indoor pollution associated with kerosene lamps, which is a leading cause of respiratory diseases. Some 600,000 people in sub-Saharan Africa die every year from indoor pollution. According to the AfDB, the rural electrification rate in sub-Saharan Africa is the lowest in the world, at less than 20%. The electrification of rural areas face challenges such as the high costs of capital, low revenue collection rates, and insufficient generation capacity (infrastructure), amongst others. For example, Tanzania’s national electricity coverage is estimated at just over 20%, with the transmission grid covering a minor part of the country and leaving out most of the territory. Access is even lower for the rural population at 7%; thus nearly 30 million Tanzanians lack a connection to the electricity grid. The vastness of the country, coupled with low population densities, makes grid extension too expensive. This is typical of most African countries.

In addition to the lack of energy infrastructure, Africa also has an inefficient generation, transmission and distribution system, which leads to increasing costs. For example, the average efficiency of the fleet of gas-fired power plants was 38% in 2012. Had the average efficiency been equal to that of gas-fired power plants in India (46%), the unused fuel could have generated 8 TWh (21%) more electricity.

Africa has a vast growth potential in renewable energy, i.e. 11 terrawatts of solar power, 350 gigawatts (GW) of hydropower, 110 GW of wind power, and 15 GW of geothermal power. By 2040, it is forecast that renewables could provide more than 40% of all power generation capacity. African countries may want to support private investor participation in its renewable energy sectors. Governments will have to ensure that they adopt business-enabling policy frameworks. This includes making it easier for independent power producers to enter the market and earn acceptable returns. More competition will increase innovation and lead to lower costs...Read more
Mini Grids Solar Project to Improve Energy Access in Cameroon

Three independent multi-product micro-utilities in Cameroon providing lighting for more than 6,000 bulbs alongside powering other energy related businesses. This will serve more than 22,500 people in the six targeted villages and neighboring villages. This will serve as a precursor for deployment of internet communication facilities and the enhancement of education in these impoverished off-grid communities.

**Project Objectives**

This will go a long way to improve agricultural production and productivity especially in off-season market gardening, hence improving income streams for rural women, fighting hunger and reducing human drudgery. This program will serve as a learning-by-doing environment for the Smart Village Energy Entrepreneurs trainees of the Renewable energy department of Torchbearer Foundation. The training of Smart Village Entrepreneurs (SVE) and Smart Village Technicians (SVT) is already ongoing and diversifying mode of energy deployment into the villages as well as identifying business opportunity will serve as a booster to this training.

Additionally, the project will couple solar energy with agriculture, education and training, microfinance, food processing plants and other humanitarian projects that have have economic, spiritual, physical, social, cultural, civic, political and educational impact in the community. This will reduce migration to the cities in the search of opportunities. Consequently, this will mark a new era in the reduction of urbanization. Read More

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**Powering Agriculture Tanzanian Bio-mass Mini Grid Project**

**PROJECT OVERVIEW**

The aim of the project is to accelerate agribusiness within Benin and Tanzania by implementing biomass clean energy technology, targeting the oil palm and other agricultural subsectors. On top of this the project will also improve access to modern energy for 50 communities and produce an increased awareness of clean energy and its importance to the economy.

The lack of access to energy services slows the adoption of modern agricultural techniques, which leads to lagging food production and poor economic growth. As well as this there has been a growing trend between fossil fuel and food prices, causing soaring living costs and unpredictable pricing. The way to break this link is by introducing local energy sources to take the pressures off food prices. Creating local biomass plants will allow communities to develop and manage their own energy resources, giving them energy security and creating new jobs across the entire supply chain. The new biomass plants will promote growth through the selling and generation of biomass electricity as well as from businesses that buy and sell the power. Not only will the agricultural sector benefit from the biomass mini grid project but so will the telecom sector as well as social and ICT services.

**Objectives of the Bio-mass grid project?**

To achieve these goals Gazogen Inc. will install 50 biomass plants, in partnership with local Beninese and Tanzanian technology manufacturers, which will generate electricity for more than 5000 families. The biomass plants will run primarily off palm oil, with the look to expand into other materials such as maize, rice, coffee or cashews. The 50 biomass plants will be rolled out over a period of 3 years, and will come with complete training and create an African rural ESCO business model which will be shared among the plants. A marketing campaign will run alongside the clean energy development in order to increase awareness of the project and the benefits of using clean energy.

The bio-mass mini-grid project will reduce green-house gasses in a number of ways. First and foremost the biomass systems will be replacing fossil fuel based generators with carbon neutral energy. Secondly a large amount of methane, which is 25 times more polluting than carbon dioxide, is produced during the decomposition of agricultural waste; when this waste is used in a biomass plant this methane production is eliminated. The biofuel created can also be used to replace kerosene lanterns and firewood, further reducing the production of green-house gases. Read More
MOROCCO TO INVEST €200 MILLION IN SOLAR PROJECTS TO SERVE AGRICULTURAL GROWTH

Morocco is getting ready to launch a €200 million programme to spark investment in solar power projects in the agricultural sector by 2021. The programme will launch under the guidance of the Ministry of Energy, Mining and Sustainable Development (Ministère de l’Énergie, des Mines et du Développement Durable) and is set to promote the use of solar energy to power water pumps for irrigation in order to help farmers reduce their energy costs and use less butane gas in farming operations.

Programme to spark investment in solar power projects

‘Agrovoltaic’ is a new concept, which puts energy models for agriculture in the energy transition context. As energy constitutes one of the main operational costs of farming, solar power provides costs reduction, as well as flexibility. The plan is to expand agricultural water access to more than 100,000 hectares of new land by 2021 and significantly increase agricultural output. This is one of the endeavours of North-African countries, which aim to harness their solar potential to open new intercontinental energy corridors, like for example the 4.5GW TuNur project in Tunisia. The case for renewables in Morocco is very promising, given high solar irradiation and rising electricity demand. The country is considered one of the sunniest countries in the world, with around 3000 hours of sunshine per year.

On 24th November 2017, EBAFOSA Nigeria commemorated their 1st with objectives to take stock of progress made in the past year and leverage it to promote EBAFOSA as the priority initiative that will accelerate socioeconomic transformation in Nigeria through the implementation of Nigeria’s Nationally Determined Contributions (NDCs) commitments under the Paris Agreement. The strategic thrust behind the EBAFOSA Modus operandi is to establish EBA-Driven Agriculture led, clean energy powered agro-industrial zones.

Five strategic achievements were discussed and shared with stakeholders drawn from government, academia, private sector & non-governmental organizations.

First, on enabling NDCs implementation policies, the EBAFOSA Nigeria Inter-Agency policy harmonization task force was officially inaugurated. The task force which is already operational is hosted & chaired by the Ministry of Environment with co-chairs being the Ministry of Budgets, Planning & Coordination and the Ministry of Agriculture. This task force has put in place formal working arrangements and is engaging other critical ministries to drive NDCs implementation focusing on establishment of EBA-Driven Agriculture led, clean energy powered agro-industrial zones. The aim of this inter agency task force is to create an enabling policy environment for NDCs implementation spanning all the critical ministries.

Secondly in following up on the above, the Ministry of Environment announced it had integrated EBAFOSA into its budget as a framework to implement Nigeria’s NDCs. The incentive for the Ministry was in line with section 5 of the Paris Agreement – where EBAFOSA Nigeria having mobilized multiple state & non-state actors critical to NDCs implementation offers a low risk implementation platform for the Ministry. The Ministry through the Director of Climate Change lauded EBAFOSA’s innovative approach ensuring climate action becomes a socioeconomic opportunity ensuring not only enhanced ecosystems & mitigated carbon but wealth creation as well – priorities that cut across the entire government. He remarked that it was the first time the Ministry was allocating a budget to work through a grand initiative for NDCs implementation and expressed confidence in its success.
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## CLIMATE WARNINGS

According to FEWS NET, very large assistance needs and Famine risk will continue in 2018. Across 45 countries, an estimated 76 million people are expected to require emergency food assistance during 2018.

Acute Food Insecurity: Near Term (November 2017 - January 2018)

![Map showing acute food insecurity phases](image-url)
PUBLICATIONS

Africa Renewable Pathway: The Path to Sustainable Growth
The Productive Use of Renewable energy in Africa
Scaling Innovation at the Energy-Agriculture Nexus in East Africa
Renewable Energy Makes Inroads Globally, Off-Grid Grows in Africa
Energy Efficient Rural Food Processing Utilising Renewable To improve rural Livelihoods in Kenya
Empowering Women in Africa through Access to Sustainable Energy
Why African Farmers Are Part of the Climate Change Equation
Biofuel potential in sub-Saharan Africa: Raising food yields
Food Issues - Renewable energy for food preparation and processing

SUGGESTION

Please kindly suggest the areas of coverage you would like the newsletter to cover in the next edition. Also suggest the key topics and sectors which could be looked into and explain why you think those should be the priority and Strategic areas for coverage.

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