

1 FEDA Activities

Some of the key achievements of FEDA per its thematic areas are summarized below.

1.1 Biodiversity conservation and Environmental management

The objective of this work stream is to promote the wise use and sustainable management and conservation of biodiversity and the environment, for the benefit of local communities and the population of Cameroon at large.

The key activities and results/impacts are presented under the following areas:

1.1.1 Research

1.1.1.1 Marine and fresh water

- **Marine turtle studies:** Preliminary survey of status and anthropogenic threats on Marine turtles in the coastal zone of Fako Division in the South West Region Cameroon in 2012. Eleven villages surveyed (Botaland, Wovia, Ngeme, Limbola, Batoke, Bakingili, Debuncha, Njonji, Isobe, Idenau and Sanje) and key findings included; significant dropped in number of marine turtles visiting the shore to feed and lay eggs; main threats were from industrial fishing trawlers, pollution from oil exploration and exploitation companies and from other companies. Turtles nested on the beaches in two main villages (Batoke and Njonji) while the other beaches were mainly visited for feeding.

Marine and coastal health:

Several research has been undertaken on the marine landscape with focus on the Limbe coast in the SW Region of Cameroon. These include:

- A study the impact of solid waste (debris) deposited on 3 beaches in Limbe and potential impact on tourism. The main categories of waste common to the three beaches were; plant fragments (52 %) followed by plastics (15 %) and tar balls (Photo 3). This pollution was as a result of the high intensity of fishing activities and absence of toilets in the fishing port. Regular beach clean-up campaigns need to be organized and toilets constructed to prevent defecation on beaches.



Photo 3: Solid Waste on Idenau beach, S.W region:

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- In collaboration with the Institute of Agriculture and Agromic Research, FEDA in 2013 attempted to assess the efficiency of waste treatment through use of serial ponds in the Tiko CDC rubber factory. Effluent from the factory were analyzed together with those from successive anaerobic ponds (Photo 4) for Biochemical Oxygen Demand (BOD), Chemical Oxygen Demand (COD), Total Nitrogen and Phosphates. Levels of pollution in term of COD were higher than WHO (World Health Organisation) recommended values of 300kg a day while values of Phosphates and Nitrogen from the system were below WHO norms of 10 and 20 mg/L respectively at the point of discharge into the environment. There is need for improving treatment of these effluent by use of modern environmental safe technologies.



Photo 4: View of rubber factory in Tiko.

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Marine health: FEDA in collaboration with IRAD again in 2016, undertook preliminary assessment of the health status of the marine environment around Limbe and Tiko (Photo 5). Samples of water were collected from various points at sea and analyzed for temperature, Ph, Dissolved Oxygen, Nitrates, Ammonia Phosphates, Sulphates and Salinity. Aside ammonium which recorded higher values than normal (7 to 10mg/l) all the other parameters were within normal range for safe growth of plankton, fish and various marine organisms. These values were especially high in the Limbe area (9 and 10mg.l) most probably as result of divers industrial activities herein. Measures need to be put in place to ensure safe discharge of various industrial wastes into the sea in general in the southwest region



Photo 5: Sampling for water quality analysis at sea.

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- **Fresh water studies (Lake Barombi Mbo):** A scooping mission was undertaken to the Barombi Mbo Crater Lake which is a Ramsar site (Photo 6) in Kumba, Meme Division, and Cameroon. The Lake is famous among biologists for the occurrence of 12 endemic fish-species rendering it one of the places with the highest densities of endemic species per area in the world. All 12 species are critical threatened. The lake is surrounded by partially degraded evergreen forest vegetation. A small group of monkeys have been observed within the crater rim and historically, elephants and chimpanzees (*Pan troglodytes*) were common in the surrounding forest of lake but no more. The lake is also an important sacred site to the Barombi tribe. The social, economic and cultural life of the Barombi Mbo people is intimately linked to the use of the resources of the lake through fishing, mythology and transport, and to the surrounding land through farming. It is also a source of clean water for the 200,000 people who make up the metropolis of Kumba and its environs. The lake and watershed faces a number of threats including; overfishing; encroachment, deforestation for agriculture and pollution from use of chemicals in cocoa farms. In addition, the potential for the introduction of foreign fish to the ecosystem is also thought to be a potential source of threat to the lake.



Photo 6: Lake Barombi Mbo-Ramsar site. .

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A project was also developed after the scooping mission and submitted for funding but was not favorable considered. FEDA plans to continue seeking for funds to promote the integrated management and conservation of this important Ramsar site.

1.1.1.2 Biodiversity conservation

Research work in biodiversity include:

- Study of fuel wood consumption and sustainability in the NW Region of Cameroon a grassland area with very limited natural forests, now restricted to forest reserves. Most of the fuel wood is from plantations dominantly of eucalyptus trees.
- Wildlife trade monitoring with focus on bushmeat especially pangolins which scales are under very high demand from Asia for medicinal purposes. A FEDA staff is currently undergoing a 15 months training on pangolins conservation organized by the Zoological Society of London and funded by the United State Fisheries and Wildlife Service (USFWS). One of the field training sessions is indicated in Photo 7.

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Photo 7: Field training in biodiversity identification

- FEDA is also monitoring the trade of *Gnetum Africa* (Eru) a vine which leaves are in high demand for food, especially in neighboring Nigeria but which is receiving little or no restoration attention. Dependency on wild harvests is not sustainable.

1.1.1.2.1 Environment and Social Impact Assessment (ESIA) studies

ESIA is a systematic evaluation to determine the favourable and unfavourable effects of a project on the environment. This enables measures to be put in place to mitigate, avoid and/or compensate for negative impacts of the project.

FEDA has conducted a number of number of EISA at the behest of companies, one of which was a 'high level scoping study to understand the legal framework, process and procedure for undertaking Environmental and Social Impact Assessment (ESIA) in Cameroon as well as to flag any environmental aspects of concern at the 240 ha study site at Mbalmayo, Cameroon and to propose potential solutions. Study was done in collaboration with IRIS Ingénierie, Cameroon at the request of, JCM GREENQUEST Canada in November 2014. Scoping Study', which is to contribute to the pre-feasibility study of a 60-100MW PV solar project near Mbalmayo, Cameroon to be constructed by JCM GREENQUEST Canada. The study produced a i) a road map on ESIA steps in Cameroon and ii) preliminary environmental overview report on the project site with a number of red flags including the overlap of the site with a community forest resulting in further research and negotiations to avoid potential conflict with the community forest communities. ESIA studies are services provided by FEDA as sources of income to support activities rather than part of its core work. They also serve for capacity building for FEDA staff.

1.2 Local empowerment and agriculture development

The objective is this work stream it to ensure food self-sufficiency through the promotion of sustainable agricultural practices, improved inputs and support for alternative income-generating actions that are environmentally friendly.

The key activities and results/impacts are presented under the following areas

1.2.1 Research

- **Status of Mushroom production in the SW and NW Regions in Cameroon:** An assessment of mushroom production in the Regions of the SW and NW of Cameroon indicated that; production in the NW region was more than demand while demand in the SW Region was greater than production. However, there are no mechanisms in place to ensure the surplus in the NW Region can fill the demand gap in the SW Region. The greatest problem with the production is the availability of spawns, support to farmers (education, technical, financial and organizational), linkages between producers and consumers/markets and general public education and awareness.
- **Proximity sourcing for the benefit of local communities:** This research was to determine how local farmers in the proximity of boarding schools could benefit from these schools through the supply of food items to the school and avoid schools sourcing these from far away places. The research revealed that boarding schools are a potential market for food items that are produced by adjacent communities but many do not benefit from this opportunity because they are not organized. Many of the schools do not have good statistics of their expenditures. Organizing the local communities around these schools would help both the school benefit from lower prices since food is sourced nearby and the community on the other hand will generate income for their livelihood.

1.3 Education and Outreach

The objective is to enhance knowledge and skills of both FEDA and non-FEDA members on biodiversity conservation, environment management and sustainable agriculture.

Key results and achievements under this heading include:

1.3.1 Education

Building and improving capacity is key to FEDA work especially in the fast evolving world of technology and innovation. A number of FEDA staff have therefore benefited from capacity development in various fields including short term training courses and internships some of which include:

- The FEDA conservation Manager has attended short courses provided by the International Atomic Energy Agency both in Cameroon and abroad on topics such as; International Maritime Security, Heavy metals and Polonium-210 measurements in Marine Sediments and Biota and transfer of radionuclides from soil to plants; training on various sampling techniques for marine pollution; Biomonitoring and Trend Assessment, including Legislation/Regulation Requirements: Use of Biota and Sediment and data base building and management and statistical treatment of data;
- Another FEDA staff had a 6 months' internship with Heifer Project International which is a grassroots level organization providing support for the sustainable self-development of people using the resources available in their community. The intern spent 6 months supporting pig farmers in one of the Heifer community groups;
- Another staff works as an intern with the organization, Noah's Ark, Bamenda, under the Rural Drinking Water and Sanitation Project. The project trains rural communities on preserving the source and quality of water, including education on how to construct and protect catchment areas from animals and also preventing the contamination of water supplies from agricultural products.
- The Policy and advocacy officer of FEDA is undergoing a 15 months internship on pangolin conservation with the Zoological Society of London in Cameroon with focus on the policy and legal aspects of the conservation of this species and other wildlife in general.

- Two members of FEDA were trained in plantain propagation process, the objective being to promote large scale economic production of high producing plantain varieties.

FEDA has also provide training and support to number of students from various universities, in Cameroon notable University of Buea and Dschang, Institute of Fisheries and Aquatic Sciences Yabassi, University of Douala to works on various subjects including:

- Environmental and social impact assessments;
- Marine and in land water ecology
- Agroforestry,
- Water management
- Biodiversity conservation
-etc

Food and Environmental Education clubs, with focus on schools: Catching the youth young is the strategy that FEDA has in place to inculcate the linkages and synergies between food production and environment in the society. FEDA therefore has a program on the development and support of clubs in schools to educate and raise awareness on the important of food the environment and most importantly the synergies and interdependence of both sectors. Photo 8 shows students in a school celebrating world environment day and displaying posters produced by FEDA on some facts and figures of forests in Cameroon.



Photo 8: Food and Environment Club, in a college in Buea, SW Region

1.3.2 Outreach

FEDA is supporting a number of outreach programmes in collaboration with partners. These include:

- **Mushroom production:** FEDA supports mushroom production of a number of Common Initiative Groups (CIG) via training, technical and material inputs. Photo 9 show members of CIG called MbengAdio in a training session and some mushrooms in their production farm.



©Mbeng-Adio

Photo 9: Training session and some of the mushrooms produced by the MbengAdio CIG

- **Plantain cultivation:** This involves contribution to a farmer training school initiative of the German government, production and supply of seedling and provision of field technical support and monitoring to plantain producers. A simple propagator and plantain nursery farm in presented in Photo 10.



Photo 10: Locally made plantain propagator and nursery:

- **Promoting tree planting:** This is one of the focus activities of the Food and Environment Clubs (FEC) of FEDA. The importance of trees to the environment and food agriculture production cannot be overemphasized. Trees are important for water production from watersheds, stabilize soils and avoid erosion, produce fruits used for food, home to the bushmeat we consume etc. However, the attention given to forest restoration does not match the current deforestation rates of 200,000 ha per annum in Cameroon. FEDA is advocating, *inter alia*, for the government of Cameroon in institutionalize a national tree day as part of efforts to encourage forest restoration in Cameroon.
- **Support of orphan and vulnerable children:** Although the target here is children who are orphans and those who are vulnerable, the activities of FEDA are focused on supporting their caretakers (parents and relations responsible for their wellbeing) to generate funds for their support. FEDA's efforts in collaboration with the Noah of Ark CIG with the support of the ministry of Social welfare has focused on promoting farming activities for the caretakers of these children.