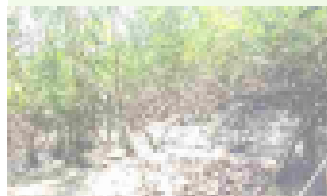


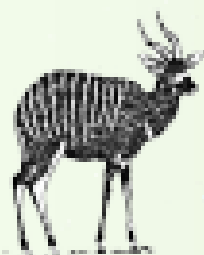
Cameroon Mangrove Conservation Network



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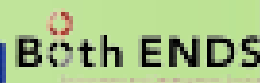
To Educate and Inform Cameroonians on Mangroves



CWCS



National Committee
of the Netherlands



Our Partners

Cameroon Mangrove Conservation Network (CMN) - network of over 40 active grassroots national NGOs, CBOs and experts involved in sustainable mangrove, coastal area and wetlands management issues in Cameroon within a wider regional network-African Mangrove Network (AMN) based in Dakar Senegal. CMN secretariat is hosted by Cameroon Wildlife Conservation Society (CWCS) at Mouanko (National Coordination) and Cameroon Ecology (CAMECO) (Secretary General). Matanda is the coastal parlance for mangroves. Matanda News is a six monthly newsletter of CMN activities and partners.

Editorial



Matanda News structured to give more information on the status and renewed interest towards participatory management of Cameroon Mangrove

Mangroves are vital but fragile coastal wetlands ecosystems found within sheltered low-waved energy inter-tidal bands within the tropical and sub-tropical zones of the world. A mangrove ecosystem encompasses three ecosystems: terrestrial, freshwater and marine component ecosystems that are intricately linked to produce a unique ecosystem. Cameroon counts among the rare countries still having this ecosystem along its coastal region covering over 400km coastline. The present mangrove coverage in Cameroon according to UNEP's 2006 mangrove ecosystem assessments in West and Central Africa is about 200 000 ha consisting mainly of estuarine mangroves covering major rivers within 3 blocks: Rio Del Rey border with Nigeria up to River

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Mounjo (54%), Cameroon estuary (Rivers Wouri, Dibamba, Sanaga and Nyong) 44% and Ntem estuary with the border with Equatorial Guinea 1% (Rivers Lokonjje, Ntem). Cameroon mangrove coverage represents 6% of African coverage and is the largest in Central Africa. They have a great structural peculiarity in that they are the most giant in Africa reaching over 100cm in diameter and 60m in height especially around the Wouri estuary. Key ecosystem services provided by mangrove forests include: provisioning services such as construction; fuel wood for cooking and smoking fish; thatching materials, medicines regulatory services especially high level of carbon sequestrations to mitigate climate change effects, shoreline protection against storms and surges; and supporting services of being important breeding grounds for fish and habitats of waterbirds and important fauna including other aquatic fauna. Mangroves also support several cultural and spiritual activities of most festivals with huge ecotourism and environmental educational potentials.

Unfortunately, according to UNEP report, mangroves have declined by 28% between 1980 and 2006 in Cameroon. Key drivers of change in the Cameroon include population growth and urban development; economic pressure from petroleum exploration. The majority of the threats facing mangroves resulting from the key drivers identified above include: urban infrastructure and agricultural development; eutrophication and algal blooms – pesticide and fertilizer run-off from large-scale plantations (rubber, palm oil, banana) in the coastal region of the Cameroon; low protection/legislation for mangroves – with large tracts still unprotected, except within the newly created Ndongoro National Park at the border with Nigeria, Bois de Singe, Douala-Edea National Park, and the Campo Ma'an National Park with the border with Equatorial Guinea. Outside this area, the mangroves are threatened with large scale petroleum/gas exploration and exploitation activities. In spite of the abundant use of timber and non-timber forest products from the mangroves, an adequate legislation does not exist yet. Invasive species – the nipa palm is an introduced species, which has colonized several areas and competes to a significant degree with the indigenous mangroves such as *Rhizophora* spp, water hyacinth (*Echorhina crassipes*) is also abundant. Most of the threats identified are well known but not properly quantified and documented for management applications.

Faced with this ugly scenario, renewed interest towards participatory management of Cameroon mangrove ecosystems has been demonstrated and channelled through the ongoing joint 5 year project GEF initiative 'Supporting community based conservation and sustainable management of mangrove ecosystems in Cameroon' being implemented by FAO and Cameroon Government with other co-financing NGOs (Cameroon Wildlife Conservation Society -CWCS, Cameroon Ecology-CamEco and Organisation for Environment and Sustainable Development –OPED). Matanda News has undergone some restructuring to feed our audience with more information on the current status, conservation and management of Cameroon mangroves through a current survey of opinion from active readers and stakeholders working with this ecosystem. This edition features more various interesting contributions to reflect the status, conservation and sustainable management of this ecosystem. Enjoy it!

Dr Gordon Ajonina

Matanda News.

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Mangrove Action Project (MAP)

CAMEROON, PREPARED TO PAY FOR THE USE OF DIFFERENT MANGROVE ECOSYSTEM SERVICES



Quantified evaluation of wood

Mangrove ecosystems provide many benefits to people commonly referred to as "services rendered". Mangrove forests filter pollution, mitigate the effects of floods and are essential in order to estimate the fisheries breeding areas. Despite its various functions and services they provide to different users, they continue to deteriorate increasingly under the influence of human activities. To address this concern, the Ministry of Environment and Nature Protection (MINEP) through the Organization for Environment and Sustainable Development (OPED) (Jonas KEMAJOU SYAPZE Augustine Corin BITCHICK BI BITCHICK and Elijah Nguekam WAMBE) Dr

Gordon AJONINA (Lead consultant for this study) found it necessary to make a quantitative assessment of the degradation of a part of within the Littoral region in order to estimate the hectare value cost of degraded mangroves, i.e. assign quantitative values to the goods and services provided by resources of mangrove ecosystems that we draw. The mangrove is a source of livelihood for the coastal population, in terms of services rendered, it was clear from our study that the amount of fish caught in the mangroves is estimated at 22 tons per ha/year, equivalent to 6,466,048 FCFA/ha and shrimp in the Kribi area are evaluated annually

in mangrove ecosystems at 841,836 FCFA/ha. The wood species of mangroves and associated forests harvested are estimated at approximately 30 000 m³ (15 000 tonnes). These species emit 28,000 tonnes of CO₂ per year with the consequent clearing of 140 ha/year. According to Din et al. , In 2008 , 200,000 trees are cut down each year in Douala, clearing 1,000 ha with timber prices in the market at 25-30 euros (18,013 FCFA)/m³ and a nearby daily demand upto 500m³. Sand exploitation rate is

estimated at 38.2 tons (6 trucks) per day for an average daily income of more than 200 000 FCFA. Today, more than 70 % of the carbon is stored in below-ground biomass of mangrove ecosystems in contrast to tropical forests where the rate is around 5% in the soil. The rate of carbon sequestration varies between 7.5 and 10 t / ha / year of mangroves and the role that plays hectare of mangroves to protect against flooding, erosion and natural disasters is estimated at 118 628 800 CFA francs. The cultural activities of Ngondo Festivals around mangrove areas is valued at 4,515,000 FCFA /year on average for a total of 7260 FCFA/ha/year of mangroves and annual transport services of up to 1,119,060 FCFA/km within the mangroves. Today, the value mangrove users are ready to pay for mangrove services is currently estimated at about 200 million FCFA/ha/ year.



Validation meeting

Elie Nguekam Wambe
Biologist /
Environnementalist
Chief of Station OPED
Kribi

A MULTIDIMENSIONAL WORKSHOP AT THE DAWN OF MAJOR DEVELOPMENT PROJECTS IN MOUANKO

A multidimensional of the people near the workshop at the dawn of various institutions to be major development aware of the importance projects in Mouanko of their role and on how "Capacity building to play it to better support Workshop of traditional conservation and developed the theme leaders and opinion sustainable development leaders of Mouanko efforts. Among the participants COPVAM (Steering were the representatives committee for the of the administration and conservation and technical services, valorization of traditional leaders of 2nd and 3rd degree, opinion and its impact in the activities, promotion of leaders of Mouanko, development of Mouanko tourism and local members of the civil



A Présentation

handicrafts and presented to participants thereafter, Mr ABENA finalization of the thus ensuring their Richard, Deputy Sub regazettement of the capacity to definitely take divisional officer of Douala-Edea Wildlife control of their command Mouanko condensed Reserve", that was the units, fully assuming three presentations into one, namely the Mouanko subdivision as auxiliaries of the "The council of the CWCS, and finally, KUD'A TUBE, Mouanko administrat ion and supporting the authorities and committees," "The After the opening ceremony of the workshop by Mr Hamid " By late afternoon the

YOUNG FEDERATION, Sub-divisional Officer of Mouanko, council through Miss

followed presentations and series of heated debate on different topics presented in turn by: Departmental Delegate of Small scale enterprises and handicraft economy Sanaga-Maritime developed the theme "Handicrafts and local economic development"; the Departmental Delegate of Tourism and Leisure of the Sanaga-Maritime spoke on "The importance of tourism and its impact in the development of Mouanko locality"; Mr Paul KALDJOB, Sub divisional Delegate of Agriculture and Rural Development made a presentation on "The Village Development Committee, crucible of democracy and essential development tools" thereafter, Mr ABENA Richard, Deputy Sub divisional officer of Mouanko condensed three presentations into one, namely "The council of notables, various

Matat presented two development projects under the 2013 PIB (Public investment Budget) namely a hall for



A view of participants

fish sale at BOLOUNGA and a modern smoke oven at MBIAKO The second day opened with a session of free screening for hypertension and blood sugar interventions ; the presentation for that day were: "Genesis of COPCVAM" by Amélie DAMDJA, representative of the conservation; "CWCS, COPCVAM and Regazettement of DEWR (Douala Edea Wildlife Reserve): future perspectives" by Dr. Gordon Ajonina, National Program Coordinator of the CWCS, and finally, "Community Forests" by Mr Patrice NGOKOY of CAMECO.

After the closing word of the Sub-divisional Officer of Mouanko, all participants received certificates of participation.



Remittance of certificates of participation

By Prudence Kalke
Volunteer, CWCS

GEF and stakeholders together for enhancing Cameroon's mangrove conservation and development



Participants

A project named « sustainable community project implementation was undertaken. based management and conservation of Earlier on, the PMU has equally visited the mangrove ecosystems in Cameroon », Tiko mangrove area to participate in a GCP/CMR/030/GEF, was launched last consultative meeting as part of the February 2013 in Douala, by H.E. HELLE process for the elaboration of norms for Pierre, Minister of Environment, Nature mangrove management in Cameroon. Protection and Sustainable Development (MINEPDED). For close to one week, the Hotel Makepe Palace conference hall, Douala, hosted respectively the planning and budgeting for year one activities, the launching workshop and the steering committee meeting. Key co-funding partners of the project include the

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DOUALA EDEA MANGROVE PROJECT HAS A MASTER PLAN



Family photograph

MINEPDED, local NGOs (Cam The Project Management Unit Eco, CWCS, OPED) and Food (PMU) based in Limbe has been and Agriculture Organization active in the follow up of activities (FAO) Cameroon as budget geared towards mangrove holder. Henceforth, functions and services of Cameroon mangrove ecosystem advocated and lobbied by local NGO and its partners have been brought to the forefront by the Global Environment Facility (GEF) funding. Better still, the culmination of that effort, which included the signing in March of the Letters of Agreement (LOA) and the FAO, is reflected on the field with ongoing mangrove conservation and development activities.



Field evaluation at Mouanko

conservation. Between May 27 and June 1st, 2013 a trip to be familiar with the project areas and to ensure effectiveness of

Initiated by the NGO Cameroon Ecology, supported and approved by the Ministry of Forestry and Wildlife (MINFOF), this project has taken effect since 2012 in the mangroves of Littoral. The Project submitted to the International Tropical Timber Organization (ITTO) for funding, and granted by the Governments of the United States of America and Japan is already operational. The structure cost U.S. \$ 671,031, slightly more than 300 million CFA with a contribution of Cameroon Ecology of 71 millions CFA. The overall objective of the project is to contribute to the management of mangrove ecosystems around the Douala-Edea Wildlife Reserve and associated watersheds. Two main products are already made, resulting in the implementation of the project, namely the participatory management of the mangrove ecosystem of the project area scheme is developed and the

improvement of living unsustainable use of standards of local mangrove resources is populations developing successfully. Thanks to the Among others, beekeeping, development of a low agriculture, livestock and impact local community fish farming are conducted economy on mangrove in several communities in ecosystems. the project area. The project area covers At the outcome of the four divisions socio-economic and socio-

THE UNQUESTIONABLE IMPORTANCE OF MANGROVE CONSERVATION FOR THE PROTECTION OF THE MARINE FAUNA ALONG THE CAMEROONIAN COAST

In the history of humanity, integrity of creation has become in the second half of the 20th century, a categorical imperative because the environment changes over time under the influence of natural and anthropogenic processes. Thus, the Cameroonian coast, particularly beautiful and wild is also rich in specific plant and animal species. Among them, the mangrove forests are amphibious characteristics of these environments. Mangroves in Cameroon by many authors play several ecological, economic, tourist roles and are reservoirs of biodiversity like marine wildlife that is an environment for breeding, feeding and protection.

Regarding reptiles, crocodiles are found, including the long-snouted crocodile especially hunted for its skin and flesh; other crocodile species found in the Kribi-Campo site are *Crocodilus cataphractus*, *crocodilus niloticus* and *Ostealaemus tetrapis* all classified as Endangered (IUCN, 2000). With 122 species of reptiles, the Kribi-Campo is one of the areas richest in reptiles in the world. The dinosaurs are represented by *Rampholeum spectrum*, *Chameleo quadricornis* and *Chameleo montium*; the latter species is endemic to Mount Cameroon. Ophidians are represented by 150 species, including *Pithon sebae*, *Boulangerina annulata*, *Bitis gabonica* and *Dendroaspis viridis*.

Mangroves are food areas of *Chelonia* found in Cameroon such as the green turtle (*Chelonia mydas*), which is primarily herbivorous feeding on mangrove propagules, their diet varies according to the oceans and the distribution of species of algae more especially *Rhodophyceae* in the



Map of the Douala-Edea Mangroves

Wouri, Sanaga Maritime, biological studies made, Nkam and Ocean a draft of the master plan. Almost at the Fourth year was developed and a of the project, the national validation expected results are workshop of the said currently being achieved master plan was approved as planned during the year 2012 in the For this purpose, the presence of the Executive reservation of two Secretary of the ITTO, community forests of René Ze Meka, and the Dibeng (Nkam) and Minister of Forestry and Bessombè (Sanaga Wildlife) communities were obtained and interim agreements of said forests are being signed with MINFOF, Alternative income generating activities to the

By: Cécile Ndjebet, Coordinnator of Cameroon Ecology and Patrice Ngokoy, Manager, Cameroon Ecology



Humpback dolphin (Souza) at the mo

wild. They feed on green algae *Ulva* and *Caulerpa*. Some authors have detected in the stomach contents of species such as *Bostrychia calliptera*, *B. radicans* and *Caloglossa liprieurii* that grow on the roots of *Rhizophora* mangle. Leatherback turtles (*Dermochelys coriacea*) feed on jellyfish, tunics and crabs, olive ridley (*Lepidochelys olivacea*) feeds on crabs, tunics and small invertebrates and hawksbill turtles (*Eretmochelys imbricata*) feeding on sponges, tunics, shellfish and algae are all characteristics of mangrove species. These environments are places for cetaceans such as humpback whale (*Megaptera novaeangliae*), the sperm whale (*Physeter macrocephalus*), dolphin (*Tursiops truncatus*), Clymene Dolphin (*Stenella attenuata* or *S. frontalis*), the humpback dolphin of Cameroon (*Souza teuszii*), striped dolphin (*Stenella coeruleoalba*), the white dolphin (*Delphinus* sp) and Sirenia as the African manatee (*Trichechus senegalensis*) that have



Humpback dolphins in Cameroon (Teuszii) near the mouth of the river near Kribi

a quiet and conducive environment to their development. And humpback dolphin of Cameroon (*Teuszii* Souza) is a characteristic species of this environment on the

Cameroonian coast. The African manatee (*Trichechus senegalensis*), a herbivore in coastal areas find these areas quite calm environment for its nutrition, and the estuaries of different rivers like the Ntem, Nyong, Sanaga, Wouri, Mungo, Meme and others are mangrove ecosystems that are generally frequented by this species despite numerous threats like natural (coastal erosion and sedimentation) and anthropogenic (pollution, deforestation, poaching), the species is still a pole of attraction for conservation. The fish diversity along the coast has been widely described and is filled with about 381 species in marine and coastal waters with a further 170 identified in brackish and estuarine waters (Fishbase, 2004). While WWF (1989); Schlieven (1996), Brummett et al. (1999); Nguenga (2002); Tiotso (2005); Brummet and Teugels (2004) inventoried 27 families and 232 species of which 18 are of major economic importance in the Campo-Ma'an, including *Heterotis niloticus*, *Clarias* spp. *Chrysichthys* spp. *Mormyrus* spp, *Synodontis* spp, *Labeo* sp *Brycinus macrolepidotus*, *Lates niloticus*.

Recent research in the Kribi-Campo by Worlfish Center and IRD has described two new species of fish group Chromaphyosemions. Cameroon can boast of a highly diverse fish fauna in marine and coastal waters of some 381 species, with an additional 170 recorded species associated with brackish estuarine environments

(Fishbase, 2004). Cameroon's coastline also appears to host the dusky grouper (*Epinephelus* sp.) Classified as endangered by the IUCN Red data Book.

According to Languy and Demey (2000), Anye (2002) confirmed the presence of 302 bird species on one side of Kribi-Campo, which according to the criteria of BirdLife International is classified as a priority area for the conservation of birds. A preliminary study during the months of January and March 2007, was used to estimate the aquatic birds in a non-exhaustive 65 Palaearctic and Afro-tropical avian species where a total of 18,326 individuals in 300 species were counted. In the continental shelf of the Cameroon coast, wildlife is divided according to the nature of the bottom (sandy bottom, muddy bottom, or muddy-sandy), but also the temperature and salinity. There are species of desalinated hot water (surface water depth of 0-30 m) Crustaceans. Species of the intermediate zone (thermocline zone) where the temperature drops and the salinity increases as one moves down (depth 0-50 m) are mostly Crustaceans, annelids. Of cold water species that live below the thermocline and can withstand high salinity are molluscs (10 species), crustaceans. To these must be added invertebrate sponges, jellyfish, foraminifera and many protozoa. Given this strong rich wildlife of coastal and mangrove ecosystems, mangrove conservation does not exclude consideration of wildlife found there. The concept of ecosystem approach would be ideal in the development of management plans for mangroves when wildlife-oriented aspects are integrated in relation to their habitats.

**By Ayissi Isidore
Biologist-océanographe
National President of
Cameroon Marine Biology
Association (ACBM)
Communication Officer (RCM)**

INTERVIEW

Interview with Dr. Ndongo Din, Head of Department, Marine and Coastal plants, Faculty of Sciences of the University of Douala

"Matanda News" team in the bid to assess climate change in Cameroon, its impacts on mangrove ecosystems and adaptability of populations meets Dr. Ndongo DIN of the University of Douala, a mangrove expert to listen to his views on the subject.

Matanda News: Today we talk regularly on climate change, is it not an act of snobbery?

Dr DIN: Perhaps, yes, in the case of many

Matanda News: In some terms, how can you define climatic events in Cameroon, what impacts?

Dr DIN: The climate in Cameroon is essentially defined around the rhythm of rainfall when temperatures tend to be in several contexts, regions and other climatic parameters are related to the first two. Certainly, changes in the timing and amount of precipitation have multiple impacts on one hand and floods and droughts on the other. In both cases, there could be consequences.

Matanda News: Any risk on mangroves following its abusive use?

Dr DIN: I would not return to the role of mangroves for local communities, but only if I say that these ecosystems have already recognized role in the world and by local people, their degradation causes minimal loss of these properties. The hardest thing for an ecosystem is its main functions which are not often seen by people before any disaster, the so-called "services" of an ecosystem is sometimes more important than the "products"

Matanda News: What are the roles of mangrove ecosystems in climate phenomena encountered by the populations of Cameroon today?

Dr DIN: In the coastal areas where mangroves grow, there is an important familiar problem known as the rising sea level and increasing their ability to grow towards the sea, they are the only

ecosystem that is resistant to this phenomenon (Cap Cameroon underwater). Our advantage not to be part of the cyclonic areas does not spare us from storms or even decadal secular could shave all exposed coasts after the destruction of mangroves. Good information on this subject is very important.

Matanda News : Activities and habits of local residents expressed with respect to climate, is it possible that people adapt smoothly?

Dr DIN: This question is linked to the land and ecosystems involving mangroves depend on climate, such as agriculture does. Like any forest degradation that results in multiple consequences and regulation of local climate and even at regional level may be affected.

Matanda News : could it have other consequences?

Dr DIN: I do not think so

Matanda News: populations adapt to these phenomena?

Dr DIN: You should know that people adapt generally after a disaster. The main products of mangroves in Cameroon (earth and wood) can be missed if all adaptations of mangroves are destroyed. Without support, there is no hope. NGOs such as CWCS must push the authorities to support the protection of mangroves.

Matanda News: As Director of Consultancy firm for studies on sustainable development of coastal and marine ecosystems; what are the measures taken to regulate climatic phenomena or management? And what actions are to celebrate World Environment Day?

Dr DIN: The list of actions is not limited to participation in various forums and my students have organized several events.

Interview by
Carole Miyema

ANNOUNCEMENTS

The 11th Executive Committee Meeting of Cameroon Mangrove Conservation Network (CMN) will be organized with the Fourth National Round Table on the theme "Water birds as indicators of wetlands International Methods of Counting & monitoring with national action plan" at Akonolinga in the Upper Nyong wetlands. The Fourth National Roundtable will be organized in collaboration with the Ministry of Forestry and Wildlife (MINFOP) Department of Wildlife and Protected Areas (DFAP) and Wetlands International under the framework of its programme "African Waterbird Census (AFWC).

The Coordinator
Dr Gordon Ajonina

UNEP-CWCS Mangrove REDD+ Central
African Regional workshop in Douala
Cameroon, 5-6 December

The United Nations Environment Programme (UNEP), Cameroon Wildlife Conservation Society (CWCS) and the University of Douala will be organizing a workshop on mangroves and REDD+ for the Central Africa region. UNEP has been working with CWCS to produce a study on the value of mangroves for climate change mitigation as well as multiple benefits for Cameroon, Gabon, the Republic of Congo and DRC. At the workshop the findings will be presented to representatives in the region for review and to make recommendations for inclusion of mangrove ecosystems in REDD+ strategies.

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