Local perceptions of Ecosystem Services in West Africa

Hosts:

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<th>Host</th>
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<th>Organisation</th>
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Abstract:

Several studies have highlighted the key roles played by ecosystems in fulfilling the needs of local people particularly in rural areas in West Africa. It has been admitted that ecosystems and the natural resources they contain contribute a lot to the development of the economy, human wellbeing, and culture in (Sub-Saharan) Africa. However, it is known that the willingness and efforts of people to conserve natural resources and ecosystems highly depended on people’s perceptions of the benefits or services these ecosystems are providing them. Meaning that understanding local perceptions of ecosystem Services is a pre-requisite in developing sound and appropriate ecosystem conservation programmes and policies. In this session are presented the results of studies on local perceptions of ecosystems services in various socioecological landscapes. It is anticipated that similitudes, differences and complementarities in the perceptions of ecosystem services across West Africa will be highlighted by the session. Concluding remarks of the session will serve as guidelines for the elaboration of development programmes and policies that promote sustainable provision of ecosystem services and increase human wellbeing and security in West Africa.
Goals and objectives of the session:
The goal of this session is to identify fundamentals for the elaboration of programmes and policies that promote sustainable provision of ecosystem services and increase human wellbeing and security in West Africa. The objectives are:

- Capitalise available research results on local perceptions of ecosystem services in West Africa;
- Highlight similitudes, differences and complementarities in the perceptions of ecosystem services across West Africa;
- Contribute to the reinforcement of the network of ecosystem services stakeholders in West Africa.

Planned output / Deliverables:

- A state of art of research on local perceptions of ecosystem services in West Africa;
- A synthesis of similitudes, differences and complementarities in the perceptions of ecosystem services across West Africa;
- Guidelines for the elaboration of development programmes and policies that promote sustainable provision of ecosystem services in West Africa.

Related to ESP Working Group:
Sectoral Working Group – SWG 9 – Indigenous people & Local communities

II. SESSION PROGRAM

Date of session: Monday, 17 June 2019
Time of session: 15:30 – 17:30

Timetable speakers

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<tr>
<td>15:30–15:45</td>
<td>Jan philip</td>
<td>Schaegner</td>
<td>European Commission, JRC</td>
<td>Ecosystem Services in Africa: A Review of “Big Literature” by Automated Content Analysis</td>
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<tr>
<td>15:45–16:00</td>
<td>Mercy</td>
<td>Diangha</td>
<td>Naturschutz Stiftung Berlin</td>
<td>Protected Areas, their ecosystems, and their biodiversity have gained increasing recognition for their socio-cultural, ecological and socio-economic importance at local level</td>
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<td>16:00–16:15</td>
<td>Oblé</td>
<td>Neya</td>
<td>West African Science Service Centre on Climate Change and Adapted Land Use (WASCAL)</td>
<td>Fringe communities’ perceptions of ecosystem services provision and social drivers of degradation in two protected areas in West Africa</td>
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### III. Abstracts

The abstracts appear in alphabetic order based on the last name of the first author. The first author is the presenting author unless indicated otherwise.

1. **Type of submission: Abstract**

**S. Sectoral Working Group sessions: S9b Local perceptions of Ecosystem Services in West Africa**

**Willingness to pay for and to accept monetary compensation for ecosystem services: an indigenous perspective**

*First authors:* Mercy D Diangha  
*Other author(s):* Peter Schmidt, Jürgen Pretsch  
*Affiliation:* Naturschutz Stiftung Berlin, Germany  
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Protected Areas, their ecosystems, and their biodiversity have gained increasing recognition for their socio-cultural, ecological and socio-economic importance at local, national and international levels. However, preserving the ecological status of protected areas in human dominated landscapes while simultaneously enabling the socio-cultural and socio-economic values they offer remains a huge challenge. Hence, it is vital to ascertain Ecosystem Service values held by communities living around such areas to promote understanding and dialogue that may revert existing problems and further clarify Ecosystem Service knowledge.

Using Banyang–Mbo Wildlife Sanctuary (BMWS) as a Protected Area case study, a research was conducted in selected villages around the Sanctuary to examine indigenes perspective on use and non-use values of Biodiversity and Ecosystem Services, and to evaluate their willingness to accept (WTA) monetary compensation and willingness to pay (WTP) for...
conservation and protection of Biodiversity and Ecosystem Services. Stated preference contingent valuation approach was applied to elicit indigenes perceptions of identified used and non-use values. WTA cash compensation for improvement of natural resource use practices, and to invest in Ecosystem Services management activities yielded more than 90% positive responses from the total questionnaires administered. WTP for direct use values of Biodiversity and Ecosystem Services was comparatively more than WTP for non-use values. The amount of money they were willing to sacrifice was very minimal and varied based on educational level, diversification of income sources and household size. However, consent for further conservation efforts in and around the Sanctuary to sustain Ecosystem Services for the benefit of present and future generation was recognized.

This study provided an economic justification for the continued existence of BMWS but clearly indicated that community education to clarify the meaning of Biodiversity and Ecosystem Services to indigenes is required to improve understanding and could pave a way for an inclusive Ecosystem Services management within and around BMWS.

Keywords: Banyang-Mbo Wildlife Sanctuary, Ecosystem Services, willingness to pay, willingness to accept, Indigenous Community

2. Type of submission: Abstract

S. Sectoral Working Group sessions: S9b Local perceptions of Ecosystem Services in West Africa

Plight of the Hooded Vulture (Necrosyrtes monachus) in the Accra metropolitan area

First authors: Margaret Impraim
Other author: Prof Erasmus H. Owusu
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The hooded vulture (Necrosyrtes monachus) is an ecologically important scavenger that is undergoing a steady decline over the years. Currently the species is listed as critically endangered on the IUCN Red List. The causes of the current decline have been attributed to many factors including poisoning and the use of their parts for traditional medicine. The situation in Ghana is not different and only a few studies have been undertaken to establish the actual causes and how local people see the role of the species in the environment. This study was purposed to estimate the population status of the hooded vulture (Necrosyrtes monachus) in the Accra Metropolitan Area. Specifically, we investigated the environmental factors influencing the distribution of the species in the metropolis, assessed the
perceptions of local people towards the species and how the finding could inform awareness creation strategies that can reverse the decline. Vulture counts at selected sites and interviews were used to obtain data. A total of 60 hooded vultures were recorded for two months at 10 sites and mostly found on Ceiba pentandra. The decline has been attributed mainly to reduction of habitats and feeding sites and the aversion people had towards the species. Majority of people interviewed indicated the species was not important to them. However, these perceptions varied significantly among the respondents living in different localities as well as between age categories with the youth having more dislike for the species and males perceiving vultures as useful birds.

**Keywords**: Hooded vulture, abundance, perceptions, Accra Metropolitan Area

3. **Type of submission**: Abstract

S. Sectoral Working Group sessions: S9b Local perceptions of Ecosystem Services in West Africa

**Local perception and factors determining ecosystem services identification around two forests reserves in Northern Benin**

*First authors(s):* Nounagnon Gérard Gouwakinnou  
*Other author: *Awessou K. Beranger  
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Ecosystems provide humanity with goods and services known as ecosystem services. The definition of the values of these services provides a basis for political decision–making. Supporting such a policy requires an understanding of the biophysical processes involved. We aimed at highlighting the knowledge and perceived importance, by surrounding communities, of the ecosystem services provided by the forests’ reserves (Alibori–Supérieur and Ouénou–Bénou) as well as the factors likely to influence this knowledge and perception. Primary data were collected from 285 respondents through twenty–five discussions groups held in twenty–five villages surrounding the forests’ reserves. The discussions were held based on a list of the twenty–nine predefined ecosystems services by Millennium Ecosystems Assessment (MEA). Socio–economic characteristics of the informants were then introduced into statistical analysis as a co–variable to analyze the determinants of the variation in knowledge and perception. Our results showed that education level, poverty index, household size, and proximity to forests determined the variation in knowledge of ecosystem services. Provisioning services have been mostly identified by the poorest very
close to the forests. The importance of the provided services for well-being has been unanimously recognized. The most recognized cultural services were education and spiritual values. Climate regulation and pollination were the best known regulating services. Supporting services such as soil formation and pest regulation which are relevant for sustainable production were unknown to the communities. The approach based on ecosystem services proved essential to inventory the diversity of services important for society and their integration into management policies for targeted conservation education.

**Keywords:** Ecosystem services, perception, forest reserves, local community, Benin.

4. **Type of submission:** Abstract

S. Sectoral Working Group sessions: S9b Local perceptions of Ecosystem Services in West Africa

**Fringe communities’ perceptions of ecosystem services provision and social drivers of degradation in two protected areas in West Africa**

**First authors:** Oble Neya  
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**Affiliation:** Research Cluster Ecosystem Change–Ecosystem Services, WASCAL Competence Center  
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Protected areas constitute an important component for the conservation of biodiversity and the maintenance of vegetation cover, thus providing a wide range of ecosystem services for the sake of local populations. Unfortunately, most of the existing protected areas in the region are undergoing continuous human induced degradation, leading to the loss of essential goods and services for population. Thus, this study was undertaken with the objectives to evaluate the perception of fringe communities on ecosystem services provision by two protected areas in West Africa namely the Nazinga Game Ranch (NGR) in Burkina Faso and the Pendjari Biosphere Reserve (PBR) in Benin and to analyze the social drivers of degradation of these ecosystems. To this end, 145 and 150 semi-structured individual interviews were conducted in the neighboring villages of the Nazinga Game Ranch and the Pendjari Biosphere Reserve respectively. The importance of ecosystem services provided by these protected areas as well as, the social factors of the local population that influence the evolution of vegetation cover and wildlife, were assessed. The study showed that around both protected areas, supply and cultural services were best perceived by the population with about 42% and 71% of household interviewed declaring to benefit from these services respectively for the NGR and the PBR. Regarding social drivers of degradation, it was found
that gender and household size have a significant (Pr <0.05) negative impact on the evolution of resources in the Pendjari Biosphere Reserve while none of the considered social factors was significant (Pr>0.1) for the Nazinga Game Ranch.

**Keywords:** Biodiversity, degradation, local perception, Nazinga Game Ranch, Pendjari Biosphere Reserve.

5. **Type of submission:** Abstract

**G. General sessions:**

**Etude de la perception de Lantana camara L. (Verbenaceae), une espèce végétale exotique envahissante, par les populations riveraines des cocoteraies du Sud-Est de la Côte d'Ivoire.**

**First authors:** Pagny Franck Placide Junior, Tiébré Marie-Solange

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L'étude de la perception d'une population permet de comprendre les opinions des personnes sur une problématique donnée afin d'adopter une stratégie de gestion efficace et durable. La présente étude vise à évaluer d'une part, la perception des populations riveraines des cocoteraies des villages de Mondoukou, d'Assouindé et de la ville de Grand Bassam sur Lantana camara, une espèce végétale exotique envahissante, et d'autre part, leurs impressions sur les espèces exotiques envahissantes en général. Pour atteindre ces objectifs, 190 personnes ont été interviewées dont 141 parmi les populations locales, 38 agents du Centre National de Recherches Agronomiques (CNRA) en charge de la gestion des cocoteraies industrielles et 11 horticulteurs. Les résultats obtenus montrent que les personnes enquêtées ont une bonne connaissance de Lantana camara et des plantes exotiques envahissantes. Les plantes telles que Chromolaena odorata, Bambusa vulgaris, Pistia stratiotes, Eichhornia crassipes et Cecropia peltata sont les plus citées par les populations car ayant un impact négatif sur l’environnement. Lantana camara est souvent utilisée à des fins thérapeutiques et alimentaires et la moitié des personnes enquêtées sont défavorables à un programme de lutte contre l’espèce.

**Keywords:** Perception, Plantes exotiques envahissantes, Lantana camara, Côte d'Ivoire.
Ecosystem Services in Africa: A Review of “Big Literature” by Automated Content Analysis

First authors: Jan Philipp Schägner  
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Africa’s natural resources under severe pressure. Immense population and economic growth in past and future years are driving forces of land degradation due to agricultural conversion, deforestation as well as road and settlement development. Increasing scarcity of natural resources accompanied with growing incomes causes that the benefits and contributions of nature to people become more and more recognized, and so does the ecosystem service concept. 

In this study, we review and analyse the scientific literature of the SCOPUS database that deals with ecosystem services (and related concepts) in Africa. To harvest all relevant publications from the “big literature” (about 66 million records in SCOPUS database) we developed a python script that allows us submitting multiple requests with hundreds of keyword combinations by accessing the SCOPUS database API. Harvested publications are then analysed by two means: (1) a simplified automated content analysis using an R-script and (2) manual reading of the most relevant publications.

Harvested publications are analysed according to seven different criteria: their geographical scope within the African countries, the ecosystem service type assessed, the political concepts considered, the nature conservation approach taken, the applied methodologies, the disciplinary perspective taken and trends over time. The quantitative findings give an overview of the state of the art in ecosystem service research within the Africa countries and allow identifying research gaps and future prospects.

Keywords: Ecosystem Services, Nature Conservation, Biodiversity, Literature review, Africa
Wild food and its economic value for African populations

First authors: Séverin Tchibozo
Other author(s): Patricia Mergen, Jutta Kleber, Koen Es, Piet Stoffelen, Jérôme Degreef
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"While well proven that Nature provides many services to human kind, conservation measures for its sustainable use still need to be reinforced. Lists of wild species used in the food sector or of the so called Non-Timber Forest products exist, but are far from complete to unlock the full potential of those resources in terms of subsistence, wellbeing and economic revenue for millions of human beings. This is true both for the local African populations, but also for the African diaspora spread over all other continents.

For millennia, wild food resources are consumed and sold in all African countries, as well as abroad by the diaspora. Their usage brings in valuable nutrients, has healing virtues both for plants, animals and human beings. Their proper valorization contributes to the bio–economy both locally and globally.

Recently the exploitation of these resources intensifies and the market is growing, without that sufficient attention is put into conservation, assuming that because it is "bio" it is de facto harmless to the environment. This is far from true and a reason why education and public awareness on sustainable exploitation, evaluation of the added nutritional value, replacement by domestication and farming and proper assessment of the ecosystem services provided, needs to be a priority.

Several initiatives illustrate this approach, such as the project LINCAOCNET1 on the edible insects, the European project Big Picnic2, as well as the ongoing activities on coffee, edible fungi and other wild crop relatives conducted in collaboration with the Meise Botanic Garden.

Keywords: Wild food, wild crop relatives, Bio–economy, Africa, Conservation
Menaces et stratégies locales de régénération de Borassus aethiopum dans la commune de Savè (Benin).

First authors: Aures Tchiche
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L'étude est conduite dans le cadre de la mise au point de stratégies de conservation et d'utilisation durable de l'espèce qui est dotée de potentialités socioéconomiques importantes. Les données ont été collectées en réalisant des enquêtes et des observations directes. Les différents types de menaces pesant sur l'espèce et les stratégies de régénération sont les principales informations recueillies auprès de chaque enquêté. L'objectif de l'étude est d'évaluer d'une part, l'importance relative des différentes menaces qui pesent sur le devenir des plantules de l'espèce et d'autre part de déterminer les techniques actuelles de régénération de Borassus aethiopum utilisées par les populations et leur influence sur la densité de régénération. Les principaux résultats de notre étude indiquent que, Borassus aethiopum présente une faible densité dans les champs. Il ressort également que les populations sont conscientes que diverses menaces anthropogéniques et naturelles entrainent la disparition de l'espèce dans le milieu à savoirs la coupe des pieds mâles adultes, le ramassage des fruits murs, la concurrence entre les pieds jeunes et adultes, les feux de végétations et la faible disponibilité de l'eau dans le sol. Afin de contrer les difficultés liées à aux menaces, les populations adoptent trois techniques de régénération : la régénération naturelle assistée, la régénération artificielle et la régénération naturelle. En dehors de ces différentes techniques de régénération, seul le facteur externe durée de jachère a un effet significativement positif sur la densité de régénération de Borassus aethiopum, ce qui explique la forte densité de régénération dans les zones à jachère longue.

Keywords: Mots-clés, Borassus aethiopum, Savè, régénération, menaces.