

EVAMAB closing workshop (Bahir Dar, 13-17 May 2019)

Full detailed report of the workshop

By the EVAMAB team

Pictures credit: Lucie Ongena, CEBioS

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Monday 13 May 2019

Programme

Time	Subject	Presenter
14.00	Welcome address by UNESCO and Belspo	UNESCO Director, Addis Ababa
14.15	Welcome word by the Belgian embassy	Ambassador of Belgium, H.E. Mr. François Dumont
	Opening address Government of Ethiopia/	Minister of environment
	Group photo	
14.30	The MAB programme	UNESCO Paris
14.40	Introduction to CEBioS and the EVAMAB project	Luc Janssens de Bisthoven (CEBioS)
Findings of the EVAMAB project – Part 1		
15.10	Introduction to EVAMAB tools assessment	Anne-Julie Rochette (CEBioS) and Jean Hugé (ULB)
15.40	EVAMAB results from Lake Tana BR	Daregot Benihun (Bahir Dar University), Steven Van Passel (UAntwerpen)
16.40	Coffee break	
17.10	UNESCO Film about Lake Tana	
18.00	Reception	

The workshop started at 14.20.

Welcome words

Introduction words were given by his excellency Fekadu Beyene (commissioner for environment of Ethiopia), M. Dumont (Belgian ambassador in Ethiopia) and Ms. Ana Elisa Santana Afonso (Director of Unesco liaison to the African Union).



The MAB programme (UNESCO Paris) *Noëline Raondry Rakotoarisoa (UNESCO-MAB, Paris)*

Ms Noëline Raondry Rakotoarisoa introduced the UNESCO-MAB programme and the Biosphere Reserves concept. The functions and zonation scheme of the BR were presented, as well as their polycentric governance system involving multiple governing bodies interacting within a specific location – the BRs.

Introduction to CEBioS and the EVAMAB project *Luc Janssens de Bisthoven (CEBioS)*

The CEBioS programme -coordinator of the EVAMAB project- as well as the EVAMAB project itself were introduced. The concept of ecosystem services – the core subject of the EVAMAB project- was also reminded. The objectives and the programme of the workshop were outlined.

Introduction to EVAMAB tools assessment *Anne-Julie Rochette (CEBioS) and Jean Hugé (ULB)*

The first work package of the project consisted in a review of existing tools for assessing ecosystem services in Biosphere Reserves. The methodology to select the tools, the tools themselves and their application on the field were summarized.

Evamab results from Lake Tana BR *Daregot Benihun (Bahir Dar University), Steven Van Passel (UAntwerpen)*

An introduction was given about the Lake Tana BR, its highlights, ecosystem services and products, threats and challenges, as well as required conservation measures. The work of the EVAMAB team was summarized: study of the willingness to contribute for water hyacinth control in villages around Lake Tana, and for the protection and restoration of papyrus wetlands around Lake Tana. It concluded with the call for an integrated, comprehensive and sustainable wetland management for the Lake Tana region.



Discussions:

- Interventions were made explaining that the **water hyacinth** can be used as a service instead of a disservice, like for composting.
- The question of **gender** was raised: why so few women in the surveys? Reasons invoked were cultural reasons, household duties, the need to ask permission to husbands. Suggestion to at least inform women afterwards is taken up.

UNESCO movie about Lake Tana

A movie about Lake Tana BR was broadcasted. It aims “to generate awareness of the importance of Lake Tana BR for economic reasons, the need for nature conservation and improved environmental management, in order to revert for people living in harmony with nature”. The 17 clips and 8 expert interviews are available online at laketana.intewo.tv.

The day ended with a reception.

Tuesday 14 May 2019

Programme of the day:

Time	Subject	Presenter
Findings of the EVAMAB project – Part 2		
9.00	EVAMAB results from Lake Manyara BR	Noelia Myonga (Lake Manyara NP), Linus Munishi (NMAIST), Luc Janssens de Bisthoven, Anne-Julie Rochette (CEBioS)
10.00	Coffee break	
10.30	EVAMAB Results from Pendjari BR	Jean-Didier Akpona, Romain Glèlè Kakaï (UAC), Jean Hugé (ULB), Steven Van Passel (UAntwerpen)
11.30	EVAMAB results from Mount Elgon BR	Zerubabeeli Naturinda (Busitema University) Fred Kizza (Mt Elgon BR), Bruno Verbist, Koen Vanderhaegen (KU Leuven)
12.30	LUNCH	
Ecosystem services and the MAB programme		
13.30	The MAB programme in Ethiopia	Ethiopian MAB National committee
14.00	Co -investment in ecosystem services: global lessons from payment and incentive schemes	Meine Van Noordwijk (World Agroforestry Center)
14.30	Canadian BR reserves approach to valuation of ES	Liette Vasseur (Canadian MAB Committee)
15.00	COBAFISH: research project dealing with ES in MAB Yangambi BR, DR Congo	Erik Verheyen (CEBioS)
15.30	Coffee break	
16.00	Ecosystem services approach in other Biosphere Reserves	Serge Rarivoavonjy (Tsimanampesotse BR, Madagascar) and Abena Dufie Wiredu Bremang (Lake Bosomtwe BR, Ghana)
16.30	Presentation of the Draft Manual on Ecosystem Services for MAB managers	Anne-Julie Rochette (CEBioS), Jean Hugé (ULB)
16.50	Working Session I: formulating recommendations for the Manual	
17.30	Adjourn	

Note: due to very rich discussions, the last part of the day (after the 15.30 coffee break) was moved to Wednesday.

EVAMAB results from Lake Manyara BR *Noelia Myonga (Lake Manyara NP), Linus Munishi (NMAIST), Luc Janssens de Bisthoven, Anne-Julie Rochette (CEBioS)*

Ms Noelia Myonga presented **Lake Manyara BR**: its history, its tourist attractions and activities, community activities in relation to tourism, tourism trends, and the main challenges (siltation and dry outs, lack of land use plans, poaching, human population increase, blockage of migratory corridors, insufficient budget,...). The way forward includes Conservation Awareness and Education to all stakeholders and a national strategy involving 7 ministries formulated in 2019.

Linus Munishi gave an overview of the landscape and the **research activities** around it. Lots of disciplines and collaborations on natural assets for solutions. Themes include: Adaptation and Resilience to Climate Change, Anthropogenic disturbances in the landscape and their influence on

natural assets, the impact of soil erosion on the environmental and social well-being of communities, Healthy Aquatic Ecosystems, Managing invasive weed species for rangeland management, etc.

Luc Janssens and Anne-Julie Rochette presented **EVAMAB work** in Lake Manyara BR: stakeholders workshops, literature survey and interviews were conducted to map the interests of different groups in the area (community mapping), assess and describe priority ecosystem services, their pressures, potential management options, and possible future scenarios. Results were organized according to the DPSIR framework (Drivers-Pressures-State-Impacts-Response). Conclusions are that tourism is key in the area, while the ecosystem and its biodiversity are highly vulnerable. The importance of by-laws on land use and a more transparent and fair redistribution of tourism benefits were emphasized. An operational integrated management of the BR, owned by all stakeholders, is essential for the future.



Discussions:

- How is the increase in **tourism** managed? It is linked to increasing needs (power, infrastructures, water etc). Do we not underestimate the impact of tourism? What is sustainable tourism then? From the perspective of indirect and direct values coming from tourism, It's a key question. Reasons for protection include the use of the area as a tourist attraction. All National parks have a management plan, which also states how many tourists can visit the area. We are still very far from the maximum number of tourists. Tourism is embedded in a larger landscape, where Lake Manyara is not central. Issue of land tenure is central – where are you going to build hotels, big farms etc. Close to buffer zone, risk of externalities.
- Regarding **management plans**, the one from Maputo Special Reserve was **overruled**, by the Minister, under pressure of corporations; and resorts were built on protected coast. In Lake Manyara, communities plus policy enforce protection. Manyara is now more seen as a communal property than it was in the past. There are about 46 villages in Manyara, they need to adapt to changing conditions. Who is going to be responsible for drafting the management plan? Now is the **time to work on the ground**.
- Lots of pressure still comes from **corrupt** politicians. Although there are also good, and controversial plans (eg road through Serengeti, salt industry in Lake Natron)
- Biosphere Reserves should submit **periodic reviews** on the management of the site. Lake Manyara BR has 3 management plans for the three responsible authorities in the different zones of the BR. Periodic reviews need feedback from a scientific and community perspective. We need to make sure that EVAMAB etc findings are actually informing management plans.

Evamab Results from Pendjari BR *Jean-Didier Akpona, Romain Glèlè Kakai (UAC),
Jean Hugé (ULB), Steven Van Passel (UAntwerpen)*



Jean-Didier Akpona presented the **Pendjari BR**: its general characteristics (people, climate, ecosystems, etc), ecosystem services, central management elements, threats, and overview of his collaboration with Belgian EVAMAB students. An important management element is that the government has recently (2017) transferred the management of the Park to African Parks Network (APN).

Jean Hugé presented the **Ecosystem services assessment** applied in the BR. Approaches that were used include the TESSA tool complemented with the Nominal Group Technique (NGT), a multi-stakeholders workshop (Multi-criteria decision analysis) and the Q methodology. Stakeholders involved were local communities, NGOs, academics, the private sector, park managers, etc. Key results include priority ES threats and trends (food from agriculture, water for domestic use, tourism), stakeholder perceptions on the management of the Park, and collective prioritization of ES management options (e.g. organic agriculture, land tenure plans, roads maintenance,...).

Steven Van Passel summarized a study about the **Park dependency** of the inhabitants of the surrounding villages, **attitude towards conservation** and park management and Research on **economic impact of reducing the controlled agricultural area** (new fence) through willingness to accept statements. Conclusions highlights that distance from the park is an important variable in explaining park dependency, as well as for willingness to accept. Policy decisions should focus on the most nearby villages. Park dependency is also linked to educational level. Different employment opportunities need to be discovered among the population. There is a need for an integrated approach towards sustainable ecosystem management in Pendjari National Park.

Discussions:

- **Establishing a fence** could endanger the MAB-label of a site. What is the fence for? What is the impact? Although the fence is not there, people now are already well aware of the limits, as there is enforcement now. There are lots of discussion on the fence, with UNESCO and others. We don't know if the fence would be effective or not. Wildlife needs to move! It's complicated. In Queen Elisabeth NP (Uganda) – fencing program started as wildlife is raiding crops, human-wildlife conflicts (need to save lives!). What is tricky – we did not have any research about the impacts of fencing – we could not inform Parliament etc. Problem is also that most corridors connecting parks are already inhabited by humans. UNESCO may not want to fence, but at other levels, it's maybe necessary. But then you could have an oasis in a desert, like Nakuru... At some

point you can't keep people out – so fencing now may put the PA in danger in the future. Way to go now is to have biodiversity outside protected areas. Fences may be an intermediary solution, but probably not a long term solution. We lack a LT monitoring of African Parks strategy. For CENAGREF we have a 30 years monitoring, it was not so bad. A demarcation line that is clearly marked is also positive. No fence means some poaching, so animals remain afraid of people. Can also be good if it's about small game poaching.

- **Multiple methods and different questions** : same tools? The aim is the same across methods: identify priority ES, main threats and management options. The stakeholders are different: the TESSA tool involved communities, Q methodology involved key-stakeholders, the workshop involved all types of stakeholders. This is why we use different methods: to reach different stakeholders. It is centered on the complementarity of methods (TESSA and multi stakeholder workshop yielded clear recommendations, while Q provides in-depth insight – complementary approaches!). Perceptions are also essential as they are linked to day-to day management!.
- **Collaboration with APN**: Nechisar NP (Ethiopia)– in 2007 African Parks (APN) wanted to do the same thing as in Pendjari. One Region wanted to resettle, other region did not want that. *How do you manage to work with African Parks?* In Pendjari, at first, APN did not want research in the park anymore, then UAC (university) went to talk to them, showed the research done, invited them to an EVAMAB workshop in Natitingou. The Natitingou stakeholders workshop was the official start of the collaboration: it allowed to sign the participation-convention- they found an agreement but more strict than before. The process was already going on but it facilitated a lot! EVAMAB workshop acted as third party facilitator to make all parties meet and discuss: APN, scientists, NGOs... It was a free space to emit frustration from both sides, and lots of explanation from both sides. There was also a positive role played by the national wildlife authority CENAGREF – they actually managed to preserve the wildlife during 30 years. Benin President decided that APN would take over the management. Tension is high, lots of antagonism , conflict – with APN. Fortress vs participatory conservation. It seems that so far APN did not follow a participatory approach – low reactivity to collaboration propositions.... But very interested when we presented them some lexicon about Pendjari – they need to have scientific data!
- **Trends in ES**, what do the results of the participatory methods tell about trends in future provision of ES in Pendjari? Methods cannot give info about future scenarios. Other methods allow to do that: e.g. participatory scenarios enable to identify feasible pathways for future .
- **People change their mind** over time. How to deal with that when using tools for assessing the perception of people? Should we do it again at another time to see the difference? Can it be a monitoring tool? Q and WTA approaches are snapshots, now they were applied at the same time, useful! But we should repeat them later. Q method is not only about statements: it has been used over time in Indonesia to see how perceptions changes and to analyse discourses. Discourses feed policy and management... Could we change people's mind/perception? There is increasing literation about nudging (behavioural economics).
- Stakeholders workshop: here again, there is a **female underrepresentation** among stakeholders. How to deal with this? MAB should empower communities so it is essential to include women! How to measure feedback on job, and communication. People say that informing youth is very important. How do you that? How to feedback your results? The NGT/Q approaches should reduce biases in a group: there is a group pressure, dominance effects etc, the methods try to reduce it. It is very hard to reduce in such cultures! In Kenya for example: focus groups were exclusively organized for women, and facilitated by a female, and some only for men. Then you have open discussions with a bias less. In Pendjari, students were mainly female researchers but it gives additional challenges on the field.

Evamab results from Mount Elgon BR *Zerubabeeli Naturinda (Busitema University)*
Fred Kizza (Mt Elgon BR), Bruno Verbist, Koen Vanderhaegen (KU Leuven)



Fred Kizza, chief warden, presented the **management of Mt Elgon NP** and the links with Payments for Ecosystem Services (PES). It is the highest caldera in the world and a water tower for Uganda and Kenya: 50 streams ! Main ecosystem services described are carbon sink (Afromontane forest), tourism, firewood and timber, NWFP (bamboo, medicines, honey, mushrooms), water provisioning, culture (Colobus tail for boys' initiation ritual)... 'Disrespect the ecosystem services, and they will punish you', e.g. landslides are an important issue in the area, but not up in the park because trees are protected there.

Zerubabeeli Naturinda presented **perceptions on (P)ES in Mnt Elgon landscape**. Rapid assessment was implemented using a combination of Tessa and PA-BAT tools. Focus groups discussions ranked priority ES (top 3: water quality regulation, indigenous knowledge, erosion and landslide control) and interviews assessed past and present PES. The distance to the forest influences the willingness to PES. An example of PES incentive was analysed: Ecotrust incentives not to cut trees. Although incentives are too low, people are on the waiting list: landslides motivate ecosystem-based adaptation PES projects.

Koen Vanderhaegen presented research on assessing **aboveground carbon** in the area. This information is needed to know whether carbon projects would be viable in the area under the current conditions. Field sampling, remote sensing and modelling enabled comparing carbon stock in 2002 and 2015: small but positive change in the C stock. The additional carbon that can be stored under effective forest protection was calculated, as well as the baseline scenario (without additional effort) with an average of C stored per hectare per year. .

Bruno Verbist presented the **potential of carbon payments**-Trees for Global Benefits (Ecotrust NGO). There is lots of C stockage potential. So the supply side is fantastic, but what about demand side to make it concrete? The scheme was assessed using the 3-E approach: equity, efficiency, effectiveness. There were more and smaller farms, which increased monitoring costs. It worked with the voluntary C market with 3 majors buyers in Scandinavia; income was used to reforest the landscape. Identified barriers are poverty, education, gender, lack of trust for community payments. The C market is volatile, yet price remains relatively constant (compared to the official market), and that constant price is because you are selling 'Carbon +'. 94% of cost is covered by the C market, 6% topped by donors.

Watershed services were also assessed. Mbale town and rice field receive lots of water from Mt Elgon. 2 PES projects took place in the 5 past years using international funding. The objective was to get an idea of how much money farmers wanted to get to protect the river banks (soil conservation

measures). Main findings are that people don't want money to give up the first 5 meter from the riverbank (too risky anyway), though they do want money at 10 and 20 meter distance. People are willing to accept money to let that go. People do want individual payments, not collective ones.

Koen Vanderhaegen then presented **private sustainability standards** (PSS) (coffee here) as a PES. Surveys and field-sampling inventories (tree- and invertebrate-biodiversity and C storage). Strong trade-offs between socio-economic and ecological benefits appeared. Some certified farms showed to apply more pesticides, as they have higher incomes, while other certifications are found to reduce yields and smallholders' income, or to create adverse ecological impacts. Multiple certification does not necessarily increase the impact of PSS or eliminate trade-offs. PSS reduce trade-offs between ES and production, but there is room for improvement.

All these results were presented at a stakeholders workshop in Mbale and Kampala. These activities were promising to rebuild trust between MENP and the local population. There is a need for upscaling promising PES initiatives at the local and international level. ES are well understood, although knowledge and perceptions are still fragmented.

Discussions:

- There were some clarifications regarding C stocks units and CO2 equivalent prices.
- All questions are directed at individuals – but many ES related issues are community based (*droit coutumier*). Their WTP may be difficult for them to answer correctly, as these are typically things that they do not decide on their own, it's a community matter. People can't make decisions, but when it comes to receiving money, they can air their opinion. In Mt Elgon, collective decision making seems to be less powerful than in DR Congo.
- 'Fred Kizza, as a MAB manager, what do you get out of this research for yr mgmt.?' Projects with no community input will fail. If a programme aims to be effective, it should also focus on what happens beyond the park, not focus only on what happens inside the park.
- Regarding the EBA project, it did not fail, but stopped when funding by IUCN and UNDP stopped. It was a demo project.
- You can buy willingness to conserve the park, by giving people access to resources as mushrooms etc. (PES 'in kind'/'in natura').

The MAB programme in Ethiopia *Motuma Didita (Ethiopian MAB National committee)*

The Unesco-MAB programme in Ethiopia was presented. Biosphere Reserves establishment started in 2010; they are five in the country. The MAB National committee is active in establishing a national BR network and activating the MAB activities. It is composed of institutions working in areas of research, education, culture, natural resources and biodiversity both from federal and regional government. It also includes universities, local NGOs and professional societies affiliated to BRs. Main weaknesses/challenges include a lack of organizational structure for BRs, weak implementation of annual plans, lack of databases, weak communication system between BRs and the MAB committee, lack of monitoring systems on BRs, lack of organized research activities on existing BRs. Future directions are the establishment of monitoring systems and management plans, the launching of the proposed BRs national network, etc.



Discussion: Where is the education aspect? It is essential! The ministry of science and higher education and the ministry of education are in the MAB committee. School clubs as well.

Co-investment in stewardship and agroforestry as paradigms for MAB reserves *Meine Van Noordwijk (World Agroforestry Center)*

Meine Van Noordwijk presented the development of PES concepts, particularly 'co-investment'. Many publications were made on the subject, including on 'Co-investment in ecosystem services: global lessons from payment and incentive schemes.'. These are 38 online chapters available here: <https://www.worldagroforestry.org/sd/environmental-services/PES>.

We can quickly be overwhelmed by the complexity: chase one line or understand and travel through the policy issue cycle! EVAMAB is a part of this cycle. Political prominence (people, their influence and concern) is to be linked to the stage of the issue-attention cycle (scoping, stakeholders analysis,...) to understand this cycle. Commitment still does not mean we found a solution, but it is a first step. Valuation has a role in this process, it will support the acceptance of an issue as part of 'policy agenda'.



Meine edited a book on "sustainable development through trees on farms: agroforestry in its fifth decade", how agroforestry changes and transformed lives. It is available here: <http://www.worldagroforestry.org/downloads/Publications/PDFS/B19029.pdf>.

The compartmentalization of sectors as agronomy and forestry, and actors as universities and ministries, is a big problem. On small islands it is integrated. MAB could be such as small islands and pioneers of institutional transformation. Co-investment refers to shared responsibility, interaction between people and their land, including identity, jobs, security, food, health, biodiversity, water, impact on people beyond their landscape. Individuals have their culture, personality, knowledge, ambitions, etc. These should be combined, it is not an ivory tower. Valuation alone will not make any change, it has to be included in a broader context, combining all characteristics of the social-ecological system.

Canadian BR reserves approach to valuation of ES *Liette Vasseur (Canadian MAB Committee)*



A guide was developed for "Assessing Ecosystem Services in UNESCO Biosphere Reserves" (Vasseur and Siron 2019, available [here](#)). The idea came from the statement that stakeholders in the BRs do not understand the ES. The guide proposes a step-by-step approach: 1/Define your BR's objectives and priorities, 2/Selection of key ES within your BR, 3/Working together to assess ES, 4/Monitor ES over time. Informal meetings such as kitchen assembly, drawing maps, using emoticons etc were useful for involving the first nation in the process. It is a simple guide that can increase social learning about the ES, leading to new actions, create greater collaboration with various partners, help manage sustainably some of the activities. A key point is the use of local resources and people in the process.

Biodiversity Research and Capacity Building in the DR Congo & the Yangambi MAB *Erik Verheyen (CEBioS)*

Erik Verheyen presented his work in DRC, in Yangambi BR, situated in the thick forests of northern DR Congo, where the young and growing population heavily relies on natural resources, including animal proteins (fishing, bushmeat). 60 million mammals are eaten per year in RDC, without the export to North! COBIMFO project studied the relationship between above carbon stock and biodiversity and concluded that there is a positive relationship for trees, but not for other organismal groups. Moreover, differences in species composition between forests increased with difference in carbon stock. Initiatives targeting climate change mitigation and biodiversity conservation should include both old-growth and regenerating forests to optimally benefit biodiversity and carbon storage. The COBAFISH project studied the relationship between nutrient origin and fish species diversity. It appears clearly that terrestrial plants are an important source fueling the Congo River food web, which means that the clearance of forest along rivers is fatal for the river! The “Centre de Surveillance de la Biodiversité” and the institutional capacity building activities of the CEBioS programme in DR Congo were also briefly presented.



Wednesday 15 May 2019

Time	Subject
09.00	Working Session II: formulating recommendations for the Manual
10.30	Coffee Break
11.00	Working Session III: formulating recommendations for the Manual
12.30	Lunch
13.30	Working Session IV: formulating recommendations for the Manual
15.00	Coffee Break
15.30	Synthesis of the recommendations for the Manual
17.30	Adjourn

Note: Two presentations from previous day were given on Wednesday instead:

Ecosystem services approach in other Biosphere Reserves

Abena Dufie

Wiredu Bremang (Lake Bosomtwe BR, Ghana) and Serge Rarivoavonjy (Tsimanampesotse BR, Madagascar)



Abena Dufie Wiredu Bremang presented **Lake Bosomtwe BR** in Ghana. The lake is the largest natural lake in West Africa, one of six meteoritic lakes in the world. It comprises vulnerable fishes, endemic species, sacred groves, a strong cultural aspect... The traditional story about the origin of the lake was related. There is a collaborative system of management. The management plan includes actions as developing sustainable ecotourism, promoting research, improving ES quality/quantity, promoting programs targeted at improving the ecological, economic and cultural values of the BR, and implementing mechanisms for equitable PES. Example of by laws are the interdiction to fish with under-size nets, to use chemicals, poison or explosives for fishing in the lake, to wash cloths or cooking utensils in the lake, fell trees along lake banks, etc. The main challenges are compliance with Laws and Regulations, overexploitation and degradation of available resources, inadequate ecotourism structures and sustaining awareness creation. Ensuring the communities get more social and economic benefits from the BR is needed, as well as proper enforcement of laws, continuous awareness raising, and placing more economic value on the resource in the reserve.

Serge Rarivoavonjy presented **Tsimanampesotse BR in Madagascar**. Main pressures are turtle poaching, deforestation and illegal fishing. Main ES are food from ocean and forests, water supply for domestic use, wood and medicinal plants (provisioning), water purification and carbon sequestration (regulating), sacred and recreation sites, education and research (cultural), primary production,

marine turtle and pink flamingoes nesting (supporting). The main objectives of the BR are reducing land clearing, poaching and fire, maintaining flamingoes populations, maintaining the hydrological quality and restoring turtles populations.

Presentation of the Draft Manual on Ecosystem Services for MAB managers

Anne-Julie Rochette (CEBioS), Jean Hugé (ULB)

The idea of developing a manual for African MAB managers about ecosystem services was presented: its format, target audience, objectives, draft general structure and production timeline.

Three questions were asked in plenary:

1. What do you expect from such a manual (content, format)?

Key answers from the participants:

- It should be user-friendly but to whom? To all or only MAB managers?
- It should describe the operationalization on the ground so that it is usable per site
- Possible next series of publications:
 - We have different ecosystems → different approaches and different stakeholders. Different approaches should be used for different ecosystems. This could be considered for next series-not in the current manual.
 - Each MAB is unique and has its own challenges. We could think of an open series of publications, following specific template: how did specific sites apply the manual? Our manual would be a basis for next series.
- The demand for such a manual is huge! The title must be more attractive. . The first chapter should focus on challenges, stakes and interests for African managers. 2nd chapter should focus on communication: how will governments use the document? It should be made clear to situate the manual for the stakeholders, what it does and does not.
- The biggest concern is knowledge and skills of the people. Take that into account. Boxes, graphics to explain unknown concepts and to enhance the knowledge to the community. Long documents don't get read.
- The manual is for MAB managers. But for policy makers there is need of a succinct format, policy brief, there are other issues. Other document for policy makers.
- The main target is MAB sites, they are kind of pilot studies for stewardship of environment worldwide outside MAB, as inspiration.
- It is a tool on which tool to select through decision system. It should be useful and concise at the same time (each tool could be a book itself!).

2. Are the goals of the manual well suited to MAB managers?

Key answers from the participants:

- A key objective for UNESCO is to better understand the ES concept
- Managers and stakeholders use different languages – it should be a two level approach! Tiered approach?
- Essential goal: maintain sustainably ecosystems

3. Is any section missing to the general structure? Should the structure be adapted?

Key answers from the participants:

- A section on monitoring and evaluation as part of the process? An evaluation of the case studies? What is the implementation process?

4. General comments:

- It should connect to local plans
- How are values considered? Monetary values or background values related to cultural practices? Both should be considered!
- Sustainability is essential! Valuation without sustainability is useless
- We should use positive wording: opportunities, not only challenges, co stewardship/co-design, not just economic
- ES are very important for managers, but who benefits from the ES? It is essential to underline.
- Through EVAMAB: a closer collaboration was established between managers, stakeholders and universities in the area!! It is framework to get local universities involved! How can we replicate that?
- Regarding the terminology: is it a manual or guidelines? UNESCO has a manual for managers for MAB, and technical guidelines. It depends on the contents of the documents. Manual is more broad.

Working sessions: world cafés



Discussions tables were organized using the *world café* methodology: participants are asked to rotate between three tables (1 table/question – around 10 participants per table) during each thematic time slot. Each question was discussed at a table for about 20'. At the end of the session, every participant has had the opportunity to discuss every question and the moderators summarize the discussions of their table to the whole group.

1st world café : Assessing ecosystem services in African MAB Reserves

1.1. Why would you (not) use a rapid ecosystem services assessment tool? (Moderator: Anne-Julie Rochette)

Use – why? Positive points

- The step by step approaches and well documented tools (user friendly)
- Stakeholders engagement: Gives a change to all to contribute – strengthens the link between stakeholders
- Providing a clear picture on quantity and quality of ES to local communities
- Community involvement: raises awareness → come to appreciate the value of a resource for restoration and conservation
- Only if communication, accompaniment and training about it

- Most of them can be customizable to a specific situation
- Gives legitimacy to the results (a tool developed by experts and internationally used) → tradeoff between legitimacy and applicability to specific sites
- Applied by Academia in environmental classes (education purpose) – sometimes as a support for park management plans
- Need to show that MAB managers are part of a global agenda (CBD, MAB network, Lima action plan) – they are not alone
- Should be underlined: Multiple use of the results (not only local!): assessing ES, impact on decision making/management plan, but also reporting to National Reports, CBD reports, MAB reports
- Only if it is clearly linked to the objectives and management of the area

Not use – why not?

- Unknown
- Another new concept – tool – we have enough (too much info)
- Lack of time – too long – Managers are too busy
- Lack of capacities/skills to apply the tools
- Not used in everyday life – only in face of a specific issue they look for tools that addresses their problem
- Might have bad consequences eg on non priority ES (superficial / rapid) → be aware of the interpretation, significance and limitations of the data
- Too general- not applicable as such to a specific site (needs to be customized)
- Economic valuation: Risks of under/over evaluation

Others

- Perceptions alone might lead to results that do not reflect reality
→ importance of complementary tools
- Importance of iteration (confront people with the results and create new results) but be careful to not over-research the communities and stakeholders!
- Recommendation should be made so that MAB managers try to use such tools at least ONCE (eg for their periodic review – every 10 years)

1.2. What would you do with the results when you have applied such a rapid ecosystem services assessment tool? What are possible entry points to feed the results into MAB Reserve management? (Moderator: Erik Verheyen)

1. Look at the results from the point of view that they are important for **the future of the young and future generations** and that you seek to support the population from the MAB area-those with roots in the area
2. Communicate the obtained results to the stakeholders, inside and outside the BRs
3. Interpret the strengths and weaknesses of the current situation, as revealed by the results, with the stakeholders
4. Solicit widely held opinions on the solutions to address the problems revealed via the obtained results and validate them via the stakeholders
5. Select different communication tools depending on the target audience to communicate the results and proposed actions for outreach purposes → centralize available information (local tv and radio, pamphlets at churches, workshops, ... >< internet, website (mission statement, procedures (transparency), activity reports, monitoring results) , accompanied by awareness and education activities to explain what it means/why actions are made
6. Assure full participation of stakeholders at all levels to assure acceptance of results (create sense of ownership): look actively for partners and get support

7. Develop a **co-designed action plan**: i.e. based on proposals of new initiatives from local stakeholders. Results should be discussed in dialogue at local level, formalized through stakeholder community for development activities
8. Actively seek out stakeholders from outside MAB (e.g. NGO's) already involved in regional development actions, hence with expertise to execute this type of actions in the transition zone
9. Seek support from higher authority levels, while maintaining "red lines" to safeguard local priorities/ objectives (define clear responsibilities and roles of various stakeholders)
10. Collaborate with higher authority levels to eventually adapt, or accommodate initiatives to pre-existing development plans/Rank actions with authorities in place to develop local plans in line with the existing national plans toward conserving the resources
11. Adapt, when necessary the **boundaries of the MAB** based on ES and its buffer zone to enable the effectiveness of the proposed initiatives: mapping stakeholders + users of ES, define priorities of different groups, and improve zonations
12. Mainstreaming the results/ actions in **local by-laws**, to be communicated regionally via adapted communication strategies
13. It should be iterative to measure impact of activities for a change to better → iterate and improve

1.3. What other ecosystem services-based approaches could complement the use of rapid ecosystem services assessment tools? What would you suggest? (Moderator: Jean Hugé)

Three main 'clusters of ideas' emerged. All proposals are meant to complement the application of rapid ecosystem services assessment tools.

A. Co-production of knowledge & dialogue

- Use serious games (to develop empathy, to understand other stakeholders better)
- Use scenarios using rich pictures (bring different generations together so that they can draw and understand the changing landscapes, and imagine a shared future)
- Use citizen science and community-based monitoring (eg regarding water quality (turbidity, pH, T°, dissolved oxygen etc) – creates empowerment, connection, and yields data in often data-poor environments.
- Create working groups bringing together champions of change from different areas
- Create dialogue at different levels (eg Lake Chad dialogues, UNESCO)
- Create opportunities for skill transfer
- LINKS programme by UNESCO (linking science with indigenous knowledge)

B. Communicating the values/the importance of ecosystem services

- Use local media (radio shows for instance)
- Collaboration between natural history museums, schools and scientists (link field visit knowledge with museum knowledge)
- Use goodwill ambassadors (linked to UN)
- Biosphere Reserve Celebration Day (eg at Lake Tana)
- Link sports contests to ecosystem services
- Organize field visits for local communities, so that they can see the core areas of Biosphere Reserves
- Hand out awards for the greenest village, the zero-fire village etc
- Link with education (eg Burkina Faso programme 'one school, one wood')
- Support local champions (change makers)
- Develop local 'brands' (eg locals cleaned their area as they were part time coffee farmers and part time tourist guides, realizing the value of healthy ecosystems)

- Use mobile telecommunications operators' network and reach in isolated areas to convey messages regarding ecosystem services
- Use traditional events (such as Christmas, end of Ramadan) as opportunities to reconnect urban visitors to their home villages when it comes to linking people and nature (ecosystem services are everyone's concern and responsibility)
- Use drama, dance and music to communicate about ecosystem services

C. Building on/re-interpreting traditional knowledge

- Sacred sites (often effective over the long run) (eg church forests in Ethiopia)
- Importance of religious/traditional leaders as influential resource persons that can trigger collective change in perceptions and behavior.
- Re-interpret some traditions which use animals for example (eg Hindu rituals in Bali, where killing adult turtles was replaced by releasing young turtles)

2nd world café : Economic valuation of ecosystem services in African MAB Reserves

2.1. What are the main advantages (strengths/opportunities) of the economic valuation of ecosystem services in support of the sustainable management of African MAB Reserves? (Moderator: Steven Van Passel)

- Money is well known and the workable general equivalent and as a result it helps conservation of resources
- Valuation helps to design payment for ecosystem services and reward mechanisms
- Politicians (and policy makers) speak in monetary terms and hence valuation is needed to attract funding and to improve (policy) planning
- Monetary values look simple, it is 1 unit and hence it is comparable
- Ecosystem services are often taken for granted and considered for free. Valuation can change that view and illustrate the scarcity of ES
- Monetary values can be easily translated into capital forms and this can attract investment and result in job creation
- Valuation helps decision making between competing users and different land use types. In other words, it improves sustainable allocation of resources
- Valuation support appreciation and awareness of ES
- Valuation can motivate local communities and help to create markets (e.g. carbon markets, water markets)
- Valuation can help with scalability and link local-regional-global issues and rural-urban transfers
- Knowing values can help to raise knowledge, embrace conservation
- Valuation can help to map unfairness/poverty/inequality issues
- Valuation can facilitate law enforcement
- The alternative of valuation (e.g. bureaucracy) is worse
- Valuation can show the need to intervene, e.g. in the case of a decline of ES (showed by lower values) another conservation status can be chosen
- Valuation can help monitoring and launch restoration/conservation/other relevant projects
- Valuation can help to improve further valuation research (e.g. value of esthetics, improved valuation of non-use values)
- Valuation can connect people and stimulate discussion, multidisciplinary and interdisciplinarity (e.g. biologist-economists; scientists-environmentalists-investors)
- Valuation can help to diversify between economic activities

- Valuation can help to strengthen institutions/governmental organizations at the field and improve the status of environmental institutions (compared to others)
- Valuation is sometimes obligatory for attracting funds and investments
- Valuation of ecosystem services can help to improve national accounting systems
- Valuation can help with conflicts between wild life and local people (e.g. design of compensation schemes)
- Valuation can help with promotion and extension services

2.2. What are the main risks of the economic valuation (EV) of ecosystem services (ES) in African MAB reserves (Moderator: Bruno Verbist)

- Difference between economic potential and what can/will be realized risks to reduce motivation of stakeholders
- EV will increase the gap between suppliers – beneficiaries as they don't always speak the same (economic) language
- Valuation needs to be informed by knowledge about ES (e.g. accounting for all forms of biodiversity, ...)
- Some ES are easier to value and valorise than others (e.g. carbon vs. biodiversity). What about the ES that are more difficult to value and valorise
- Economic valuation might not always assess properly the difference in quality of ES for beneficiaries closer or further away from the resource.
- Huge importance of transparency
- Competing interests & unequal power balance between beneficiaries e.g. commercial vs. traditional fishermen
- How can stakeholders be grouped/represented correctly without overlooking e.g. minorities ?
- Different evaluation methods will lead to different results and might – if the discrepancy is too big – lead to different/wrong policy decisions
- There is no “universal value” for different ES
- There is a lack of “scaling rules” in EV
- EV is not forward looking (looking at the past)
- Difference in value of 1 USD in different countries e.g. Ethiopia vs Morocco can drive e.g. C-payments to the cheapest country rather than lead to an increase in ES (in casu tree planting) in all countries
- Current MAB boundaries do not always coincide with the boundaries of ES service provision
- Tipping points in ES delivery will likely not match with tipping point regarding WTPay or tipping points in livelihoods of communities
- EV tends to underestimate ES; it can be a very large underestimation
- Are the data for EV good enough?
- Volatility in prices for ES might be very high, which might lead to ES providers to consider other LU options that provide less ES, but more private income (prices more volatile than ES)
- EV can push people from an intrinsic reason to conserve to an often weaker external reason (money) to protect/preserve ES. What if e.g. agriculture is more profitable than forest?
- Risk of corruption
- EV could lead to a PES scheme that is so successful, that it might become a victim of its success by creating a pool of attraction for many people living further away than the neighbouring communities
- Some groups have the power to abuse EV methods (eg. Public investments in infrastructure rather than a rehabilitation of the uplands)

- Difference in power between suppliers – buyers; Is the “ES-market” a buyers’ or suppliers’ market?
- The power of the market to control a reduction in ES might be much lower than the rule of law. Need for a change in paradigma

2.3. Do you know examples of best practices, success stories, regarding the economic valuation of ecosystem services in African MAB Reserves and/or beyond? What can we learn from these best practices? (Moderator: Koen Vanderhagen)

- Tanzania, Simanjiro Area (outside P.A., in bufferzone), communities signed an agreement with tour operators. Communities were compensated by tour operators for wildlife using their communal lands in certain seasons. Scientists helped the stakeholders to design and set up this ‘local PES’ system. However it is not perfect. Some community members do not feel adequately compensated. Benefits are received by the local political leaders and used to build schools etc. but the benefits might not always reach all actual ecosystem service providers. => issue of accessibility, issue of benefit sharing. (Linus Munishi)
- Tanzania, “Value the Arc”, Usambara BR region, study to map and value ecosystem services. Science – stakeholders partnership. ES maps generated for the area. Management plans based on the assessment and mapping of ES. Committee set up for carrying out the sustainable management of the ES. (Linus Munishi)
- Rwanda, not in BR reserve, Energy for Kigali was provided by a large hydropower dam but due to encroachment of agriculture in the wetlands of the dams water catchment the amount of water reduced and the hydropower plant stopped working. The government did a study to compare the cost of either building a new plant and operating it by using fossil fuel or rehabilitating the water catchment and restoring the use of the hydropower plant. The latter option turn out the most cost effective and in 2-3 years’ time the wetlands were restored and the plant started to provide electricity again. So the value of the ES service (i.e. providing hydropower) became very clear once the ES was lost... It had to collapse however first. Other systems might be permanently lost once collapsed... (Noeline)
- Tanzania, Lake manyara BR, one part of the BR ES value is directly quantified by looking at the incomes from tourism. A part of these benefits are shared with the communities around the lake and used to build schools, health centers, ... Besides the shared income from the park, communities also receive income by their own businesses with tourists, e.g. souvenir shops, restaurants, local hotels,... The local communities are very happy of this and members actively help to protect the park, among others by providing intelligence about other community members not respecting the agreements etc.
- Tanzania, carbon projects, TZ is actively participating in the REDD+ framework and several projects are developed in the country. They also have a regional REDD+ center. More info can be found online. (Linus Munishi)
- Ireland, The Bruns, (example presented on EUROMAB meeting April 2019), Since 1970’s modern cattle was preferred over the traditional species. However these modern cattle could only graze in the lowlands. This caused degradation over the long term and a local PES scheme was installed. Traditional cattle was reintroduced. This cattle could migrate to the highlands like it used to be done before. Allowing the lowlands to recover part of the time. Grazing the highlands also improved biodiversity in the highlands. Biodiversity in the lowland also improved. An additional benefit was the reintroduction of traditional folklore linked to the migration of the cattle. Festivities are held and tourists are also attracted by this. Incomes are used to compensate the cattle herders for reduced productivity of the traditional cattle. (Liette Vasseur)

- Ecuador, Somaco reserve near Puyo, unsustainable agricultural system was changed back to the traditional system. Some type of cyclic crop rotation as alternative to the slash and burn system. All managed by local woman, certified organic cacao, coffee, production of cassava, mango ,... the system helped to re-enhance biodiversity. Price premiums for certified products made the system attractive. (Liette Vasseur)
- Ecuador, near Chimborazo, high amounts of modern livestock was causing damage to the paramo wetlands. Climate change increased the problem. Local NGO's and communities set up a PES scheme wherein the community members of San Juan, that benefit from the clean water from the paramos for their households and agriculture, agreed with the pastors upland to change the sheep and goats and reintroduce the herding of the dwarf alpaca. This dwarf alpaca causes much less harm to the ecosystem and provides wool, milk, meat,... San Juan compensates for the lower incomes from dwarf alpacas. (Liette Vasseur)
- Ethiopia, Bale mountains, communities near the BR have installed their own nature conservation areas and this helps to create a buffer around the park. The communities benefit from incomes from tourism in their own areas and get additional revenues by the government that supports this as well as from the BR reserve.
- DRC, Uganda. Whole story of oil exploration in the Virunga and Queen Elizabeth National parks. See online. ES valuation was used to convince politicians to change these catastrophic plans of selling blocks of land in the parks as concessions to drilling companies for the exploration for oil. Finally plans were withdrawn till a certain extent. On the Ugandan side a study on ES value was carried out by WWF. Contact person: Ivan AmanigaRuhanga iamani@wwfuganda.org amani.ivan@gmail.com
- Ethiopia, different regions, green economy in BR by Ecopia, CEO Dr. Mitselal Kifleyesus-Matschie. Very interesting projects using natural resources in a sustainable way to produce products up to European standards. Lot of attention for benefit sharing and gender. (ask Brigit for more info)
- Website "Panorama". Many examples of successful PES schemes
- Kenya, Nairobi, about 50% of water supplied for the capital by the Aberdare region. The water company of Nairobi was very interested to implement conservation projects in the Aberdare region to reduce sediment loads from the catchment. Could be a perfect local PES scheme but was never brought into practice. Kenyan water laws and other institutional barriers blocked the process.
- The Sasamoa PES book, by Meine van Noordwijk et al., other examples also again about Nairobi.
- Uganda, different examples, PES on carbon by Face the Future in Kibale NP, PES on carbon by ECOTRUST in Mt Elgon NP, UWA sharing 20% of park entrance fees with communities around parks, Micro hydropower plants in Elgon region, Kween district and Suam. Benefits are shared to protect catchments, Chimpanzee trust in Albertine region, also PES project for the conservation of chimp habitat on private owned lands.
- Kenya, Mombasa paying Nzima springs to provide drinking water?
- Dar Es Salaam, payment for watershed services to Usamabaras. People motivated to plant trees but the system worked only where people had access to markets e.g. by good roads. Incentive to plant trees didn't work when people had no access to market to generate income from products obtained from trees... There was a lack of holistic approach. Farmers with access to markets would have even plant the trees by themselves.
- Ethiopia, lake Tana, Farmers are mobilized during the dry season to carry out community work in the upper slopes. Together they restore the vegetation on the slopes, protecting their villages for erosion, flash floods,...

- Ghana, lake Bosomtwe, No payment for ES conservation in cash but by capacity building. Local communities are given very practical trainings on alternative livelihoods, e.g. organic agriculture, climate smart agriculture, ... + are given seeds, tools,... The trainings are much appreciated and communities are motivated to help conserving the BR.
- Besides examples lessons were learned:
 - a. Conditionality should be built in PES and is important but difficult
 - b. Fairness is important, all providers should be compensated in a fair way

3rd world café: Translating ecosystem services-assessments to decision-makers

3.1. How can rapid ecosystem services assessment tools be used to trigger change? (change in management, in communication etc.) (Moderator: Luc Janssens de Bisthoven)

How to get which results, which entry points?

Key message 1: approach in a systemic way and focus on priority problems based on the needs

- Results to one specific issue, more efficiency, trigger change, focused on one problem, useful and applicable
- Change in perception! Identify potential trigger point
- Helps to define the problems in the system, way to articulate problems. Mental progress
- Objectives of tools based on their needs but can show new needs.
- Travail qui doit se faire doit être précédé par identification des attentes des communautés.

Traditional and local knowledge

Key message 2: recognize and valorize the local knowledge and build trust

- E.g. knowledge on climate, their monitoring etc. They see that their knowledge is recognized and valorized by other people.
- Trust building important part of the tool
- Tap in traditional knowledge if local communities are willing to share.
- Traditional knowledge is valued as specific knowledge and complementary.

Explain, explain, explain

Key message 3: trigger discussion and paradigm/behavioral shift by explaining threats, consequences of bad decisions with concrete examples and explaining Nature's multiple roles

- Trigger stakeholders & policy makers by putting value, money or status of resource, like threats, challenge, policy makers at different levels.
- Scientific evidence informing to change sustainable behavior
- Improper decision-making allocating land to industries nearby water bodies, displayed consequences about that.
- Accepting the nature's role!!
- Communication that nature is limited and not for granted.
- Group level to largest system, shared diagnosis to shared action plan, common understanding. Accountability

Science is an important part to understand MAB management

Key message 4: use new technologies and work on MAB zonation policies with scientific data, properly communicated

- New buffer zone policy
- Use techniques of mobile phoning in rural areas; ;
- University studies should not remain in the shelf!

- Assessment tools in context of research for assigning values, challenge of communicating comm findings to community.

Communication at local level to achieve changes at multiple levels

Key message 5: combine science and education in conservation with beneficiaries

- 3 functions: conservation, science & education and beneficiaries: changes different ways
- Results of tools can change
- Help put on agenda or change agenda
- You need trust. Tool is first stepping stone to build trust, confidence. Help what is future we want? Where do we want to go? Trust and transparency.
- Science should address global problems with local situations – local people feel taken seriously
- Shift of paradigm: we can live with nature, economic development towards resilient green economy.
- Speed of implementing the decisions, taking actions, like the water hyacinth.
- Implementing together the action plan and follow up is very important;
- Every stakeholder at all levels should know when talking about problem or benefit
- Understandable to everybody. Absorption of information, ownership building of information
- Incorporating the media within the tool (e.g. inviting local journalists so that they talk about the workshop), starting processing info to make it transparent to community.
- Media: local FM station. Part of programmes responsibility.
- Missing link between researchers and outreach organisations, lack of incentives!

Tools and people, an uneasy marriage

Key message 6: At level of actors, choose the right ones, the willing, the powerful

- Organizing policy committee but also technical committee drafting action plan with relevant stakeholders
- Actors doing tools, powerful actors
- Change on people to effect change on nature
- Usefulness to whom?
- Credibility of the tool to the stakeholders is important, familiarity to the tool?
- Depends on the communication, should respond to local needs.
- Mobilizes local stakeholders, empower them, responsible all stakeholders, get the info from the stakeholders and give them the full picture
- Stakeholder involvement is basis to submit MAB! Stakeholder involvement is key and mandatory: 3 players: institution in charge, local and national authorities in charge of buffer and transition area
- Third party bringing parties together for conflict resolution. Team building.

Key message 7: Demonstrate, take policy makers to the field and bring them together with local communities

- Do research with the community! Awareness starts there.
- Expansion good pilot of tana to demonstrate
- Transfer doc to people in face to face way
- Other way: work with demonstration plots in the MAB sites. Demonstration sites of scientists working with farmers or experimenting directly with communities – bring decision makers in the field and show demonstration. Incentive is disappearance of ES like medicinal plants is a incentives, walking to the different sites with the communities. Discussion by walking, very powerful.
- Demonstration site to decrease resistance, embassies, international visitors,
- The way results are communicated can trigger, to show how serious the problem is.
- What local communities are losing. Local community as an agent of change.

- Bottom up movement of acceptance by local communities is also important.
- Ethiopia: politicians don't understand theory, need experiments!
- Kids at school, eg China reforestation of mangroves, typhons, replanting by kids. Now community protect the mangroves because feel emotionally responsible.
- Reach the influential people within the communities, since the beginning. !!
- Research need to budget to outreach to come back to communities to show results.
- Seeing convinces.
- Communities surveying affected diseased trees, because they are affected directly.
- Address localized problems, they realize bringing solutions within themselves. Vo-management!!
- Funding policies addressing local problems?

3.2. Who are the most impactful stakeholders and how can they be reached? (Moderator: Meine Van Noordwijk)

The question has two parts: A) who needs to be considered beyond those directly involved in the MaB assessment of ecosystem services, values, issues and options? B) What type of messages might get attention and trigger action by these various stakeholders.

Most of the important stakeholders will be 'local', but in a slightly wider circle than those who have been directly involved, and can be grouped under community leaders (incl women, youth, religious, customary), local government, NGO's and entrepreneurs. At national scale there usually is a long list of Ministries and Departments to consider, sometimes collectively reachable through the national M&B Committee (details depend on the country), as well as members of Parliament, journalists, MGO's business platforms. Depending on the context regional bodies can be interested and supportive, as well as global organizations (international, NGO) and potential bilateral donors and investors. It is important for all of these that communication is not an afterthought, but that efforts have been made throughout the process to understand who all might have a stake in the area of focus (positively or negatively), and what approach may work best to engage them.

In terms of message (how to reach them? What type of message?) there will be a number of balancing acts to perform:

Threat versus Opportunity

Most studies can be presented as a **threat** (there is a lot of value at risk, current conflicts can get out of control, beyond blaming others direct action is needed, contested rights are at the core of the issue), or as an **opportunity** (conservation and respect for local traditions and religion can be reconciled, job opportunities and new investments are feasible with emphasis on youth and women, sustainable development goals can be achieved, there is clarity on the rules of the game for attracting new external (co-)investment). The balance depends on the audience, but consistency across both sides of the coin is needed.

Short versus medium/long term

Journalists and politicians are triggered by immediate issues that are starting to get traction, but for the longer term the 'slow variables' of education, trust building, respect, recognition and partnerships are key to success. It is important that short-term issues are in support of the change needed for the longer term.

3.3. Do you know examples of success stories of research impacting decision making? What are the conditions for research to be taken up by decision-makers? (Moderator: Jean Hugué)

- Demonstrate the **socio-economic impact** of taking (or not taking) into account the research findings
- **Science-education feedback loop** is key (education of policy-makers)
- **Transparency** (what is the research for?)
- **Avoid saturation** if the same communities all over again (they are no guinea pigs)
- **Inclusion** of different parts of the communities (men, women)
- **Relevant packaging of the results** (policy briefs etc, linkages with art, think of **flagship questions** etc. Don't get stuck in your own research niche)
- Promotion of **citizen science**
- **Indigenous Knowledge Systems** need to be included
- **Correct bogus info** (eg regarding rhino horns) – don't be too shy as a scientist
- **Co-designing research objectives** from the start (example of Ngorongoro Conservation Area, Tz) – this was later taken up by ministries at national level after field visits by ministries staff
- **Inter-disciplinarity** from the start
- More **funding for research dissemination**
- **Findings are often not digested**, think of/improve absorption capacity of decision-makers
- Scientific applicability = step 1, then only, think of acceptance.
- However, also think of **balance between understanding processes and co-constructing solutions**
- Think of **applicability of research results**
- Start with a **gap analysis**: what is not known?
- Research idea must emanate from policy makers (?) – most table participants disagree with that
- Importance of **trust** between researchers and policy-makers
- **Demand must emanate from different stakeholders**
- Use **goodwill ambassadors** to gain access to high-level decision-makers (eg join a football player to get access to the president (ex from Gabon))
- Focus your **communication beyond scientists** (think of your target group!) eg combine science and art (pictures of erosion) – Lake Manyara example
- Develop **pilot activities** (living labs, demo projects) – that will demonstrate the results of your research to policy-makers. They need concrete examples.
- Include **social-econ dimension in natural science** projects
- Best practices:
 - recent gazettement of Lake Bosomtwe Biosphere Reserve in Ghana: all local communities were visited before designation, and their traditional rules were used to draft the Reserve bylaws.
 - Gombe Reserve – building on years of research (not starting from scratch every time) to integrate chimpanzee conservation and ecotourism
 - Lake Manyara erosion management project: sharing workshops; common understanding of challenges; follow up project building on communities' feedback
 - Sumberjaya case (?): conflict between deforesting farmers and dam building – whose to blame for water shortage? Scientists pointed out poor data & showed the real trends. Scientists showed that the causes of the problem lies outside. Stakeholders

were open to that, and conflict was solved as perception was different from the scientific insights. Science needs to be connected to a process. That is actually contradicting rapid tools...these would have confirmed the perceptions.

Thursday 16 May

Field trip on Lake Tana, visit of outlet towards Blue Nile, far North-east with water hyacinth issue, and Zigé peninsula and its monastery.



Pictures: 1. One of our boats as we are leaving the port (by Lucie Ongena, CEBioS); 2. Some water hyacinths in the North-East of Lake Tana (by Lucie Ongena, CEBioS); 3. A fisherman on Lake Tana (by Luc Janssens de Bisthoven, CEBioS); 4. The inside of a church in Ura Kidane Mehret Monastery, on the Zigé peninsula (by Anne-Julie Rochette, CEBioS).

Friday 17 May 2019

A joint project to establish lake research stations that supports management and conservation plan of Abaya and Chamo Lakes

Genaye Tsegaye, Arba

Minch University

A last presentation was given about Abaya and Chamo Lakes, the two largest Ethiopian Rift Valley Lakes, providing important ES, in particular having a positive impact on modulating the weather and air quality of Arba Minch town. Despite the prominent role in the maintenance of biological diversity and economic sustainability, very little has and is being done to protect this iconic lakes. If no measures are taken to control erosion, it is expected that the Lake Chamo will undergo a change to turbid state. A prefeasibility study was conducted on the catchments of both lakes and provided information about their background history, map of the entire catchments of the two lakes; and parameters as slope; land use change; and the status of sediment deposition at the inflow of the two

lakes. The next phases focused on a quick win intervention plan, by mapping the potential sites for a quick planting scheme, and on mapping soil erosion risk and soil loss. The presentation ended by highlighting reasons for ecosystem valuation, such as the loss of life and livestock due to crocodile attack, deterioration of fish production for the past decades, submerged roads and other infrastructures, loss of soil from the entire catchment, habitat change impacts on ecotourism and ecosystem and economic loss due to fertilizer application.

Discussions:

- **Fishing:** Park boundary should not be entered by fishermen. But in practice they do enter it. Cooperatives are outside the boundary, but the illegal ones are inside, and more guards are needed. Alternatives are sought to find other income for them.
- Is the **fence** comparable to non-take zones in the marine area? The fenced place is a central breeding place: it contributes to the whole lake and was selected purposely.
- Nominating this site as a **MAB** could help this case and the manager is considering it.

Wrap-up of the workshop *Jean Hugé and Luc Janssens de Bisthoven*

A wrap-up of the workshop was presented: the first ideas about the manual and the key results of the world café sessions. The word was then given to the participants.

Discussions:

About the manual:

- **Positive wording** is essential in the manual, e.g. empowering communities. Education and schools are key and should be addressed as well. Mobile phones should be generalized to social media. Reference to sustainable management is missing!
- Important stakeholders in MAB programme are **MAB national committees**. They are weak but they have to be strong if you want to have a working MAB programme.. They have to be considered as key stakeholders for the MAB programme.
- The issue of **stakeholders** is too general: should be more descriptive?
- Lots of emphasis on the **gender** issue and women underrepresentation. How to put this clearly in the manual?
- The manual should not be too general but address specific issues and enable to contextualize top a given situation. This will be a big challenge: tradeoff between the length and easy format of the manual, and specificity of the subjects addressed.
- Regarding **ES valuation**, we should consider 3 steps: assessing ES, economic valuation, and investment plans. All this should get integrated into local and national development plans (parks are state properties).
- The manual is **only the beginning** : it is not even there. We should all reflect on how to use our network to use the impetus to extend the outputs of the manual. It is very optimistic. To achieve the cause we want to achieve, we will have to show it works before recommending it everywhere. It could be an interesting tool but we first have to show that it works!
- We should not forget that although we want the manual to be useful for any kind of landscape, we **target MAB reserves**. They have specific requirements, characteristics. The manual should be first useful for MAB managers!
- Further connection should be made with international recommendations for greening the economy (e.g. world bank, international statistics etc): there should be a connection with people working at the national scales (National bureau of statistics).

About the workshop:

- The **group** present at the workshop is very interesting: managers commissioners scientists,... big diversity! This is very important! This group should be broadened and have regular exchanges. It gives the opportunity to share the experiences of African reserves: good practice exchange, standard technique for making evaluation etc... we can speak the same language.
- Representatives were missing in this meeting. We should strengthen the link between what we do and the **communities**. Also, **politicians**: they were there at the beginning only. Unesco has the power to talk to governments, politicians, etc. We should use **UNESCO network and power** to reach the political level! It is a first step!
- When such workshops are organized, it would be good if we consider to have more women participants.

General:

- ES have to be used for biodiversity protection and **restoration**. The restoration issue is very important! We need to have more of restoration activities due to the loss of biodiversity. MAB sites are important to demonstrate how this can be done correctly.
- **Knowledge translation** is essential. We have to remember 2017, at UNESCO, a definition of a scientific was approved: researchers have an obligation to translate their knowledge and it has to be open access. It is especially the case when you do participatory research: it is community data! See document "Recommendation on Science and Scientific Researchers": http://portal.unesco.org/en/ev.php-URL_ID=49455&URL_DO=DO_TOPIC&URL_SECTION=201.html.
- The use of **new technologies** is very important.
- As Unesco BRs we need an **international agreed format** for the economic valuation of ES. We should recommend that all BR should use that kind of valuation to create a sort of uniformity in BRs.
- For further projects and opportunities, we should take contact with the African Development bank and its Green economy department.
- We hope that we will be able to secure a 2nd EVAMAB-like project, in order to take all advantages of this 1st stage. We should go on with scientific research and broaden the manual and continue.

Main outputs

Workshop reports

This report summarizes the whole workshop and will be circulated to all participants and put on the EVAMAB website www.biodiv.be/evamab, together with the powerpoint presentations and pictures of the workshop. The workshop was also summarized in a Conservation News piece to Oryx—The International Journal of Conservation, under the title "Conserving African Biosphere Reserves: managers & scientists exchange on ecosystem services & beyond – a recent UNESCO workshop in Ethiopia". It will be published in the October issue.

Manual

The manual will be drafted based on the recommendations and discussions of the workshop. A first version will be presented to the AfriMAB community at the AfriMAB meeting in September. It should be finalized in 2020.

Videos

During this workshop, we decided to film short interviews with as many participants as we could. These interviews will be used to create short video clips, which will then be published on the CEBioS

Youtube channel and website, and be presented e.g. at the AfriMAB meeting or other conferences and events where EVAMAB is presented.

Appendixes

1. Programme
2. Participants list

Appendix1: Programme

Saturday-Sunday 11-12 May 2019:

Arrivals of the participants in Bahir Dar

Shuttle service to the hotel

Monday May 13, 2019:

Time	Subject	Presenter
14.00	Welcome address by UNESCO and Belspo	UNESCO Director, Addis Ababa
14.15	Welcome word by the Belgian embassy	Ambassador of Belgium, H.E. Mr. François Dumont
	Opening address Government of Ethiopia/	Minister of environment
	Group photo	
14.30	The MAB programme	UNESCO Paris
14.40	Introduction to CEBioS and the EVAMAB project	Luc Janssens de Bisthoven (CEBioS)
Findings of the EVAMAB project – Part 1		
15.10	Introduction to EVAMAB tools assessment	Anne-Julie Rochette (CEBioS) and Jean Hugé (ULB)
15.40	Evamab results from Lake Tana BR	Daregot Benihun (Bahir Dar University), Steven Van Passel (UAntwerpen)
16.40	Coffee break	
17.10	UNESCO Film about Lake Tana	
18.00	Reception	

Tuesday May 14, 2019:

Time	Subject	Presenter
Findings of the EVAMAB project – Part 2		
9.00	Evamab results from Lake Manyara BR	Noelia Myonga (Lake Manyara NP), Linus Munishi (NMAIST), Luc Janssens de Bisthoven, Anne-Julie Rochette (CEBioS)
10.00	Coffee break	
10.30	Evamab Results from Pendjari BR	Jean-Didier Akpona, Romain Glèlè Kakai (UAC), Jean Hugé (ULB), Steven Van Passel (UAntwerpen)

11.30	Evamab results from Mount Elgon BR	Zerubabeeli Naturinda (Busitema University) Fred Kizza (Mt Elgon BR), Bruno Verbist, Koen Vanderhaegen (KU Leuven)
12.30	LUNCH	
Ecosystem services and the MAB programme		
13.30	The MAB programme in Ethiopia-tbc	Ethiopian MAB National committee
14.00	Co -investment in ecosystem services: global lessons from payment and incentive schemes	Meine Van Noordwijk (World Agroforestry Center)
14.30	Canadian BR reserves approach to valuation of ES	Liette Vasseur (Canadian MAB Committee)
15.00	COBAFISH: research project dealing with ES in MAB Yangambi BR, DR Congo	Erik Verheyen (CEBioS)
15.30	Coffee break	
16.00	Ecosystem services approach in other Biosphere Reserves - tbc	Serge Rarivoavonjy (Tsimanampesotse BR, Madagascar) and Abena Dufie Wiredu Bremang (Lake Bosomtwe BR, Ghana)
16.30	Presentation of the Draft Manual on Ecosystem Services for MAB managers	Anne-Julie Rochette (CEBioS), Jean Hugé (ULB)
16.50	Working Session I: formulating recommendations for the Manual	
17.30	Adjourn	

Wednesday May 15, 2019:

Time	Subject
09.00	Working Session II: formulating recommendations for the Manual
10.30	Coffee Break
11.00	Working Session III: formulating recommendations for the Manual
12.30	Lunch
13.30	Working Session IV: formulating recommendations for the Manual
15.00	Coffee Break
15.30	Synthesis of the recommendations for the Manual
17.30	Adjourn

Thursday May 16, 2019:

- Field and working visit to Lake Tana Man & Biosphere Reserve

Friday May 17, 2019:

- 09.30-12.30: Conclusions of the workshop & wrap-up
- 12.30: Lunch
- Evening: first departures of participants

Saturday-Sunday 18-19 May 2019:

- Departures of the participants

Appendix 2: Participants list (green were impeached for various reasons)

NAME	ORGANISATION
1. Mulunesh ABEBE ALEBACHEW	Bahir Dar University
2. Enyew ADGO	Bahir Dar University
3. Jean-Didier AKPONA	Université d'Abomey-Calavi, Benin
4. Daregot BERIHUN	Bahir Dar University
5. Fekadu BEYENE	Ministry of Environment, Forest and Climate Change of Ethiopia
6. Amandine CALLENS	UNESCO
7. Brigitte DECADT	Belspo, Belgium
8. Motuma DIDITA	Ethiopian biodiversity institute
9. SE. Mr. François DUMONT	Belgian embassy in Addis Ababa
10. Nega EJIGU TEFERA	Bahir Dar University
11. Wubante FETENE ADMASU	Bahir Dar University
12. Romain GLELE KAKAI	Université d'Abomey-Calavi, Benin
13. Marcel HOUINATO	Université d'Abomey-Calavi, Benin
14. Jean HUGE	Université Libre de Bruxelles, Belgium
15. Luc JANSSENS DE BISTHOVEN	CEBioS, Royal Belgian Institute of Natural Sciences
16. Fred KIZZA	Mount Elgon National Park, Uganda
17. Linus MUNISHI	Nelson Mandela African Institution of Science and Technology, Tanzania
18. Norman MUSHABE	UNESCO
19. Noelia MYONGA	Manyara BR, Tanzania
20. Zerubabeeli NATURINDA	Busitema University, Uganda
21. Lucie ONGENA	CEBioS, Royal Belgian Institute of Natural Sciences
22. Noëline RAONDRY RAKOTOARISOA	UNESCO – MAB Paris
23. Serge RARIVOAVONJY	Tsimanampesotse BR, Madagascar
24. Anne-Julie ROCHETTE	CEBioS, Royal Belgian Institute of Natural Sciences
25. Ana Elisa SANTANA AFONSO	UNESCO
26. Rolf-Dieter SPRUNG	UNIQUE Forestry and Land Use
27. Honoré TABUNA	Communauté Economique des Etats de l'Afrique centrale
28. Adgo TADESSE	Nature and Biodiversity Union (NABU) Bahir Dar
29. Fassil TEFFERA	Arba Minch University
30. Genaye TSEGAYE	Arba Minch University
31. Koen VANDERHAEGEN	KULeuven, Belgium
32. Meine VAN NOORDWIJK	CGIAR
33. Steven VAN PASSEL	Universiteit Antwerpen, Belgium
34. Liette VASSEUR	Canadian MAB committee
35. Bruno VERBIST	KULeuven, Belgium
36. Erik VERHEYEN	CEBioS, Royal Belgian Institute of Natural Sciences
37. Komera WAKJIRA	Ethiopia Wildlife Conservation
38. Abena Dufie WIREDU BREMANG	Lake Bosomtwe biosphere reserve, Ghana
39. Yohannes ZERIHUN	Ministry of Water, Irrigation and Electricity