



Demonstrating ecosystem service values in Africa through shared learning

Presenting the results of Ecosystem Service Assessments



Workshop report

11 – 14 February, 2014 at 14 Falls lodge, Kenya.

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About the workshop

The workshop was held by the Tropical Biology Association in partnership with BirdLife International as part of the project “Demonstrating ecosystem service values in Africa through shared learning”. Eleven African conservationists attended the workshop and presented their results of ecosystem service assessments at the site scale. All participants had attended our first training workshop on the ecosystem services concept and how to use the Toolkit for Ecosystem Service Site-based Assessment (TESSA). The participants are pioneers of TESSA in Africa and had applied the toolkit for the first time in Burundi, Cameroon, Ghana, Kenya, Malawi, Madagascar, Uganda and Zimbabwe. They covered a range of habitats including tropical forest, miombo woodland, grasslands, wetlands and coastal mangroves.

Participants presented insights into how land use change might influence the continued delivery of ecosystem services at their sites including climate regulation, water, harvested wild goods, cultivated goods and nature-based recreation. For example, in Cameroon, certified cocoa provided greater ecosystem service benefits to local communities than the non-certified product. Native forest provided the greatest benefits of all. All agreed that they would like to use their results to inform policy and management decisions and in many cases this is already happening.

The workshop also provided a forum for gathering feedback on how the toolkit could be improved and the way forward for its future development (Appendix 1).

Pioneers of TESSA in Africa

Name	Country	Site Assessed
Charles Rugerinyange	Burundi	Mpungwe Mountain Chain
Patrick Armel Mbosso	Cameroon	COPAL Community Forest
Leonard Akwany	Kenya	Yala Swamp complex
Paul Muoria	Kenya	Kakamega Forest
Roma Randrianelona	Madagascar	Mangabe forest, Alaotra Mangoro
Tiwonge Ivy Gawa	Malawi	Mt. Mulanje
Michael Opige	Uganda	Echuya Forest
Togarasei Fakarayi	Zimbabwe	Driefontein Grasslands
Jacqueline Kumadoh	Ghana	Krososua Hill Forest Reserve
John Bett	Kenya	Boni Dodori forest reserve
R. Lalao Aigrette	Madagascar	Velondriake Mangroves

The trainers for the workshop were drawn from Kenya and UK, and shared diverse experiences and expertise in ecosystem services assessment.

Trainers

Name	Country	Organization
Jenny Birch	UK	BirdLife International
Rosie Trevelyan	UK	Tropical Biology Association
Paul Mugo	Kenya	Tropical Biology Association
Samuel Mwangi	Kenya	Arid Lands Information Network
Mwangi Githiru	Kenya	Wildlife Works
Olivia Adhiambo	Kenya	BirdLife Africa Secretariat
John Kasina	Kenya	Kenya Agricultural Research Institute
Mary Gikungu	Kenya	National Museums of Kenya



The workshop was held at the Fourteen Falls Lodge in Thika, Kenya.

Sharing experiences of applying TESSA and making suggestions for improvements

The workshop provided a unique opportunity to gather feedback from the first cohort of TESSA users in Africa. Participants shared what worked well, identified areas of improvement, and pointed out gaps in the toolkit and its approach. They also reported on the time and resources that are needed to conduct site based assessments so that people can realistically plan for the work in future.

Participants recommended that the toolkit is relevant for conservation professionals, project managers, technical field officers and students. However, they thought that it is too technical for local communities to apply directly and analyse the data. Many non-

English communities would also need to have the toolkit translated. A key recommendation made was to clarify further how to select an ‘alternative state’. Participants proposed they needed more guidance on this approach and suggested the inclusion of case studies by way of examples. A second major recommendation was to make the toolkit more accessible and appealing to users since the current format is weighty and daunting. Suggested improvements include having links between sections, separating some sections out into portable documents, providing the questionnaires as ‘apps’ for use on Ipads and smartphones, and creating a shorter less technical version. A final set of recommendations centred on new ecosystem services to add namely pollination, cultural services, marine and coastal services.

Participants’ time and cost estimates in trialling the toolkit.

Person	Field work (person days)	Data analysis (person days)	Direct Cost (£)
Jacqueline Kumadoh	153		2,450
Tiwonge Ivy Gawa	40	20	3,750
R. Lalao Aigrette	280	45	2,350
Roma Randrianavelona	60	30	2,867
Charles Rugerinyange	34	10	5,000
Patrick Armel Mbosso	80	20	6,033
Michael Opige	120	20	5,000
Togarasei Fakarayi	61	3	2,482
Leonard Akwany	76	28	6,000
Mean	100	22	3,992

Research design and data analysis

Ms. Jenny Birch used case studies from Fiji and Nepal to explain how data was collected and analysed using TESSA in these countries. This was followed by a detailed question and answer session. Dr. Rosie Trevelyan gave an interactive talk on designing research and sampling. This was designed to assist participants make decisions about their sampling protocols when applying TESSA. She took a step-by-step approach to explain the importance of linking research questions to the methods and of visualising the results as part of the process.

Communication skills

Rosie also gave her tips on how to make effective presentations. She challenged the participants to use the next opportunity they get to think creatively about their presentation, to tailor it more closely to the audience, and to make their take home messages clear and memorable.



‘Capacity building happening around TESSA and other TBA/ BirdLife International initiatives has very long impact on trainees’

Expert experiences on Ecosystem Services

Dr. Mwangi Githiru talked about the current approaches to ecosystem services in Africa. He used various case studies from the continent including the Kasigau Corridor Reducing Emissions from Deforestation and Forest Degradation (REDD) project. Mwangi then presented information on carbon credits and global market trends. He concluded his talk with insightful notes on the strengths and weaknesses of valuing ecosystem services in conservation.

Mr. Samuel Mwangi from the Arid Lands Information Network shared his expertise on measuring water services. Using the example of the Sasumua dam that supplies water to Nairobi city, he explained the important but difficult process of developing a business case for downstream water managers to engage in upstream Payments for Watershed Services. He also talked about the case of the River Malewa that provides 80% of water to Lake Naivasha and concluded with various challenges in designing and delivering payments for water services.

Dr. Mary Gikungu, and Dr. John Muo Kasina delivered a session on pollination as an ecosystem service. Their presentations covered pollinator diversity in Africa, the role of pollinators in environmental conservation and how to evaluate pollination services.



'The teachers were very well selected, the topics interesting and informative'

Using TESSA to influence policy

Ms. Olivia Odhiambo shared her experiences on influencing policy using the example of the 'Ecosystem-based Adaptation' project being implemented by BirdLife International. She outlined the steps that are needed in order to eventually influence policy. She gave advice on how to identify opportunities, build partnerships with stakeholders, and present information in a policy relevant manner. She facilitated a discussion on how participants could use their results of ecosystem services assessments to influence policy at various levels. Many participants shared how they had already influenced policy using the TESSA results.

Field excursions

The group visited the Chania falls on Chania River near Thika town, and Fourteen Falls on Athi River which gave them an opportunity to see first-hand different levels of ecosystem services degradation. Thika town hosts many food and agricultural industries and is densely populated. Untreated effluent from domestic and industrial waste is increasingly deposited in the Athi River affecting its ability to provide adequate ecosystem services including clean water for domestic and agricultural use, tourism facilities and cultural uses. Participants were given an exercise to conduct a rapid appraisal of ecosystem services provided by the sites visited.



‘This has been an exciting learning moment on something I knew very little about in April, 2013’

The workshop’s last practical activity was a field trip to the Ol Donyo Sabuk National Park where the team was and briefed by the Kenya Wildlife Service warden. The team hiked through the dense montane forest to the mountain top. The mountain provides valuable ecosystem services to the community notably micro climate regulation and is a source of streams that supply water to downstream communities.



‘There was a good follow up of issues, well-structured to give feedback on TESSA’

Next steps for the toolkit and lessons learned

Participants' recommendations for TESSA will be incorporated into the next version of the toolkit where resources allow. Several sections will be changed to make them clearer. Priority changes to the format include a web-based and interactive pdf version, a Question and Answer section, and case studies so that people can learn from best practice. Suggestions for other services have been noted and lead module authors will need to take this further.

The main lessons learned from applying TESSA were that sufficient time needs to be allocated for all phases of applying the toolkit, including the stakeholder consultation and data analysis.

Those who used the questionnaires thought that it would be better to use fewer, shorter questionnaires, and survey more respondents. Participants also recognised they need to have consistency which could be enhanced by training and using the same field assistants throughout the study.

In order to use TESSA to influence policy, users need to identify policy gaps at the beginning and collect relevant data for policy needs. It is important to engage appropriate stakeholders throughout and include a communications plan from the start.

Impact of the workshops and looking ahead

The workshop has increased the capacity of conservation managers to assess and monitor ecosystem services at important sites for biodiversity in Africa. Everyone said that they aspire to integrate TESSA into other projects and programmes they or their organisations are involved with. They would also like to apply TESSA at new sites and encourage students to use the toolkit in their projects.

The participants have committed to use the results of their site assessments to influence policy at various levels. This is already happening for some of the sites. In Cameroon, Community Forest users are now considering maintaining some areas of native forest instead of converting to cocoa plantations. Further, Patrick's involvement in the TESSA project led to his ministerial appointment as the Regional Chief of Service in charge of the Monitoring of Environment and Social Management plan in the East Region, the most forested region in Cameroon.

Workshop Assessment

The workshop received a score of 4.3 for the overall content (where 1= very poor and 5 – very good). All eleven participants said there was a good balance of talks, discussions and all said they intended to apply the toolkit again.

a) Usefulness of the talks on the workshop.

Score (1-not useful to 5-extremely useful)	1	2	3	4	5	Mean
Frequency	0	0	1	1	9	4.7

b) Balance between talks and discussions.

Score	1 -Too many talks	2 -About right	3 –Too much discussion	Mean
Frequency	0	11	0	2

c) The overall content of the workshop.

Score	1 –very poor	2 -poor	3 -Average	4 -Good	5 –Very Good	Mean
Frequency	0	0	0	8	3	4.3

d) How likely the participants would apply TESSA again

Score	1 – Very likely	2- Likely	3 – Not likely	Mean
Frequency	11	0	0	1

Workshop Timetable

Tuesday 11th: Sharing results of TESSA applications

- 8:00 Introductions and aims of the workshop
- 8:10 Discussion – Feedback on the toolkit
- 9:00 Results of site scale assessments (15 minutes each)
Charles Rugerinyange: Mpungwe mountain.
Jacqueline Kumadoh: Krososua Hill Forest Reserve.
Paul Muoria: Kakamega Forest.
- 10:00 **Tea/Coffee break**
- 10:30 Results of site scale assessments, Cont'd
Tiwonge Ivy Gawa: Mt Mulanje Forest reserve.
John Bett: Boni/ Dodori forest reserve.
Roma Randrianavelona: Mangabe forest, Alaotra Mangoro Region.
- 11:30 Talk: Data analysis and presenting results – case study 1
- 13:00 Lunch**
- 14:30 Results of site scale assessments, Cont'd
Patrick Armel Mbosso: COPAL Community Forest
R. Lalao Aigrette: Velondriake Mangrove.
Togarasei Fakarayi: Driefontein Grasslands
- 15:30 Tea Break**
- 16:00 Field walk around the site, comparing ecosystem services in two alternative states
- 19:00 Dinner**

Wednesday 12th: Putting things in context

- 8:00 Recap of day 1
- 8:20 Results of site scale assessments, Cont'd
Leonard Akwany: Yala Swamp complex
Michael Opige: Echuya Forest Reserve, and Mgahinga National Park
- 9:00 Discussion on the toolkit (Successes and challenges)
- 10:00 Tea/Coffee break**
- 10:30 Talk: Where we are with ecosystem services in Africa
- 11:30 Talk: Data analysis and presenting results – case study 2
- 12:15 Question and answer
- 13:00 Lunch**
- 14:30 Talk: Measuring water services
- 15:15 Discussion: Challenges of assessing water services & implications for toolkit
- 16:00 Tea/Coffee break**
- 16:30 Talk: Data analysis and presenting results – case study 3
- 19:00 Dinner**
- 20:00 Post-dinner musings: 3 top questions a user might like to ask about the toolkit

Thursday 13th: From practice to policy

- 7:00 Depart for Blue Post Hotel
- 7:30 Breakfast at Blue Post Hotel
- 8:30 Briefing and visit the Chania falls
- 9:30 Depart for 14 falls
- 10:00 Briefing at 14 falls
- 11:00 Depart for 14 falls lodge
- 11:30 Tea/Coffee break**
- 12:00 Talk: Pollination as an ecosystem service
- 13:00 Lunch**
- 14:30 Talk: Influencing policy
- 15:00 Sharing experiences: how to influence policy – participants experiences
- 15:45 Talk: Scientific communication 1
- 16:15 Working tea/coffee break**
Discussion, compilation of top 3 questions
- 19:00 Dinner**

Friday 14th: TESSA: Where next?

- 8:00 Discussion: the way forward for the toolkit (content, format, user groups, etc.)
- 9:00 Talk: Scientific communication
- 10:00 Tea/Coffee break**
- 10:30 Targets: How to communicate the results of the TESSA assessments?
- 11:30 Closing session and review of workshop
- 12:30 Lunch**
- 14:00 Excursion to Ol Donyo Sabuk National Park
- 19:30 Campfire & Nyama Choma

Appendix 1: Participant’s feedback on the toolkit

a) How easy was it to use the toolkit?

Score (1-hard to 10-easy)	1	2	3	4	5	6	7	8	9	10	Mean
1. Was it easy to use?	0	0	0	0	1	1	6	2	0	0	7.7
2. Was it easy to explain to others?	0	0	0	0	1	2	4	1	1	0	7.8

b) What did you most like about the toolkit from your perspective as a user?

- ✓ Use of specific examples in explanations
- ✓ Stakeholder involvement
- ✓ Easy to adapt
- ✓ Very useful for advocacy
- ✓ Stepwise explanation of procedures
- ✓ The holistic nature of the toolkit
- ✓ The uniqueness in assessment of resources
- ✓ The use of the dichotomous key style
- ✓ Use of scores in determining ecosystem service change
- ✓ Rapid appraisal

c) How did you use TESSA?

Generally, participants used the toolkit as a reference document. They used it mostly as a guide before doing the field work and during data analysis, for example, to view worked examples. They found the flow charts helpful.

Some of the participants were confident adapting the approach and methods with their own experience, whereas others felt they had to follow the methods strictly and/or needed more specific guidance on some services.

Action: Make really clear that TESSA is not a blueprint – for guidance. Must be adapted.

d) Specific feedback

1. There was agreement that the concept of the alternative state is complex.

Action: Review the toolkit to make it more clear how to select an alternative state (e.g. size, distance from site, key criteria to consider) and add more real examples. Emphasize the importance of first deciding the expected changes on the current site & then look for sites where those changes are currently present.

2. There were suggestions to improve the questionnaire survey methods:
 - Improve HWG methods for subsistence use only products such as herbal medicines, honey, where there is no market (e.g. look at replacement cost)
 - Respondent fatigue was an issue in several studies. Reduce, revise and simplify the questionnaires e.g. use of pictures and quick choices, take out repetitive questions
 - Pilot surveys first

Action: Review survey guidance and revise to address the above.

3. The language barrier was clearly an issue for French-speaking countries who suggested TESSA should be translated into French and into other local languages. Because users had to make their own translations this significantly slowed down their work.

Action: The broader need and feasibility of this should be considered.

4. Link the results to wider ES issues including Payments for Ecosystem Services (PES)
 - Several suggestions were made for things already addressed in the toolkit e.g. Glossary, soil carbon method, non-monetary and monetary valuation, criteria for selecting an alternative state, provide indicative cost based on experiences and timelines.

Action: Consider whether these issues are addressed sufficiently and/or how to highlight them more clearly.

e) The format

Overall, the feeling was that the current format is daunting and not appealing to users. The following suggestions were made:

Structure

- Consider merging the methods with the service sections (*in my view this isn't applicable now that there will be an interactive version making jumping between sections easier*)
- Split the toolkit into smaller, easier to manage booklets for specific ecosystem services
- After introduction, introduce a short summary to help with planning the key information/data needed for each service.

Accessibility

- Put interactive links to the convenient sections indicated by the flow charts
- Format the toolkit in an interactive Portable Document Format (pdf) with links to make it shorter and quicker to use.
- Create an application for the toolkit e.g. an Android version for portability
- Provide the questionnaires as applications e.g. for iPad to make it quicker and fun.
- Produce a colourful printed “folder like” version with pull-outs (colour-coded?) & referenced side extensions
- Provide a more comprehensible version targeting lower technician level practitioners.

Support

- Provide an online tutorial on how to use the toolkit (consider a video tutorial on a CD due to poor internet connections in the field)
- Include more case studies and examples

Action: Use the above to inform the IAA project

f) Other services they would like to see included

1. Cultural and spiritual services (*in development*)
2. Pollination services (*in development*)
3. Commercially cultivated goods (e.g. big tea and coffee farms)
4. Marine and coastal ecosystem measurement
5. Global climate regulation services in papyrus wetlands ecosystems

Action: Consider with committee if these services should be added to strategy action plan list

g) Additional methods to consider:

- Market assessments for wild goods & cultivated goods prices
- Improved / new methods for valuation of water services
- Alternatives to respondent surveys (since the tool gives a lot of trust to respondents)
- Methods that use more participatory tools

Action: Consider with committee if these should be addressed and added into next version

h) Frequently Asked Questions

General

1. What does the toolkit intend to achieve?
2. Who are the target users of the tool?
3. What services does the toolkit cover?
4. What are the limitation(s) of the toolkit?
5. How can TESSA be used to influence policy?
6. How is the tool different from others?
7. What is the knowledge requirement for TESSA users?
8. What are the spatial dimensions of a site (minimum and maximum limits)?
9. How can I use the results of the toolkit for (Payment for Ecosystem Services) PES?
10. How can I interpret and apply the results of TESSA?
11. How affordable is the toolkit.

Specific to Carbon

1. Do I need to measure height?
2. Do I need to identify the tree species?