

ACES Newsletter

Project Newsletter

Date: February 2015

# Abrupt Changes in Ecosystem Services and Wellbeing in Mozambique (ACES)



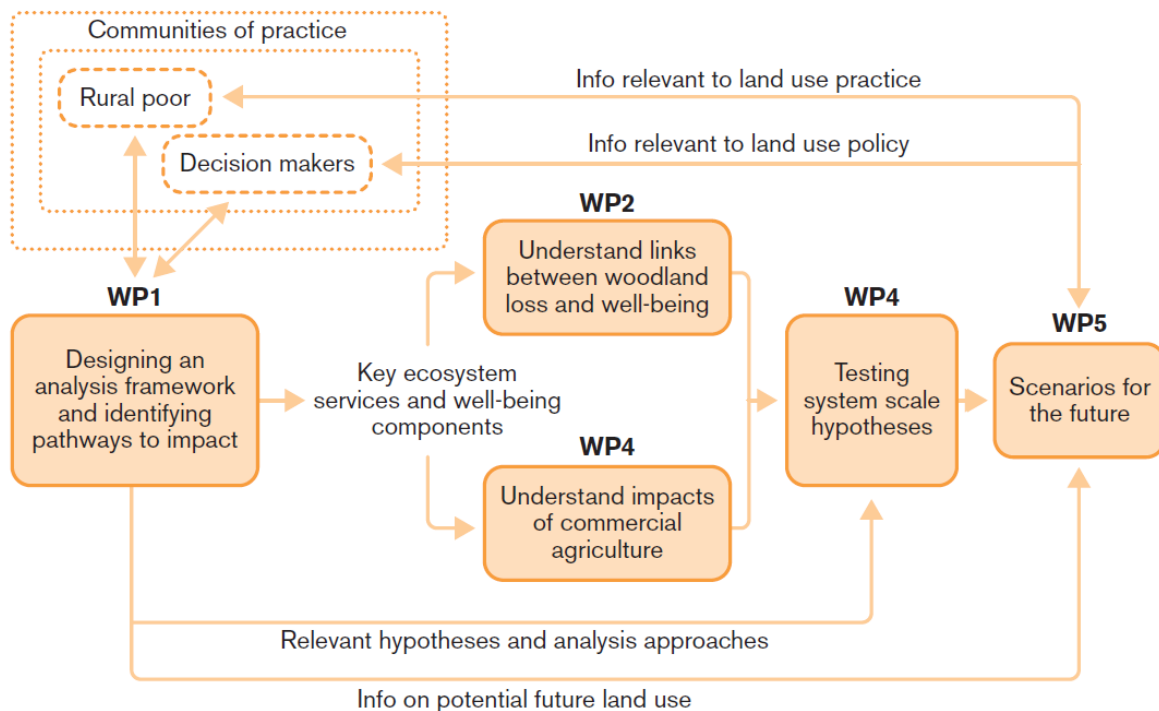
# Abrupt Changes in Ecosystem Services and Wellbeing in Mozambique (ACES)

ACES Newsletter- Issue 1: February 2015

ACES is a three-year (2014 -2017) research project that is being implemented in Mozambique with the main purpose being to contribute to poverty alleviation in Mozambique by co-producing new knowledge of the dynamic links between land use change, Ecosystem Services (ES) and the wellbeing of the rural poor and thereby meet the demand from policy makers and practitioners for ways to better manage Mozambique’s woodlands (Deweese et al. 2008; Wiggins et al. 2012). The research sites include Gaza, Manica and Niassa Provinces, with research conducted on charcoal production, commercial agriculture and forest plantation land use change drivers in each site.

The project is implemented by the University of Edinburgh (UoE) in partnership with the University Eduardo Mondlane (UEM) in Mozambique, the International Institute for Environment and Development (IIED), the University of Zimbabwe, the National Institute for Space Research (Brazil) and the Land University Centre for Sustainable Studies. ACES is implemented through five work packages (WPs) and the relationship between them is described in Figure 1.

Figure 1: Project structure



ACES’s website provides further information on the project:

- English at <http://miomboaces.wordpress.com/>
- Portuguese at <https://miomboacespt.wordpress.com/sobre/>

## ACES 1<sup>st</sup> year

**This first bulletin presents the achievements for each of the WPs for the first year of the project, outlines the next steps, and highlights innovations within the area of research. The newsletter will be published twice a year to inform stakeholders on project accomplishments.**

**WP1:** This WP, which was carried out in 2014, focused on constructing a preliminary Bayesian

Belief Network (BBN), and designed a protocol for the national (in Maputo), provincial (in Xai-xai – Gaza) and village (three villages out of seven selected by the WP2 and three in Mabalane District, Gaza Province) BBNs. The workshops took place in August, with the aim of understanding the relationship between ecosystems services and the wellbeing of rural communities, by identifying the variables/ecosystem services (fuel wood, availability of manure, hunting, soil nutrients, etc.), that they consider important.

The next step is to combine this information with the information from WP2 and 3 and produce preliminary BBNs that will be presented to stakeholders in 2015.



Photo: Pedro Zorrilla-Miras. ACES 2014



Photo: Ana Luz. ACES 2014

**Picture 1 & 2.** BBN construction: left at national level (13<sup>th</sup> of August 2014) and right at village level (18<sup>th</sup> to 22<sup>nd</sup> of August).

## The pathways to impact

Stakeholder analysis and policy mapping was carried out<sup>1</sup>. The aim was to conduct an analysis of various sectoral policies that affect land use, land use change and access to ecosystems services, in particular by the rural population. The information was gathered in order to enable an assessment of the relevance of ACES research questions to various policy challenges as well as ongoing field activities. Furthermore, the stakeholder analysis provides information on key actors to engage in the process of generating useful results for policy and practice and to influence. Four focal points were identified from the following key Ministries: Agriculture (responsible for land use through small- and large-scale agriculture and forestry investments), Planning and Development (leading on macro level planning and overall development priorities, including poverty reduction), Environment (overseeing the assessment of social and environmental impacts) and Tourism.

ACES pledges to engage stakeholders throughout the project in order to maximise relevance and impact on the ground. This entails meetings from national to local level. The first meeting took place in Xai-Xai on 19 May 2014, where the project was presented to the main stakeholders in Gaza province (government, NGOs, iNGOs and civil society), before the pilot field work in Mabalane district. A national inception workshop took place on 12 and 13 August, with participation of national stakeholders from the government, international and national NGOs and stakeholders from Manica and Niassa province.



Photo: Alexandre Zimba. SPFFB/ Gaza 2014

**Picture 3.** Participants of Xai-Xai stakeholder meeting, 19<sup>th</sup> of May.



The main recommendations from the two events were:

1. (a) The study results must be relevant beyond the districts where data was collected; (b) the need for an urgent solution for the increase in demand for charcoal and for its role as source of employment; (c) identify platforms to share knowledge and information with other projects and the civil society in the district.
2. The participants at provincial level, where decentralised planning is taking place, indicated interest in wider training in the application of BBNs and scenario development for planning purposes. The participatory nature and stepwise reflection on the issues was welcomed by the participants.



Photo: Pedro Zorrilla-Miras. ACES 2014  
**Picture 4.** Session of inception workshop 12th August 2014

The impact team will subsequently work in the production of a policy note to inform on the current understanding of the land use change issue in Mozambique, highlighting agreements and discrepancies between groups and scales.

**WP 2 and 3:** for 2014, WPs 2 and 3 carried out the pilot field work to test the data gathering instruments in May (12 to 31 May, including a preparatory week in Maputo) and the fully-fledged fieldwork, that took place from August to October. Both data gathering activities for this year took place in Mabalane District, Gaza Province – where the main driver of deforestation and consequently of land use change is charcoal production to supply the Maputo market.

The collection of data was done through a land use intensification gradient (from more degraded to less degraded forest) and as a result seven villages were selected. The data gathering methodologies combined a set of quantitative and qualitative methods and also participative tools to collect both biophysical and socio economic data. In the near future these work packages will be working on the elaboration of two research publications. As a result of the first phase field work in Mabalane, one paper will examine the rates and extent of resource extraction from the forests of Mabalane and the other will look at the nature of the charcoal value chain in the area. The collection of biophysical and socio-economic data was done through a land use intensification gradient and seven villages were selected (Figure 2). The data survey combined a set of quantitative and qualitative methods, and participative tools. In the near future, these work packages will be working on the elaboration of two papers, as a result of the first wave of field work in Mabalane. One paper will consider the rates and extent of resource extraction from the forests of Mabalane, while the other will focus on the nature of the charcoal value chain in the area.

**WP4:** Its activities consist of the analysis of the data collected to link woodland health and wellbeing (WP2), the role of commercial agriculture (WP3) and future scenarios (WP5). The team responsible for WP4 participated in the pilot phase of field work that contributed to the methodologies of data collection. As soon as the data from the WP2, 3 and 5 are available, the WP4 team will start its analysis, using structural equation modelling to identify the linkages between ecosystem services structure and wellbeing.



Photo: Pedro Zorrilla-Miras. ACES 2014  
**WP5:** As planned, during 2014 the WP5 was working on creating conditional probability tables. In addition, with the input from stakeholders storylines were created through the BBNs and scenarios workshop at both national and provincial level. WP5 is now working to create land cover and land use maps that, together with BBNs and scenarios, will contribute to the construction of land use models.

**Picture 5.** Niassa group discussing about the main drivers of changes for the scenario construction

## Innovation within the research field

- ACES' work on gradients of land use changes that allow comparison between different stages of land use degradation as well as between more and less degraded woodlands. Moreover, previous studies based this work on gradients on satellite images only; ACES work presents a departure from this reliance on satellite images.
- Tablets were used in data collection, and interviewers were trained on how to use them.
  - The participative tool, *Ketso*<sup>ii</sup>, was used to design scenarios during the national and provincial BBN workshops.



**Picture 6.** Students being trained in the use of tablets for data collections.



**Picture 7.** Participatory process of scenario design

## Local participation, capacity building and dissemination

- Albeit a highly technical research project, ACES secured the involvement of stakeholders in the field work, and enabled close collaboration with district technicians from different sectors of the government, community members and civil society organisations (e.g LUPA).
- During its first year, the project also offered Eduardo Mondlane University technicians and students the opportunity to participate and learn new field techniques.
- Media participation in the national inception workshop and keen interest of the district community radio in the field work and on how knowledge acquired in the district can be used to inform policies and practices related to sustainable use of ecosystems services to enhance wellbeing of local people.

## Additional outcomes in 2014

### Work packages 1 and 5

- I. Briefing note on construction of Bayesian Belief Networks and scenario development.
- II. Newsletter to inform on progress
- III. ACES webpage in Portuguese to enable wider access to information related to this project.
- IV. A mailing list to keep key stakeholders informed about progress and to discuss the relevance of findings.

### Work packages 2 and 3 will produce leaflets on the following issues

- I. Charcoal commercialisation.
- II. The degradation along charcoal production gradient.
- III. Recommendations.

<sup>i</sup> Document can be found in the ACES web page: <http://miomboaces.wordpress.com/>

<sup>ii</sup> Ketso is a practical toolkit that can be used for multiple scenarios to encourage creativity in presenting and sharing ideas.

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## Event Materials

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### Forests

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*Keywords:*

Ecosystems services, wellbeing, land use change, commercial agriculture



International Institute for Environment and Development  
80-86 Gray's Inn Road, London WC1X 8NH, UK  
Tel: +44 (0)20 3463 7399  
Fax: +44 (0)20 3514 9055  
email: [info@iied.org](mailto:info@iied.org)  
[www.iied.org](http://www.iied.org)