



RESEARCH CONFERENCES

ESF-Africa Frontier Research Conference **Dynamic Interlinkages between Social and Ecosystem Changes: Towards a Europe Africa Partnership**

8-12 November 2010

Hotel Golden Tulip de Beyaerd, Hulshort, The Netherlands

Co-Chaired by:

- **Prof. Marja J. Spienburg** - *VU University Amsterdam, NL*
- **Prof. Rashid M. Hassan** - *Centre for Environmental Economics and Policy in Africa (CEEPA), ZA*



www.esf.org

Conference Highlights

Please provide a brief summary of the conference and its highlights in non-specialist terms (especially for highly technical subjects) for communication and publicity purposes. (ca. 400-500 words)

This ESF Research Conference was inspired by ICSU's new Programme on Ecosystem Change and Society (PECS). The main aim of the conference was to foster exchanges between African and European researchers that will improve our understanding of the inter-linkages between socioeconomic development, poverty eradication and ecosystems' health. Invited speakers and presenters were drawn from a wide range of disciplines, with different research approaches and findings based on diverse sources of information including narrative, qualitative and quantitative data and historical records in addition to more traditional technical monitoring tools and remote sensing. The conference was structured around five themes, which will be described below. Presentations (and posters) were very rich and many addressed more than one of the selected themes.

The "*Social institutions and ecosystem changes*" session hosted rich debates and deep discussions around the socio-ecological dynamics of ecosystem management, demonstrating the need for adaptive management systems taking into account local knowledge and responsiveness to issues such as climate change. Case studies pertained to a variety of ecosystems including forests and wetlands in Africa.

Topics addressed in the "*Resilience and vulnerability of social and ecosystems to climate change*" session included the dynamics of grassland biomass for agro-hydrological climate studies, and vulnerability assessments and ecosystem-based climate change adaptation strategies developed by local communities and local government institutions. Two presentations focused on the importance of archeological (paleo-environmental) and archival data to develop better understandings of trends in ecosystem change and management.

Interesting case studies were presented in the "*Biodiversity, ecosystem change and human wellbeing*" session, stressing the importance of taking into account the influence of wider socio-economic developments such as emerging markets in certain ecosystem services, social problems in local communities and governance arrangements. Attention was paid to the need for a coherent and comprehensive classification of ecosystems and their services, and the potential and risks associated with novel products such as non-timber products and biofuels.

This session provided a nice link with the session on "*Managing tradeoffs between multiple ecosystem services*" which further built on the classification of ecosystem services. Discussions focused on the possibilities and risks associated with tools such as forest certification, and ecosystem restoration projects.

In the "*Drivers of ecosystem and social change*" session presentations and discussions covered various experiences concerning emerging markets for certain ecosystem services, but also effects of increased population pressures, changing patterns of migration and changing relations between sedentary populations and pastoralists.

During the conference a number of issues emerged that turned out to be relevant to all sessions, and in turn, for the new ICSU Programme on Ecosystem Change and society:

- The need to look at the influence of wider socio-economic changes on ecosystem change and management, including changes in market relations, emerging markets but also social problems resulting from economic deprivation;
- The need to develop a truly trans-disciplinary approach, relying on different kinds of research approaches and methodologies, including narrative, qualitative and quantitative data and historical records in addition to more traditional technical monitoring tools and remote sensing; but also integrating local and indigenous knowledge;
- Such an approach is needed as knowledge concerning the complexities of ecosystem changes and their relations to broader socio-economic changes as well as the relations between different ecosystem services needs to be increased;
- There is a need for more research on governance and policy-making processes. It is important to study and develop flexible, adaptive ecosystem management systems to take into account trade-offs between the different ecosystem services and deal with the complexities of ecosystem and socio-economic changes;
- There is a need to study a variety of ecosystems at land/seascape level, and include the study of cultural landscapes.

x

I hereby authorize ESF – and the conference partners to use the information contained in the above section on 'Conference Highlights' in their communication on the scheme.

Scientific Report

Executive Summary

(2 pages max)

This ESF Research Conference was inspired by ICSU's new Programme on Ecosystem Change and Society (PECS). The main aim of the conference was to foster exchanges between African and European researchers that will improve our understanding of the inter-linkages between socioeconomic development, poverty eradication and ecosystems' health. Invited speakers and presenters were drawn from a wide range of disciplines, with different research approaches and findings based on diverse sources of information including narrative, qualitative and quantitative data and historical records in addition to more traditional technical monitoring tools and remote sensing. The conference was structured around five themes, which will be described below. Presentations (and posters) were very rich and many addressed more than one of the selected themes.

The "*Social institutions and ecosystem changes*" session hosted rich debates and deep discussions around the socio-ecological dynamics of ecosystem management, demonstrating the need for adaptive management systems taking into account local knowledge and responsiveness to issues such as climate change. Case studies pertained to a variety of ecosystems including forests and wetlands in Africa.

Topics addressed in the "*Resilience and vulnerability of social and ecosystems to climate change*" session included the dynamics of grassland biomass for agro-hydrological climate studies, and vulnerability assessments and ecosystem-based climate change adaptation strategies developed by local communities and local government institutions. Two presentations focused on the importance of archeological (paleo-environmental) and archival data to develop better understandings of trends in ecosystem change and management.

Interesting case studies were presented in the "*Biodiversity, ecosystem change and human wellbeing*" session, stressing the importance of taking into account the influence of wider socio-economic developments such as emerging markets in certain ecosystem services, social problems in local communities and governance arrangements. Attention was paid to the need for a coherent and comprehensive classification of ecosystems and their services, and the potential and risks associated with novel products such as non-timber products and biofuels.

This session provided a nice link with the session on "*Managing tradeoffs between multiple ecosystem services*" which further built on the classification of ecosystem services. Discussions focused on the possibilities and risks associated with tools such as forest certification, and ecosystem restoration projects.

In the "*Drivers of ecosystem and social change*" session presentations and discussions covered various experiences concerning emerging markets for certain ecosystem services, but also effects of increased population pressures, changing patterns of migration and changing relations between sedentary populations and pastoralists.

During the conference a number of issues emerged that turned out to be relevant to all

sessions, and in turn, for the new ICSU Programme on Ecosystem Change and society:

- The need to look at the influence of wider socio-economic changes on ecosystem change and management, including changes in market relations, emerging markets but also social problems resulting from economic deprivation;
- The need to develop a truly trans-disciplinary approach, relying on different kinds of research approaches and methodologies, including narrative, qualitative and quantitative data and historical records in addition to more traditional technical monitoring tools and remote sensing; but also integrating local and indigenous knowledge;
- Such an approach is needed as knowledge concerning the complexities of ecosystem changes and their relations to broader socio-economic changes as well as the relations between different ecosystem services needs to be increased;
- There is a need for more research on governance and policy-making processes. It is important to study and develop flexible, adaptive ecosystem management systems to take into account trade-offs between the different ecosystem services and deal with the complexities of ecosystem and socio-economic changes;
- There is a need to study a variety of ecosystems at land/seascape level, and include the study of cultural landscapes.

The results of the conference are crucial to the further development of the ICSU/UNESCO Programme on Ecosystem Change and Society, and will be reported to the scientific committee of this programme.

The co-chairs are currently exploring possibilities of publishing an edited volume on the basis of the conference presentations.

The majority of the participants were in favour of maintaining contact, and of organising a follow-up conference, on the basis of more detailed sub-themes that arose out of the presentations delivered.

Possibilities of setting up a network modelled on the experiences of the Asia-Pacific Network and the International American Institute have been discussed as well. The American NSF has shown interests in establishing an African network, perhaps there are possibilities here also for the ESF to cooperate with the American NSF.

Scientific Content of the Conference

(1 page min.)

- *Summary of the conference sessions focusing on the scientific highlights*
- *Assessment of the results and their potential impact on future research or applications*

This ESF Research Conference was inspired by ICSU's new Programme on Ecosystem Change and Society (PECS). The main aim of the conference was to foster exchanges between African and European researchers that will improve our understanding of the inter-linkages between

socioeconomic development, poverty eradication and ecosystems' health. The conference focused on comparing findings of research focusing on social-ecological systems associated with specific landscapes, seascapes or coastal regions. and case studies presented showed a remarkable geographic variability in policies, practices and outcomes for management of natural capital, flows of ecosystem services, and human well-being. Invited speakers and presenters were drawn from a wide range of disciplines, with different research approaches and findings based on diverse sources of information including narrative, qualitative and quantitative data and historical records in addition to more traditional technical monitoring tools and remote sensing. The conference was structured around five themes: (a) Social institutions and ecosystem changes; (b) Managing tradeoffs between multiple ecosystem services; (c) Resilience and vulnerability of social and ecosystems to climate change; (d) Biodiversity, ecosystem change and human wellbeing; and (e) Drivers of ecosystem and social change.

Forty-one people attended the three-day conference. Keynote speakers included Line Gordon of the Stockholm Resilience Centre and Belinda Reyers of the CSIR in South Africa (theme b), Thomas Elmqvist of the Stockholm Resilience Centre and Anantha Duraiappah of the International Programme on Human Dimensions in Bonn (theme c), Charles Perrings of the Arizona State University and Themba Kepe of the University of Toronto (theme d) Peter Minang of the CGIAR in Nairobi and Eduardo Brondizio of Indiana University (theme e). Marja Spierenburg of the VU University Amsterdam presented a keynote address on theme a.

The organizers deliberately opted for fewer keynote speakers to provide especially junior scientists with an opportunity to present their findings and receive feedback. A total of twenty-two participants presented short talks, grouped together according to the main theme they focused on – though understandably there was quite some overlap between the different themes. A further ten participants presented posters. Among the participants – including speakers and poster presenters - there was a good representation from Africa and non-European countries (64%; EU: 36%), and a nice mix of young and senior researchers and gender balance (57% of the speakers/participants was female).

Presentations (and posters) were very rich and many addressed more than one of the abovementioned themes.

The “*Social institutions and ecosystem changes*” session hosted rich debates and deep discussions around the socio-ecological dynamics of ecosystem management, demonstrating the need for adaptive management systems taking into account local knowledge and responsiveness to issues such as climate change. Case studies pertained to a variety of ecosystems including forests and wetlands in Africa. Some of the presentation focused on recent trends in institutional arrangements, in particular the growing importance of public-private cooperation. Lively debates ensued about international environmental agreements and programmes, the possibilities and risks associated with subsidies, and the issue of nested institutions.

Valuable contributions have been made to the “*Resilience and vulnerability of social and ecosystems to climate change*” theme session that included experiences from different African

countries – complemented by some studies from European and Asian countries. Topics addressed included the dynamics of grassland biomass for agro-hydrological climate studies, and vulnerability assessments and ecosystem-based climate change adaptation strategies developed by local communities and local government institutions. Here too, the need to focus on local institutional arrangements and the inclusion of local knowledge was stressed. Two presentations focused on the importance of archeological data (paleo-environmental data) to develop better understandings of trends in ecosystem change and management.

Interesting case studies were presented in the “*Biodiversity, ecosystem change and human wellbeing*” session, stressing the importance of taking into account the influence of wider socio-economic developments such as emerging markets in certain ecosystem services, and for instance the effects of drug problems in local communities and corruption. Furthermore, attention was paid to the need for a coherent and comprehensive classification of ecosystems and their services, and the potential and risks associated with novel products such as non-timber products and biofuels.

This session provided a nice link with the session on “*Managing tradeoffs between multiple ecosystem services*” which further built on the classification of ecosystem services. Presentations focused on the possibilities and risks associated with tools such as forest certification, and ecosystem restoration projects. Discussions emerged on the different forms of trade-offs (spatial, temporal, distribution of risks, benefits and costs among different groups in society). More information is also needed on bundles of ecosystem services. Other issues addressed were the morality and rationality of decision-making, the need to acknowledge that policy-making is not a straightforward, technocratic process in which scientific information inspires better policies, but is inherently a political process in which interests play a role. The session demonstrated the need for a truly trans-disciplinary approach to study possible trade-offs. Furthermore, participants concluded that new ways of modeling should be developed, including (participative) scenario planning. Participants also concluded that research on governance and policy-making processes.

In the “*Drivers of ecosystem and social change*” session presentations and discussions covered various experiences concerning emerging markets for certain ecosystem services, but also effects of changing patterns of migration (including effects on fishery management and marine conservation) and changing relations between sedentary populations and pastoralists. Furthermore, interesting cases were presented in relation to increasing population pressure and its effects on land use change and deforestation, and resulting effects on human health and security. The complexities of forecasting (one of the grand challenges formulated in relation to the Global Environmental Change Programmes) were the subject of intense debates.

During the conference it became clear how the different themes indeed are interrelated. A number of issues emerged that turned out to be relevant to all sessions, and in turn, for the new ICSU Programme on Ecosystem Change and society:

- The need to look at the influence of wider socio-economic changes on ecosystem change and management, including changes in market relations, emerging markets but also social problems resulting from economic deprivation;
- The need to develop a truly trans-disciplinary approach, relying on different kinds of research approaches and methodologies, including narrative, qualitative and quantitative

data and historical records in addition to more traditional technical monitoring tools and remote sensing; but also integrating local and indigenous knowledge;

- Such an approach is needed as knowledge concerning the complexities of ecosystem changes and their relations to broader socio-economic changes as well as the relations between different ecosystem services needs to be increased;
- There is a need for more research on governance and policy-making processes. It is important to study and develop flexible, adaptive ecosystem management systems to take into account trade-offs between the different ecosystem services and deal with the complexities of ecosystem and socio-economic changes;
- There is a need to study a variety of ecosystems at land/seascape level, and include the study of cultural landscapes.

Forward Look

(1 page min.)

- *Assessment of the results*
- *Contribution to the future direction of the field – identification of issues in the 5-10 years & timeframe*
- *Identification of emerging topics*

The results of the conference are crucial to the further development of the Programme on Ecosystem Change and Society. One of the co-chairs, Marja Spienburg, is a member of the scientific committee of this programme, and will report back at this committee's next meeting.

The majority of the participants were in favour of maintaining contact, and of organising a follow-up conference, on the basis of more detailed sub-themes that arose out of the presentations delivered. It would be highly appreciated if the ESF could contribute to this, possibly in cooperation with ICSU. These emerging themes are:

- The need to look at the influence of wider socio-economic changes on ecosystem change and management, including changes in market relations, emerging markets but also social problems resulting from economic deprivation;
- The need to develop a truly trans-disciplinary approach, relying on different kinds of research approaches and methodologies, including narrative, qualitative and quantitative data and historical records in addition to more traditional technical monitoring tools and remote sensing; but also integrating local and indigenous knowledge;
- Such an approach is needed as knowledge concerning the complexities of ecosystem changes and their relations to broader socio-economic changes as well as the relations between different ecosystem services needs to be increased;
- There is a need for more research on governance and policy-making processes. It is important to study and develop flexible, adaptive ecosystem management systems to take into account trade-offs between the different ecosystem services and deal with the complexities of ecosystem and socio-economic changes;
- There is a need to study a variety of ecosystems at land/seascape level, and include the

study of cultural landscapes.

Possibilities of setting up a network modelled on the experiences of the Asia-Pacific Network and the International American Institute have been discussed as well. The director of the IHDP programme in Bonn, Anantha Duraiappah, has offered to assist in exploring these possibilities. The American NSF has shown interests in establishing an African network, perhaps there are possibilities here also for the ESF to cooperate with the American NSF.

In terms of possible publications: Springer publishers has indicated an interest in an edited volume on the basis of the paper presentations. The co-chairs are currently reviewing the different contributions made by the participants and will on the basis of these reviews contact participants to ask them if they are willing to contribute and revise their papers for such an edited volume.

▪ Is there a need for a foresight-type initiative?

In the light of the emerging issues from the conference it would be highly appreciated if a follow-up conference could be organized.

Possibilities of setting up a network modelled on the experiences of the Asia-Pacific Network and the International American Institute have been discussed as well. The American NSF has shown interests in establishing an African network, perhaps there are possibilities here also for the ESF to cooperate with the American NSF.

Atmosphere and Infrastructure

▪ *The reaction of the participants to the location and the organization, including networking, and any other relevant comments*

Participants' feedback indicated that the social and collegial atmosphere was a very valuable component of the conference although was to some extent constrained by the large number of talks. There were "some very good exchanges between students and senior scientists during poster sessions, lunch and dinner and it would have been nice to see more of this rather than more talks" (quote from the report by the rapporteur). Participants said they were impressed by the commitment of the senior scientists to spend as much time as possible with them discussing their research and careers. Feedback also indicated that networking between students was excellent.

Participants appreciated the appropriateness of the conference venue as it ensured that participants stayed together for longer periods not being distracted by external events.

The logistical support provided by Alessandra Picolini was highly appreciated. She even managed to sort out the visa problems experienced by one of the participants from Cameroon.

Date & Author: 6 February 2011, M.J Spierenburg and R. Hassan
