Book of Abstract

I. SESSION DESCRIPTION

ID: T14b

Title of session:

Human-Wildlife conflicts & coexistence: Implementing Ecosystem (dis)Services for sustainable management

Hosts:

	Title	Name	Organisation	E-mail
Host:	Dr.	Sunil Nautiyal	Institute for Social and Economic Change, India	nautiyal_sunil@rediffmail.com
Co-host:	Dr.	Hannes König;	Leibniz Centre for Agricultural Landscape Research (ZALF), Germany;	hannes.koenig@zalf.de;
	Dr.	Chuanzhun Sun;	South China Agriculture University, China;	subject_111@126.com;
	Dr.	Sharif Mukul;	Independent University Bangladesh, Bangladesh;	smukul@usc.edu.au

Abstract:

Human conflicts over management objectives related to wildlife have increasingly become a controversial issue discussed in many regions of the world. This challenge particularly applies to (agri-) cultural landscapes with human-wildlife interference. Wildlife provides ecosystem services (ES), e.g. with respect to pollination, pest control, meat supply, or recreation; but wildlife can also provide ecosystem disservices (EDS) that negatively affect people, e.g. by transmitting pathogens or by causing, economic (crop/livestock losses) or ecological (browsing, rooting) damages.
However, the complex relationships between agro-ecosystems and wildlife - and the corresponding stakeholder groups - require integrated approaches for better understanding

the interplay of ecological and social components over time and space. This session invites contributions that focus on integrated and novel approaches which can be applied to implement ES frameworks into practice towards sustainable land management. Case study examples as well as conceptual and methodological presentations are welcome.

As an outcome of this session – we plan to establish a new thematic working group on "Human-Wildlife interactions and ES" and will explore possibilities for a special issue in an international scientific journal with impact factor for a selected number of contributions.

Goals and objectives of the session:

1) Kick-off for new thematic working group
2) Initiate & provide a platform for the international scientific community for exchange of ES implementation towards human-wildlife coexistence and sustainable land management

Planned output / Deliverables:

1) Joint special issue for a selected number of contributions in one of the following target journals: International Journal of Biodiversity Science, Ecosystem Services & Management; Biological Conservation; Ecosystem Services; (Journal of) Environmental Management
2) Collecting ideas for joint projects bewteen North and South and exchange of researchers from different labs

Related to ESP Working Group/Natioanl Network:

TWG 14 – Application of ES in Planning & Management

II. SESSION PROGRAM

Date of session: Tuesday, 9 October 2018

Time of session: 16:00 – 18:00

Time	First name	Surname	Organization	Title of presentation
16:00-16:15	Sunil	Nautiyal	CEENR, ISEC	Introduction
16;15-16:30	Sunil	Nautiyal	CEENR, ISEC	Conservation policy and land use sustainability: Does Anthropocene requires fresh perspective?
16:30-16:45	Sharif Ahmed	Mukul	Independent University, Bangladesh	Mitigating human-wildlife conflict in tropical transboundary landscapes: the case of human-elephant conflict in Bangladesh, India and Myanmar
16:45-17:00	Chuanzhun	Sun	South China Agricultural University	Impacts of land use changes on ecosystem pollination services in Eastern China
17:00-17:15	Aditya	Petwal	IUCN	Designing Agro Forestry in Favour of Biodiversity: A conceptual framework to enhance Landscape Matrix
17:15-18:00			Discussion	

III. ABSTRACTS

1. Type of submission: Abstract

T. Thematic Working Group sessions: T14b - Human-Wildlife conflicts & coexistence: Implementing Ecosystem (dis)Services for sustainable management

Conservation policy and land use sustainability: Does Anthropocene requires fresh perspective?

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The issues related to conservation and livelihood development in democratic society are still in the core of debate concerning environmental protection and people welfare. Biodiversity rich areas being resided by people demands more discussion relating to global conservation and socio-ecological Development and more particular “Does Anthropocene demands fresh perspective to conservation and livelihood development in biodiversity hotspots which would necessitate the nature protection in more meaningful way”. Our work of last couple of years in two biodiversity hotspots (the Western Ghats and the Himalaya) of India advocate for more investigations in the perspectives of conservation, societal development and political ecology /economy. This is because the human and ecosystem interactions in diverse and rich landscapes are quite complex and top-down approach for resource conservation and management would not yield meaningful results. The hotspots in India are being resided by farming/tribal communities. In biodiversity rich areas, both conservation and socioeconomic development are at the core of discussions among various stakeholders such as local people, policymakers, conservationists, resource management professionals, economists, researchers/scientists and so forth. Various innovations are being implemented that aim at promoting both improved livelihood for the people and conservation and management of natural resources. The rich and diverse landscapes in India's biodiversity hotspots are protected through the implementation of various conservation policies. However, the there is decline of natural resources which have affected the sustenance of local people. In this context, our efforts are to evaluate the potential of various solutions that are being implemented for socio-ecological development in the biodiversity hotspots. Unfortunately, not many were successful in achieving the both conservation and sustainable livelihood development. The paradox of conservation policies in India has created enormous

conflicts between local people and policy makers hence, necessitates rights that are more democratic for people living the matrix of the forests. The tribal people of the Himalayas and the Western Ghats are still looking for more viable solutions that could help them improve their lifestyle as well as contribution towards biodiversity conservation and sustainable socio-ecological development.

Keywords: Anthropocene; Biodiversity Hotspots; Conservation; Socio-ecological development

2. Type of submission: Abstract

T. Thematic Working Group sessions: T14b - Human-Wildlife conflicts & coexistence: Implementing Ecosystem (dis)Services for sustainable management

Mitigating human-wildlife conflict in tropical transboundary landscapes: the case of human-elephant conflict in Bangladesh, India and Myanmar

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Human-Wildlife conflict is a common phenomenon in tropical forest agriculture frontier, particularly in the developing tropics. In tropical transboundary landscapes, managing human-wildlife conflict is still challenging due to the complex nature of the landscape, governance and managerial issues. Human-wildlife conflict is a common issue in South Asia, a region overwhelmed with high population density and limited land available for conservation of forests and biodiversity. This situation has further exacerbated by habitat loss, forest fragmentation, and climate-induced events. Here we discuss the human-elephant (Elephas maximus) conflict in the bordering region of Bangladesh, India and Myanmar, causing continuous damages to agricultural crops, injuries, and deaths of humans as well as elephants. This has also remained as a major source of dispute among the forest managers of two neighboring countries. We argue that a common platform for monitoring elephant movements and agreed actions to reduce the conflict between human and elephant are necessary. We also propose a compensation scheme to aid the affected parties where

funds will be generated through revenues earned from elephant related activities.

Keywords: wildlife, transboundary conservation, Bangladesh, India, Myanmar

3. Type of submission: Invited speaker abstract

T. Thematic Working Group sessions: T14b - Human-Wildlife conflicts & coexistence: Implementing Ecosystem (dis)Services for sustainable management

Impacts of land use changes on ecosystem pollination services in Eastern China

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Pollination service is one of the most important ecosystem service for preserving wild plant communities and support agricultural production. Growing demand for food and corresponding intensification of agricultural production has widely been recognized a major threat to pollination services provided by insects. In this study, we investigate the impact of the Chinese land conversion program in which farm land has been converted into forests. We selected a village in the Poyang Lake region in Eastern China to analysis land use change impacts on pollination services during the year 2000-2013. We used high-accuracy land use data, pollinating bees' biophysical data, districts' social economy and the data from field investigation. For the impact analysis, we employed the "Integrated Valuation of Ecosystem Services and Trade-offs - InVEST" model, a GIS-based tool, in combination with regression analysis to quantify the relationship between pollination service and land use intensities. Result showed that (i) farm land at the village level was reduced by 13.5% whereas farm investments for pesticides, chemical fertilizers and labor forces doubled during the same time of period, (ii) the case study village received an average pollination service abundance rate of 0.127 and 0.108 respectively in 2000 and 2013, while the average pollination service abundance decreased by15.5%, and (iii) regression coefficient analysis shows a negative correlation between land intensification and pollination service abundance of -0.164. Based on our results, we conclude that the land conservation does not offset the big negative

effect on pollination services. Instead the substantially increase of land intensification due to pesticide applications has negatively affected the bee pollination effects in the case study village.

Keywords: land use changes, agricultural intensification, pollination service, ecosystem services, InVEST model

4. Type of submission: Invited speaker abstract

T. Thematic Working Group sessions: T14b - Human-Wildlife conflicts & coexistence: Implementing Ecosystem (dis)Services for sustainable management

Designing Agro Forestry in Favour of Biodiversity: A conceptual framework to enhance Landscape Matrix

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With only 21.34 % land cover in India under forest against the national ambition of bringing 33% of land under green cover, Trees outside forests provide unique opportunity to enhance biodiversity and associated ecosystem services, outside forest areas. Designed appropriately, they could very well become biological corridors for several pollinators and pest predators coming from wild areas. Their area, composition as well spatial configuration can have implications for bird diversity, soil moisture and micro climate.

IUCN and ITC Limited has partnered for a collaborative progamme in Munger district of Bihar state referred to as 'Agriscapes' aimed at revival of eco-system services for the benefit of agriculture by improving upon biodiversity. Agriscapes programme has identified three different landscapes with unique problems due to loss of biodiversity. In one of the agriscapes, it is found that large stretches of farm landscape are mostly devoid of any trees except for the orchards with single fruit tree species. Such landscape has made agriculture highly vulnerable to climate change impacts and the loss of biodiversity has caused loss of linked potential ecosystem services. Assessing the detrimental impact of declining

ecosystem services in such agriscape, ITC and IUCN are working to enhance the biodiversity by promoting mostly indigenous species based Agro forestry in farmlands. This community driven agro-forestry is implemented in partnership with women groups, farmer associations aimed at reducing pressures on forest and to improve upon aspects like - density of tree outside forest and predatory bird population in the agriscape. This paper presents conceptual framework according to which landscape matrix is being worked upon, that will favor both livelihoods as well as biodiversity.

Keywords: Biodiversity, Ecosystem Services, Landscape Matrix, Trees Outside Forest