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Tropical Ecology and Society Reconciliating Conservation and Sustainable Use of Biodiversity

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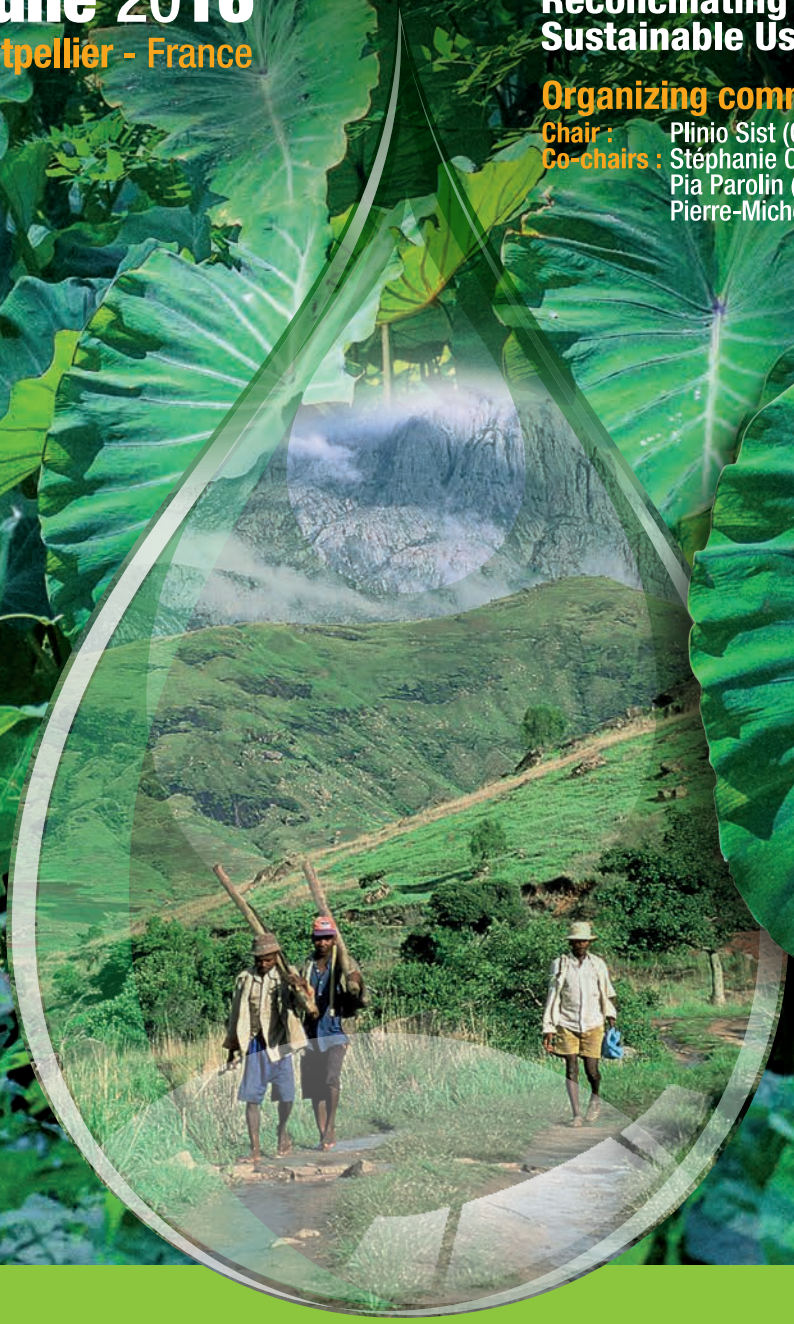

PROGRAM & ABSTRACTS

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P43-02 – S43 *Free session: Human-nature interactions in tropical landscapes*
17:30 – 18:30 – Joffre Area (Level 1)

The social dimension of restoration in seasonally dry tropical forests: a dialogue of knowledge with the indigenous NGO Xuajin Me'Phaa, in Guerrero, Mexico

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The degradation of natural ecosystems services affects the whole society, however, rural communities are the most affected. Then, restoration strategies depend on the active participation of these social groups in a dialogue of knowledge. The region of La Montaña in Guerrero, has a high degradation level of vegetation and a very low level of health services, education and quality of life. In this region, the NGO Xuajin Me'Phaa, AC, was formalized in 2006 and is comprised of about 300 rural farmers. From them, 124 are active producers of organic Hibiscus sabdariffa flowers. In 2008, the Regional Center for Multidisciplinary Research (CRIM in Spanish) of the National Autonomous University of Mexico began working with this cooperative in many local and landscape restoration projects using the methodology of action-participation research. First, the percentage of land degradation and fragmentation of the region was assessed in three different altitudes and was described the reference ecosystem. A next step was to characterize organic production of hibiscus flower and the consumption of natural resources, mainly fuelwood and the most used species. Productive restoration experiments were also set to evaluate the potential to produce ecosystem services of some tree species. In 2013 the NGO obtained its own financing source to restore the cultural home gardens of 200 farmers. The action-participation research methodology associated with a high social capital among cooperative members were the main reason for the success of this restoration project.

P43-03 – S43 *Free session: Human-nature interactions in tropical landscapes*
17:30 – 18:30 – Joffre Area (Level 1)

Mediating factors shaping ecosystem services for people's resilience to climate variability in forest landscapes

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Changes in land use and management affect the capacity of ecosystems to deliver services that contribute to the well-being of societies and their resilience to climate variations. For example, forest ecosystems help regulating water flows during extreme rains depending on species characteristics (roots and leaves) and people's inputs and decisions (planting trees in specific areas) determined by governance and economic settings (land ownership and labour). The linkages between ecosystems services and people's resilience to climate variations are mostly studied indirectly and findings are scattered in the literature. In particular, the social-ecological systems interactions for resilience have often been described generically (as ecosystem services and land management), considered as unidirectional (flows of services from ecosystems to people), and neglected multiple aspects (ecosystems own sensitivity or role in livelihoods diversification).
The study aimed to identify mechanisms or mediating factors that enable or constrain the supply of ecosystem services to build people's resilience to climate variations. We reviewed the literature on forest ecosystems' contributions to increase rural people's resilience and proposed a framework that was applied to case studies in Indonesian communities affected by drought and floods. Forest ecosystem services and their benefits to local people were assessed through forest inventories, satellite images, focus group discussions, and household surveys.
People's response strategies to climate-related events partially relied on the benefits provided by forest ecosystems but surprisingly in less forested places there were more strategies based on trees. This difference between potential and actual use suggested that human inputs and other favourable conditions determine whether ecosystems service can effectively contribute to increase people's resilience. In fact, the provision of benefits was mediated by ecological and anthropogenic factors such as knowledge & skills, values & beliefs, access to services & markets, land tenure & use rights, technology & infrastructure, and social norms & networks. Therefore, functional ecological processes might need to be actively maintained, complemented or partially modified by human actions before becoming actual benefits. A better understanding of how ecosystem services contribute to people's resilience can support the design of more effective and sustainable land management practices.