### Integration for restoration: reflecting on lessons learned from the silos of the past

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Momentum for forest and landscape restoration (FLR) is building and holds the potential to make a positive contribution to local livelihoods, wellbeing and the ecological integrity of forest landscapes. Yet FLR is operating amid multiple and competing demands for land and resources, which are too often acting in parallel rather than in unison. Silo-style approaches in which ecologists produce narrow restoration guidelines, foresters plant trees for production, companies invest in tree planting for carbon credits, and so on must be exchanged for new models of governance, management and knowledge production. This talk will draw on evidence that elaborates the shortfalls of approaching sustainable forest management through sectoral approaches. We focus in particular on the challenges that impact the management and governance of FLR interventions and those which confound and constrain the knowledge creation and the intellectual back-drop informing interventions and their implementation. These two issues are relevant to the fundamental questions that surround all forms of FLR: notably, FLR for what, pursued where and measured how. We focus on the tropics, drawing on the literature and specific case studies which illustrate how a lack of integration can undermine initiatives. We stress, in particular, the previous pot-holes on the road to forest restoration in order to highlight the need to incorporate these lessons in the current and emergent FLR agenda. We argue that without such reflection, the FLR momentum risks adopting an ahistorical and apolitical technocratic approach to the challenges of forest and land management.

### Integration of traditional and western knowledge in forest landscape restoration

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The diversity of environmental, historical, social, economic and cultural contexts in which forest landscapes (and their degradation) occur requires that restoration efforts effectively engage and mobilize the social and cultural capital that exists within these socio-ecological systems. In many parts of the world, the importance of incorporating local and indigenous knowledge, into land management decision-making is increasingly recognized, particularly to better align management with the varied needs and place-based objectives of diverse stakeholders and the historical ecological realities of forest landscapes, In this presentation, we explore the process of integrating multiple knowledge systems in FLR, with a primary focus on experiences in North America. We will first examine the values and world views underlying Western and Traditional knowledge systems, as well as specific efforts to integrate knowledge systems in restoration and management at landscape scales in a variety of ecological and socio-cultural contexts. We consider the challenges - and opportunities - involved with integrating Traditional and Western knowledge systems at various stages of the FLR planning and implementation process, and how these challenges have been met, through case studies in Canada and the US.

### Reconciling biodiversity conservation with livelihoods of vulnerable value chain actors through land degradation neutrality: shaping an enabling environment for sustainable and inclusive resource and market access in Brazil

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This study analyses value chains of non-wood forest products (NWFP) – which occur in areas of high biodiversity and low human development indices – such as the Brazil nut chain in the Amazon. Such food chain actors are embedded in landscapes characterised by the lack of an enabling environment for achieving land degradation neutrality (LDN). Yet, ensuring no net loss of land-based natural capital depends on an enabling environment – particularly inclusive governance structures – for balancing socioeconomic and environmental trade-offs. Qualitative and quantitative data were collected from 2012–2015 to understand how institutions affect the resource and market access by vulnerable rural dwellers in Brazil. Household interviews (N=185) and key informant interviews, as well as problem-centered and narrative interviews (N=89) were conducted from community to national level – *inter alia* with the Brazilian Ministry of Environment. Results demonstrate that 15.5% of overall household income comes from forests, including 13.1% from Brazil nut gathering and marketing in the Lower Amazon basin. Environmentally sound resource and market access as well as inclusive sustainable development of the Brazil nut value chain is found to mainly depend on local democratic participation in decision-making by transforming the governance structures of councils for managing inhabited protected areas from consultative to deliberative ones. Results illustrate the importance of NWFP and the relevance of inclusive governance for reconciling environmental conservation and local livelihoods, while avoiding unsustainable land uses. Evidence is offered for shaping an enabling institutional and policy environment towards inclusive governance for sustainable integrated landscape planning.

### Forest stewardship for restoration: integrating grassroots initiatives into landscape approaches

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In Southern Brazil, we have been developing and testing models of forest restoration that are economically viable and enable farmers to move away from monocultures, reduce their use of pesticides, and maintain the forest cover that is critical for local and regional ecosystem services. These models have been developed in collaboration with small-scale erva-mate (*Ilex paraguariensis*) producers and based on traditional knowledge of the forest. Forest products are key aspects of these models, including trees for wood production, erva-mate and other native fruit tree species; but they must adhere to Brazil's restrictive Forest Code. Avenues of agricultural innovation are needed to ensure that restoration approaches value the knowledge and important role farmers play in forest stewardship. The rational of our restoration model is to rapidly establish a forest cover using fast-growing native pioneer species, especially *Mimosa scabrella* (bracatinga), which provides an appropriate shaded environment for erva-mate to thrive and direct economic return. After a forested environment is established (~3 years), natural regeneration is managed for species and product diversification while maintaining erva-mate production for a period of > 30 years. Additionally, we seek to value and document the voices and knowledge of traditional erva-mate producers not only to ensure that their products and culture is valued by society, but also that their important role in rural and urban ecological well-being is recognized and appreciated.