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Mobilizing indigenous and local knowledge for successful restoration

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Key messages

- Careful integration of indigenous and local knowledge in Forest Landscape Restoration (FLR) is at the heart of successful FLR initiatives.
- Indigenous and local knowledge differs across cultures and places, and within communities based on gender, age, and other factors of social differentiation.
- To successfully incorporate indigenous and local knowledge in FLR planning and implementation, practitioners and policy makers should: 1) recognize the legitimacy and value of indigenous and local knowledge; 2) ensure diverse knowledge holders have equal voice and that their strategic interests are addressed; and 3) ensure that mobilizing indigenous and local knowledge generates culturally-desirable incentives and benefits to local and indigenous knowledge holders, rather than being an extractive exercise.

Introduction

Forest Landscape Restoration (FLR) aims to recover ecological integrity and enhance the wellbeing of people living in deforested and degraded landscapes. Within global and national restoration agendas, modern science is viewed by influential actors as the foundation for addressing some of the world's most pressing ecological challenges. Yet, integrated approaches that bridge the social, economic, and ecological dimensions of restoration and give voice to diverse stakeholders are compromised by technocratic solutions and a lack of attention on different ways of knowing and valuing the world (Higgs 2005). To inform FLR decisions and processes, conventional science must be coupled with other types and sources of knowledge, including the knowledge of local women and men who manage and inhabit the landscapes to be restored (Ballard et al. 2008). This is recognized in global agreements such as the Paris Agreement (Article 7) and the Convention on Biological Diversity's Aichi Biodiversity Target 17, which states the need to respect traditional knowledge and to harness it for effective implementation of the Convention.

Gender and indigenous and local knowledge

Indigenous and local knowledge can be understood as "a cumulative body of knowledge, practice and belief, evolving by adaptive processes and handed down through generations by cultural transmission, about the relationship of living beings (including humans) with one another and with their environment" (Berkes 2012, 7). Indigenous and local knowledge is situated in time and place, yet evolves as societies and environments change. It varies according to a person's social position and roles, such as their daily tasks and their place in society (Pfeiffer and Butz 2005).

Gender plays a key role in shaping indigenous and local knowledge because resource use and management are primarily organized along gender lines. Due to gender norms that attribute different roles and responsibilities to different gender groups, rural women and men often come to know about the environment in different ways. For example, they may specialize in different livelihood activities; in growing, harvesting or using different crops, species or varieties; and in distinct phases of the cropping cycle; or they

Women discussing their local landscape to inform project objectives in South-East Cameroon (Photo by M. Elias/Bioversity International)

may conduct similar resource management activities in different ways or in different spaces (Howard 2003). Other factors that typically vary with gender, such as level of formal education, social status, and social networks, also shape women and men's relationship with their environment (Elias 2016).

In addition to knowledge differences between the genders, indigenous and local knowledge varies within gender groups; with ethnicity, age, marital status, socio-economic status, kinship, mode of livelihood and other factors of social differentiation. For instance, in an ethnobotanical study in Venezuela, older mestizo men and women showed similar knowledge levels of useful plants, but young mestizo men held more knowledge of useful plants than young women (Souto and Ticktin 2008). Omitting to consider the knowledge of certain groups, such as women, thus gives an incomplete picture of the knowledge held by a community. It can also result in unreliable information. For example, with respect to biodiversity assessments, overlooking women's knowledge can lead to an inaccurate identification of plants, their uses, characteristics and management (Howard 2003).

Yet, gender bias is common in agricultural, natural resource and restoration research and practice. Howard (2003b, 3) explains that, "in many cultural and economic contexts [...] women are [...] seen as 'minor' actors, secondary to men who are presumed to be the knowledge holders, managers and preservers of most plant resources that are thought to be 'valuable', particularly to outsiders." In fact, local knowledge holders themselves - particularly those who experience exclusions on the basis of gender, indigeneity, socio-economic status or other factors - have often internalized norms that undervalue their own knowledge. Preference given to men's knowledge or to the knowledge of more powerful actors maintains the exclusion of women and marginalized groups in environmental policy and practice, and has resulted in ill-informed policies, programs and initiatives, and development failures. It also represents a lost opportunity to harness the diversity of available indigenous and local knowledge and capacities towards development and conservation.

Indigenous and local knowledge and restoration

Coupling indigenous and local knowledge with conventional science can help capture a broader range of reliable data sources to make empirically-informed decisions. Integrating indigenous and local knowledge, in all its diversity, in restoration initiatives thus offers a wider repertoire of knowledge and skills to restoration efforts, as well as a chance for local people's worldviews and perspectives to inform resource management decisions (Ballard et al. 2008). In this respect, engaging communities in knowledge generation and sharing can contribute to their empowerment, and to democratizing science and orienting it towards community concerns (Holmberg 2014).

There are many examples of indigenous and local knowledge informing restoration practice. For example, knowledge gained through farmers' experiments with soil and water conservation techniques has informed donor-led restoration projects in Burkina Faso's drylands (Reij et al. 2005). In Thailand, restorationists have learned from Karen and Lawa ethnic groups, who cultivate rotational swiddens in which they manage regeneration of secondary forests through successional stages by means of coppicing and seedling development (Wangpakapattanawong et al. 2010). Likewise, traditional techniques of the Lacandon Maya people of southern Mexico, who direct and accelerate succession (the process of change in species structure over time) to enhance production and restore depleted soils, are informing efforts to restore degraded tropical rainforest clearings (Douterlungne et al. 2010). In the Philippines, key factors contributing to successful restoration initiatives included when: "restoration was made compatible with local patterns of resource use and land tenure; [...] local knowledge and skills relevant to restoration were successfully tapped by the project; [and] local social groups and organizations were effectively mobilized to support and implement restoration activities" (Walters 1997, 287). Understanding the local customs that impact on resource management (e.g. taboos), and identifying restoration practices already occurring on degraded lands, can also contribute critical information to restoration initiatives (ibid). So too can knowledge of what to plant, where, and when to harvest, as well as strategies to maintain and rehabilitate genetic and species diversity and soils under uncertain climate conditions (IFAD 2016). Likewise, knowledge of 'cultural

keystone species', which local people depend on most extensively to satisfy their basic life necessities, and which are critically embedded in cultural traditions and narratives, can orient restoration initiatives towards species that play a key role in community resilience (Garibaldi and Turner 2004).

Indigenous and local knowledge can also contribute to monitoring the impacts of restoration initiatives. Knowledge of land use history and species occurrence and abundance, which are an integral part of indigenous and local management systems, can provide a baseline for initiatives, and knowledge of climate history can support the development of adaptive responses through restoration (IFAD 2016). For example, in India, indigenous and local knowledge provided a longer-term perspective regarding non-timber forest product (NTFP) harvesting patterns than formal science did, and complemented - sometimes with discordant information - scientific evidence. As such, Rist (2010, 1) indicates that, "combining information on historical and current harvesting trends for the NTFP with official data suggests that current assessments of sustainability may be inaccurate and that the use of diverse information sources may provide an effective approach to assessing the status of harvested resources".

Integrative sciences and the value of knowledge

Mobilizing indigenous and local knowledge to support restoration decisions can encourage communities to reflect on and share environmental information, strengthen their resource management capacities, mobilize their perspectives and enable them, as knowledge holders, to claim their rights to participate in and influence restoration initiatives, from local to international levels (Holmberg 2014). Yet, achieving a meaningful integration of indigenous and local knowledge and conventional science - or fostering the co-production of knowledge - is not easy, and requires valuing and reconciling different forms of knowledge, rooted in different worldviews. Approaches are needed to engage with local knowledge holders - both women and men - in a legitimate, equitable and transparent way, and avoid taking a tokenistic approach or co-opting local knowledge (Ballard et al. 2008). Mobilizing indigenous and local knowledge across scales will require redistributing the power of conventional science, recognizing the plurality and value of local knowledge, and fostering a collaborative design of initiatives to generate equitable, adaptive and sustainable restoration options.

Working with men and women separately to understand gendered knowledge and priorities in Nepal (Photo by M. Elias/ Bioversity International)

Recommendations

- Restorationists should seek to actively integrate indigenous and local knowledge holders in restoration initiatives, and to meaningfully integrate indigenous and local knowledge with conventional science.
- The diversity of indigenous and local knowledge and of knowledge holders, differentiated by gender, age, and other factors of social differentiation, must be engaged and valued in restoration initiatives.
- Mobilizing indigenous and local knowledge for effective restoration should generate culturally-desirable incentives and benefits for local women and men, rather than being an extractive exercise.

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About this brief series: Lessons for gender-responsive landscape restoration

Forest Landscape Restoration (FLR) aims to achieve ecological integrity and enhance human well-being in deforested or degraded landscapes. Evidence shows that addressing gender equality and women's rights is critical for addressing this dual objective. Against this backdrop, CIFOR and a number of partners hosted a Global Landscapes Forum workshop on FLR and gender equality in Nairobi, Kenya in November 2017. The objective of the workshop was to identify and discuss experiences, opportunities and challenges to advancing gender-responsive FLR in East African countries, as well as to join together various stakeholders working at the interface of gender and FLR as a community of practice. This brief set is a tangible outcome of this collaboration, featuring a number of useful lessons and recommendations rooted in the experience and expertise of partners in civil society, multilateral organizations, research community and private sector – all working in different ways to enhance the gender-responsiveness of restoration efforts.

The Global Landscapes Forum (GLF) is the world's largest knowledge-led multi-sectoral platform for integrated land use, bringing together world leaders, scientists, private sector representatives, farmers and community leaders and civil society to accelerate action towards the creation of more resilient, equitable, profitable, and climate-friendly landscapes.

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