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Sociedad Iberoamericana y del Caribe de Restauración Ecológica (SIACRE)

CHAPTER 21

Experiences with capacity building for ecological restoration in Latin America

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INTRODUCTION

In several countries and sub-regions of Latin America, landscape-scale ecological restoration initiatives have been proposed with ambitious goals, but without always taking into account the range of capacities required for these projects to be successful. "Capacity building" can be defined as the process of stimulating, strengthening and maintaining the ability of

individuals, organizations and society in general for the successful management of an initiative or project (FAO, 2011). Although the concept of capacity building has existed for several decades in the economic development, public health and agricultural extension fields (Gordon & Chadwick, 2007), it has only recently been applied in the context of community involvement in conservation activities, for example, through the

mechanisms of REDD+1 (Prisma-Cabal *et al.*, 2011).

Ecological restoration requires a holistic view of both the biophysical and social aspects that affect land degradation as well as the opportunities and constraints for ecosystem recovery (Melo et al., 2013). Several scientists, projects and programs mention the importance of training and technical assistance to ensure the effectiveness of ecological restoration (Calmon et al., 2011; Melo et al., 2013). In addition, capacity building was recognized by the Convention on Biological Diversity (CBD) in 2012 as a key factor for the successful implementation of international ecosystem restoration initiatives (Aronson & Alexander, 2013). Capacity building includes not only improving the technical skills required to carry out restoration actions, but also strengthening the institutional capacity and leadership to increase the social and human capital of the parties involved (Paré & Gerez, 2012; Slusser et al., 2014). Capacity building is relevant to all local, national and regional institutions implementing restoration projects to develop and enhance their ability to prioritize and design effective programs and to execute successful projects.

To address this important issue, different organizations involved in training and capacity building for restoration were brought together at a symposium during the IV Congress of the Ibero-American and Caribbean Society of Ecological Restoration (SI-ACRE, in Spanish). Two organizations dedicated to capacity building in Latin America coordinated the symposium: the Environmental Leadership and Training Initiative (ELTI) and the Center for Research on Sustainable Agricultural Production Systems (CIPAV, in Spanish) from Colombia. ELTI, an initiative of Yale University in the US, in collaboration with the Smithsonian Tropical Research Institute (STRI), has worked since 2006 to provide decisionmakers with knowledge, tools, skills, motivation and connections required for the conservation and restoration of forests and landscapes in tropical Asia and in the Neotropics. Likewise, CIPAV has dedicated the last thirty years to strengthening capacity for restoration, conservation and sustainable use of resources in agro-landscapes of Latin America.

Other invited speakers represented the Atlantic Forest Restoration Pact, the Northeast Center for Environmental Research (CEPAN, in Portuguese)

¹In 2005, a group of countries led by Papua New Guinea and Costa Rica placed the issue of avoiding deforestation on the agenda of the Conference of the Parties, held in Montreal (COP 11). Thus, the discussion of the role of forests in the fight against climate change became a subject for international debate. During COP 13, held in Bali in 2007, the UNFCCC recognized the Reduction of Emissions from Deforestation and Forest Degradation (REDD) as a valid mechanism in the fight against climate change. According to the Bali Action Plan (2007), REDD+ is the reduction of emissions from deforestation and forest degradation, in addition to conservation, sustainable management and improvement of forest carbon stock in developing countries.

and The Nature Conservancy (TNC) Brazil, who are working on capacity building for implementing national and regional forest restoration initiatives in Brazil. The EcoLogic Development Fund (EcoLogic) and the leader of the Association of Water Management Boards of the Southern Sector of Pico Bonito National Park (AJAAS-PIB, in Spanish), a community group with whom EcoLogic works in Honduras, represented their training processes carried out in Mexico and Central America.

This chapter summarizes the approaches applied by these institutions in their efforts to strengthen capacity for ecological restoration in Latin America. Each example briefly describes the organization's mission and institutional context as well as the factors that influence their approach to training. Then, we provide a summary of the achievements and lessons learned and highlight the relevance of capacity building for empowerment and social participation in ecological restoration in Latin America.

ORGANIZATIONS AND THEIR CAPACITY BUILDING APPROACHES

Atlantic Forest Restoration Pact (PRMA, in Portuguese). The PRMA is a collective movement that brings together about 300 Brazilian institutions (government, non-governmental organizations, companies and scientific institutions) with the mission of combining efforts to overcome the

structural obstacles to large-scale restoration in Brazil's Atlantic Forest. It aims to restore 15 million hectares of native forests by 2050, in areas where the opportunity cost of land is low and, consequently, the conversion to forests is more feasible in socio-economic terms, as well as in protected sites such as riparian areas, springs or river headwaters and slopes, where restoration is mandatory according to environmental legislation.

As part of its training program, the PRMA uses a book that presents the theoretical framework for restoration in the Atlantic Forest and synthesizes the lessons learned from more than 30 years of research on the ecological restoration of tropical forests in the country (LERF-LCB/ESALQ/USP, 2009). In addition, the PRMA designed a technical monitoring protocol that has served as a working guide and provides a conceptual basis for PRMA's training programs. With the support of these materials and the participation of members across the movement, training courses are carried out in several regions of Brazil and for different stakeholders, from farmers and indigenous people to directors of private companies and public officials. The experience of the PRMA in Brazil can serve as a model for developing largescale training plans with the participation of multiple actors involved in restoration projects (Melo et al., 2013).

The development of restoration programs at the regional-level requires the mobilization, coordination and participation of a large number and variety of actors to unite several small

and isolated restoration initiatives into a wider and collective program. In this context, it is important that members participating in regional-scale restoration coalitions work in a coordinated fashion. A capacity building program can have the essential function of "leveling the playing field" by establishing a standard of theoretical and practical knowledge about restoration.

Northeast Center for Environmental Research (CEPAN, in Portuguese). CEPAN is a private non-profit organization founded in 2000 by professors, researchers and graduate students from the Federal University of Pernambuco, Brazil, with the mission of proposing strategic solutions for biodiversity conservation in northeastern Brazil through science, human development and an open dialogue with society. CEPAN's activities, research and training focus on: (1) supporting the creation of protected areas; (2) restoring forests and ecosystem services; and (3) protecting endangered species. CEPAN works in a regional planning unit called the Northeastern Biodiversity Corridor, which comprises four Brazilian states located in the region of highest conservation priority within the Atlantic Forest of Brazil.

CEPAN is dedicated to strengthening local and regional capacity to deal with strategic ecological restoration issues. Some of CEPAN's courses cover techniques for producing seedlings of native species and managing community tree nurseries. The target audience includes small farmers, private owners and decision makers. All courses are

participatory and include classroom and field exercises. Feedback from course evaluations has been essential for improving the training methods.

Another key component of CEPAN's work is the concept that ecological restoration can add economic value to degraded tropical landscapes. This value can be understood as the ability of such landscapes to provide environmental services and to preserve biodiversity threatened with extinction. In this context, all stages of ecological restoration, from seedling production to planting and monitoring can be seen as a value chain where each link (such as seed collectors, seedling producers and implementers of restoration) generates jobs. This unprecedented vision in environmental management creates an opportunity for synergy between ecological restoration and other economic activities while also giving greater relevance to decision makers and society. Therefore, CEPAN's training activities seek to strengthen the vision of restoration as a productive value chain that creates social opportunities for marginalized rural communities. CEPAN's main achievements have been contributing to the creation of sub-national political agendas related to forestry, the development of forest policies and the empowerment of diverse stakeholders in the activities of the restoration value chain.

The Nature Conservancy (TNC) Brazil. TNC is a non-profit organization established in 1951, which supports the protection of 48 million hect-

ares in more than 35 countries. Since 1998, TNC has conducted activities in Brazil with a focus on the participation of multiple actors, the formation of local partnerships and the development of practical solutions for environmental problems. Its projects seek to influence public policies to maximize conservation. Currently, TNC operates through projects focused on three priority conservation strategies for Latin America: food security, water security and intelligent infrastructure. Ecological restoration activities are an integral part of these three strategies.

Since 2006, TNC has conducted ecological restoration activities in conservation areas and private properties in seven Brazilian states (Santa Catarina, Paraná, São Paulo, Rio de Janeiro, Espirito Santo, Minas Gerais and Bahía). One of the first capacity building activities was a project in the state of Bahía aimed at connecting two important protected areas. Because not enough people had the technical skills for restoration, TNC carried out a training program to build the capacity of the community members involved in the project. In this process, the community members formed a forest restoration cooperative, which provided an alternative source of income.

TNC Brazil's approach, activities and methods for capacity building depend on the target audience and the needs of each project. The work has a broad range including developing materials and courses for government personnel, extensionists and others as well as training traditional communities or landowners of small and medium-

sized plots to restore areas in their properties. The National Training Program for Ecological Restoration is dedicated to the development of didactic materials and training courses for all sectors of the restoration value chain. To date, TNC has supported the creation of four cooperatives in communities (220 people trained and 1,400 hectares restored), coordinated the design of reference materials (manuals, brochures and guides for four states of Brazil) and hired farmers to work on two projects.

EcoLogic Development Fund (Eco-Logic). EcoLogic is an NGO with the mission of empowering indigenous and rural people to restore and protect tropical ecosystems in Central America and Mexico. Founded in 1993, Eco-Logic has collaborated with more than 627 communities to provide the tools, training and resources to enable them to balance environmental conservation with meeting their other needs.

approach EcoLogic's to ity building, based on rural extension methods, focuses on issues such as watershed restoration, traditional knowledge, micro-watershed management, enhancing 'milpa' farming systems and home gardens, operation and maintenance of wood-saving stoves, community agroforestry and forest management plans to qualify for financial incentive programs. A guiding principle of EcoLogic is that leadership and active involvement of local communities in conservation are not only fair, but also essential for longterm conservation. The people whose

livelihoods depend directly on nature are themselves best suited to lead initiatives that nurture the communities and ecosystems where they live. For this reason, EcoLogic works with these communities (their local partners) to create solutions, strengthen community leadership, provide technical and financial assistance and build bridges between local initiatives and national and international resources.

EcoLogic's institutional relationship with its partners is exemplified by the experience of the Association of Water Management Boards of the Southern Sector of Pico Bonito National Park (AJAASSPIB, in Spanish) in Honduras, which was founded with the support of EcoLogic and the Pico Bonito National Park Foundation (FUPNAPIB, in Spanish). AJAASSPIB configures and maintains "water committees" composed of volunteers from each village that belongs to AJAASSPIB. Each water committee manages the funds paid by community members to maintain the community's water system. In addition, each committee has set an additional fee to fund conservation and reforestation initiatives in the watersheds. During the past four years, EcoLogic and AJAASSPIB have supported and oriented the municipality of Olanchito to raise awareness and motivate the urban population to make voluntary payments for the conservation of their local water sources.

Center for Research on Sustainable Agricultural Production Systems (CIPAV, in Spanish). CIPAV is a Colombian non-governmental or-

ganization with the institutional mission of contributing to the sustainable development of the rural agricultural sector through research, training and outreach on environmentally friendly techniques for agricultural production. CIPAV works in collaboration with other research groups, agricultural producers at different scales, private companies, public institutions, national and international universities and non-governmental organizations in order to advance scientific research and the implementation of development projects related to sustainable livestock production and the restoration of productivity and ecosystem services. Most of CIPAV's ecological restoration projects are carried out in agroecosystems with the active participation of rural communities. Their projects are conducted at a variety of geographic scales (local, sub-regional or international) and time frames (from one to five years, or beyond). Meanwhile, CIPAV has managed to sustain decade-long relationships with some farmers and rural communities thanks to the linking of different projects in a variety of subjects.

CIPAV's capacity building activities are directed to multiple audiences: field workers, rural communities, farmers of lands at different scales, students (universities, technological institutes), technicians, professionals, policy-makers and public officials. The current work of CIPAV addresses two major challenges related to the restoration of the natural capital in Colombia: rehabilitation of degraded ranching lands and the recovery of se-

verely eroded areas. In the first case, CIPAV bases their strategy for rehabilitation on the use of silvopastoral systems, which can improve the profitability and provisioning of ecosystem services and, at the same time, allow for the release of marginal lands for ecosystem restoration. In the second case, the restoration strategy combines bioengineering techniques with the active participation of local populations. Both situations require diverse skills that transcend the boundaries of any professional training. Capacity building is key to form working teams that can foster a cultural change among farmers and rural communities. Different strategies (including field trips, field courses, lectures, university courses, participatory research processes and workshops supported by a network of rural farmers and pilot farms) have helped CIPAV to consolidate teams of professionals, technicians and field staff trained to promote and implement land use change and erosion control.

Environmental Leadership and Training Initiative (ELTI). ELTI was created in 2006 with the objective of offering capacity building opportunities to different audiences (decision-makers, owners, communities and professionals, among others) that influence land use in the mosaic landscapes of tropical Asia and the Neotropics. Its mission is to provide knowledge, tools, skills, motivation and contacts to advance in the conservation and restoration of forests, native trees and ecosystem integrity of these landscapes. ELTI

has two programs: (1) *Training*, dedicated to strengthening theoretical and practical knowledge through workshops and field courses, conferences and online courses; and (2) *Leadership*, which focuses on following up with alumni to support them in the practical application and dissemination of the information acquired in ELTI's trainings (Garen, 2014).

ELTI began its activities in Latin America in 2009 with an emphasis on the ecological restoration of productive landscapes in Panama. Then, in 2010, ELTI coordinated restoration courses in the Atlantic Forest of Brazil with CEPAN and LERF and, in 2011, courses on the restoration of connectivity corridors in livestock landscapes of Colombia with CIPAV. These initial courses reaffirmed the importance of working with local partners on issues related to the restoration of agricultural landscapes with methods that respect and strengthen local livelihoods. In 2012, ELTI and STRI began to collaborate in the establishment of focal sites in Panama for teaching about forest restoration with interpretive trails, demonstration areas and model farms. In addition, in 2013, with a solid foundation in the lessons learned through field courses, ELTI launched its Online Training Program in response to the both the growing number of interested stakeholders involved with forest restoration along with the improvement of internet access in Latin America.

Currently, in collaboration with local partners, ELTI designs and coordinates training courses (field and online) that directly link the three major issues that are needed to develop appropriate restoration strategies: scientific theory, applied ecology and socioeconomic aspects. Follow-up activities through the leadership program seek to empower environmental leaders capable of disseminating the best practices in communities and expanding restoration initiatives with respect for existing livelihoods.

Other organizations. In addition to the organizations gathered at the symposium during the SIACRE congress, there are several organizations involved in a variety of training activities for ecological restoration in Latin America. These groups include: municipal, national and regional governments; non-governmental organizations; research institutes; outreach professionals, teachers and university professors; government outreach officials and leaders of rural communities. among others. For example, in addition to the aforementioned activities of CIPAV and ELTI, Colombia has a diversity of active institutions focused on capacity building at different scales, such as the Alexander von Humboldt Biological Resources Research Institute (IAvH in Spanish), the Ministry of Environment and Sustainable Development (Minambiente), the Colombian Federation of Cattle Rangers (FEDEGAN, in Spanish) and the Colombian Network for Ecological Restoration (REDCRE, in Spanish).

SYNTHESIS AND DISCUSSION

The organizations discussed in this chapter employ a variety of strategies and tools for capacity building for ecological restoration in Latin America. A common thread among these organizations is the use of courses that combine theory, practical information, and applied experiences. The design of the courses varies according to the purpose of the training and the target audience involved. In general, the courses are based on a combination of (1) classroom activities, with presentations and discussions on certain topics; (2) individual or group hands-on activities that require participants to think critically and receive feedback from instructors; and (3) visits to demonstration sites, where participants can learn about restoration projects in progress and about other areas that exemplify the concepts addressed on the course.

All of the organizations featured in the symposium highlight the use of didactic printed and digital training materials, such as manuals, brochures, guides, posters and audiovisual media. For example, an important complement to many training activities are species guides for specific geographic regions that assist with the selection of the most suitable plant species and facilitate their identification in the field. In terms of online resources, ELTI has developed a website (http://reforestation.elti.org) that functions as an information clearinghouse about reforestation with native species.

The use of less conventional materials such as the "Restoration Backpack"

designed by TNC Brazil is noteworthy; this backpack contains didactic materials for field exercises along with a landscape model with tokens that simulate restoration activities. CIPAV has used music as an innovative tool thanks to the creativity of two partners with a great ability to incorporate complex technical messages into folk songs and popular music: Adolfo Cardozo (researcher, educator, composer and performer of the 'Llanos venezolanos') and León Octavio Osorno, director and composer of the peasant musical group 'Campo y Sabor'.

The contents of restoration courses have a strong foundation in applied science. CIPAV and CEPAN, as research institutions, integrate the results of their research projects on sustainable production systems and the restoration production value chain into their training activities. The book compiled by the AFRP, which synthesizes the results of three decades of scientific research on ecological restoration in Brazil (LERF - LCB/ESALQ/ USP, 2009), serves as a reference material in training courses, where participants can learn the history of mistakes and successes in the attempts to restore the Atlantic Forest biome over time. In a similar way, ELTI courses provide a solid foundation on theoretical frameworks of ecology, succession, natural regeneration and forest management, developed by professors of the School of Forestry and Environmental Studies at Yale University. In Panama, ELTI activities benefit from the scientific results and demonstration sites of the 'Agua Salud Project' and 'Native Species Reforestation Program' (PRORE-NA, in Spanish) of STRI.

With the rapid increase in the availability and use of the internet in Latin America, successful elements of field training can serve as models for designing online courses that not only transmit information using virtual tools, but also take advantage of the internet to strengthen the capacity of environmental professionals to implement restoration projects. For example, key to the success of ELTI's online courses are practical homework assignments designed to maximize the possibilities of participants to apply the learned lessons in their professions, organizations and decision-making for land-use management. Online tools can allow trainers to reach a more global audience with a flexible format that fits the participants' schedules and commitments and allows them to engage in an exchange of experiences on restoration. For example, ELTI has trained participants from various regions, and each course can have students from six to fourteen countries and different areas of a single country. Moreover, the online format is ideal for presenting a variety of experiences from people working in different parts of the world. To date, ELTI courses have incorporated presentations, video conferences and case studies presented by the executive committee of ELTI, Yale professors and students and key partners such as CIPAV, CEPAN, LERF, Eco-Logic and TNC Brazil. These organizations collaborate in the creation of new educational materials using audiovisual tools.

Finally, in any effort to strengthen capacity for ecological restoration, it is essential to recognize that training does not end with courses and educational materials. The organizations presented in this chapter use additional capacity building approaches such as educational tours, field trips, workshops, farmer-to-farmer exchanges, training for trainers, network maintenance, mentorship, conferences and symposia, among others. In any activity, the aspect that distinguishes capacity building from education is that capacity building activities are designed and used as tools to empower and bring about change, in this case ecological restoration. Specifically, the activities of the organizations presented in this chapter demonstrate that there is a wide variety of strategies and participatory approaches to strengthen capacity for empowering communities and promoting social participation in restoration.

EMPOWERMENT AND SOCIAL PARTICIPATION IN RESTORATION

Ecological restoration in fragmented agricultural landscapes is not only a biophysical process, but also a cultural one (Robertson *et al.*, 2000). When making decisions about the environment, it is necessary that those involved in restoration consider the perspectives of the people who depend on those ecosystems (Castilho, 2005) in order to identify local needs and design training activities to address them. The

team from TNC Brazil highlighted the following lessons on the development of training activities according to local needs:

- Three important factors include: maintaining an active local presence, forming a network of stakeholders and building a relationship of mutual trust.
- To reach consensus among actors with different interests, needs and expectations, an important step is to understand the multiple visions of those actors and communicate them among all those involved (Waltner-Toews *et al.*, 2003).
- Building sustainable forms of ecosystem management requires a continuous, interactive and participatory exchange of ideas and information (Castilho, 2005).
- To optimize the use of resources and guarantee positive results, positive results, capacity building efforts should focus on people who have a real interest in a particular project, while maintaining the openness and flexibility needed to make changes and adaptations that meet the needs of local actors.
- Key aspects to the success of restoration projects are the identification of local leaders and advocates for restoration, and the efforts to work together with these local actors democratically.

Additionally, EcoLogic states that its training activities focus on strengthening institutional capacities through strategies that (1) improve the managerial and administrative-financial skills and abilities; (2) establish networks of contacts with international donors,

national institutions and organizations of interest to each partner and project; and (3) provide funds and the ability to find funds independently. Furthermore, EcoLogic's work is guided by four core values:

- 1. Community-based conservation: preserving nature by recognizing the needs, responsibilities and knowledge of people living in complex ecosystems.
- 2. Impact: creating positive and measurable results as well as evaluating and improving those results.
- 3. Solidarity and justice: recognizing that leadership and community participation are critically important for the protection of the environment; work should have the goal of enabling rural and indigenous communities to advocate for and represent their interests on equal terms.
- 4. Honesty and transparency: acting with sincerity and integrity in an ethical and moral way, with the highest standards of conduct.

These participatory methods and strategies designed to empower leaders, restoration advocates and community groups are equally important to the other organizations presented in this chapter. For example, in the last two decades, CIPAV found that the key tools for promoting the adoption of silvopastoral systems are pilot farms and farmer-to-farmer training. Additionally, they stress the importance of training field professionals and technicians with a holistic view of the productive, social and environmental aspects of cattle ranching and a clear focus on the values and principles of rural sustainability. In their most recent work to restore lands affected by landslides and severe erosion, CIPAV's strategy has been based on consolidating a team of field workers who contribute to the continuous improvement of bioengineering and assisted natural regeneration techniques.

Through its Leadership Program, ELTI aims at empowering its alumni to help them amplify the impact of their knowledge and strengthen their capacity as leaders able to meet the challenges of restoration. This is exemplified by the shared experience of ELTI and their local partner, the Association of Agricultural and Livestock Producers of Pedasí (APASPE, in Spanish). In 2009, ELTI offered a course to a group of farmers from Panama on the use of native species and silvopastoral systems in agricultural landscapes. Because of the great interest raised within the community, ELTI continued to work with the farmers of the Azuero peninsula to support them in the formation of their cooperative APASPE. With the support of ELTI to help the farmers strengthen their organizational capacities, the technical trainings conducted by CIPAV and technical field assistance provided by a volunteer from the Peace Corps (a US government extension program), APASPE was able to obtain a grant from the Small Grants Program of the Global Environment Fund and establish demonstration sites of silvopastoral systems, riparian restoration and sustainable agriculture. Currently, APASPE members collaborate as invited experts in ELTI courses and

facilitate their own farmer-to-farmer exchanges to share their experiences and inspire other farmers in various regions of Panama (Slusser *et al.*, 2014).

Another example of how the organizations presented in this chapter design their training activities to address local needs is their focus on the socioeconomic aspects that determine the viability of ecological restoration. This concept is exemplified by the efforts of CEPAN and the AFRP to strengthen a vision of restoration as a production value chain through their training activities, their efforts to help and nurture networks of seed collectors. seedlings producers and implementers of restoration, and their role in the development of smart public policies to restore forests. A tangible social outcome of this process is CEPAN's work to establish the Northeastern Association of Seedling Producers, a formal organization comprised of nursery managers.

CONCLUSIONS AND RECOMMENDATIONS

With the growing recognition of ecological restoration as a global priority, activities that strengthen the capacity of diverse actors to effectively design and implement restoration projects become all the more important. The approaches presented in this chapter share the following elements that can be considered as lessons learned or recommendations for other organizations involved in capacity building:

- Training processes should be based and sustained on scientific results and practical management experiences and should be built on clear values.
- Building capacity for an integrated land management (i.e., combining conservation, ecological restoration and sustainable production) requires organizations to work across borders between disciplines, educational background, ideologies, cultures and worldviews.
- Programs should be developed and conducted in a participatory manner, responding to local contexts and needs.
- Empowering leaders, restoration advocates and community groups is an integral part of the process of capacity building.

By sharing experiences, approaches and the best practices of different organizations involved in capacity building, the purpose of this document is to help and inspire individuals and organizations that seek to improve social participation in restoration through capacity building.

ACKNOWLEDGEMENTS

The authors thank the steering committee of the SIACRE Congress for accepting this symposium as part of the event and for recognizing the importance of this topic for the scientific community involved in ecological restoration. The participation of the speakers was possible thanks to the financial support of the Arcadia Fund (http://www.arcadiafund.org.uk).

REFERENCES

- Aronson J, Alexander S. 2013. Ecosystem restoration is now a global priority: Time to roll up our sleeves. *Restoration Ecology* **21**: 293–296.
- Calmon M, Brancalion PHS, Paese A, *et al.* 2011. Emerging threats and opportunities for large scale ecological restoration in the Atlantic forest of Brazil. *Restoration Ecology* **19**: 154–158.
- Castillo A. 2005. Comunicación para la restauración: perspectiva de los actores en intervenciones con y por medio de las personas. *In*: Sánchez O, Peters E, Marquéz R, *et al*. Eds. *Temas sobre restauración ecológica*. Instituto Nacional de Ecología, Mexico, 67-78.
- FAO. 2011. Fortalecimiento de capacidades. http://www.fao.org/docrep/014/am859s/am859s02.pdf
- Garen EJ. 2014. Fortalecimiento de capacidades para la restauración ecológica en América Latina. *In*: Calle A, Calle Z, Garen EJ, Del Cid-Liccardi A. Eds. *Simposio sobre restauración ecológica y agropaisajes sostenibles. Iniciativa de liderazgo y capacitación ambiental.* New Haven, CT: Yale University; Panama City: Smithsonian Tropical Research Institute, 34-38.
- Gordon J, Chadwick K. 2007. Impact assessment of capacity building and training: assessment framework and two case studies. *Impact Assessment Series Report* **44**: 1-117.
- Rodrigues RR, Brancalion PHS, Isernhagen I. 2009. *Pacto pela restauração da mata atlântica: referencial dos conceitos e ações de restauração florestal*. 3th Edition. Laboratório de Ecologia e Restauração Florestal, São Paulo.
- Melo FPL, Pinto SRR, Brancalion PHS, *et al.* 2013. Priority setting for scaling-up tropical forest restoration projects: Early lessons from the Atlantic Forest Restoration Pact. *Environmental Science & Policy* **33**: 395-404.
- Paré L, Gerez P. 2012. *Al filo del agua: cogestión de la subcuenca del río Pixquiac, Veracruz.* Secretaría de Medio Ambiente y Recursos Naturales y Instituto Nacional de Ecología. México D F
- Prisma-Cabal 2011. *Diseñando un programa REDD que beneficie a las comunidades forestales de mesoamérica. In:* Elizondo D. (Coord.). Fundación PRISMA and Grupo CABAL. Nicaragua and El Salvador, 1-42.
- Robertson M, Nichols P, Horwitz P, Bradby K, MacKintosh D. 2000. Environmental narratives and the need for multiple perspectives to restore degraded landscapes in Australia. *Ecosystem Health* **6**: 119-133.
- Slusser JL, Calle A, Garen EJ. 2014. Increasing local capacities in rural Panama. *In*: Chavez-Tafur J, Zagt RJ. Eds. *Towards productive landscapes*. Tropenbos International. Wageningen, the Netherlands, 1-224.
- UICN. 2017 ¿Qué es REDD+?
- https://www.iucn.org/es/sobre/union/secretaria/oficinas/sudamerica/sur_trabajo/sur_bosques_quesam/sur_bosques_cambio_climatico/sur_bosques_redd/
- Waltner-Toews D, Kay JJ, Neudoerffer C, Gitau T. 2003. Perspective changes everything: managing ecosystems from the inside out. *Frontiers in Ecology and the Environment* 1: 23-30.

This book invites us to reflect on the restoration of terrestrial ecosystems in the context of a region whose identity is still under construction, Latin America and the Caribbean, immersed in a social, economic, ecological and political crisis, whose roots originate historically and politically in colonialism and in the prevailing model of capital accumulation. For the first time, insights and practical experiences on restoration are gathered from most Latin-American and Caribbean countries. Furthermore, this book offers a social approach to restoration, which will likely become preponderant in this field and in this region. The authors claim that a Latin-American knowledge of restoration is under construction and that this discipline can be a significant tool to empower local populations, which might, in turn, lead to a collective action of change.

Case studies from 11 countries of the region were compiled, involving multiple voices that emerge beyond generalist principles and with a bottom-up approach. The main idea of the book is to open a debate about the identity of ecological and social restoration in this region.

This book is targeted to restoration specialists, volunteers, environmental managers, researchers, politicians and NGOs working on the complexity of socioecological restoration in a region with unavoidable social problems. It is intended for people with similar concerns to those of the chapters' authors. This work tries to integrate a movement on the rise, almost silent, born with its own narratives of successes and failures that do not hinder its development. Finally, the determination and commitment of Latin-American and Caribbean social actors to restore not only natural values but also social, ethical and cultural ones is remarkable.

















