

Regenerative Agriculture in Latin America



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About this report

This internal research report was written for the Mustardseed Trust to expand its knowledge about Regenerative Agriculture (RA) in Latin America. Although a significant amount of information is beginning to emerge on RA in Western Europe, North America and Australia, there is still a lack of awareness about its degree of development in other parts of the world. To address this knowledge gap, we carried out a 9-week desktop research project from April-June 2020 based on the following research questions:

- Which actors and factors are either enhancing or inhibiting a shift in thinking and practice to regenerative agriculture in Latin America?
- Who are the most influential (male and female) people and organisations that are enhancing/driving the practice of RA in Latin America? What innovations do they present?
- What are the most influential factors that are enhancing/driving the practice of RA in Latin America? What are the most important factors that are inhibiting the practice of RA in Latin America?

Disclaimer: This report focuses on continental Latin America (LA) and does not delve into RA in the Caribbean. Any opinions, points of view or conclusions expressed in this document are those of the authors alone and do not necessarily reflect the views and position of any other person or organisation (unless explicitly indicated).

NB: You can access the websites of the RA actors listed in this report by clicking on their logos.

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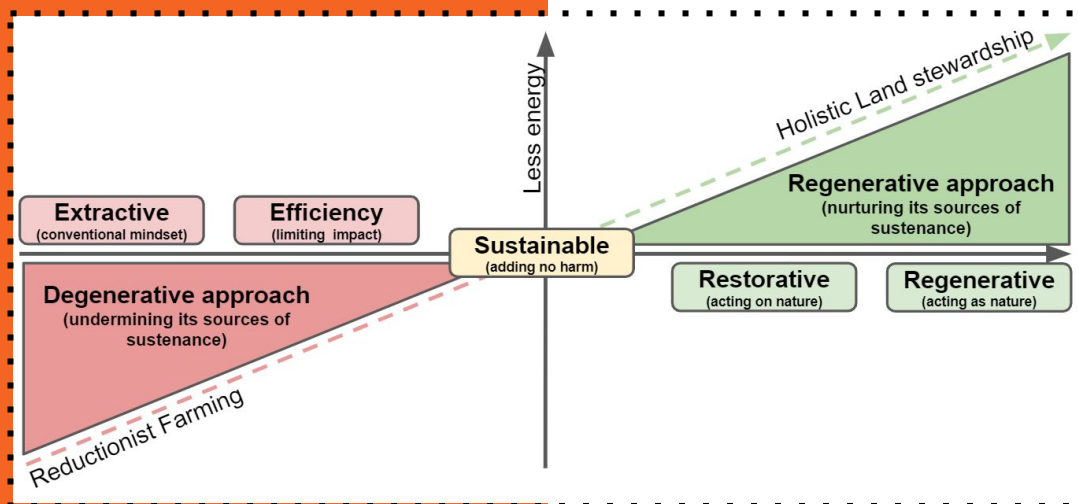
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Introduction

An increasing number of scientific publications recognise that the Earth has entered a new human-induced geological epoch, the Anthropocene, in which human activities and pressures on natural systems are driving the Earth's climate and other crucial biophysical processes beyond any "safe operating space" (Rockström et al., 2009). These "ecological overshoots" are growing together with a series of "socio-economical shortfalls" on major global challenges such as extreme poverty and inequality, healthcare, social justice, gender equality, and other United Nations Sustainable Development Goals (Raworth, 2017).

Regenerative agriculture (RA) aims to address both the environmental and socio-economic aspects of this planetary emergency by redesigning human systems to function from scarcity to abundance. It is rapidly gaining momentum as a worldview, a body of knowledge, a series of principles and practices and a set of social movements. In this study, we will delve into the numerous ways in which RA is unfolding and innovating in Latin America.



The common denominator behind all regenerative approaches is the intention to move beyond sustainability (adapted from Mang & Reed, 2012).

Defining Regenerative Agriculture

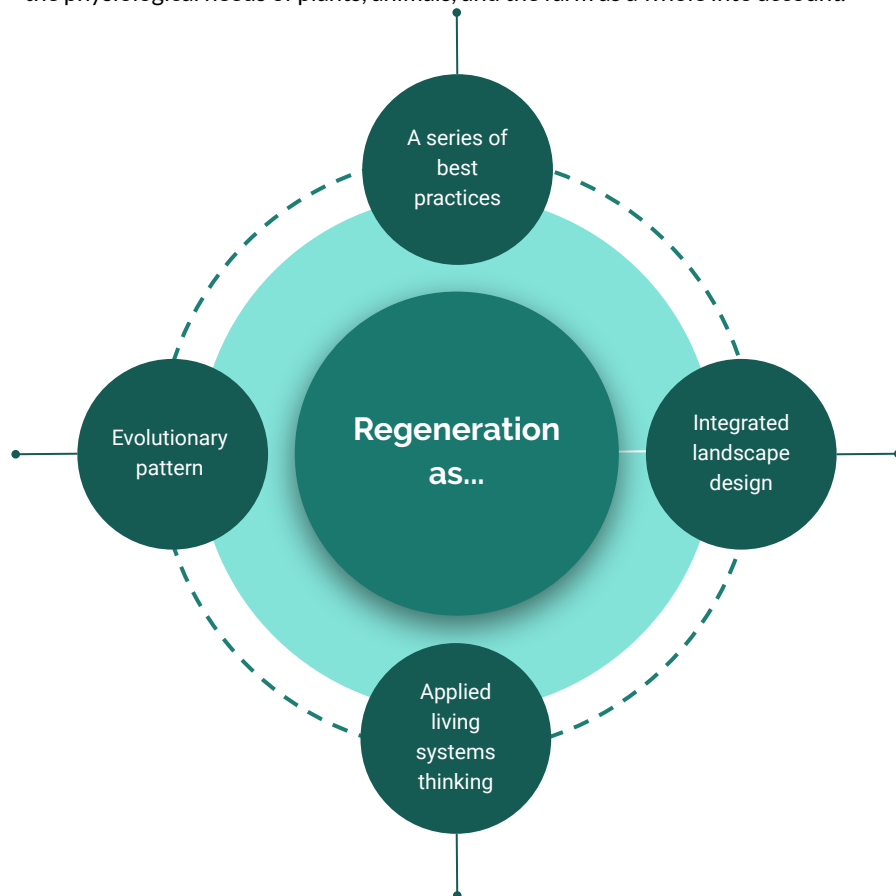
One of the first documented uses of “regenerative agriculture” dates back to the early 1980s. Robert Rodale, son of J.I. Rodale, founder of the pioneering organic agriculture Rodale Institute, defined RA as “a holistic systems approach to farming that encourages continual innovation for environmental, social, economic and spiritual well-being” (Rodale Institute, 2014). This definition goes beyond conventional understandings of farming and sustainable agriculture, i.e. the simple “sustainment” of the land, to designate the active regeneration of its resources through agriculture itself. In this configuration, land managers go from acting on nature to acting as nature.

Since its early beginnings, the concept and practice of regeneration has evolved to encompass a plurality of meanings, practices and actors, and still eludes any precise definition. Indeed, as Soloviev and Landua (2016) suggest, defining RA goes against the very spirit of regeneration itself. “To define” stems from the Latin *de-finire* (i.e. “completely bounding, limiting, bringing to an end”), and can therefore not apply to an approach which targets the “health, vitality, and evolutionary capability of whole living systems”. These authors nonetheless identify a series of “levels” at which RA actors are operating, that offer insights into the different existing perspectives on regeneration.

Most agree that a regenerative land management approach is based on four cornerstones (for a detailed overview, see [Merfield, 2019](#)):

- **Minimum soil disturbance:** building rich organic soils by leveraging the photosynthetic ability of plants to capture atmospheric carbon dioxide. This increases the soil’s organic matter and biological health, as well as its capacity to act as a net carbon sink.
- **Fostering biological diversity:** ensured by intercropping and complex rotations in both time and space, with a focus on perennials and on closing nutrient cycles.
- **Maintaining constant soil cover** using cover crops and a combination of the approaches above.
- **Integrating livestock and production** adopting a stock management approach that takes the physiological needs of plants, animals, and the farm as a whole into account.

A shift from a mechanistic world view to a thriving regenerative culture, which implies a deep understanding of the human history and rootedness into a specific place. This is based on a multi-dimensional and multi-generational perspective, conveyed through pattern languages of songs, stories, rituals, etc.

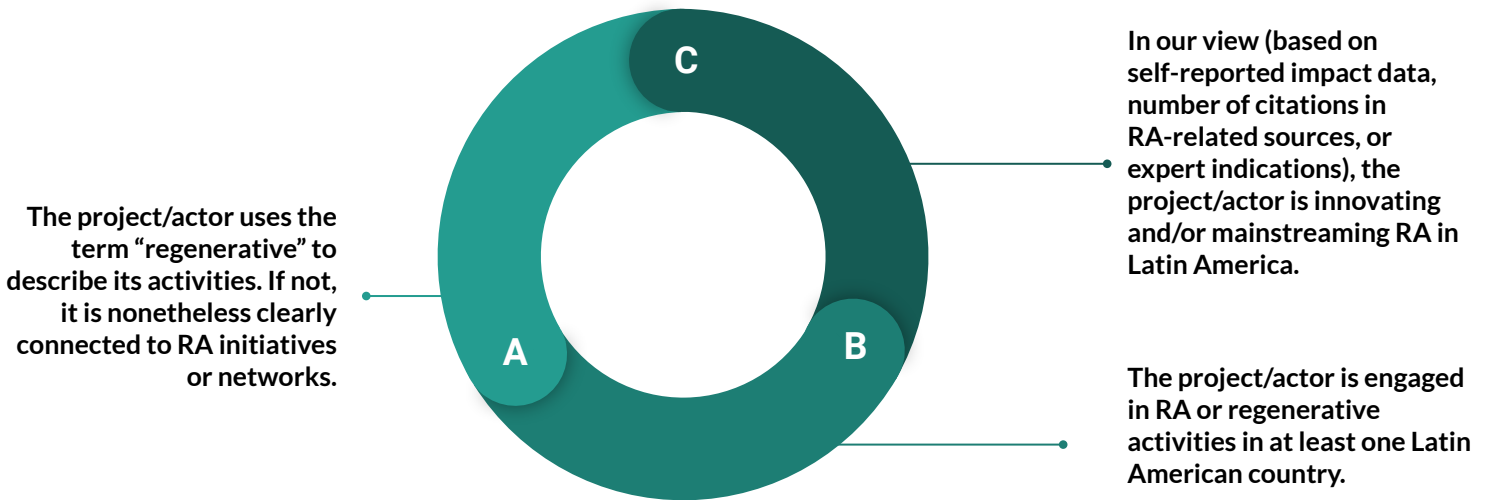


Through holistic design, best practices are combined in an integrative system that enables the mimicking of natural ecosystems. The farm’s ecology determines the form of its agricultural enterprises, with the ultimate goal of creating an Earth-as-Eden landscape.

Different entities are intertwined into an ecosystem of regenerative enterprises, operating as a decentralised network in which wealth goes beyond purely monetary terms to embrace all the different forms of capital and human exchange.

Research Methodology

Our inclusion criteria



Our research process

Phase 1

Online desktop research and literature review (including academic and grey literature, websites, social media), consultations with RA experts and practitioners from our networks.

Phase 2

Snowball sampling to identify further initiatives falling under criteria A and B, combined with online interviews of Latin American RA frontrunners identified during Phase 1.

Phase 3

Clustering the entries based on their field of action and filtering them according to criteria C, while identifying the most innovative and/or influential actors in our view.

The limitations of our study

Our research was conducted exclusively online over a short, 2 month period and over a very broad geographical zone. This limited our capacity to carry out an exhaustive analysis of RA in Latin America backed up by fieldwork and in-depth interactions with local RA actors.

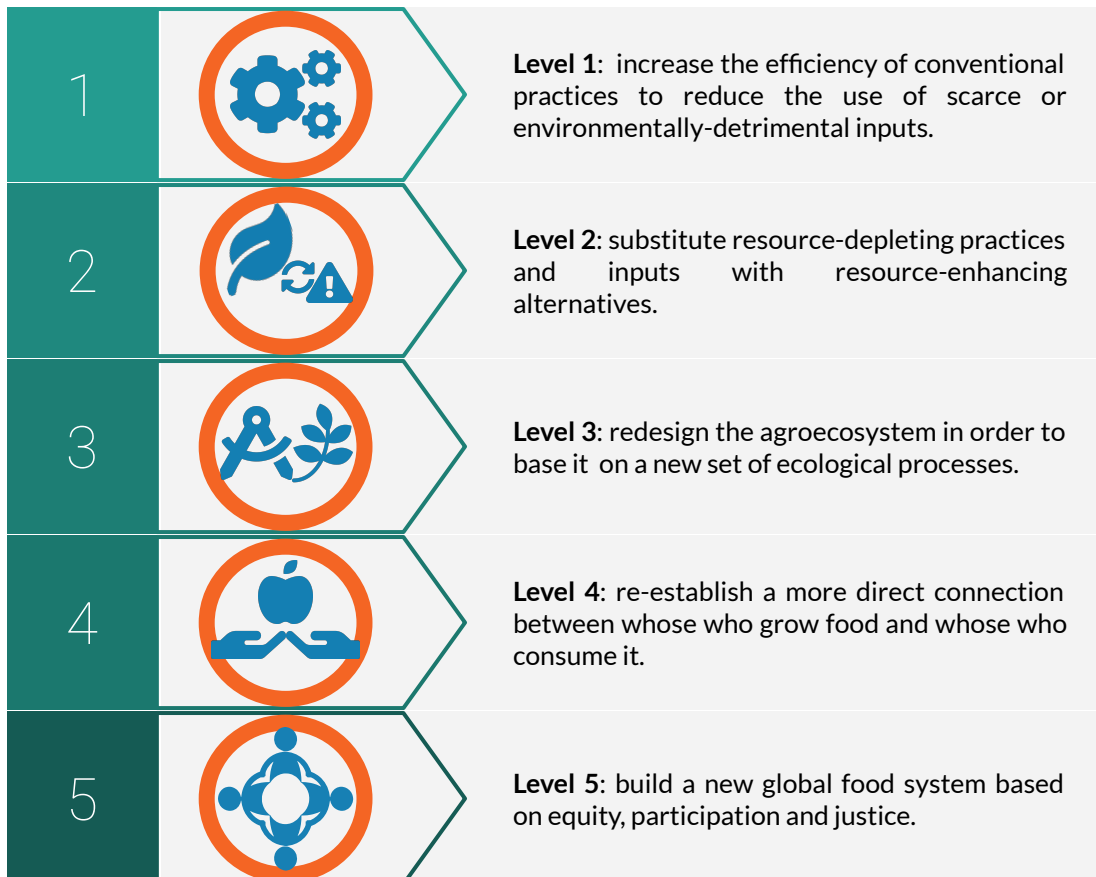
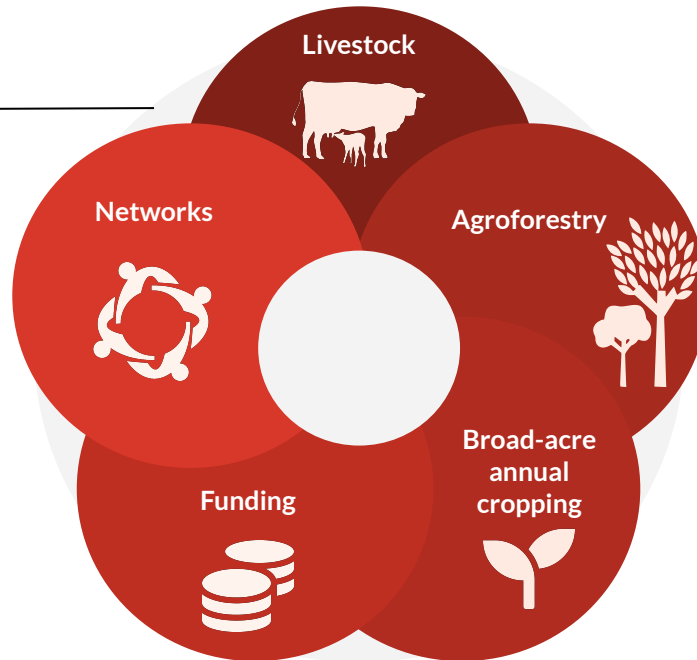
The virtual nature of our research did not allow us to assess which RA initiatives are truly applying RA principles and techniques in their daily activities, as opposed to projects that may be using regenerative terminology mainly as a means of communication.

We can realistically expect numerous relevant RA projects to be underrepresented or absent from the internet, especially those that lack the means or interest to develop an online presence.

Structure & Framework

Chapters

This report focuses on RA projects and initiatives that are explored in these 5 thematic chapters. Since there is significant overlap in RA approaches and activities, attributing a project to a single field of action was not always possible. This classification is not intended to be a strict categorisation, but rather a functional layout that allows for a clear and structured narrative.



Food System Levels

RA innovations are summarised according to the level of food system they are leveraging at the beginning of each chapter. This framework is adapted from Gliessman's *Levels of Conversion* (Gliessman, 2014). It is useful in understanding the current and potential impacts of RA innovations in Latin America. A key threshold is situated between levels 3 and 4, where incremental changes that mainly target food production methods have broader impacts on socio-economic impacts, the global agrifood market and governance.

Latin America is both a continent of great opportunity and imposing obstacles when it comes to RA. As a major global exporter of agricultural goods that still contains significant tracts of unexploited agricultural land (especially in Brazil and Argentina), there is no doubt that the region will further expand its crucial role in the global food system in the future.

How will agriculture evolve in Latin America over the coming decades? Will it continue to be a driver of degradation or a vector of regeneration? This chapter provides an overview of some of the key enhancing and inhibiting factors that are shaping the evolution of RA in Latin America.

A key concept to bear in mind when thinking about Latin America is contrast, and especially the contrast between two very different approaches to agriculture, which have shaped the very history of this continent over the past centuries.

2

Enhancing and Inhibiting Factors for RA in Latin America



Source: Greenpeace UK

Latin America: a region of contrasts

Latin America is a continent of contrasts. On the one hand, Latin America's largest agricultural exporters (e.g. Brazil, Chile and Argentina) count numerous export-oriented commercial farms. These operations are usually monocultures that rely on synthetic inputs and heavy machinery. Most often, they belong to wealthy absentee owners and are administered by employees who do not entertain a strong bond of ownership or stewardship of the land. This highly specialized, competitive, profit- and export-oriented agricultural sector is predominant in Latin America. On the other side of the spectrum, small-scale subsistence farming is characteristic of the entire region. It is intimately linked to agroecology, which emerged largely through social movements of small farmers protesting against the Green Revolution during the 1960s and 1970s. Latin American agroecology stresses farmers' autonomy, social and environmental justice and sustainability. The political nature of agroecology partially explains why most Latin American large-scale producers, agribusiness and policymakers do not feel at ease with this current. In parallel, its focus on local production-consumption cycles and markets (especially in terms of energy, inputs and technology) and its opposition to corporate industrialised agriculture and global food regimes limit the integration of agroecological smallholders into international value chains (Altieri, 2009).

This contrast is key to understanding the opportunities and challenges that RA currently faces in Latin America. Whereas RA and agroecology have numerous agricultural practices in common, they are steeped in different traditions. Compared to agroecology, RA is more inclusive for the simple reason that it is more recent and carries less political associations. However, and especially for agroecological actors, it can be perceived as a new, imported term devoid of any substance that is of little relevance to the Latin American context. In our opinion, the process through which RA will progressively gain acceptance from and engage with Latin American agroecology is an important step towards its mainstreaming in the region. In sum, the clear divide between large-scale industrialised agriculture and smallholder agroecology is the backdrop against which RA will need to position itself. It also determines many of the enhancing and inhibiting factors that condition its mainstreaming in Latin America.

Latin American agroecology: a snapshot

The international Via Campesina movement has advocated for family- and farm-based sustainable practices since 1993, and coined the term "food sovereignty" at the World Food Summit in 1996: "the right of peoples to healthy and culturally appropriate food produced through ecologically sound and sustainable methods, and their right to define their own food and agriculture systems". A further key agroecological movement is the Brazilian Movimento dos Trabalhadores Sem Terra (Landless Workers' Movement). With an estimate following of over 1.5 million members, it is one of the largest social movements in Latin America. A key academic institution is the Latin-American Scientific Society of Agroecology (SOCLA). SOCLA has played a key role in bringing agroecology into academia, creating curricula and gathering farmers, students and researchers over the past 60 years.



Enhancing factors of RA in Latin America

Political Factors

- **The current global shift in narratives concerning human impacts on the environment:** RA is increasingly perceived as a timely solution to face the current and future planetary challenges of climate change, biodiversity loss and environmental degradation. Governmental support for such solutions is expanding in line with increased awareness amongst policymakers and the general public.
- Several Latin American nations present **favourable policy environments** for RA to unfold, such as Uruguay, Bolivia, Ecuador and Costa Rica. For instance, Uruguay is a small country that largely depends on its meat exports (26.9% of total exports in 2019). Movements that are supporting holistic grazing and organic agriculture are well established, and often connected with the Uruguayan government and policy makers.

Socio-Economic Factors

- **Economic instability and hardship** affecting Latin America is also an opportunity to rebuild local economies based on RA principles. Numerous Latin American producers are struggling to remain competitive in the global agrifood market and to maintain the health of their land . They are therefore seeking alternatives, while vulnerable populations are also looking for new subsistence models.
- As mentioned above, the fact that **small-scale farming and agroecology** are widespread and deeply rooted in Latin America provides fertile ground on which RA can emerge and further build on agroecology.

Technological Factors

- Latin America has a great wealth of **indigenous and campesino (peasant) knowledge** to draw upon. Finding inspiration within and disseminating these forms of knowledge is key to rooting and embedding RA into local eco-cultural contexts, preserving indigenous varieties and weaving RA into Latin American realities.
- **Virtual technologies** (especially internet and Whatsapp) play an important role in information sharing and are supporting the rapid emergence of RA networks.
- **Technology and knowledge transfer:** Latin America can benefit from European technology and machinery that is suited to the mechanization and monitoring of regenerative systems. Conversely, it has deep experience and know-how in integrated systems and their management, which can be of benefit to other countries and settings in the world.

Environmental Factors

- The wealth of traditional Latin American knowledge is reflected by, and indeed drawn from, the extraordinary **diversity of Latin American ecosystems and the biodiversity of fauna and flora** that they harbor. This opens up a universe of possibilities for RA in terms of production, knowledge exchange and research.

Inhibiting factors of RA in Latin America

Political Factors

- **Governments and large-scale agribusiness may not only associate RA with agroecology, but also perceive it as a threat to their core interests.** Indeed, Latin America's current political context is mostly unfavourable to the adoption and expansion of RA. Governments (notably in Brazil) resolutely deny the global environmental emergency, or feel at ease with inaction and maintaining the status quo (e.g. Argentina and Chile).
- While numerous governments and large agribusiness actors are quick to declare their support for anything "green", "sustainable" or "regenerative", **(agri)business as usual is the rule in Latin America**, underpinned by subsidies for the largest and most well-connected actors of the sector.
- Compared to other areas targeted by the United Nations 2030 Sustainable Development Goals, **RA is a relatively recent concept in the global international development discourse.** Even when actors are willing to financially support RA, the **scarcity of RA showcases and well-established success stories complicates the process of supporting RA.** There is thus a strong need for pilot projects to showcase RA's potential in Latin America and to raise awareness on and garner political support for RA.

Socio-Economic Factors

- The Latin American market for certified organic produce is small and overwhelmingly export-oriented, and that of certified regenerative produce is even smaller. **Certifications are expensive for producers to acquire, and drive prices up for consumers.** In this sense, they do not add regional value to food that is produced locally. RA needs to become accessible and profitable to all types of producers. On the demand side, developing local markets for affordable regenerative produce is essential. Educating consumers and engaging governments to subsidise RA can be a good start in this direction.
- **Short value chains for regenerative produce are more difficult to establish for low-value commodity crops.** For example, the value of high quality organic coffee is very high. Conversely, staple crops (e.g. corn and soybean) are valued in terms of quantity, not quality, making it more difficult to valorise them on the market despite their regenerative attributes. Although niche products such as specialty coffees and fine flavour cocoa allow for the decommmodification of value chains and revenue redistribution to producers, they are inherently limited by customer demand for high quality products.
- **RA is mainly communciated in English.** It must overcome the language barrier and communicate in Spanish, Portuguese and key indigenous languages (such as Quechua, Guarani, Nahuatl...) to engage local populations and further connect with grassroots social movements, agroecological actors and indigenous and traditional groups.
- **The greatest obstacle to mainstreaming RA practices is pedagogical:** increasing farmers' ecological literacy by making techniques more inclusive and accessible to all is a key leverage point for their expansion. "Mental compaction" is still widespread amongst academia, private actors and decision-makers with regards to RA, and negatively affects farmers who are not part of the mainstream. Conversely, negative or judgemental attitudes amongst alternative agricultural practitioners can repel conventional farmers as well. Indeed, one must also recognise the considerable shift in outlook that transitioning to RA requires, for instance in terms of the continuous observation of and interaction with the land. On farms owned by absentee landowners and staffed by employees, there is little incentive to initiate this transition.

Inhibiting factors of RA in Latin America (continued)

Technological Factors

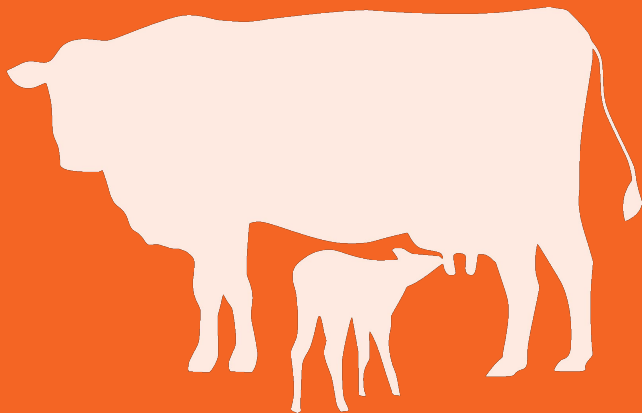
- **Digital agriculture and artificial intelligence** are required to provide more data and precise measurements of the impacts of RA. This will both speed up the learning curve for practitioners, boost RA's legitimacy and scale-up landscape-level private investments in the sector.
- The **right type of mechanisation** is necessary to make large-scale RA operations viable, while decreasing the mechanical and labour costs of RA. Lighter, more flexible and multifunctional tools are required to replace today's heavy, costly machines that often have only one specific use.

Environmental Factors

- Latin America is characterised by a steep latitudinal gradient from North to South, which entails a **broad set of climatic and ecosystemic conditions**. For this reason, RA techniques and approaches need to be adapted to them. There is no "one size fits all" Latin American RA model. Indeed, an important aspect of RA innovation consists in adapting RA to different local contexts. This further illustrates the essential role of engaging with context-specific examples of best practices at the local level.
- The **significant land availability** that characterises Latin America is a considerable barrier. Since land is not a limiting factor, especially (but not only) close to the tropical deforestation frontier, there is little economic incentive to adopt more intensive grazing management styles based on regenerative principles.
- The **higher amount of management required by some RA practices** can be time- and labour-intensive, acting as a deterrent for their application. As we will see below, several actors are working on innovative solutions to remove this barrier.

3

Livestock








While agroforestry and tree-based agriculture is deeply intertwined with the pre-colonial history of Latin American agriculture itself, cows, sheep and goats were introduced during European colonisation. Tracing their origins to Western European cattle-raising traditions, Latin American ranches became a socio-economic and cultural institution in numerous regions of the continent. Grazing is now one of the pillars of Latin American agriculture, and is also one of the key drivers of environmental degradation in both Central and South America.

Over the past years, various grazing approaches that aim at restoring pastures while increasing animal productivity have been gaining ground. Many of them build upon the pioneering work of André Voisin, a French biochemist who set out four universal laws in his seminal work, *Grass Productivity* (1959). They involve timing the rotation of livestock through the landscape according to plant and animal physiology in order to avoid overgrazing and guarantee optimal animal nutrition (Voisin, 2014).

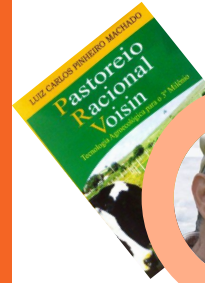
Drawing on Voisin, different currents have shaped the meaning and practice of pasture-based regeneration. They act as influential nodal points in the dissemination and adoption of approaches that have been developed over the past decades, but are currently attracting stronger interest.

An important reason for this is the environmental and economical crisis that many Latin American ranchers are currently experiencing. These model farms are proving that a regenerative approach to animal grazing can address the erosion of both soils and incomes (Suarez, 2016). In this section, we provide an overview of some of the most impactful grazing actors and networks encountered during our research.

Innovation Summary

Innovation	Actors	Opportunity	Level
Developing appropriate technologies to increase the time-use efficiency of regenerative livestock operations	Pablo Etcheberry	<ul style="list-style-type: none"> Appropriate technology decreases the time required by the daily management of a regenerative ranch, and also optimises its operations. It can enhance ranchers' quality of life on one side, and potentially decrease time-related entry barriers on the other. 	
Pioneers in the development of regenerative livestock systems	Luiz Carlos Pinheiro Machado, Allan Savory, Jaime Elizondo Braun	<ul style="list-style-type: none"> Providing solutions to the economic hardship and land degradation affecting Latin American ranchers and supporting their transition towards approaches that increase productivity and cut costs whilst restoring ecosystems. 	
Adapting grazing management innovations to different socio-ecological contexts while showcasing their economic benefits	All of the projects mentioned in Chapter 3	<ul style="list-style-type: none"> Creating context-specific reference points for RA dissemination at a community level and at different local-to-global scales. 	
Horizontal, producer-to-producer networks for knowledge transmission	Ovis 21, Cultura Empresarial Ganadera, Red Uruguay de Pastoreo Racional, ACOGANAR, Regengraze, Ganaderia Regenerativa	<ul style="list-style-type: none"> Connecting producers among themselves and with consumers at a national and continental scale. Increasing the legitimacy and broader societal acceptance for regenerative approaches to grazing. Increasing support among decision-makers for these practices and encouraging market actors to invest in the sector. 	
Innovative certifications are injecting holistic quantitative and qualitative standards for livestock-based products	Savory Institute, Pecuária Neutra e Regenerativa, Carnes Manada	<ul style="list-style-type: none"> Creating a market for holistic producers at a regional scale and educating consumers about regeneration. Providing cost-effective means based on physical and biological indicators to measure ecological performance and the actual extent of regeneration (Savory Institute). This measuring system can be used to applied to ecosystem service monetisation once it becomes available. 	

Luiz Carlos Pinheiro Machado & Filho



Several producer-oriented networks are contributing to the spread of PRV in Latin America. One of them is **Cultura Empresarial Ganadera** (CEG, Livestock Business Culture), led by Michael Rúa Franco, who is also the director of the Instituto André Voisin Colombia. CEG organizes conferences, workshops and educational events and offers PRV-related consulting and design services. Through its on-site and online activities, CEG is connecting professionals and farms with a similar approach in Colombia, Ecuador, Venezuela, Panama, Costa Rica, the Dominican Republic, Nicaragua, Guatemala and Mexico.

A frontrunner of this network is its Costa Rican branch, **Ganadería Más Rentable**, based in Finca El Poró. It showcases the integration of PRV and silvopastoral systems in the region. CEG's outreach efforts consist in a series of initiatives and collaborations, such as the recently-launched PARTNER program (offers remote-distance technical support to livestock producers) or its collaboration with the Colombian regional administrative body RAPE in the Neutral Carbon Ranching (GNC) project.

PARTNER CEG

Mejores Empresas Ganaderas Trabajando Juntos



Source: partnerceg.org

In the 1970s, **Luiz Carlos Pinheiro Machado** founded the Instituto André Voisin in Porto Alegre (Brazil), significantly contributing to the dissemination of a regenerative pasture management. Pinheiro combined André Voisin's grazing laws with an agroecological approach focusing on soil life and the integrated planning of pastures, leading to the *Pastoreio Racional Voisin* (PRV) system, i.e. Voisin's Rational Grazing. Pinheiro's book was published in Portuguese in the early 2000s, was rapidly translated to Spanish and began to spread throughout the continent.

Pinheiro is a good example of a transdisciplinary figure active in both academia and civil society. On the one hand, he was a professor at the Federal University of Santa Catarina and collaborated with other institutions such as the Universities of Buenos Aires, Cambridge and Wageningen. On the other, he was involved in numerous national and international field projects, consultancies, courses and conferences. He was officially awarded by the Landless Workers' Movement in Brazil, and has been an important figure in the rise of RA in Italy and Spain.

His work is being further developed by his son, Luiz Carlos Pinheiro Machado Filho, who founded the PRV Research and Extension Nucleus at Santa Catarina University (Brazil), which engages in research, dissemination, network building and advocacy. The Pinheiro family is also behind the organization of Pan-American events on PRV and agroecological pasture management.



- ❖ Linking academic research to field work, Pinheiro Machado is a key figure in the dissemination of RA and agroecological pasture management at the Panamerican and international levels.
- ❖ Different networks are applying the same principles to different local contexts, showcasing practical examples to which other producers can directly relate.

Further South, another relevant PRV network is the **Red Uruguaya de Pastoreo Racional** (Uruguayan Network of Rational Grazing). One of its most prominent voices is Juan Dutra, rancher, educator and consultant. Dutra is currently writing a book with Bruno Vaschetto, whose El Mate farm is rapidly establishing itself as an example of integrated livestock systems in Argentina. Their joint efforts will describe the day-to-day operations of running a regenerative farm, building on practical lessons and their direct experiences.

While Pinheiro was refining Voisin's method in Brazil, Allan Savory was also drawing upon Voisin's approach to develop Holistic Management in Zimbabwe (Savory & Butterfield, 1998). This decision-making framework seeks to maximise the social, economic and environmental benefits of grazing while minimising its unintended negative consequences. Its focus extends from the farm itself to embrace the broader, holistic context of its managers, their value systems, and the social and financial dimensions in which they are embedded.

Globally, the Savory Institute has influenced over 10 million hectares of land and thousands of people worldwide, aiming at the large-scale regeneration of grassland ecosystems through education, advocacy and trainings (Savory Institute, 2019). In Latin America, the Institute comprises locally-owned hubs in Argentina, Chile, Colombia and Brazil, which propose a broad range of holistic grazing services and offer some of the most structured training and grazing assistance programs available, connecting regional networks with an extensive global community.

Example of Savory Institute's partnerships in LA



reNature.

Besides its own hubs, the Savory Institute is engaged in several continental collaborations. One example is the US Heifer International NGO, which supports **Reverdeser** in Bolivia, an initiative that involves 250 families. It aims at regenerating 2000 hectares dedicated to production and 1000 hectares of native grassland using Holistic Land Management. A further example is the **Grupo Ecologico Sierra Gorda**, which has been applying participatory leadership principles to the management of the Sierra Gorda Biosphere Reserve in Mexico over the past 30 years. The Reserve includes over 380,000 hectares and 638 communities. Offering a diploma in holistic management, the group is committed to the regeneration of soils, prairies and natural habitats while spreading holistic principles to other Mexican states. Finally, the Savory Institute is engaged in a showcase regenerative livestock project in Brazil along with **ReNature** and **Meraki Impact** (see section 6).



Savory



Allan Savory



Savory Institute's LA official hubs

Examples of partnerships



+Regeneración +Rentabilidad



Ovis 21 (Argentina), was the first Savory Hub to be established in Latin America in 2003, and officially accredited in 2013. It is also a Certified B Corp , and offers farm and herd improvement consulting as well as Holistic Management education and training . Ovis 21 also founded the *Escuela de Regeneración* (Regeneration School), based in Buenos Aires and offering both online and on-site training across the continent (in Nicaragua, Costa Rica, Bolivia, Chile, Chile, Argentina, Uruguay and Paraguay). Its recently inaugurated series of live streaming interviews features pioneering ranchers and opinion leaders in Latin America.

Ovis 21 also advocates for regenerative approaches. For example, *Chubut Regenera* is a joint Argentinian initiative led by the Chubut provincial administration, the Ministry of Production and Labour, and the Federal Council of Investments. This publicly-financed program provided free training and consulting to local producers and extension agents with the involvement of Ovis 21 tutors.

Moreover, Ovis 21 contributes to the Savory Institute’s international work. Pablo Borelli, co-founder and trainer of Ovis 21 Argentina, was behind the first certification for regenerative grazing (GRASS). Initially developed to certify the regenerative sourcing of Ovis 21’s wool, GRASS was a precursor of the *Ecological Outcome Verification* (EOV) protocol. Together with the *Land to Market* initiative, EOV is the first global certification program for regenerative animal products based on quantitative and qualitative environmental data measurements rather than a mere qualitative assessment of a project’s regenerative practices.

Measuring physical parameters such as soil cover, biodiversity, carbon stock, photosynthetic potential and water infiltration, EOV is a method to quantify the extent of regeneration. It is currently being extended to the Chilean branch of the network, founded by Isidora Molina. At the global level, the Land to Market initiative has partnered with companies such as Kering and Timberland that are committed to regenerative livestock-based supply chains.



- ❖ Holistic decision-making framework for environmental and livelihood regeneration
- ❖ Network of hubs and local/international collaborations, that has influenced more than 10 million hectares worldwide
- ❖ Innovative certification based on field indicators that quantify the actual extent of regeneration in livestock-based supply chains



Regenerative Wool

FIBER PLUS ANIMAL WELFARE AND LAND REGENERATION OUTCOMES

A more recent tendency within grazing is Non-Selective High-Density Grazing (or PUAD, *Pastoreo de Ultra Alta Densidad*). Developed by the South African Johan Zietsman, this approach is currently spreading under the name of *Regenerative Ranching*. Apart from the physiological and agronomical aspects related to pasture-management, one of its major characteristics is its focus on animal breeding, which consists in developing livestock genetics that are adapted to the local pasture and environment in terms of nutrition, climate, immune and reproductive systems.

Zietsman's approach has been adopted and developed by Jaime Elizondo Braun, a Mexican rancher, educator, author and consultant. Through *Regengraze*, Braun is setting up a community of ranchers and professionals that engage in knowledge exchange, mutual support and experience-sharing, further enriched by his participation in the Regrarians Platform and Workplace Community (see next page). The trainings offered by Elizondo Braun and Zietsman have inspired several Latin American communities of practice, and are fueling the dissemination of regenerative ranching at a global scale, influencing thousands of ranchers worldwide (in Mexico alone, the *Manejo Regenerativo de Ranchos* network - Chihuahua State - counts hundreds of adherents).

Amongst others, Elizondo and Zietsman trained the Colombian Román Jiménez Aristizábal, owner of the El Pajuil farm and founding member of **ACOGANAR** (*Asociación Colombiana de Ganadería Regenerativa*). Founded in 2019, this association offers on-site and online training, organises tours of demonstration farms, and is rapidly acquiring national visibility. At present, the **FEDEGAN** (*Federación Colombiana de Ganaderos*) estimates that 4100 small producers are positively impacting 159,000 hectares of land in Colombia (Molano Torres, 2019).

Other founding members of ACOGANAR are Álvaro Aristizábal Mejía of **Asodable** (the Colombian Association of Dual Purpose Livestock Breeders), and Roberto Tatis Zambrano of the University of Cordoba. This university is developing a study on the potential of regenerative ranching in Colombia through the AQUARISC project. With its network of farms, ACOGANAR plays a key role in disseminating regenerative grazing practices across the country and beyond. Frontrunner ranches are El Pajuil, Hacienda Africa and la Cascada. These farms organise open field days to showcase different models of regenerative ranching to inspire others in defining their own regenerative projects.

Jaime Elizondo Braun (Regengraze)



- ❖ Jaime Elizondo Braun is catalysing the spread of regenerative grazing through LA and worldwide
- ❖ In LA, the regenerative movement is rapidly taking hold, led by frontrunner ranchers which are showcasing its application while building networks with local/international actors for mutual support and knowledge-sharing
- ❖ Different projects contribute to the diffusion of regenerative grazing by integrating different approaches, connecting to the local and international community, creating online platforms and engaging in the development of appropriate technologies





*Founded by the Australian Darren Doherty, the **Regrarians** - as a company, a platform, and a community - combines holistic management, water-planning, and a structured set of ecological design principles in the design of farms and landscapes. In Latin America, Doherty offered several courses, trainings and consultancies, cooperating with several farmers and ranchers in the dissemination of RA. The **Regrarians Workplace** is the organization's online platform. It connects producers and professionals involved in the management of regenerative agricultural landscapes and enterprises worldwide.

Source: Regenerando Ando

Aline Kehrle and Marcos Spinella, the managers of **Agropecuária Kehrle**, are pioneering ranchers in Brazil. This couple applies regenerative grazing principles integrated in a holistic decision-making framework. Furthermore, their project is part of the **Regrarians Community***, and recently hosted its farm planning training program.

Another Brazilian frontrunner is **Ah Pashto/Agropecuária Fleta**, led by Filippo Leta. This small-scale silvopastoral farm integrates dairy goats, cows, pigs, woody species, and coconuts which are processed on-farm, creating employment opportunities for young people in the area. This project is also the Brazilian Hub of the **Savory Institute**, and is showcased by the **Brazilian Agricultural Research Corporation EMBRAPA** as an exemplary integrated farm. Besides, Ah Pashto is part of the **Pecuária Neutra e Regenerativa** project (Neutral and Regenerative Livestock), a certification scheme that gathers four operations, with the aim of guaranteeing a climate-positive dairy and meat production, based on a rich set of indicators and a detailed carbon-methane accounting.

Pablo Etcheberry founded **PensAgro** based on his day-to-day research and experience as a regenerative rancher, and it is providing technological innovations to adapt ecologically intensive forms of pasture management to the efficiency standards of modern farm operations. Appropriate technology and optimised farm operations are functional to enhance ranchers' quality of life. Through his development and dissemination work, Etcheberry is potentially opening the adoption of regenerative ranching to a broader pool of land managers.

In Mexico, Daniel Suárez Castillo, owner of rancho El Yaqui, launched the **Ganaderia Regenerativa** website. Besides a useful collection of resources, the website includes **Regenerando Ando**, an online mapping of Latin American regenerative grazing initiatives (including PRV, holistic management and other approaches). Its goal is to connect producers, retailers, consumers and other actors that are engaging in regenerative animal products, increasing Panamerican connection and collecting data about local changemakers that are active in different contexts.

4

Agroforestry



In Latin America, agroforestry has been practiced since the appearance of agriculture itself. It was already a major form of landscape use in pre-Columbian times, especially in the humid tropics where multi-layered home gardens and shifting cultivation are widespread to this day. Agroforestry systems are very diverse in terms of composition and complexity, ranging from simple plantations composed of only two or three species (as is the case in many large-scale operations), to highly biodiverse cultivation patterns with multiple layers and stratifications (such as in numerous home gardens; Porro et al., 2012). In addition to emulating the structure of a forest, some agroforestry systems are also based on the biomimicry of its functions and ecological succession patterns. Several RA-related initiatives are merging indigenous knowledge with modern agricultural and forestry techniques, coupled with research efforts in order to steer natural regeneration towards food production.

In particular, cacao and coffee cultivated in shaded agroforestry systems are widespread throughout the continent. A 2012 study “guesstimates” that around 90% of Latin American coffee and 80% of cocoa are shade-grown (a notable exception is Brazil, a major global producer, where the figure is no more than 10%; Somarriba et al., 2012). Although production types differ from country to country, a general transition from complex to simple systems is underway, with an increase in low-shade simplified plantations, full sun cultivation, and the progressive abandonment of traditional cacao and coffee varieties (Somarriba et al., 2018).

From an economic perspective, cacao and coffee are buyer-driven supply chains, in which most value added is created downstream by firms operating in consumer countries. Nevertheless, the recent growth of interest in specialty coffees and fine flavour cocoa is decommodifying segments of their production. This can potentially result in higher upstream incomes for producers (Hughes, 2010). RA initiatives in cacao and coffee production tackle both sides of the issue, promoting the diversification and ecological intensification of agroforestry systems on the one hand while securing livelihoods and community resilience on the other.

Innovation Summary

Innovation	Actors	Opportunity	Level
Developing technical innovations for the broad-scale application of syntropic agriculture for perennial and annual crops	CEPEAS, Mata do Lobo	<ul style="list-style-type: none"> Overcoming time and labour barriers that hinder the application of regenerative systems at scale Showcasing innovative cultivation patterns for replication and dissemination 	
Adopting technology to measure producers' environmental performance	CoopCoffees	<ul style="list-style-type: none"> Showcasing the ecosystem services performed by farmers can result in a premium for positive environmental performance, encouraging the adoption of regenerative practices Promoting the use of online applications such as the Cool Farm Tool eases the collection of greenhouse gas, water and biodiversity data 	
Historical pioneers in the development of productive systems that mimic the structure and processes of a forest	Ernst Götsch, IAFN	<ul style="list-style-type: none"> Merging traditional knowledge and techniques with modern agricultural and forestry approaches Creating income opportunities while fast-tracking ecosystem regeneration Leveraging on ecosystem services can substitute external inputs to cut costs and reduce market dependency 	
Developing blueprints for the design and dissemination of RA projects	Adapta Group, ECOTOP	<ul style="list-style-type: none"> Translating knowledge and techniques from research into concrete projects, leading to context- and site-specific applications of RA principles Developing context-specific business plans and credit mechanisms to implement regenerative solutions (Adapta Group) 	
Establishing community-generated, bottom-up production models composed of a multitude of small-scale producers	CooperaFloresta, Asentamiento Mario Lago	<ul style="list-style-type: none"> Disseminating successional agroforestry among a steadily increasing number of small-scale producers, leading to ecological benefits, positive impacts on food sovereignty and improved income streams 	
Developing local and international certifications that base production standards on regenerative criteria	IAFN, Ecovida	<ul style="list-style-type: none"> Increasing awareness in supply chains and among consumers on international markets (IAFN's Forest Garden Products) Lowering certification entry barriers and redistributing power amongst local stakeholders through Participatory Guarantee Systems targeting forest products (IAFN) and agroecological production (Ecovida) 	
Decommodifying the coffee and cocoa supply chains while redistributing benefits and revenues	Mashpi Chocolate Artesanal, Ecocacao, Yellowseed, CoopCoffees	<ul style="list-style-type: none"> Targeting niche markets such as specialty coffees and fine flavour cocoa to generate higher returns with high-quality products based on agroforestry and traditional genetics Farm-to-bar chocolate companies, direct-trade and transparent-trade initiatives shorten supply chains, thus transforming producer-consumer connections 	
Merging regenerative systems between neighbouring properties to instigate the holistic regeneration of the entire eco-social tissue	Mashpi Chocolate Artesanal, Pambiliño	<ul style="list-style-type: none"> Moving beyond farm boundaries and engaging in landscape-scale and bioregional efforts to embed regeneration into a place and cultures 	



IAFN RIFA

Red Internacional de Forestería Análoga
 Restaurando los sistemas de soporte de vida del planeta

Conceptualised by the Sri Lankan Ranil Senanayake, analogue forestry aims at devising systems (analogues) that mimic the structure and architecture of climax state natural vegetation. What differentiates analogue forestry from other approaches is its emphasis on ecosystem restoration and biodiversity conservation. Annual crops are planted together with perennials at the beginning of the cycle. As the system matures and shade levels increase, they are gradually substituted by their perennial counterparts. The result is a mature forest garden, where the yield is composed of non-timber forest products (such as shade-tolerant fruit, honey, mushrooms, etc.). Analogue forestry practices have been applied in development projects to improve the livelihoods of small-scale subsistence farmers, but can also be adopted by commercial agricultural businesses (Gonsalves, 2015).

Analog forestry is promoted by the **International Analog Forestry Network** (IAFN, or RIFA - *Red Internacional de Forestería Análoga*). Its activities include global capacity-building programs to train farmer groups, knowledge exchange on analogue techniques, and partnerships with NGOs, research institutes, civil society organizations and public and private actors. IAFN developed two different types of edible-forest certifications targeting different markets. The Forest Garden Products certification scheme is adopted by analogue forestry operations on international markets. For example, it is being adopted both by Asian tea exporters and Brazilian rainforest products. IAFN is also working on certification schemes for local markets through the more affordable, trust-based Participatory Guarantee System (PGS). With its extensive number of trainers scattered across several countries, IAFN is a well-rooted presence in Latin America.

- ❖ Commercially productive forest gardens that steer the agricultural system towards landscape restoration 
- ❖ Local and international certifications to promote access to market for non-timber forest products 
- ❖ Long-term presence in Latin America, connecting impactful projects across several countries and interacting with a plurality of actors (including producers, consumers, research institutes, public organs and civil society) 

Participatory Guarantee Systems (PGS)



Third-party certification systems (such as organic agriculture certification) have been criticized for their costs and bureaucratic requirements. These barriers are often prohibitive, especially for small-scale producers. Moreover, their insistence on standardisation prevents them from adapting to the environmental and socio-economic specificities of different local contexts.

To tackle these challenges, a series of alternative certification schemes have been developed, many of them falling under the umbrella of Participatory Guarantee Systems (PGS). There were 133 operational PGS initiatives and 100 under development worldwide in 2016 (Kaufmann & Vogl, 2018). In this type of alternative certification, standards are collectively defined by producers, consumers and other relevant stakeholders. This removes the cost of an external controlling organism, redistributes power at the local level, promotes local collaborations and opens up new market opportunities. What determines the success of a PGS is its ability to address a series of intrinsic challenges such as catalysing local participation, balancing stakeholders' interests, and sharing responsibilities in such a way that the volunteer time needed to participate in the co-management of the scheme does not become an entry barrier for its members.



Source: Red Ecuatoriana de Forestería Análoga

The former IAFN president Milo Bekins and Tey Lezema Lopez manage the Costa Rican **Fila Marucha** farm, one of four international IAFN training centres (the others are located in Bolivia, Cameroon and Sri Lanka). According to Bekins, Fila Marucha was the first organic certified operation in Costa Rica in 1992. In his 30+ years of analog forestry practice, Bekins has disseminated this approach to Ecuador, Peru, Mexico, Honduras, Cuba, Dominican Republic, Canada and Sri Lanka. Through its collaboration with CATIE (Tropical Agricultural Research and Higher Education Center), local and international universities (such as Missouri, Stanford and Southern California), Fila Marucha is a reference point for restoration-oriented forest farming and production.

PROBIOMA

Productividad Biósfera y Medio Ambiente

Probioma is the Bolivian IAFN training center and a social enterprise that promotes agroecology, analog forestry, food sovereignty and biodiversity-based innovations. Probioma has influenced over 500 thousand hectares in Bolivia over the past 30 years, helping small producers to switch from agrochemicals to biological control methods. The organisation sees analog forestry as a means to meet the country's need for reforestation while involving local and regional authorities and creating new economic opportunities for smallholders.



Milo Bekins and Tey Lezema



GAGGA GLOBAL ALLIANCE FOR GREEN AND GENDER ACTION

IAFN collaborates with the Global Alliance for Green and Gender Action (**GAGGA**), led by the Nicaragua-based Centroamerican Women's Fund (FCAM). Focusing on women rights and social justice, GAGGA financially supports feminist and environmentalist initiatives in more than 30 countries across Latin America, Africa, Asia and Europe, prioritising local groups with limited access to finance. Together with GAGGA, the IAFN supports female farmers who are active in their respective local communities in Latin America and abroad, empowering them in steering the conventional agricultural system towards social and environmental restoration.

Image source: analogforestry.org, drawing by Sabina Nagel





Ernst Götsch



Fazenda Olhos d'Agua. Source: agendagotsch.com

In 1984, the Swiss farmer **Ernst Götsch** began converting his farm, the Fazenda Olhos d'Agua (Bahia, Brazil), from a degraded pasture to a diversified commercial agroforestry system. Over the years, he refined his work in what is now known as syntropic farming, which combines a strong focus on both production and ecosystem function. This “regeneration by use” approach supports farmers in emulating and accelerating natural ecological succession and stratification processes by developing an understanding of where to ideally place plants both in space (strata) and in time (succession). Syntropic farming is based on a rich and complex approach to and philosophy of living systems (Andrade, 2019). Its core concept, “syntropy” (as opposed to entropy), provides a matrix to interpret and cultivate landscapes while catalysing their regeneration. There are numerous connections between syntropic farming and RA.

Fazenda Ourofino (Bahia state), **Epicentro Dalva** (São Paulo state) and **Sítio Semente** (Brasilia) are but three of numerous relevant examples that have been applying, researching and delivering courses on syntropic farming and agroforestry techniques. Syntropic agriculture is now known, applied and taught on a global scale. An important contribution to its worldwide success was provided by Dayana Andrade and Felipe Pasini's **Agenda Götsch**, whose *Life in Syntropy* video presented at the Paris COP21 in 2015 gave international visibility to the movement. Agenda Götsch is a primary source for English information about Götsch himself and syntropic systems.

- ❖ Both an agronomic approach and philosophy of living systems, syntropic translates natural processes into regenerative farming interventions.
- ❖ Syntropic principles have been rapidly absorbed and adopted by a broad diversity of actors, including subsistence farming, small-scale commercial operations, broad-acre agriculture and well-capitalised private ventures.
- ❖ Different mainstreaming approaches include technical innovations to reduce labour and time inputs, community-based participatory projects and context-specific models and financial support mechanisms to catalyse farmers' adoption of RA practices.





Namastê Messerschmidt and
Nelson Corrêa Netto



Assentamento Mario Lago



Joachim Milz, Director of ECOTOP SRL
and President of the ECOTOP Foundation



Joachim Milz is an early student of Ernst Götsch. He has been applying syntropic principles in his farm in the Alto Beni region of Bolivia since the 1990s. His company, ECOTOP SRL, advises private and public entities on the science and implementation of agroforestry systems in Latin America, Africa, Asia, and the Pacific (his clients include Dr. Bronner's, a member of the Regenerative Organic Alliance, cf. section 5). The ECOTOP Foundation is connected to his consultancy firm, and works with frontrunner Bolivian farmers who act as knowledge disseminators within their communities.

Syntropic systems have been applied and developed by a plurality of actors and communities of practice, ranging from small-scale farming and community projects to broad-acre agriculture and well-capitalized private ventures. An example of the former is the **CooperaFloresta** cooperative in São Paulo state. Its members belong to traditional communities and *quilombola* (traditional escaped slave communities) families. Born in 1998 from the spontaneous organisation of farming households, the collective quickly grew and is now horizontally organised into several groups, including an Agroforestry School.

According to this cooperative, regeneration goes beyond agriculture to englobe the redesigning of a local culture based on short food supply chains, resilience, and personal relationships. Over 80 families are actively engaged in reforestation through syntropic agroforestry systems, commercialising their products through the participative **Rede de Agroecologia Ecovida** certification, which is recognised by the Brazilian Ministry of Agriculture. Ecovida itself is a good example of a decentralised network which promotes producer-customer relationships that go beyond monetary terms. Its certification is the most significant Participatory Guarantee System (PGS) one in Brazil (Caldas & Anjos, 2017).

CooperaFloresta's experience is inspiring other projects in the region. Key Brazilian disseminators of syntropic agriculture are also connected to this cooperative. One of them is **Namastê Messerschmidt**, a syntropic educator and consultant engaged in developing farmers' livelihoods through agroforestry. In his words: "We're all for big scale agriculture! But we need to revise what this 'large scale' is... a settlement with 500 families producing in agroforestry systems is a large scale. The biggest large-scale agroforestry system in Brazil today is in São Paulo with the CooperaFloresta. These are areas of small farmers, but when they come together, they become a large scale" (Vianna, 2018).

Messerschmidt emphasises the power of connecting the syntropic approach to food production and social movements such as the *Movimento dos Trabalhadores Sem Terra* (MST, Landless Workers' Movement). One of MST's settlements, *Assentamento Mario Lago*, is connected to another pioneer of Brazilian regenerative agroforestry, **Nelson Corrêa Netto**, who has been involved in the management of CooperFloresta for over 20 years. In Mario Lago, Netto and Messerschmidt cooperated in a pilot study to demonstrate the high returns of small-scale syntropic systems despite the lack of capital and investments. Mario Lago's results could potentially apply to the hundreds of thousands of Brazilian families that are part of the MST movement. This settlement is becoming an important player in the mainstreaming of agroforestry across the country. 25

Syntropic farming has also been applied to large-scale operations, which is an active subject of investigation by institutional and independent research bodies. One of the major limiting factors to the adoption of syntropic systems at scale is related to their management, in particular to vegetation pruning and slashing. These operations are at the heart of syntropic agriculture, fueling biological cycles and natural succession. But they are also time-consuming and labour-intensive, which represent barriers to the large-scale adoption of these practices. Hence the need for adequate technology, especially light machinery that does not compact the soil and can serve both for small and big operations.

CEPEAS (Research Center in Syntropic Agriculture) is targeting these challenges. It was born as an initiative of the *Instituto Caminho do Meio* in an effort to promote agroecology and regenerative practices. CEPEAS has two major goals. The first is to pursue Ernst Götsch's research in syntropic agriculture, especially concerning the development of appropriate machinery. The second is to transmit knowledge to farmers by increasing their ecological literacy through the lenses of syntropic agriculture, synthesising its main principles in an accessible manner.

Fernando Rebello, co-founder of CEPEAS and environmental analyst at the ICMBio (Chico Mendes Institute for Biodiversity Conservation), is disseminating research results through articles, videos and conferences. CEPEAS also focuses on the application of syntropic principles to annual cropping. Together with ICMBio and EMBRAPA, CEPEAS established a series of field trials to test different combinations of grasses and crops (e.g. corn, soybeans, wheat, cotton and sorghum). In this setup, annual crops are planted together with perennial pastures. This merges the advantages of grain production with the benefits of perennial soil cover. Moreover, the grass itself provides the organic material to mulch the grains, thus avoiding weed competition without requiring synthetic herbicide inputs. Several adjustments are required within this system, such as crop spacing, the varieties used, the distance of tree lines (in case of agroforestry systems) and the type of machinery adopted, which are all currently under investigation by CEPEAS.



Fernando Rebello



Daniele Cesano,
CEO

The Brazilian **Adapta Group** develops scalable solutions for micro-, small- and medium-scale producers in order to include family farmers in “structured productive chains” that contribute to climate resilience, economic viability and sustainability. Similarly to Sustainable Harvest International (cf. section 6), Adapta works with agricultural cooperatives to progressively inject RA knowledge into communities. This long-term endeavour is essential for the integration and mainstreaming of RA into farming practices at a larger scale. These context-specific standardised blueprints are always adapted to several of Brazil's main biomes, such as the semi-arid *sertão* of Northeastern Brazil (characterized by thorny scrub forest *caatinga* vegetation), the *cerrado* and the *Mata Atlântica* (Atlantic Rainforest) biomes. Adapta also runs the *MAIS (Módulo Agroclimático Inteligente e Sustentável)* programme, which has engaged 650 farmers, 6 cooperatives and 16 municipalities to date. *MAIS* includes an integrated model comprising a productive system design (including RA and agroforestry), technical assistance, monitoring and access to funding (including case-specific credit mechanism development). Over the coming years, Adapta Group will seek to collaborate with larger farms and expand its initial focus on agroforestry to include grains in no-tillage systems (Adapta collaborates closely with GAAS, cf. section 5).



Agustina Arcos and Alejandro Solano

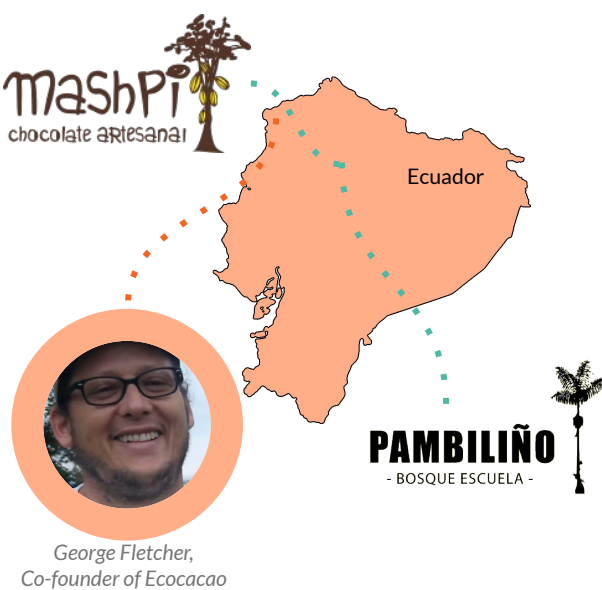
Mashpi Chocolate Artesanal. Source: chocomashpi.com

Mashpi Chocolate Artesanal, launched by Agustina Arcos and Alejandro Solano in the Mashpi Shungo reserve, is an innovative example of a small-scale, farm-to-bar chocolate company. Born as a conservation initiative in the Chocó bioregion, a degraded pasture has been recovered using analog forestry techniques (see IAFN, section 4), and has since then developed into a lush forest ecosystem. The on-site processing of beans creates local employment opportunities, with specific focus on women, while preserving the local endangered cacao variety.

In this example, regeneration is approached holistically, reaching across property boundaries to embrace the whole eco-social tissue in which the project is developing. For example, Agustina and Alejandro are among the founding members of Fundación Imaymana, a local NGO through which agroforestry techniques, scientific research, appropriate technologies and the promotion of local tourism aim at combining income opportunities and environmental restoration at a bioregional scale. Other like-minded projects have been emerging in neighbouring properties, such as the **Pambiliño** reserve and ecological farm, started by Maria Emilia Arcos and Oliver Torres.

Applying similar strategies to ecosystem restoration, Pambiliño is running a field school. Both projects are involved with the Ecuadorian Seed Guardian Network (cf. section 6).

Another pioneering cocoa project is part of this network: the **Ecocacao** cooperative, founded by the Ecuadorian-Peruvian biologist George Fletcher, who also launched an Agroecology School to train farmers in the area. Ecocacao is regenerating old cacao orchards using permaculture principles. In 2016, the cooperative included 80 farmers spread over 320 hectares (Zamierowski, 2016). Together with other producers in the region, Ecocacao's products are branded through Herencia Esmeraldas, a farmer-owned social enterprise. In 2006, Fletcher began collaborating with Gregory Landua ([Terra Genesis](#), USA), to preserve the local cacao variety while supporting a regenerative shift at the community level. Fletcher is a major promoter of regenerative cacao systems, and is collaborating with other innovative projects in the sector. For example, Ecocacao is also one of the suppliers of [Uncommon Cacao](#). This intermediary links smallholder cooperatives to the specialty cacao industry based on transparent relationships and aims at the decommodification of the sector.



PAMBILIÑO
- BOSQUE ESCUELA -

George Fletcher,
Co-founder of Ecocacao

- ❖ Local farm-to-bar chocolate companies and producers' cooperatives create employment opportunities while regenerating their ecosystems and protecting traditional cacao varieties.
- ❖ Pioneering organisations connect international actors with cacao and coffee growing communities, redistributing revenues and benefits across the supply chain.
- ❖ Online instruments such as the Cool Farm Tool allow for easy collection of greenhouse gas, water and biodiversity data, and can be connected to premium bonuses and support schemes.
- ❖ Connected neighbour projects provide examples of regenerative efforts with bioregional objectives.

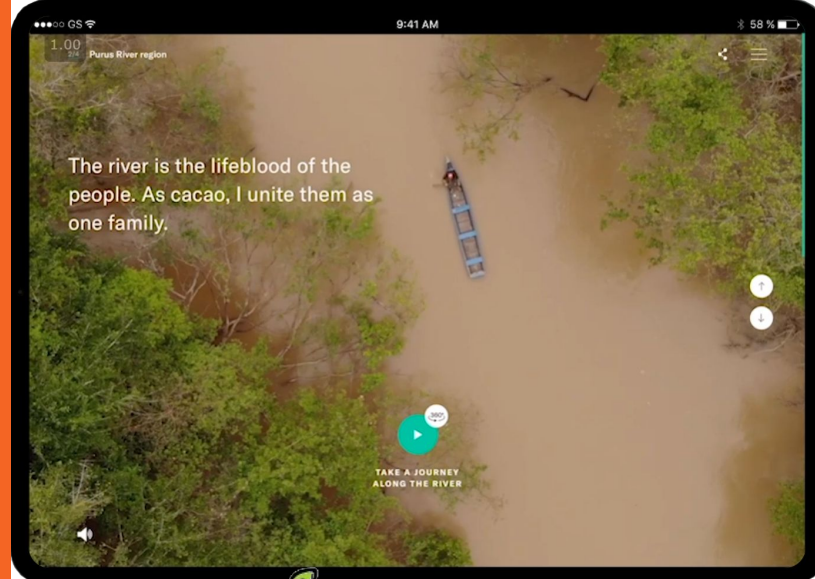


A further entity supported by Terra Genesis is **Yellow Seed**, a pioneering organisation that connects international consumers and chocolate makers with Latin American cacao growing communities. This was achieved through an online marketplace platform, where farmers could share the stories of their land and produce while setting the price themselves. Yellow Seed's approach is based on three pillars: giving producers more voice to share the hidden information that lies behind a product, improving the trust and transparency of market connections, and supporting community-driven projects enabling local agency. The marketplace now evolved into the Global Farmer Voices Project, where local producers are the protagonists of a narrative presented through interactive graphics and 360-degree videos.

Short value chain initiatives have also been emerging in the coffee sector.

A soil-regeneration-focused example is **CoopCoffees**, a cooperative owned by 23 coffee roasting companies in Canada and the USA, which is importing green coffee beans directly from cooperatives across Latin America and beyond. **COMSA**, one of its Honduran suppliers, is directly involved in RA. Through collaborations with leading regenerative agriculture educators such as Jairo Restrepo and Ignacio Simón*, COMSA set up a "RA diploma" specifically targeting coffee producers.

Inspired by COMSA's experience, CoopCoffees launched the Carbon, Climate and Coffee Initiative. This is an environmental-service fund based on a voluntary carbon tax paid by the cooperative's coffee roasters. The funds are reinvested into the suppliers to compensate for the ecosystem services provided. More recently, CoopCoffees became a member of the Cool Farm Alliance, adopting the use of the **Cool Farm Tool**. This online greenhouse gas, water and biodiversity calculator, enables the easy collection of data through mobile apps and an online platform. Pilot projects in tracking carbon sequestration in organic coffee farms are planned in Peru, Guatemala, Honduras and Mexico, with a carbon premium paid directly to producers.



yellowseed
GLOBAL FARMER VOICES

Screenshot of Yellow Seed's visual experience about the story of cocoa from the Purus River region of Brazil. For more see [Wild Cacao](#).



*Monika Firl, CoopCoffees
Director of Sustainability*



Jairo Restrepo and Nacho Simón



***Jairo Restrepo Rivera** is a Colombian agronomist that has published and presented extensively on RA-related topics. He has been both an ambassador and consultant of several NGOs, foundations, and international cooperation programs. The Mexican agronomist **Nacho Simón** collaborates with Restrepo in the dissemination of RA. Specialising in soil microbiology and microorganism reproduction, Simón founded **Gaia Orgánicos**, which offers soil analysis and consulting services to support the transition towards regenerative farming.

These two agronomists are cross-sector thought leaders in Latin American RA, having inspired regenerative initiatives at a global scale. As revealed by the name of Restrepo's website, **La Mierda de Vaca** (cow dung), their approach emphasises the self-production of microorganisms and biofertilizers using inputs that are available on farms to achieve independence from the capitalistic agribusiness system. Building on the knowledge of Latin American farmers and alternative biochemists, their approach focuses on holistic soil health and remineralisation, with techniques that have been applied to the management of annual and perennial crops, be they vegetables, cereals, fruit trees, or prairies.

5

Broad-acre annual cropping







Water runoff, soil erosion and the resulting land degradation have acted as powerful drivers of the development of alternative agricultural practices in Latin American arable cropping. Although organic agriculture has widely been adopted to sustain soil fertility and decrease negative environmental impacts, its application to broad-acre situations presents several trade-offs. For example, to avoid crop competition with spontaneous vegetation, farmers often need to compensate the absence of herbicides with intensive tillage and repetitive mechanical weeding performed by heavy machinery. This can result in bare, compacted, degraded and exposed soils, with a loss in biological activity, structure and organic matter (Vincent-Caboud et al., 2017). The problem is compounded in many tropical soils that contain little organic matter to retain water and are exposed to heavy downpours.

To halt soil degradation and improve soils, conservation agriculture techniques have been developed and adopted in Latin America since the 1970s, involving no or reduced tillage, cover crops and crop rotations (Farooq & Siddique, 2014). Brazil was the first Latin American country to implement these solutions at scale. Many others followed, especially in the southern part of Latin America, where 70% of cropland is cultivated using a conservation approach. However, these solutions are often only partially put into practice, with some farmers practicing no-till but neglecting soil cover or rotations, resulting in soil degradation. Most no-till systems also rely heavily on herbicides to deal with crop competition (Etingoff, 2017).

A regenerative approach to annual cropping can solve the issues faced by both organic and conservation practices by reducing and ideally eliminating the use of herbicides while enhancing soil structure, organic matter and fertility. Brazil stands out as a frontrunner in steering broad-scale arable farming towards regeneration in this regard.

Innovation Summary

Innovation	Actors	Opportunity	Level
Developing technical innovations for regenerative grain production that can tap into the mainstream	Rizoma Agro, Soil Capital, GAAS, Mata do Lobo	<ul style="list-style-type: none"> Developing technologies that can meet the needs of farmers such as smaller, more versatile and more affordable machinery and digital solutions Emancipation from (both synthetic and organic) commercial inputs can result in economic gains, restoring farmers' profitability 	
Devising innovative strategies to generate short-term returns, reducing risks and protect agricultural assets on struggling farms	Soil Capital, GAAS, Rizoma Agro	<ul style="list-style-type: none"> Given the current fragility of numerous Latin American political and socio-economic contexts, these strategies are necessary for conventional farmers to consider transitioning to RA Proving that the transition to RA is feasible in the market is an important step in legitimising it in Latin America 	
Creating inclusive, producer-led networks based on horizontal knowledge transmission and on-site research	GAAS	<ul style="list-style-type: none"> Allowing farmers to engage with each other and share knowledge Engaging different audiences beyond the alternative agriculture "usual suspects" to advocate for more sustainable agricultural practices among society at large 	
Developing traceability models for broad-acre annual cropping	GAAS	<ul style="list-style-type: none"> Beyond-organic approaches require a new set of tools to build trust and reach out to consumers. Traceability mechanisms for grain crops can tap into the rapidly growing demand for organic food (still undersupplied in LA), while avoiding the standardisation and bureaucracy of third-party certification 	



Rogerio Vian, GAAS Chairman



Source: Mata do Lobo

The Brazilian *Grupo Associado de Agricultura Sustentável* (GAAS-Associated Group on Sustainable Agriculture) was born as an informal group of farmers seeking alternative farming solutions. Formally established in 2019, GAAS acts as a network of producers (the majority of its members), agricultural researchers and professionals and as a platform for research, education and events, including three editions of the Brazilian Forum of Sustainable Agriculture. Its success can be explained by its inclusiveness towards all types of farmers who share the GAAS vision, ranging from conventional producers to farmers that are seeking to go beyond organic. This broadens both the pool of potential adherents and the scope of alternative practices to be tested.

Another major reason for GAAS' success is the economic hardship that many farmers are currently experiencing and the need to restore their farm profitability. Working with organic amendments (such as compost and rock dusts), biological control, cover crops and on-farm microorganism reproduction, GAAS is developing strategies to improve farms' agroecosystems and cut their costs, thereby reducing farmers' dependence on a dysfunctional commercial system and commercial farm inputs.

GAAS also advocates for more sustainable agricultural practices amongst Brazilian policymakers and the agro-industrial sector. Although it communicates around "sustainable agriculture" it shares numerous commonalities with the RA agenda and is an important network to bear in mind as a catalyst of change. FOR GAAS, sustainability concerns soil care, farm input self-production, open access to knowledge, and farmer empowerment. GAAS is also working on a certification scheme for the traceability of grain products. According to GAAS, around 2.5 million hectares of land in Brazil are now cultivated along its recommendations.



The **Mata do Lobo** farm is a GAAS member, located in Goiás State, Brazil. It conducts field trials for no-till corn cultivation in a perennial, low-growing leguminous cover crop that provides nutrients and soil protection. This allowed the farm to abandon fungicides and chemical fertilizers and nurture a protected, carbon-sequestering soil. The Mata do Lobo approach was inspired by the soil microbiologist Elaine Ingham, who conducted workshops in Brazil with GAAS. Her principles are being tested at Mata do Lobo, along with the application of compost tea and other biological control methods.

Mata do Lobo is also running an experimental large-scale syntropic coffee plantation. With the 2019 Best Brazilian Coffee of the Year awarded to a syntropic farm, the quality of coffee in such systems is now officially undisputed. A major limitation to the spread of syntropic operations on a large-scale is the high labour input required for their maintenance. While shaded coffee in Latin American (but not in Brazilian) commercial plantations is very common, most of them are simple systems with a low ecosystemic value. The Mata do Lobo trial combines both approaches, counting on 10-15 different species intercropped with coffee at a scale and managed syntropically. Their example can potentially act as a catalyser for replication and flatten the learning curve for future adopters.



Daniel Froebel and Maria Vitória Vasconcelos



Source: Soil Capital

Soil Capital (Belgium) aims to empower farmers to convert 1 million hectares of land to RA by 2025. Its scope is global, and includes several noteworthy RA projects in Latin America. Soil Capital provides technical assistance to landowners and farm managers in Argentina and Brazil to transition towards RA. A key focus consists in improving the profitability of their operations, notably by switching from synthetic to organic inputs, increasing crop diversity and integrating livestock to increase soil fertility and accelerate soil regeneration. Soil Capital also undertook a feasibility study for the regeneration of 9700 hectares of land in Northeastern Brazil, mapping different regenerative production systems for the development of a new venture in the area. Together with Ernst Götsch, an agronomic strategy was designed based on syntropic farming principles. It aimed at establishing a highly biodiverse environment to ensure photosynthesis maximisation, increase biomass production and organic matter accumulation, and allow carbon capture while initiating fruit (banana, mango), fibre (sisal, a species of agave) and timber production.



Pedro Paulo Diniz, CEO

Rizoma Agro is a spin-off company of the largest organic egg producer in Brazil, Fazenda de Toca farm (São Paulo State). With Ernst Götsch's support, Toca has been pioneering RA and syntropic systems experimentation at scale. Rizoma also includes the Fazenda Takaoka farm. Together, these two operations showcase agroforestry systems, annual crops and livestock operations. Rizoma aims at scaling up regenerative organic agriculture for broad-scale annual crops, both on its own farms and through collaborations with other producers. By engaging in partnerships, Rizoma seeks to apply its approach over a significant portion of agrifood value chains. These partnerships are win-win relationships to buffer the costs of adequate machinery and join forces in both local and export markets. Rizoma also organises open field days, courses and other educational activities and publishes an online journal. Developing a regenerative approach to organic crop production demands continuous on-farm research and experimentation as well as knowledge transfer with similar initiatives. In this spirit, Rizoma visited the North American Rodale Institute* and its no-till organic cropping trials, and is now trying to adapt this approach to Brazilian conditions. Rizoma also collaborates with GAAS. Rizoma Agro's key focus areas are:

- Identifying undersupplied markets in which producers can engage in promising new projects.
- Developing technology and adapting production knowledge to specific contexts.
- Designing large-scale production hubs for regenerative organic produce with low operational costs.
- Commercialising production based on high levels of service, including in terms of logistics, traceability, quality controls, certifications and impact reports.



*The Rodale Institute's Regenerative Organic Certification

The Rodale Institute is an important player in the promotion of RA in the US, and its influence resonates worldwide. Initiated by the Rodale Institute and the Regenerative Organic Alliance, the 2017 Regenerative Organic Certification (ROC) defines RA along a series of principles encompassing soil health, animal wealth, and social equity. Regeneration is seen as an evolution of organic farming that builds on organic standards and best land-use practices. The ROC pilot program includes two businesses with Latin American supply chains. **Sol Simple** produces solar dried fruits in Nicaragua and **Guayaki** sources its mate from Paraguay, Argentina and Brazil.





Broad-Acre Annual Cropping



6







Funding Regenerative Agriculture



Funding has an essential role to play in the mainstreaming and scaling up of RA in Latin America. Funders can provide the seed funding necessary to initiate a regenerative project, to scale up operations or to engage in a transition from conventional agricultural methods to regenerative ones. Such funding bodies include community or cooperative funds, impact investors, institutional investors as well as large-scale multilateral finance mechanisms. As the regenerative agenda gains traction in Latin America, engaging and involving these actors from the local to the global level will be an essential catalyst of RA in the region. In parallel, “Philanthropy and government funding have critical, catalytic roles to play in creating an environment for more private capital to be mobilized in support of regenerative agriculture that truly delivers on its environmental and social impact potential” (Croatan Institute, 2019).

However, numerous investors highlight the lack of RA projects that have reached a scale that would allow them to absorb larger investments based on long-term business models. As this section illustrates, a process of convergence on this point is underway, in which RA endeavours and funders are increasingly aligning their methods to establish more ambitious and long-term funding models for RA operations.

Innovation Summary

Innovation	Actors	Opportunity	Level
Training and involving a new generation of impact investors and financiers in the regenerative agenda and regenerative development	SVX Mexico	<ul style="list-style-type: none"> Broadening the scope of RA by involving and training (often urban) impact investors and entrepreneurs. 	
Advocating for the monetisation of ecosystem services provided by RA endeavours	ReNature Meraki Impact, Adapta Group	<ul style="list-style-type: none"> Ecosystem services monetisation is a major opportunity in mainstreaming regenerative practices. It is intimately linked to producers' ability to obtain reliable and affordable environmental data. 	
Connecting global policy agendas (e.g. ecosystem restoration) with funding for RA projects	SLM Partners, Moringa Fund, 12Tree Finance	<ul style="list-style-type: none"> Raising awareness on the broader environmental and socio-economic benefits of RA. Creating new opportunities for RA to gain leverage in the global sustainability policy agenda. Developing large-scale agroforestry systems capable of absorbing large investments (12Tree Finance). 	
Developing FinTech and alternative financing mechanisms to provide farmers with the capital required to transition to regenerative practices	Meraki Impact, 12Tree Finance, Moringa Fund, Adapta Group	<ul style="list-style-type: none"> Supporting farmers who face shrinking margins, hold significant debt, and are unable to acquire the capital to restructure their farm. Corporations can act as anchor companies by mobilising capital and providing credit guarantees through long term purchasing contracts. 	
Developing cooperative finance and land acquisition models to regenerate land and establish RA-based value chains	Blacksheep Regenerative Resource Management, 12Tree Finance	<ul style="list-style-type: none"> Acquiring and regenerating degraded land while providing economic value through the establishment of RA value chains. Designing cooperative- and community-based models based on a bioregional approach to RA. 	
Financing and supporting RA-based value chains in Latin America with a focus on equity and producer participation	SLM Partners, Moringa Fund, 12Tree Finance, reNature, Meraki Impact, SVX	<ul style="list-style-type: none"> Providing reassurance to asset managers and investment funds and derisking RA investments in the eyes of private sector actors and the wider financial community. 	

Regenerative agriculture and ecosystem restoration

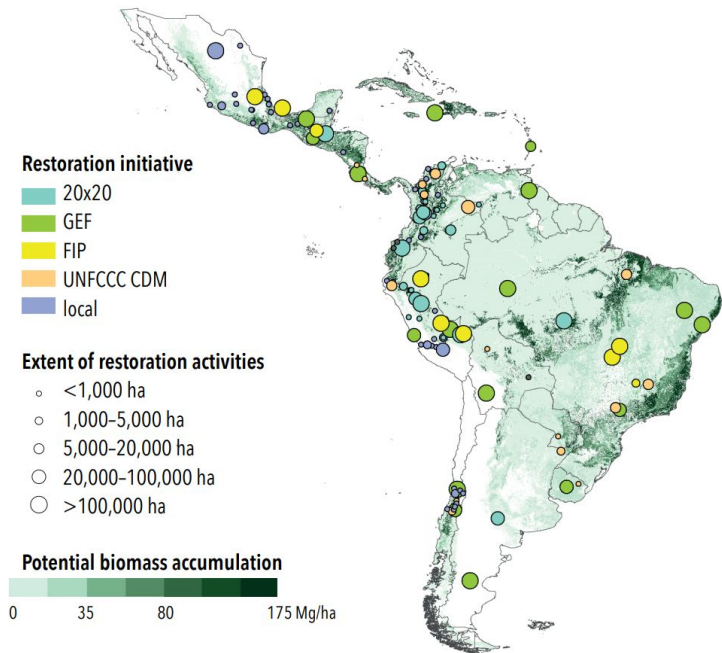


Figure 15.2 Map of 154 restoration projects in Latin America and the Caribbean

Note: 20x20 = Initiative 20x20; GEF = Global Environment Facility; FIP = Forest Investment Program;

Source: Verchot et al., 2018. The map's database can be found at the [Forest and Landscape Restoration in Latin America and the Caribbean](#) website.

At the international policy and funding level, a key opportunity to scale up and mainstream RA funding in Latin America consists in connecting it with the global ecosystem restoration agenda. As these two maps illustrate, significant efforts undertaken by a broad range of local to global actors have been underway over the past decade. Ecosystem restoration is currently a global policy priority with the launch of the [UN Decade on Ecosystems Restoration](#) (2021-2030) in the follow up to the 20x20 Initiative. This large-scale effort aimed to initiate restoration in 20 million hectares of degraded land in Latin America and the Caribbean by 2020. While 20x20 focuses on landscape restoration, it shares numerous commonalities with RA's objectives. The initiative was launched at the UNFCCC COP 2020 in Lima within the framework of the Bonn Challenge, a global commitment to bring 150 million hectares of degraded lands into restoration by 2020, and 350 million hectares by 2030. 17 Latin American and Caribbean governments committed to commence restoring more than 50 million hectares of land by 2020, with the support of over 70 technical organizations and institutions, backed by \$2.5 billion in private investments provided by a coalition of private funds and impact investors.

Initiative 20x20

Bringing **20 million** hectares of degraded land in Latin America & the Caribbean into restoration by **2020**.

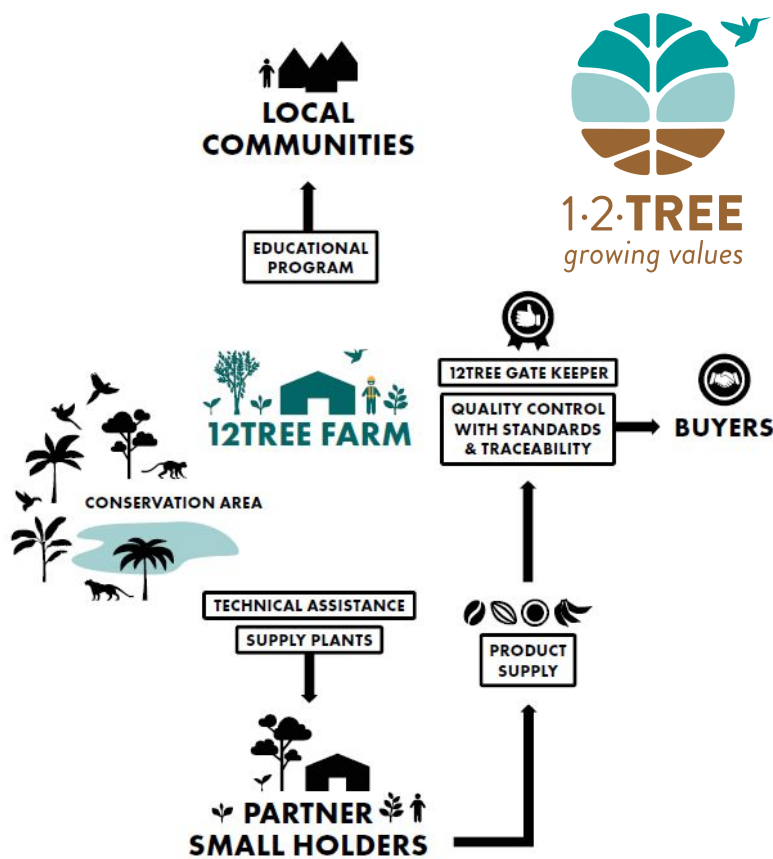
COMMITMENTS

>50 M ha by governments
\$2.5 B of private sector capital

Notes:
 *Goals to be accomplished by 2030
 **Commitment to define a national restoration strategy



Source: [20x20 Initiative](#)



The 12Tree Nucleus Plasma Model

The **12Tree Finance** asset management and investment company is based in Germany, Colombia and Panama. Its portfolio includes regenerative endeavours in Guatemala, Panama, Colombia, Ecuador and the Dominican Republic, in which agroforestry and restoration/conservation activities are applied in cacao, coffee, timber, coconut and banana production. 12Tree is developing entire value chains to produce, certify and commercialise these products globally, and emphasises the importance of associating positive environmental returns with social benefits for its employees. It bases itself on its prototype “regenerative farm”, the centrepiece of the “12Tree Nucleus Plasma Model”, in which agricultural clusters achieve commercial success while benefiting nature, the economy and local populations. The nucleus farm serves to engage nearby small producers who can thereby receive planting material and inputs, training and quality management. The regenerative farm can also purchase, process and further commercialise their production at fair rates. Such projects can further integrate RA into the social fabric by combining it with strategies to provide employment and education, potentially supporting rural livelihoods and reducing rural exodus.

The **Moringa Partnership** supports agroforestry production in Latin America with a private equity fund. In Brazil, it works with **Floresta Viva**, which produces food and timber using syntropic farming and agroforestry techniques. Located in the Vale do Ribeira (São Paulo State), Floresta Viva focuses on heart of palm as well as leguminous crops, cereals, grasses and trees while preserving 800 hectares of Atlantic Rainforest. Future investments will establish an online bottling facility and the creation of a network of small farmers to spread the Floresta Viva agroforestry model to other producers in the Vale do Ribeira. In Belize, Moringa collaborates with **TexBel**, a coconut water and citrus company that applies a coconut and lime intercropping agroforestry model on three farms. This is the first large-scale coconut water processing facility in Belize. It allows Texbel to source its coconuts from numerous other smallholders at fair prices, while further diffusing its lime/coconut agroforestry model. Moringa is developing a similar model in Nicaragua, with the **Cafetalera Nica-France** agroforestry coffee and timber company, funding an outgrower program for small- and medium-sized producers in order to create a high-quality coffee cluster aimed at the international market.



Meraki Impact supports impact investors in developing sustainable investment portfolios to scale up innovative solutions in Latin America, Africa and Europe. Its founder, the Brazilian Fernando Russo, is engaged in the bilateral transfer of knowledge and technology between Latin America and other parts of the world. Russo is also a business strategist at ReNature. ReNature mainstreams agroforestry and regenerative systems through the implementation of model farms and educational centres. Building bridges between investors, researchers, consultants and public organisations, ReNature focuses on transitioning major food commodity production to regenerative practices. ReNature and Meraki Impact are partnering with the Savory Institute, Preta Terra, and the Climate Smart Group in Brazil to develop a large-scale cattle operation based on silvopasture and holistic management, where the farm's environmental performance will be tracked for the commercialisation of carbon credits. ReNature is also developing projects in Mexico and Chile.

The impact investment B Corp **SVX Mexico** convenes the [Mexico City Regenerative Communities Network hub](#). It also proposes an online "Regenera Academy" training for business accelerators, incubators and investors to develop alternative investment models that can contribute to "regenerative capitalism" and development. A member of Regeneration International (cf. section 7), SVX is an important catalyst of change in Mexico.

SLM Partners is an asset manager that acquires land on behalf of institutional investors to initiate regenerative farming and forestry activities. In Latin America, SLM developed an investment project in Southern Chile within the framework of the 20x20 Initiative. The project acquired grazing properties in Chilean Patagonia to initiate sustainable sheep production based on holistic planned grazing. SLM Partners raised around \$100 million from private investors in order to acquire more than 100,000 hectares of land.

A model of cooperative-based funding for local regeneration is **Blacksheep Regenerative Resource Management** (Costa Rica), which sets up local cooperative entities to purchase land and implement regenerative agricultural activities, with a focus on agroforestry (for cacao, sacha inchi, turmeric and others). Blacksheep aims to "regenerate economically and environmentally exhausted areas" by creating a "formalised, replicable method of direct action against hyper-extractive industries". This community-based model of funding is a powerful means of locating, purchasing and regenerating land based on shared ownership models.

Source: Blacksheep



*Fernando Russo,
Meraki Impact
and reNature.*



*Felipe Villela,
CEO and
Co-Founder*



Laura Ortiz Montemayor, SVX Mexico





Funding for Regenerative Agriculture



1·2·TREE
growing values



7







Regenerative Agriculture Networks



In this section, we will zoom in on several Latin American networks that act as platforms for the continental and global promotion and dissemination of RA. These networks tend to adopt a broader view of “regenerative”. Indeed, these new coalitions of actors are imbuing this term with more diverse meanings and objectives that take root in agricultural practices, but also seek to expand it to other sectors and activities. Amongst others, this includes concepts such as “regenerative design”, “regenerative entrepreneurship”, “regenerative development” and “regenerative capitalism”.

Within these networks, an important vector of RA and approaches consists in “regenerative demonstration centres”, which are often hybrid farms incorporating a series of other activities, including farming, educational, business incubation, eco-tourism and conservation activities. These centres typically combine RA production with other sources of income. Due to their high visibility and frequent visitors, they act as important showcases for regenerative practices and learning. They stem from a broad range of lineages such as agroecology, permaculture, syntropic agroforestry and landscape restoration.

Innovation Summary

Innovation	Actors	Opportunity	Level
Engaging and involving policymakers and governmental bodies and developing relationships of trust and collaboration with municipal and local authorities	Regeneration International, RCN Latin America	<ul style="list-style-type: none"> • Advocating for the broader socio-economic and political benefits of RA and the regenerative worldview • Targeting and leveraging favorable national policy environments (such as in Uruguay) • Identifying the promising RA solutions and research that can be translated into impactful messages aimed at onboarding these groups 	
Adopting a long-term approach to knowledge transfer based on the active participation of target communities rather than a short-term, “hand-out” logic	Sustainable Harvest International	<ul style="list-style-type: none"> • SHI’s approach can serve as a best practice for international development organisations and NGOs that apply RA to achieve food sovereignty, improve livelihoods and alleviate poverty in vulnerable communities 	
Demonstration sites are building a broader regenerative tissue which expands beyond farm boundaries, connecting with citizens, producers and policymakers	El Manzano, Sinal do Vale, Las Cañadas, Maya Mountain Research Farm	<ul style="list-style-type: none"> • Demonstration sites serve as showcases and hubs for RA, engaging in production, training and networking 	
Informing consumers and supporting consumer organisations in driving demand for organic and regenerative produce	Mexican Organic Consumers Association, Via Orgánica, Regenerative Agriculture Alliance	<ul style="list-style-type: none"> • Driving the market-based mainstreaming of RA in Latin America and connecting producers with consumers 	
Creating a continental platform for local RA nodal points based on a bioregional approach	RCN Latin America	<ul style="list-style-type: none"> • Ensuring that context-specific eco-cultural approaches to RA are constantly circulated and analysed together to ensure mutual learning through positive feedback loops • Applying a bioregional approach to RA at a continental scale 	
Applying and disseminating a regenerative approach to an increasing number of sectors and concepts, such as regenerative project design and incubation, entrepreneurship, development, etc.	ERES, RCN Latin America, Regeneration International Latin America	<ul style="list-style-type: none"> • Broadening the scope of RA to raise awareness and interest among an increasing number of diverse actors from the local to the global level • Sensitising entrepreneurs, financiers and donors to the benefits of RA • Developing a regenerative approach to business 	

Escuelas de Regeneración EcoSocial (ERES)



ERES is composed of a broad network of focal points located across the region. They can be found [here](#).



Escuelas de la Regeneración EcoSocial (Ecosocial Regeneration Schools) is a Chilean network that supports the emergence of a new economic model going beyond sustainability to achieve “regenerative development”. ERES relates regenerative development to the concept of *buen vivir* (literally “the good living”), which was enshrined in the Constitution of Ecuador in 2008 and that of Bolivia in 2009. This concept stems from *sumac kawsay*, the cosmovision of the Quechua peoples of the Andes, which describes a way of life that focuses on the community, seeks ecological balance and is culturally sensitive (Mercado, 2017). ERES created the IncubaR regenerative project incubation program for trainees to become *actualizadores de sistemas* (“system updaters”) that identify and manifest the regenerative potential of a place, organisation or ecosystem. ERES counts member communities in Chile, Argentina, Uruguay, Colombia, Ecuador and Mexico. Since 2008, the network has trained over 2500 individuals in regenerative design in 7 Latin American countries.

One of its member communities is the Chilean **Eco-escuela El Manzano**. This 400-hectare farm proposes the IncubaR program, permaculture and ecovillage design courses and consulting services. El Manzano is a Latin American Gaia Education hub, and combines the attributes of a RA production, training and demonstration site. An important reference point for regenerative efforts at a national and Panamerican level, El Manzano is also a member of **Manada**. This Chilean consumer-packaged goods company was created by regenerative producers to acquire higher margins in shorter supply chains, while partnering with like-minded ranchers in the region. Specialising in regenerative grazing for meat production, Manada is impulsing a new direction for the Chilean meat industry, while building producer-consumer relationships based on trust, transparency and ecological education.

Another grassroots organisation supporting ERES is the Ecuadorian **Red de Guardianes de Semillas** (Network of Seed Guardians). Since 2002, it gathers 100 “seed guardian” families in 15 Ecuadorian provinces who conserve and propagate native heirloom seeds. This network applies permaculture, agroecology, food sovereignty and the social economy to support processes that regenerate life. It offers knowledge and expertise in regenerative land use and design, seed saving, solidarity economy, and related topics. Several projects mentioned in chapter 4 are part of this network. All in all, these initiatives are examples of “enterprise ecologies” - interlinked businesses which, through their interactions, optimise both monetary and non-monetary forms of capital, leading the way towards ecosocial regeneration (Soloviev & Landua, 2013).

The **Regenerative Communities Network Latin America** (RCN Latin America) is an emerging “regenerative community” acting at a continental scale. It is part of the Regenerative Communities Network, a global initiative of the US-based Capital Institute. RCN Latin America gathers national hubs of the global Regenerative Communities Network (RCN) in Mexico, Costa Rica, Colombia, Peru and Brazil. A key objective is the development of a more connected Latin American RA network to respond to the current and future challenges posed by the COVID-19 pandemic and its effects on livelihoods, food sovereignty and nutrition, especially amongst vulnerable populations. It aims at “fast-tracking regenerative agriculture and bioregional organization”, including by developing a “COVID-19 Ready Food Security and Community Resilience Response Program”, which aims to stimulate “bioregional regenerative food production as a way to efficiently create local mechanisms that provide food security to vulnerable communities”. Indeed, RA’s environmental and food security benefits can lay the foundations of a “broader societal transition to regenerative economies”. The co-creation and sharing of tools and knowledge and the development of a “regional food security and resiliency collaborative support system” intends to link an increasing number of Latin American regenerative communities. It also aims at engaging “regenerative business coalitions” to invest in regenerative practices and provide inspiration for conventional agricultural business models to transition to regenerative ones, while advocating for market-based and public incentives to support RA. A noteworthy figure connected to the RCN is its LA-based “capacity cultivator” Joe Brewer, who promotes regenerative development with a strong bioregional perspective. Recently, Brewer started the Earth Regenerators study group, a rapidly growing online initiative which currently counts 1600 members.

Team



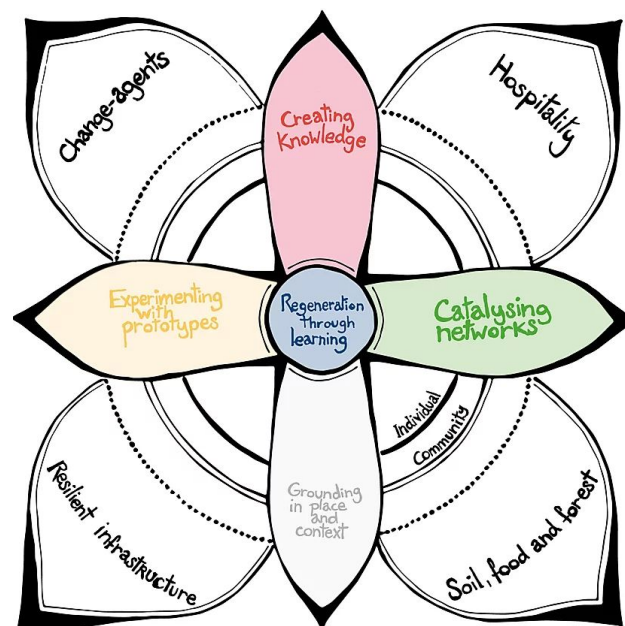
Luis Alberto Camargo
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 OpEPA
 Colombia Regenerativa
 Fellow Ashoka
 @lobodelasnieves



Melina Angel
 Founder & Co-Director
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 Colombia Regenerativa
 @inspirandoevolution



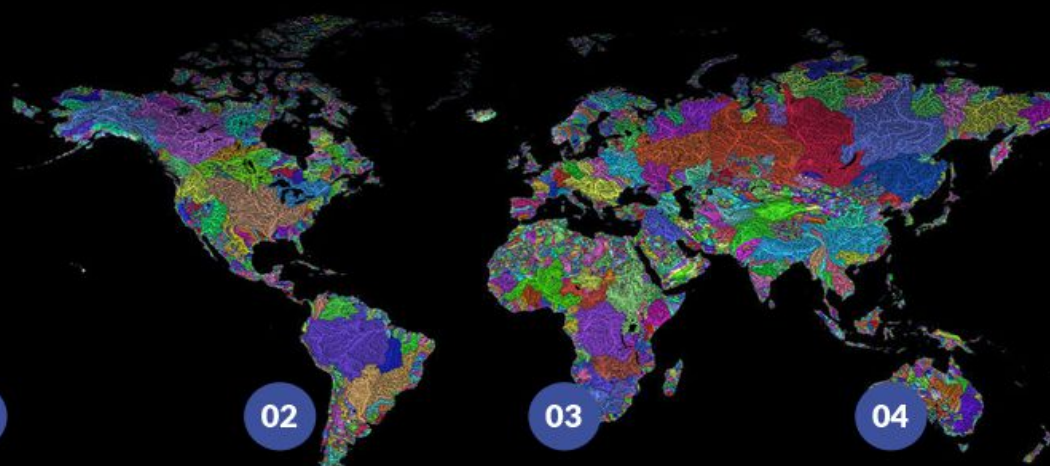
Eduard Muller
 Founder & Rector
 UCI
 Regenera Costa Rica
 @EduardMullerC



The Sinal do Vale regeneration model
 (Source: <https://www.sinaldovale.org/about-us>)



Joe Brewer, Earth Regenerators



- 01
- 02
- 03
- 04
- 05

Name the emergent purpose: regenerating bioregions through self-organizing collaboratives

Connect collaboratives

Nourish with shared tools & infrastructure

Illuminate to build a movement

Redefine economic policy agenda

Costa Rica

Eduard Muller is the founder and rector of the [Universidad para la Cooperación Internacional \(UCI\)](#), the anchor of Costa Rica Regenerativa (the national RCN hub). This university provides academic virtual training and a virtual campus on various aspects of international development, including a certificate in Regenerative Entrepreneurship. UCI is also a Latin American hub of the UK-based Gaia Education NGO. The [Oso & Golfito Regenerative Economy Lab](#) applies systems-thinking and mapping to inform the evolution of regenerative economies. Osa also offers regenerative project mentoring and design and supports regenerative endeavours in connecting to sources of capital.



COSTA RICA
REGENERATIVA



REGENERATIVE EARTH

Brazil

Located next to Rio de Janeiro, the [Sinal do Vale Institute](#) is a good example of a regenerative demonstration centre. It has developed its own methodology to instigate regeneration through learning, based on a core model of “grounding in place and context, experimenting with prototypes, creating knowledge and catalysing networks”. The institute applies a broad range of soil-regeneration techniques, including agroforestry, afforestation, organic agriculture and bioproducts, as well as conservation techniques to preserve the surrounding Atlantic Rainforest. Sinal do Vale also incubates regenerative businesses, such as the “Mosuo Bamboo” venture, which creates employment opportunities for youth from disenfranchised communities located nearby, based on on-site, regeneratively-sourced bamboo products. Sinal do Vale is a IUCN “Incubator for Nature Conservation”, a UNESCO “Advanced Post of the Biosphere Reserve of the Atlantic Rainforest” and an “Action Research Site” of OpEPA.



Thais Corral, Founder



Colombia

The [OpEPA](#) Foundation focuses on regenerative education and engaging with indigenous-led regenerative economy initiatives. It was founded by Ashoka Fellow Luis Camargo, convenor of the national RCN hub Colombia Regenerativa along with Melina Angel, founder of Syslab.



OpEPA

Colombia
Regenerativa

Peru

[Regeneración de Ecosistemas Perú](#) focuses on the “regenerative development of landscapes, ecosystems and community livelihoods”. It is establishing a [Sacred Valley Regeneration Fund](#) to support the ecological and cultural regeneration of the Sacred Valley area located below Cusco. Autopoiesis LLC, and a Peruvian associate entity, Yanapkusunchis E.I.R.L., are notably involved in this effort. Another ongoing initiative by Regeneración de Ecosistemas Perú is the [Andean Pastoral Livelihoods Initiative](#), a coalition of actors that aims to build a “regenerative workforce across the Andes for landscape and community transformation based on collaborative stewardship”. It is currently mobilising allies and identifying instruments of blended finance to restore 2 million hectares of pastoral Andean landscapes.



autopoiesis



REGENERATION INTERNATIONAL

Ercilia Sahores, Latin America Coordinator



*Ronnie Cummins
Organic Consumers Association and Vía Orgánica*

RI Latin America also supports large-scale Latin American campaigns with a global ambition. For instance, the Vía Orgánica Billion Agave Project targets innovative Mexican farms in the high-desert Guanajuato region. This agroforestry system associates agave plants with nitrogen-fixing companion tree species (such as mesquite) and holistic rotational livestock grazing. A single agave plant can yield up to a ton of biomass over its 8-10 year lifecycle. Once chopped up and fermented, the whole plant can be used as animal fodder (costing around €0.04/kg). Agaves require no irrigation and can draw down and store above ground the dry-weight equivalent of 30-60 tons of CO₂/hectare/year. This system was brought to the attention of Ronnie Cummins (RI) by Dr. Juan Frias at the Hacienda Zammaripa (San Luis de la Paz, Mexico). This high-biomass, high forage-yielding system is a good example of the local development of context-specific, large-scale regenerative solutions that can be further disseminated and mainstreamed through the RI network. Funded by donations and public and private investments, the Billion Agave campaign aims to plant one billion agaves globally to draw down and store one billion tons of CO₂.



Source: Regeneration International

RI member Humedalia aims to regenerate the chinampas of Mexico City (systems for growing crops in floating gardens in shallow lake beds, using farming techniques developed by the Aztecs), yielding a host of environmental and socio-economic benefits for local populations and endemic fauna and flora.



Why Agave?



Climate-Change Solution



Livestock Feed Source



Drought-Resistant

The multiple benefits of agave (Source: Regeneration International)



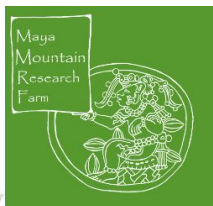
Pasticultores del Desierto, Mexico

This initiative was launched by Ranchers for Ranchers. It combines holistic planned grazing with landscape restoration on 500,000 hectares of the Chihuahuan Desert, the largest North American desert. This project aims at developing strategies to reverse desertification worldwide, and at managing 1 million hectares with 100,000 head of cattle by 2020 to regenerate desertified areas and provide ranchers with both profitable and resilient opportunities to develop their activities.



Las Cañadas, Mexico

This agroecology and permaculture centre is located in central Veracruz state and is run by the Cooperativa Las Cañadas. The project includes a large farm and offers courses and traineeships on agroforestry, syntropic agriculture, agroecology, permaculture, natural building. Las Cañadas also conserves 260 hectares of cloud forest (high-elevation rainforest that receives most of its moisture from direct contact with clouds rather than rain). It is recognized as one of the main platforms for advancing permaculture and agroecology in Mexico.



Maya Mountain Research Farm, Belize

Founded in 1988 by Christopher Nesbitt, this is one of the oldest permaculture projects in Central America. This agroforestry experimentation farm applies successional agroforestry on 28 hectares of land, which functions as a genetic seed bank for indigenous species. The farm managed the Belizean Maya Ethnobotanical Research Project (University of Florida), collaborates with numerous NGOs and community-based organizations and hosts courses on its domains of expertise.



SUSTAINABLE HARVEST INTERNATIONAL



*Elliott Powell,
SHI Executive
Director*

Asociación de Consumidores Orgánicos, Mexico

This offshoot of the Organic Consumers Association (USA) acts as a national network to raise awareness on and advocate for RA while campaigning against agro-industrial practices such as genetically modified organism (GMO) crops.

Vía Orgánica, Mexico (an *Asociación de Consumidores Orgánicos* project) is a non-profit association that advocates for regenerative agriculture, especially through organic food production, healthy food and living and fair trade. Its main site is located around the town of San Miguel de Allende in the Bajío region of Mexico. It comprises production and demonstration elements, such as a 80 hectare ranch for RA, grazing and landscape restoration. Numerous on-site educational workshops are also on offer as well as eco-tourism and leisure activities to showcase the project's regenerative work. Vía Orgánica also incorporates the Ecosystem Restoration Camp Vía Orgánica camp, which focuses on landscape restoration (see next page).

Sustainable Harvest International (SHI) Honduras Belize and Panama

SHI supports vulnerable families in achieving food sovereignty by transitioning from conventional to RA techniques, with a focus on agroforestry and small-scale farming. SHI engages with self-selected volunteer families over 5 phases in 5 areas (agroforestry, environmental stewardship, capacity-building, food sovereignty and livelihoods). Over time, the knowledge transmitted by SHI through its field trainers (1 trainer for 35 families) is instilled into the community by its members, allowing for its progressive internalisation. In parallel, a resurfacing of traditional knowledge and practices can be observed, as traditional and regenerative techniques acquire new legitimacy and acceptance among the broader community. Since 1997, SHI and the over 3,000 families involved in its programs have planted 4 million trees and regenerated over 26,000 hectares of degraded forest. Families' incomes increased by an average 23%, while their access to healthy food and nutrition improved significantly. A 2020 survey of 300 SHI graduate farmers indicated that 91% of this sample group was still practicing agroforestry after completion (Powell, 2020).

Ecosystem Restoration Camps is a landscape restoration network that significantly overlaps with RA. This global movement has been developing a strong presence in Latin America through its 6 camps located in Mexico, Guatemala, Colombia, Peru, Bolivia and Brazil. Founded by the prominent restoration advocate John D. Liu, ERC camps offer practical learning programs, events and workshops on landscape restoration, regenerative agriculture, agroforestry, bioconstruction, composting/soil creation and other themes. One of the ERC camps, Camp Farm of the Future (Caseara, Brazil) explicitly focuses on the creation of livelihoods for local families by integrating regenerative agriculture and aquaculture into its restoration work. It is currently transforming a former cattle-ranch into a “prototype regenerative farm” located in the rapidly degrading *cerrado* biome. Another ERC camp is located on the premises of Via Orgánica (Mexico) mentioned above. It delivers training on RA based on Via Orgánica’s on-site activities and approach to RA. Finally, the recent Camp Contour Lines in Guatemala is currently raising funds to transform 10 hectares of corn monoculture into an agroforestry system. Working with local Mayan (Q’echi) community members, it aims to establish a food forest to show how RA can benefit the community and the environment.

The North American Regenerative Agriculture Alliance (RAA) includes North and South American members. Its CEO, Reginaldo Haslett-Marroquin, is also part of RI’s Steering Committee. RAA’s Latin American founding members include Regeneration International, Sustainable Harvest International and Regeneration Guatemala. Amongst other goals, RAA aims to “...consolidate and grow regenerative poultry operations in British Columbia, Guatemala, Mexico, Belize, Honduras, Nicaragua, El Salvador, Costa Rica, Brazil and key African and Asian countries”. Although this network’s Latin American activities are at an early stage, its focus on building alliances between producers, consumers and entrepreneurs to implement a RA system stands out as an effort to achieve greater integration within and expand the RA market. Indeed, the alliance’s broader aims include:

- Providing RA producer pools with planning and deployment assistance
- Supply chain infrastructure development (for key sectors such as regenerative poultry, organic grains and feed, agroforestry systems, native-led regenerative bison, regenerative pork and grass fed and finished beef and dairy)
- Regenerative production protocols and certification systems integration
- Market development
- Capital markets access
- Land access and management systems
- Indigenous knowledge recovery, systematisation and dissemination



John D. Liu, ERC Founder



Reginaldo Haslett-Marroquin, CEO

Source: ERC

8

Conclusions

This report provided an overview of the most promising RA initiatives and actors in Latin America, along with the broader enhancing and inhibiting factors that are influencing its mainstreaming. We have attempted to illustrate how some of these innovations have transformative potential within the Latin American and global food system, with wider beneficial environmental, socio-economic and political impacts. While there are many obstacles that stand in the way of RA in Latin America, this region nonetheless holds great regenerative potential.

In our view, the key challenge for RA lies in its capacity to embed itself in specific, eco-cultural contexts in a meaningful way, while on the other hand engaging with the most resistant sectors of society that may see more threat than opportunity in RA, notably the powerful Latin American agribusiness complex and governments that rank environmental concerns very low on their agendas.



Source: Michael Karner

Scaling up RA Innovations in Latin America

This overview of innovative RA initiatives provides a non-exhaustive bird's eye view of regenerative agriculture innovation hotspots in Latin America. However, it is by no means representative of the totality of initiatives that are taking place in the field. Rather, it reveals the great diversity of Latin American regenerative endeavours, driven by actors pertaining to different currents within Latin America RA movement(s) that both overlap and diverge at times. Together, these currents are collectively shaping and orienting the semantic evolution of the term "regeneration". Indeed, numerous new actors are willing to support the sector, including in the financial and political spheres. However, it is crucial to maintain the high standards that RA involves, to avoid its meaning being diluted and appropriated as a mere means of communication, marketing or "greenwashing".

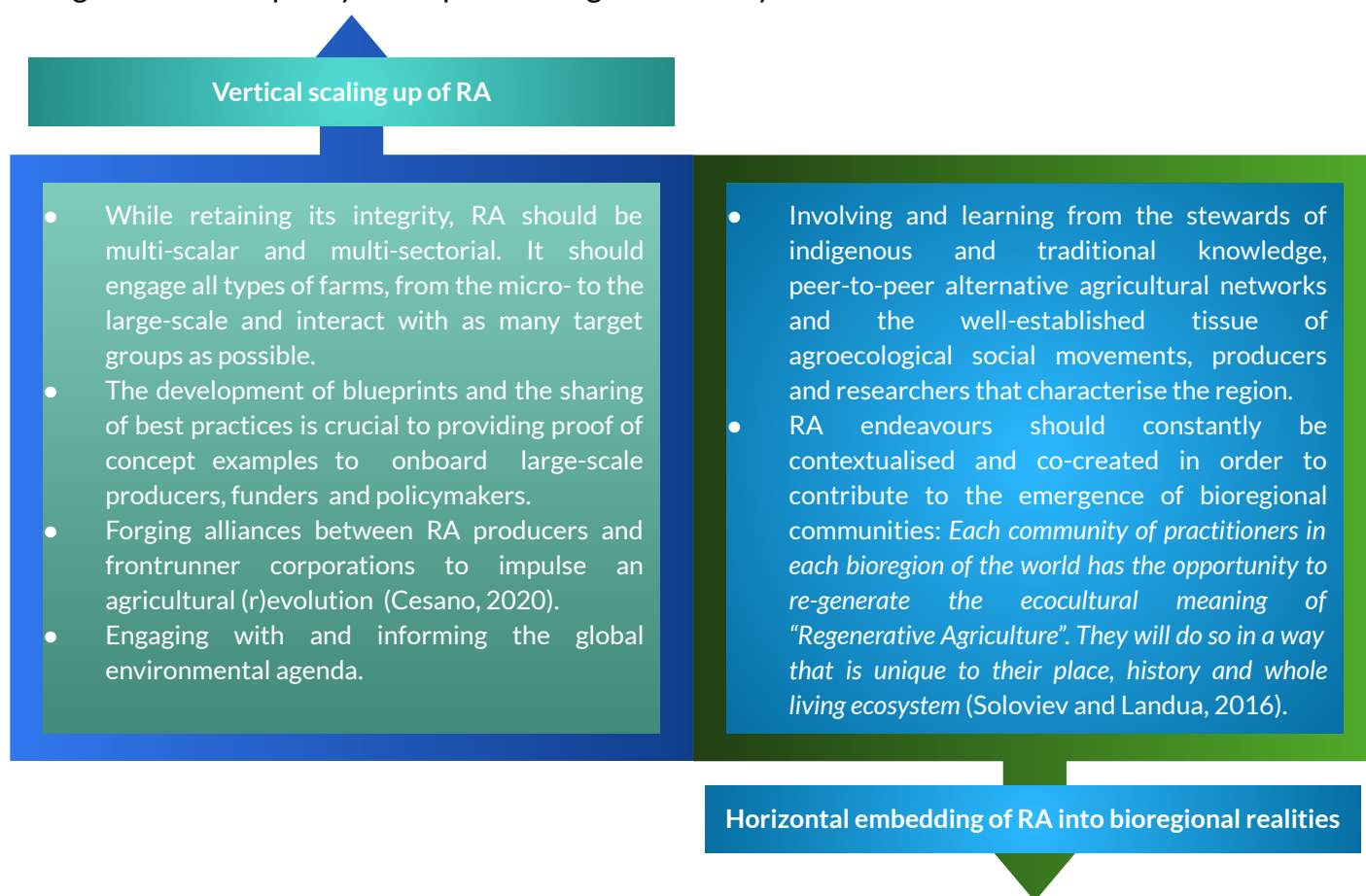
This report has identified the following key agricultural sectors for RA mainstreaming in Latin America, which act as leverage points that can lead to broader change in the Latin American food system and society:

01	LIVESTOCK	<ul style="list-style-type: none">• A fundamental sector through which to impulse change, given the global significance of the Latin American livestock industry• Guided by research and best practices, it can count on innovative certification methods backed by rigorous regenerative criteria• Rooted in well-established producer and advocacy networks that span the local, continental and global levels
02	AGROFORESTRY	<ul style="list-style-type: none">• Drawing inspiration from an enormous repository of indigenous and traditional knowledge• Informed by pioneering Latin American research• Strong potential in developing regenerative global supply chains for regenerative perennial products
03	BROAD-ACRE ANNUAL CROPPING	<ul style="list-style-type: none">• Inclusively engaging large amounts of different producers and inducing bottom-up RA mainstreaming• Developing innovative large-scale regenerative production methods, that have the potential to rapidly influence a large number of producers

Based on the innovative solutions developed within these three agricultural sectors, other groups identified in this report are key vectors in supporting, mainstreaming and disseminating these innovations, while ensuring that they are continuously reactualised and embedded into specific eco-cultural contexts. More specifically, closer relationships between producers and informed consumers can provide RA endeavours with the necessary markets to sustain their operations, while funders play a key role in scaling up RA operations through their investments, backed by technical support and advisory services provided through technical assistance organisations. Early adopters are key to illustrating the benefits of investing in RA in the eyes of other potential investors.

Scaling up RA Innovations in Latin America (continued)

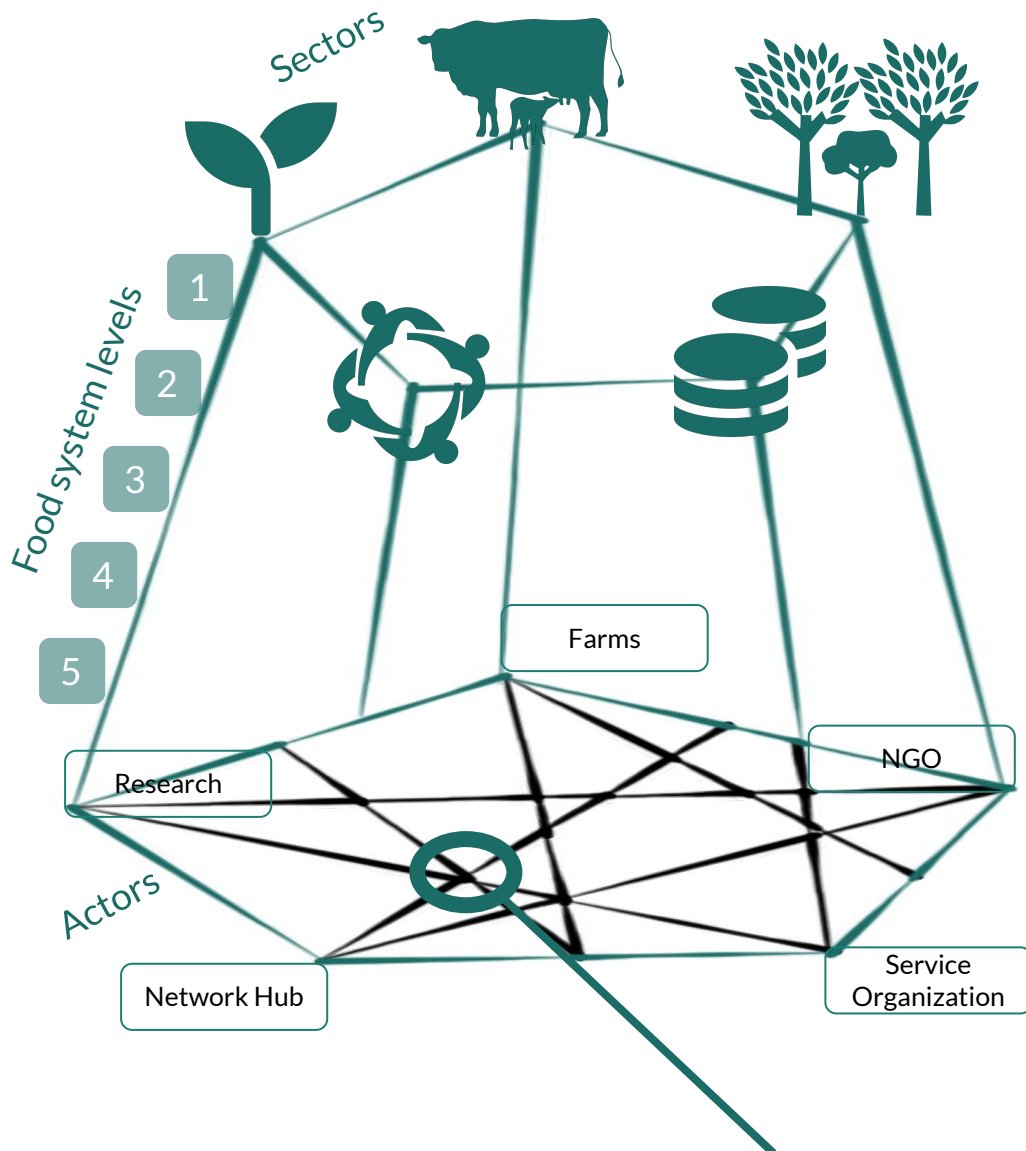
Finally, networks are central in knowledge sharing, communications, advocacy and awareness raising. Indeed, they connect the local to global levels through feedback loops by acting as integrators, inducing systemic change through numerous nodal points at different scales and in different contexts. They are also key in engaging policymakers and advocating for legal reforms and governmental support for RA. All in all, scaling up and mainstreaming RA in Latin America involves the adoption of a great diversity of tactics (education and awareness raising, advocacy and lobbying, subsidies and marketing), taking place across all scales. The relative novelty of RA plays in its favor, as it is not imbued with the political and social activist connotations of Latin American agroecology, for instance. Moreover, its context-specific nature lacks the rigidity of organic production protocols. In this sense, RA is an open and potentially inclusive field that welcomes co-creation. On the other hand, the scarcity of RA-based business models and standard methodologies may explain why few large-scale actors have gone beyond small to mid-scale RA efforts in Latin America for the time being. However, numerous actors described in this report are addressing this need, although many of their efforts are still at an early stage. To build on their work and increase momentum, carbon, water and biodiversity markets, based on official prices for the ecosystem services provided, are required. Governments have a critical role to play in this process as a means of scaling up RA, funnelling subsidies and incentives from degenerative farming practices into regenerative ones. We therefore believe that in order to reach a tipping point in RA, nodal interventions should build upon the two-fold dynamic that we have observed in this report. This involves deepening RA's horizontal rootedness in local Latin American eco-cultural bioregional contexts, while expanding its vertical capacity to shape local to global food systems.



Scaling up RA Innovations in Latin America (continued)

Working from large-scale socioeconomic patterns down to bioregionally appropriate RA solutions is essential. The context-specific nature of regenerative agriculture, where no single measure or practice works across geographies, eco-cultural contexts or commodities, is both a challenge and a primary reason for adopting a systemic approach. In our view, this two-fold process will allow for the progressive dissemination, replication and integration of RA innovations, leading to broader systemic change while maintaining the uniqueness of every place in which RA is applied: “...design of redundancy (multiple enterprises nurturing each form of capital) can increase shared learning and innovation while safeguarding the foundational pools of living and cultural capital that make each place unique” (Roland and Landua, 2016). This will further support the current tendency towards Soloviev and Luanda’s “Systemic Level” of RA in certain Latin American areas and sectors. Supported by a multiscalar network of producers, practitioners and networkers, ecosystems of regenerative enterprises will take root: “...farms are woven into an ecosystem of enterprises operating in (and possibly beyond) their bioregions. Conscious mimicry of local ecology increases resilience and antifragility of the group of enterprises” (Roland and Landua, 2016).

Potential Roles for the Mustardseed Trust



We have seen how the Latin American RA landscape is composed of a **broad array of actors**, connected to each other and/or with broader networks to different degrees. They are engaged in initiatives in **different sectors**, and promote innovation at **different system levels**.

All in all, Latin America is brimming with opportunities for RA, and the Mustardseed Trust has numerous options to choose from to support its mainstreaming in this region.

Step 1

Based on this new knowledge, evaluate how RA fits into MT's vision and which sectors and initiatives better match MT's objectives.

Step 2

Identify the nodal point(s) where action is most effective. This could include one or more actors, an innovation, a network, or further and more targeted research.

Step 3

Connect with the actor(s) and co-define the areas in which support is most needed or can achieve the greatest impact in terms of vertical and horizontal scaling up.

Further research opportunities

This report has provided a broad and non-exhaustive overview of RA in Latin America. From this study, it became clear that RA is a growing trend in the region, but that it is still far from having reached a tipping point that could lead to its large-scale mainstreaming. To better understand the preconditions and enhancing factors that could lead to this urgent shift, several pathways for future research are available:

- Engaging in extensive fieldwork at the local level to achieve a better understanding of the potential applications and benefits of RA in specific Latin American eco-cultural contexts and production sectors;
- Identifying indigenous and traditional knowledge and techniques that fall under the scope of RA and disseminating these best practices and local solutions ;
- Better understanding the potential connections and mutually enhancing factors between Latin American agroecology and RA to develop targeted strategies for RA to further build on Latin American agroecological knowledge and networks;
- Achieving a more comprehensive understanding of the Latin American ecosystem restoration agenda to promote the application of RA in restoration policy and endeavours;
- Deploying research efforts to support the development of context-based RA standardised approaches and methodologies that can be disseminated and replicated throughout the region;
- Supporting research efforts on the monetization of the ecosystem services provided by RA actors in order to encourage the implementation of such policies;
- Engaging in further research to identify large-scale mechanized RA operations, if any.

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