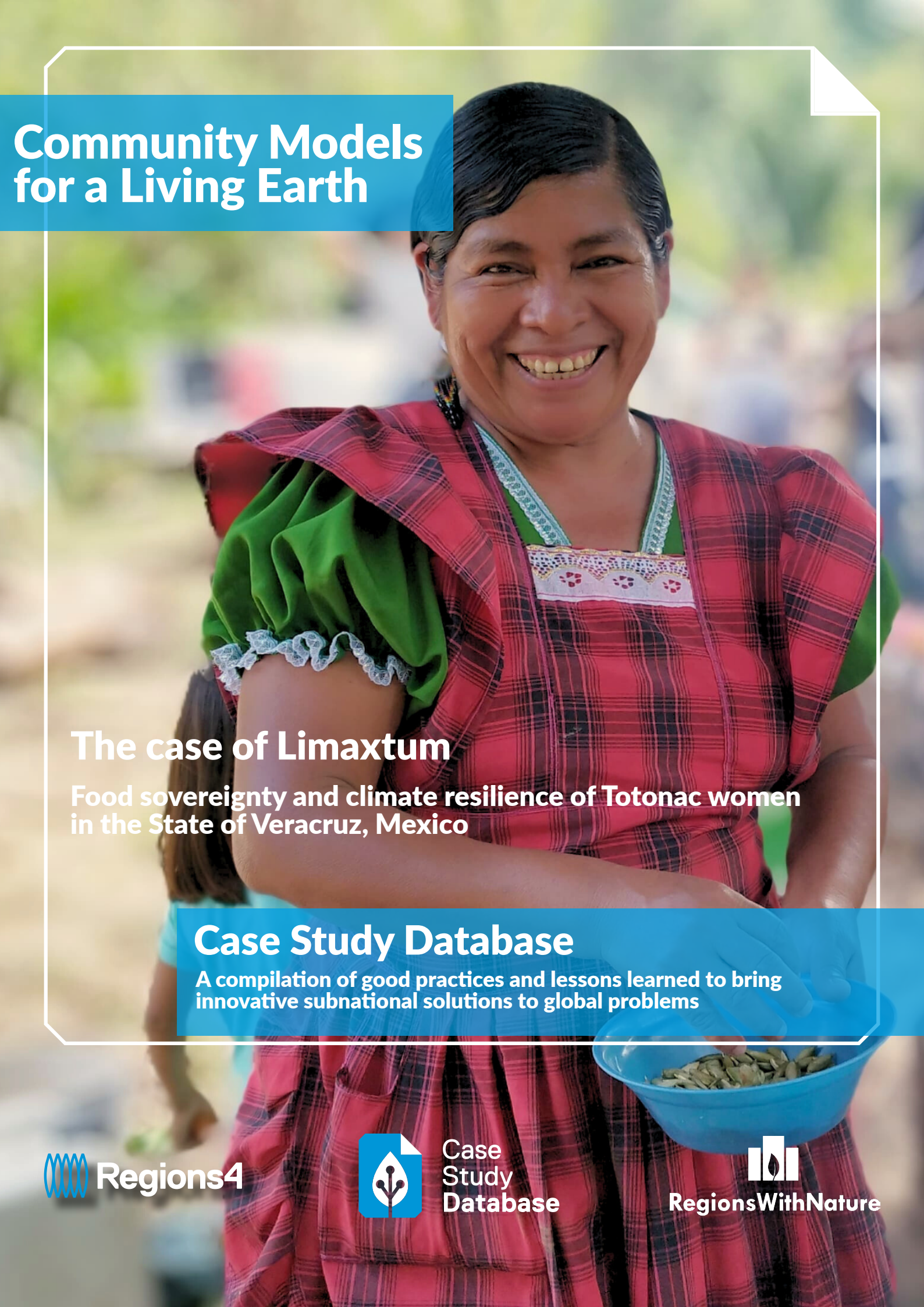
Community Models for a Living Earth



The case of Limaxtum

Food sovereignty and climate resilience of Totonac women in the State of Veracruz, Mexico

Case Study Database

A compilation of good practices and lessons learned to bring innovative subnational solutions to global problems

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Introduction

In the face of climate crises, biodiversity loss, and threats to food sovereignty, rural and indigenous communities are resorting, as they have for generations, to their ancestral agroecological models. In Totonacapan, Veracruz (Mexico), Totonac women lead the traditional system of planting Pimienta Gorda-Milpa, integrating ancestral knowledge, biocultural conservation and community economy.

Project Overview

The ancestral Pimienta Gorda-Milpa planting system, promoted by the Limaxtum Indigenous organization, combines traditional agroforestry with sustainable practices to strengthen the community economy, food sovereignty and resilience to climate change. Based on the association of allspice (Pimenta dioica) with the Mesoamerican milpa, this model promotes women's leadership, the rescue of native varieties, the production of bio-inputs and the strengthening of the social fabric. With 972 members, of which 248 are women, Limaxtum has achieved key innovations such as tree grafting, controlled pruning and the establishment of nurseries.

Key information

Location: Veracruz, Mexico

Areas of focus: Indigenous governance; food security; gender equity; biocultural conservation; local economy; traditional production systems; climate resilience.

Founded in: 2006 (Limaxtum)

Sustainable Development Goals addressed:

SDG 1, 2, 5, 7, 8, 12, 13 and 15.

Kunming-Montreal Global Biodiversity Framework Targets:

Targets 2, 8, 9, 10, 11, 13 and 23

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Regions4, in collaboration with the Association of Foresters of Totonacapan - LIMAXTUM and with the support of CONGOPE

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Special collection

This case study is part of a special collection developed by Regions4 as part of its work on

Just Resilience

Through the support of CONGOPE, its objective is to give visibility to Indigenous and community-led economic models that integrate sustainable practices, ancestral knowledge and collective organization, and that actively contribute to environmental conservation and territorial resilience.

These experiences were identified during the Breakthrough Workshop on Indigenous Economy and Just Resilience held in Napo, Ecuador, in January 2025.

The case studies include practical recommendations for subnational governments to recognize, strengthen and collaborate with these models through their public policies, promoting a more just and inclusive transition in harmony with nature.

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BACKGROUND AND CONTEXT

THE TOTONACAPAN, a region located in the northern part of the state of Veracruz, Mexico, is inhabited by Indigenous Totonac communities that, for centuries, have developed and maintained ways of life deeply linked to the land, the forest and traditional knowledge. This region, characterized by its biodiversity and cultural richness, has faced serious threats in recent decades: soil degradation, loss of native species, external pressures on its lands and abrupt changes in climate. Despite these challenges, **the Totonac communities have promoted a strategy of cultural, ecological and economic revitalization through the recovery of an ancestral production system: the agroforestry association of allspice with milpa.**

This system, promoted by the **Totonacapan Foresters Association (LIMAXTUM),** responds to the urgent need to guarantee food sovereignty, generate sustainable livelihoods, protect ancestral knowledge and strengthen resilience to climate impacts. **LIMAXTUM, founded in 2006, currently has 972 members, of which 248 are women.** Its axis of work is based on sustainable traditional practices and community governance of the territory.

KEY ACTIVITIES AND PRACTICES

The **Pimienta Gorda-Milpa** system is based on a complex and harmonious agroforestry association that integrates trees of allspice (Pimenta dioica), a native Mesoamerican tree of economic and cultural value, with the milpa, a polycultural agricultural system based on native corn. This system also includes other food species such as beans, squash, quelites, native vegetables, vanilla, medicinal plants and meliponiculture (honey from native stingless bees), integrating up to 50 different species in the same plot. **This form of production adapts to local ecological conditions, allows the integral use of the territory and represents a permanent source of food, medicine and income for families.**

Totonac women are the main drivers of the system. Their role is central not only in sowing and harvesting, but also in the protection of seeds, the transmission of knowledge, the production of organic fertilizers and the collective management of production. Historically, they were the ones who climbed wild pepper trees to collect the fruit, an activity that entailed high physical risks. **Based on participatory processes and community innovation, the grafting of female trees was introduced, which ensures production from the first year, as well as pruning techniques that limit the height of the trees to facilitate a safer harvest.** These changes have drastically decreased accidents and increased yields per hectare.

The economy generated by this system is mixed. On the one hand, it allows family self-consumption throughout the year, guaranteeing healthy, varied food free of agrochemicals. On the other hand, allspice and honey are collectively traded, generating essential monetary income. Seeds, roots and native plants are exchanged between communities in barter events organized by LIMAXTUM, thus strengthening the gift economy and sovereignty over the agricultural genetic heritage.

This model has not emerged spontaneously, but has been carefully revitalized through a collective process of diagnosis, planning, and learning. Between 2019 and 2021, a participatory process of revision of the traditional model was initiated and the practices and species at risk were identified. In 2022, an Institutional Development Plan was promoted with the support of RED MOCAF and The Windward Fund (TWP), which included the legal reactivation of the organization, the creation of demonstration agroforestry modules, the installation of pepper and vanilla nurseries, and the start-up of a community fertilizer biofactory. In 2023, exchanges were carried out with communities in Puebla, such as Zongozotla and Cuetzalan, to share and strengthen experiences. Currently, it is estimated that the model has already been replicated in 15% of the members' plots.

In this process, relevant innovations have been incorporated that allow the model to be adapted to new contexts without losing its ancestral essence. **Grafting technology, local production of bioinputs with organic waste, and pruning strategies have been key to improving productivity, reducing risks and adapting the system to a climate change scenario.**

In addition, work is being done to establish differentiated and ethical marketing channels that value the quality, origin and sustainability of the product.

Benefits and uses of allspice:

It is an excellent meat preservative. It is used in essences, cosmetics, and perfumes. It serves as an oral antiseptic and an analgesic. It helps relieve gastrointestinal problems, prevents hemorrhages, and improves liver disorders.

ENVIRONMENTAL CONSIDERATION AND IMPACT

The implementation of this ancestral system has had positive and measurable environmental impacts. It has contributed **to the recovery of more than 35 native food and medicinal species, many of them at risk of disappearing. Agroforestry practices have significantly reduced soil erosion, especially in previously degraded areas. Pepper trees, by providing shade and vegetation cover, lower the temperature of the soil and improve the humidity of the environment, which favors natural regeneration.**

The exclusive use of organic fertilizers made from plant remains and pruning residues avoids water and soil contamination, as well as reducing dependence on external inputs. Agroecological production is complemented by community reforestation from local nurseries, where seedlings of native species are grown. This makes the system a comprehensive ecosystem-based adaptation strategy.

SUSTAINABILITY AND CHALLENGES

The model is sustainable in its four dimensions: economic, social, institutional and environmental. Economically, it reduces production costs by eliminating agrochemicals, and generates income from the sale of pepper, honey and derivatives. Socially, it strengthens the community fabric, empowers women and promotes the participation of young people. Institutionally, it has a legally constituted organization and a strategic plan in place. Environmentally, it contributes to species conservation, soil health, and climate resilience.

However, the model faces significant challenges. Legal insecurity over communal land tenure limits its expansion. The incidence of forest fires, exacerbated by climate change, represents a constant threat. In addition, access to differentiated markets and official recognition of Indigenous production systems is still limited. To address these challenges, Limaxtum has strengthened its organizational structure, promoted strategic alliances with national and international institutions, and developed more participatory internal governance mechanisms.

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ASSOCIATIONS

Partnerships have been decisive in the development of the model. RED MOCAF has provided technical support and facilitated advocacy processes. The Windward Fund has provided key resources for the planning and demonstration modules. FTM-USAID has contributed to strengthening institutional governance. At the local level, the network of Totonac communities has been the living basis for the exchange of knowledge and seeds, sustaining the model with its daily commitment.

For its future sustainability, it is necessary to strengthen new alliances with universities that provide applied research, with subnational governments that recognize these systems as part of their territorial plans, and with ethical markets that value the traceability, origin and biodiversity of the products.

Lessons learned

and the role of subnational governments

The case of Limaxtum demonstrates that it is possible to articulate ancestral knowledge, ecological innovation and community empowerment in a comprehensive development model. This model not only produces food and generates income, but also protects ecosystems, rescues knowledge and strengthens cultural identity. Its ability to generate healthy food, conserve biodiversity, strengthen the community economy and face the effects of climate change makes it a strategic tool for the territories.

In this sense, subnational governments can play a key role in strengthening it. A key action is to advance in the legal recognition of communal land tenure. Guaranteeing territorial security is essential for the continuity of Indigenous production systems and to avoid processes of dispossession, fragmentation or pressure on natural resources.

Faced with the growing risk of forest fires, exacerbated by climate change, subnational governments can promote prevention and response plans adapted to the local context. These plans should incorporate traditional fire management knowledge and ensure sustainable technical and financial resources. Coordinated work with communities is essential for effective and culturally relevant ecosystem management.

Also, to support through the consolidation and support of community forest management, through technical accompaniment in the sustainable management of the forests that surround and sustain these systems. This includes facilitating access to appropriate tools and technologies that allow communities to monitor forest health, plan responsible harvesting, and prevent fire or degradation.

Subnational governments can play a decisive role in the implementation of community nurseries as a public policy for restoration and reforestation with native species. Through collaboration agreements with organizations such as LIMAXTUM, they can provide inputs, technical assistance or incentives that allow these nurseries to scale as nodes of ecological recovery, generation of green employment and environmental education.

In addition, it is essential that subnational governments officially recognize Indigenous production systems as part of their rural development, conservation, and food policies. This implies including them in planning instruments, regulations and public programmes, respecting their cultural specificity and their contribution to biodiversity.

Likewise, facilitating access to differentiated, fair and supportive markets can expand economic opportunities for communities. Initiatives such as participatory certifications, local public procurement or marketing platforms with territorial identity can make a big difference.

Subnational governments can also play an articulating role, promoting alliances with other levels of government, civil society organizations and academic actors. Through these alliances, models such as Limaxtum's can be made known, making visible their strategic value in the face of the climate, food and ecological crises.

Finally, recognizing Indigenous communities as subjects of rights and protagonists of sustainable solutions is an indispensable condition for moving towards a fairer and more resilient future.

These interventions, in addition to enhancing existing models, can be part of integrated strategies for adaptation to climate change, rural development and biodiversity conservation, thus connecting the territorial with global agendas. From the heart of Totonacapan, its guardians teach us that taking care of the earth is also taking care of the community and the planet.

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ABOUT REGIONS4

Regions4 (formerly known as nrg4SD) is a global network that exclusively represents regional governments (states, regions, and provinces) in UN processes, European Union initiatives, and global discussions on climate change, biodiversity, and sustainable development. Regions4 was established in 2002 at the World Summit in Johannesburg and currently represents more than 40 members from 20 countries across 4 continents. Through advocacy, cooperation, and capacity building, Regions4 empowers regional governments to accelerate global action.

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