



Guar farmers Jhuma and Jagdish harvest their crop in their field in Hameira village, Bikaner, Rajasthan, India.  
(Image: TechnoServe / Suzanne Lee)

## QUICK FACTS



**500 million out of 570 million** farms worldwide are smallholder farms

**US\$368 billion** spent adapting to climate change and nature loss by smallholder farmers worldwide every year



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## Regenerative Agriculture

### WHY IT MATTERS

Approximately 500 million out of 570 million farms worldwide are smallholder farms. Globally, smallholder farmers are considered to be disproportionately vulnerable to the impacts of climate change. Their crop and animal productivity as well as their household's food security, income, and well-being are directly affected by changes in temperature, rainfall and the frequency or intensity of extreme weather events. Every year, smallholder farmers across the world spend US\$368 billion adapting to climate change and nature loss. Many of these farmers operate on narrow profit margins and lack the necessary resources for climate mitigation and biodiversity conservation. Food systems are the primary driver of biodiversity loss, emphasizing the critical importance of advancing regenerative agriculture to reverse biodiversity loss.

### TECHNOSERVE'S APPROACH

Underpinning all of our technical competencies is a commitment to deliver regenerative business solutions that enable farmers and businesses to prosper while becoming more environmentally sustainable and resilient. We see regenerative agriculture as a nature-based solution for climate mitigation and biodiversity conservation. We support the adoption of farming techniques that regenerate, rather than degrade, nature so that people and markets can prosper in the long term. These practices increase smallholder resilience and incomes, reduce emissions and sequester carbon, and improve biodiversity.

TechnoServe knows that regenerative agriculture isn't a one-size-fits-all solution. It's crucial to take into account local soil health, current farming methods, and the needs and finances of farmers. Often, environmentally focused projects ask farmers to make significant changes without clear short-term financial benefits or support during the transition. Many farmers operate with small profits and need quick, measurable economic gains to speed up the transition. TechnoServe's approach includes providing technical training and incentives to empower farmers to adopt climate-resilient and regenerative practices, benefiting nature and boosting their incomes. We work with market players to create long-term incentives for change, believing this is crucial for making a lasting impact.

# Regenerative Agriculture

## Our Work

### **SUSTAINABLE GUAR INITIATIVE (SGI) | SOLVAY, HENKEL | INDIA | 2014-**

In partnership with Solvay, L'Oréal, and Hichem, TechnoServe is demonstrating and refining scalable actions for inclusive, sustainable growth and competitiveness of the guar market system in India. The project has achieved a 25% increase in guar farming yields and revenues for 1,500 participating households; reduced water waste and loss; and improved gender dynamics among guar farming households. To promote environmental awareness, 69,000 trees have been planted across 36 villages, and one silvopastoral unit has been established with 1,500 trees and a variety of fodder grasses. The program has promoted groundwater-neutral approaches, including the renovation of traditional rainwater harvesting structures (Johads), the construction of 24 sand embankments (Khadins), and the construction of 21 rooftop rainwater harvesting structures. As of 2023, the project has implemented regenerative agriculture on nearly 60,000 hectares of land.

### **MADRE TIERRA | DANONE | MEXICO | 2019-**

In partnership with Danone, TechnoServe is implementing the Madre Tierra project, which promotes low-carbon, water-efficient strawberry production that regenerates local biodiversity. Madre Tierra facilitates improved irrigation and regenerative farm practices such as use of cover crops, improved agrochemical control, and integrated pest management.

Madre Tierra supports farmers to plant pollinator strips of a variety of flowers to increase bee count and farm biodiversity. Through the application of these practices, farmers have increased their yield by 12% and income by 37% while reducing water usage by 36%. To date, the project has mitigated 2,247 tons of greenhouse gas emissions.

### **REGENERATIVE COFFEE INVESTMENT CASE Global | JDE Peets, Nestlé, Rudy and Alice Ramsey Foundation | 2025**

TechnoServe, supported by major industry players, conducted a detailed analysis and modeling across nine of the world's top coffee-producing countries. The report outlines a roadmap for achieving significant financial, social, and environmental returns as a result of a regenerative transition.



*A farmer harvests forest coffee in Bench Sheko, Ethiopia.  
(Image: TechnoServe / Nick Rosen))*

The coffee industry, which supports the livelihoods of 12 million smallholder farmers, is under threat. Long-standing challenges like land fragmentation and intensifying pressures from climate change are endangering the long-term viability of coffee production.

TechnoServe found that a strategic transition to regenerative agriculture is not just an environmental necessity but a powerful economic opportunity. Key regenerative practices proposed include agroforestry, soil conservation, and integrated pest and disease management. The study projected that an annual investment of \$560 million over seven years would generate substantial returns, resulting in an additional \$2.6 billion in yearly coffee exports and an extra \$2.1 billion in annual income for farmers.

Other key benefits include:

- Significant climate and environmental benefits amounting to an estimated annual reduction of 3.5 million MT of CO<sub>2</sub>e
- Increased farmer incomes are projected for 3.2 million smallholder farmers by an average of 62%
- Enhanced economic growth driven by an estimated 30% boost in coffee exports for the seven target countries, strengthening local and national economies

By aligning the interests of coffee farmers, the private sector, and the planet, the study provides a practical blueprint for securing a sustainable and prosperous future for the global coffee sector.