



Organization: Centro de Desenvolvimento Agroecológico Sabiá Location: Semi-arid region of Pernambuco, Brazil Solution: Combines capacity building with integrated greywater reuse system and agroforestry technology to combat drought and food insecurity Factsheet Period: First round of UNDP AFCIA funding (16 months)





Collection box for a greywater reuse system built by the community members - @Centro Sabiá

Water scarcity impacts one in ten families in Brazil, and 42% of those also face food shortages. Facing severe droughts and food insecurity, farmer families in the semi-arid Northeast are among the country's most vulnerable to climate change. The solution addresses these challenges by combining greywater reuse with agroforestry systems. This method increases water availability, enabling irrigation and improving soil health and food security through sustainable farming practices.



- 31,336 people, 55% of whom are women, benefit from better water management and adapted agri-food systems
- 30 new families introduced greywater reuse, treating 1.5 million liters annually
- 130 families implementing greywater reuse systems, with access to technical support
- 30 community-based agroforestry systems developed
- Collaboration with public and civil sector partners on water reuse



Innovation

- Enhances rainwater harvesting for efficient irrigation
- Uses simple, affordable technology built by local people
- Explored semiarid regions as potential carbon sinks



Adaptation benefits

- Increased water availability for domestic use and irrigation in dry seasons
- Enhanced food security through irrigated agroforestry plots
- Prevention of pollution with greywater treatment
- Promotion of sustainable agriculture resilience
- Improved soil health







- Improves water management and agrifood systems
- Promotes resilience, food security, and income generation and empowers women
- Encourages knowledge sharing and community collaboration
- Contributes to policy discussions on water reuse, climate adaptation, and ecological sanitation



Replication potential

- Adaptable across the Brazilian semi-arid region, Latin America, and Africa due to similar socio-ecological conditions
- Simple training allows local farmers to build and maintain the systems
- Integratable into federal water management policies



Funding snapshot

- UNDP-AFCIA grant: US\$125,000 (initial grant)
- Caritas International: \$185,000 to scale up the activities
- Ministry of Environment in Brazil: \$20,000 to implement training in climate change adaptation and mitigation in semi-arid regions



Investability

Revenue per year	Each family saves over \$350 annually on water and earns at least \$300 monthly from market sales
Sustaining criteria	 Low-cost, local materials reduce financial burden and boost local economies Potential federal investment through the Rural Sanitation National Policy Families build and maintain RAC&SAF systems, ensuring ownership and longevity Educational workshops facilitate the operation and maintenance of systems Non-patented technology supports local adaptation, knowledge sharing, and long- term viability
Financial innovation	Large-scale adoption reduces material costs via economies of scale Exploring carbon credit opportunities from agroforestry systems could generate additional income







