reNature.

Khetee Agroforestry Farm
Durdih village, India

Development stage:

Definition **Design** Financing Implementation Maintenance

Situated in North-East India, the Durdih community relies heavily on small-scale farming and it is increasingly threatened by climate change-related floods. To counteract these events, a small agroforestry 2-acre model farm has already been implemented. Building upon this fundament, this project now intends to improve the current model and upscale a feasible agroforestry systems onto the farmland of Durdih's farmers. A well designed agroforestry system will be more resilient against the strains of floods, thus, securing important yields. It will also provide a range of additional benefits for the community and the environment.

Location:
Bihar, India

Size of planted plot:
1 hectare

Size of potential area:
30 hectare

Client:
Khetee

Commodity:
Banana, papaya, moringa, yam, turmeric, chili, pumpkin, agathi, potatoes, mango, and seasonal vegetables

Industry:
Food

Goal:
Making farming ecologically feasible and economically viable, whilst creating a system that is more resilient to increasing natural habitats such as droughts and floods.

Main focus:
Climate resilience

Partners:
Durdih village

Finance & Planning

Investment
€ 30.000

Initiator
Neeraj Kumar

KHETEE

Assignment & Impact

Number of direct Beneficiaries

2.000 to 2.500 community members

Development Challenge

Durdih's farmers are increasingly facing the impacts of climate change. These manifest in extreme weather events such as droughts and floods of increased frequency and amplitude which threaten precious yields. This year, for example, the community has lost its entire papaya harvest due to flooding and poor farming practices. Losing harvests is especially severe for the Durdih community as it is remote and largely dependent on its agricultural outputs.

Intervention

With the help of Khetee and the community members, this project will upscale the transition of Durdih's farms from conventional into agroforestry systems. The farmers will be aided with knowledge and capacity-building, as well as with implementation support.

Objective

Developing a farming system that is resilient against the droughts and floods becoming increasingly common in the area.

Financial Details

reNature Model Farm: **est. € 30,000**
(Including design, implementation and capacity-building)

Inspirational Impact

Positive socio-economic impacts as well as the educational value of the agroforestry plots would serve as an inspiration for other members of the community to start the transition.

Environmental Impact

First and foremost, the project would increase the resilience of plants and crops against extreme weather events. It would stabilize the local microclimate and contribute to the counteraction of global warming through increased CO2 sequestration. Beyond the project boundaries, the planting of trees and shrubs would recharge groundwater levels in the area benefiting surrounding ecosystems. This is especially relevant as the project side is located in a particularly dry part of India. Further, agroforestry increase biodiversity by providing habitats for a larger variety of species.

Social Impact

The project would relief and empower women who are specifically active in the agricultural sector. It would reduce migration from the area which is often related to the lack of profitability of agricultural land. As large parts of the community work on the farms as manual labourers, many more community members would benefit beyond the farmland
owners. It will reduce dependencies of the community on external food sales and empower it through increased self-sufficiency. Moreover, an agroforestry system would increase water availability for drinking as well as farmland irrigation.

Economic Impact

The project would grant the smallholder farmers with increased economic resilience based on enhanced stability of yields. Stable, as well as potentially increased yields would boost capacities for self-financing and improve the value of their land. Furthermore, the increased diversity of income streams related to agroforestry protects farmers from economic losses in individual crops.

73% more
biodiversity

13% more
soil humidity

12 ton more
CO_2 sequestration
per ha/year

General impact of Agroforestry

Suggested KPI's:

Increase in yields
Increase in resilience to extreme weather events
Increase in farmer's income
Increase in income of manual labourers
Agroforestry uptake of surrounding farmers

Evaluation methods:

Annual yield comparison of focus crops with 5-year baseline (kg/ha/year)
Yield losses of focus crops linked to extreme weather compared to 5-year baseline (kg/ha/year)
Farmer's annual income compared to 5-year baseline ($/ha/year)
Manual labourer's annual income compared to 5-year baseline ($/ha/year)
Number of farmers that have started the transition to agroforestry