Smart climate solutions for agriculture, Zambia

With poor agricultural practices smallholder agricultural plots and forests of Zambia are endangered. This programme addresses the problem through planting of native tree species and educating local farmers.

Location

The programme is implemented on smallholder agricultural plots with no displacement of pre-existing agricultural activities. It is spread across a wide area of Zambia, including Eastern Province, Central Province, Southern Province and Lusaka Province.

Project

With poor agricultural practices and limited organic matter or fertilizer inputs, these plots have been in a state of decreasing fertility and degradation for years. This in turn leads farmers to clear forests to gain new fertile agricultural land when their current lands no longer produce enough to survive. The cycle of shifting agriculture, as well as other factors such as charcoal production, is a severe threat to Zambia's forests and results in one of the highest rates of deforestation in the world.

This programme provides inputs and extensive training to promote the adoption of agroforestry systems, using Faidherbia albida trees by smallholder farmers. This tree type has efficient nitrogen fixation, high biomass productivity, and impact on soil structure that improves water infiltration, reduces evaporation and erosion. It makes an ideal tool in improving degraded agricultural soils and increasing yields in an agroforestry system.

The programme also promotes improved conservation agriculture farming practices such as low till, early land preparation, residue retention and crop rotation to improve soil fertility.

Project achievements

Socio-economic impact:

- Planting cereals such as maize under mature Faidherbia trees results in yield increases up to 250-400% once the trees are fully grown.
- Ongoing source of additional income to farmers through improved yields increased food security, nutrition and agricultural resilience.
- Nutritious seedpods can provide fodder for livestock during the dry season when fodder is scarce.
- The project will provide 60-70% of the net carbon revenue to farmers.

Environmental impact:

- Planting trees on agricultural lands greatly reduces soil erosion and siltation of waterways, improves water infiltration and soil structure and provides shade only during the dry season when soil temperatures can reach very high levels, adds organic matter and cycles deep soil nutrients.
- The project establishes a native tree species, and therefore habitat for birds, animals and insects, in what would otherwise be degraded smallholder agricultural landscape.
- The shift towards these sustainable farming practices reduces the pressure on Zambia's remaining natural forests.

Checklist Project 301 318

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