

Agroforestry and Permaculture for sustainable development of human and nature

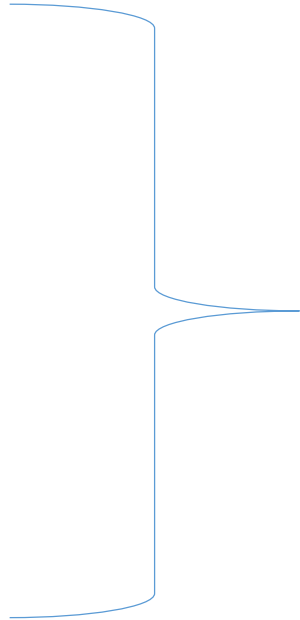
Challenges of Smallholding farmers

- Population growth
- Deterioration of natural resources and loss of biodiversity
- Growing water scarcity
- Climate change
- Political instability
- Increase in volume of waste



Adaptation and mitigation measures

- Promote local conservation agriculture practices
- Promote Agroforestry
- Promote Permaculture
- Promote solar technology for (water, Energy and food)



**“Integrated Natural
resources
management”**

Promote Conservation Agriculture Practices

- Promotes minimum soil disturbance
- Promotes maintenance of a permanent soil cover
- Promotes diversification of plant species
- Enhances biodiversity and natural biological processes above and below the ground surface
- Enhances the increased water and nutrient use efficiency
- Enhances improved and sustained crop production

Promote Conservation Agriculture Practices



Promote Conservation Agriculture Practices



Promote Conservation Agriculture Practices



Promote Traditional Relay cropping



Promote Agroforestry

- Is ecologically based natural resources management system
- Promotes the integration of trees in farmland and rangeland
- Also promotes biodiversity to ensure:
 - ✓ Sustainability
 - ✓ Productivity
 - ✓ Profitability
 - ✓ Health and
 - ✓ sustainable land-use systems



Promote Agroforestry



Promote Agroforestry



Promote Agroforestry



Promote Agroforestry



Promote Permaculture

- Is also a harmonious integration of landscape and people
- It helps people to make conscious and sustainable decisions to:
 - ✓ Produce their food
 - ✓ Produce their energy
 - ✓ Make their shelter
 - ✓ Fulfil other material and non-material needs



Promote Permaculture for demonstration



Promote Permaculture – Scaling up



Promote Permaculture – Scaling up



Promote Permaculture – Scaling up



Promote Permaculture – Scaling up



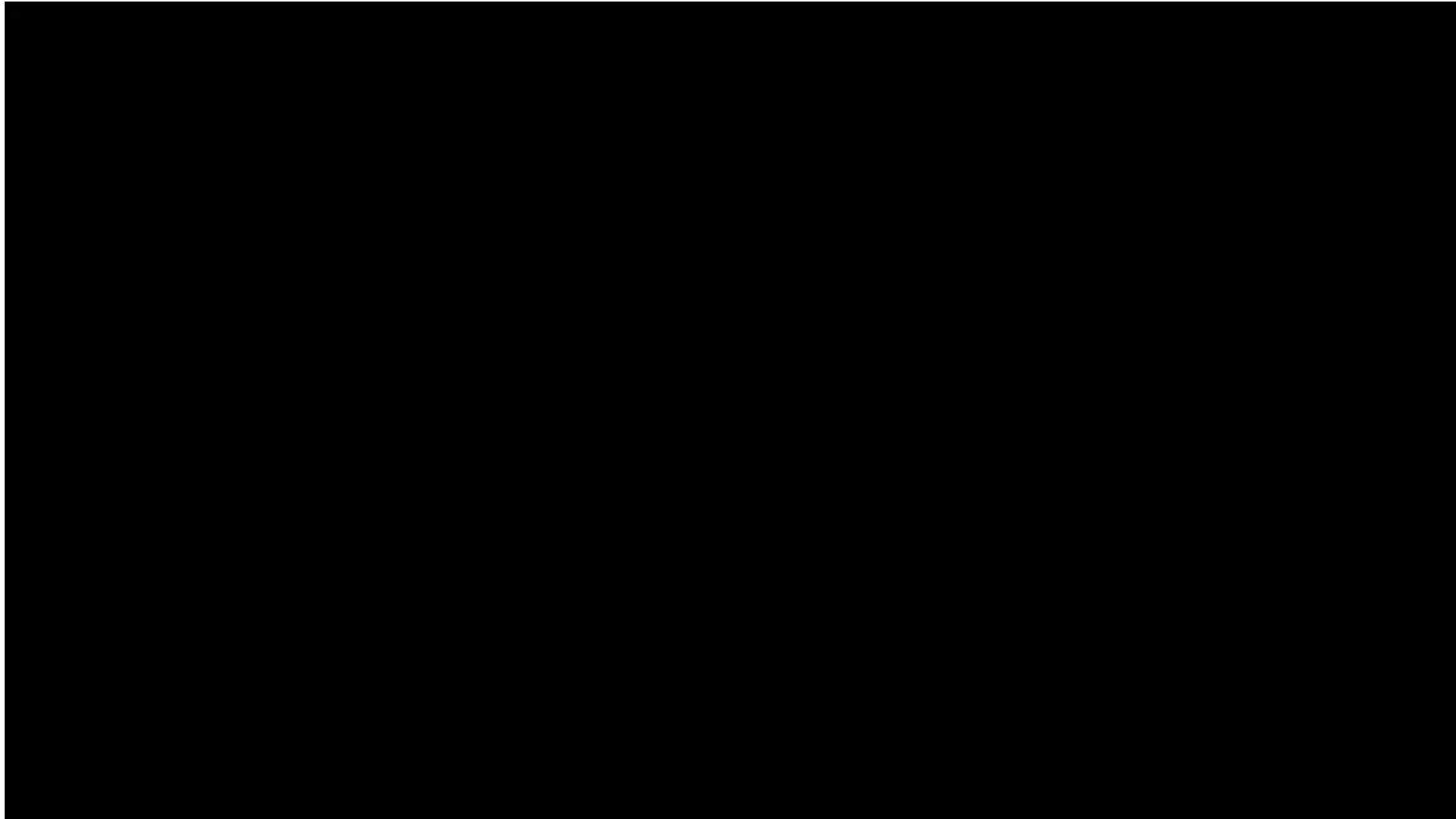
Promote Permaculture – Scaling up to FTCs



Solar PV technology for water, Energy and Food



Solar PV Technology for Water, Energy and Food



Key outcomes

- 6,000 farmers trained and improved livelihood
- 16 FTCs become real learning centers
- 5 new nurseries established and able to produce 2.5 million different seedlings
- Solar off-grid systems promoted for productive use and job creation
- Over 3.7 million trees from new and existing nurseries planted with Agroforestry principle
- 122 hectares of new usable land is gained and regenerated
- 3,500 hectares are permanently protected from erosion by agroforestry indigenous knowledge
- More than 140,000 new fruit tree seedlings are planted by 6,000 trained small-scale farmers in 16 FTCs of the district.

Thank you !

