

Ecosystem-Based Adaptation

- **Reducing Exposure to Shocks**
- **Reducing Sensitivity to Shocks**
- **Increasing Coping Capacity**

Reducing exposure to shocks



The almost complete removal of trees results in increased wind velocity at ground level and increased severity of dust storms.







Aerial view of a parkland dominated by Faidherbia in Niger

Increasing coping capacity

1. Enterprise risk diversification

1. Enhanced asset base available to liquidate for cash sales

2. Enhanced ruminant livestock fodder resources during droughts

3. Reduced health shock sensitivity: Fruit and vegetable foods from trees

Key recommendations for Ecosystem-Based Adaptation

Semi-Arid Zone: Dominated by agropastoral systems

1. **Farmer-Managed Natural Regeneration of trees on croplands**
2. **Assisted Natural Regeneration in community grazing and forest lands**
 1. Community-based grazing land (eg Ngitili in Tanzania)
 2. Watershed-based exclosures (mainly Ethiopia)
 3. Management of existing woodlands
3. **Tree crops for cash products**
 1. Shea, cashew, various fruits, honey
 2. Fodders
4. **Wood products – regeneration and planting**

Timber/poles; Firewood/energy

Key message

- ***Many tree based adaptation investments are highly profitable and are projected to remain so***
 - Require relatively little labor, and diversify income streams (fruits, timber, tree crops, etc).
 - Waiting period...but fodder systems, fertilizer trees, grafted fruits give significantly benefits early
 - Integrating high-value trees into mono-cropped systems
 - Reduced risk through diversification

Key message

- *Many tree based systems are very important for providing environmental services and restoring landscapes*
 - **Fertilizer trees in parkland systems** provide food security and ecosystem services.
 - **Carbon sequestration, biodiversity, water infiltration and soil structure, nutrient recycling, OM content.**
 - **Possible tradeoffs** –select appropriate species for particular situation