

### NATURE-BASED SOLUTIONS TO FOOD SECURITY

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# FORESTS AS A COMPLEMENT TO OTHER INTERVENTIONS

Forests, agro-forests & trees

Food price stability

Favourable economics & trade policy

New varieties & farm inputs

Better market access

**Existing Solutions** 

Food and nutrition security require multiple strategies and forests will only ever be part of the picture.



### FIGURE 1 ECOSYSTEM CONTRIBUTIONS TO THE FOUR DIMENSIONS OF FOOD SECURITY

#### UTILIZATION

- Water resources
- Energy resources for cooking
- Health-related ecosystem goods and services (e.g. medicinal plants, water purification, diverse and nutrient-rich wild foods)

### AVAILABILITY

- Edible wild plants and animals
  - Freshwater
  - Soil processes
  - Wild pollinators
- Predator-prey regulation
  - Grazing/fodder
  - Climate and water regulation

### **→** ACCESS

- Access to natural resources for food production
- Direct sources of food and freshwater
- Income from ecosystem-based livelihoods (farming, fishing, forestry, mining, tourism) and Payment for Environmental Services

### **⊕** STABILITY

- Sustainable provision of ecosystem goods and services
- · Biodiversity, including agrobiodiversity
- Natural infrastructure for stability and disaster risk reduction (e.g. flood regulation, drought mitigation, soil retention, coastal protection)



## INSTITUTIONAL AND THEMATIC SILOS ACT AS A POWERFUL OBSTACLE

Climate change will undermine the resilience of hundreds of millions of rural livelihoods but global responses tend to concentrate on individual aspects only:



Avoid deforestation



Breed better, more resistant plants



Conserve and better manage soil & water





### WHAT ARE NATURE-BASED SOLUTIONS?

Actions to protect, manage and restore natural or modified ecosystems, which address societal challenges, effectively and adaptively, providing human wellbeing and biodiversity benefits.



Enhancing food security through traditional agroforestry in the dry forests of Guatemala:

Kuxur Rum







Gliricidea sepium and Zea mays

Before

### Results of *Kuxur Rum* after 5 years

- Increased grains yields
   50% more maize and 30% more beans
- The percentage of moisture retention increased
  - Crops resistance to at least 20 days of drought
- Less erosion/soil organic matter and nutrients improved

Farmers reduced the use of chemical fertilizers and herbicides by 50%

## Restored forest lands & smallholder food security – Burkina Faso

















## **AFTER**







### CONCLUSIONS

- \*Restoration of farm land can increase yields and diversify crops
- \*Focusing on local solutions to climate uncertainty can help farmers to adapt
- \*Forest landscape restoration as a nature-based solution which contributes to food security



### Case study contributors

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For full case studies:

https://portals.iucn.org/library/node/45774



Enhancing food security through forest landscape restoration: Lessons from Burkina Faso, Brazil, Guatemala, Viet Nam, Ghana, Ethiopia and Philippines



