Bioversity International

Global mandate to improve livelihoods and contribute to healthy agriculture and food systems through agrobiodiversity research

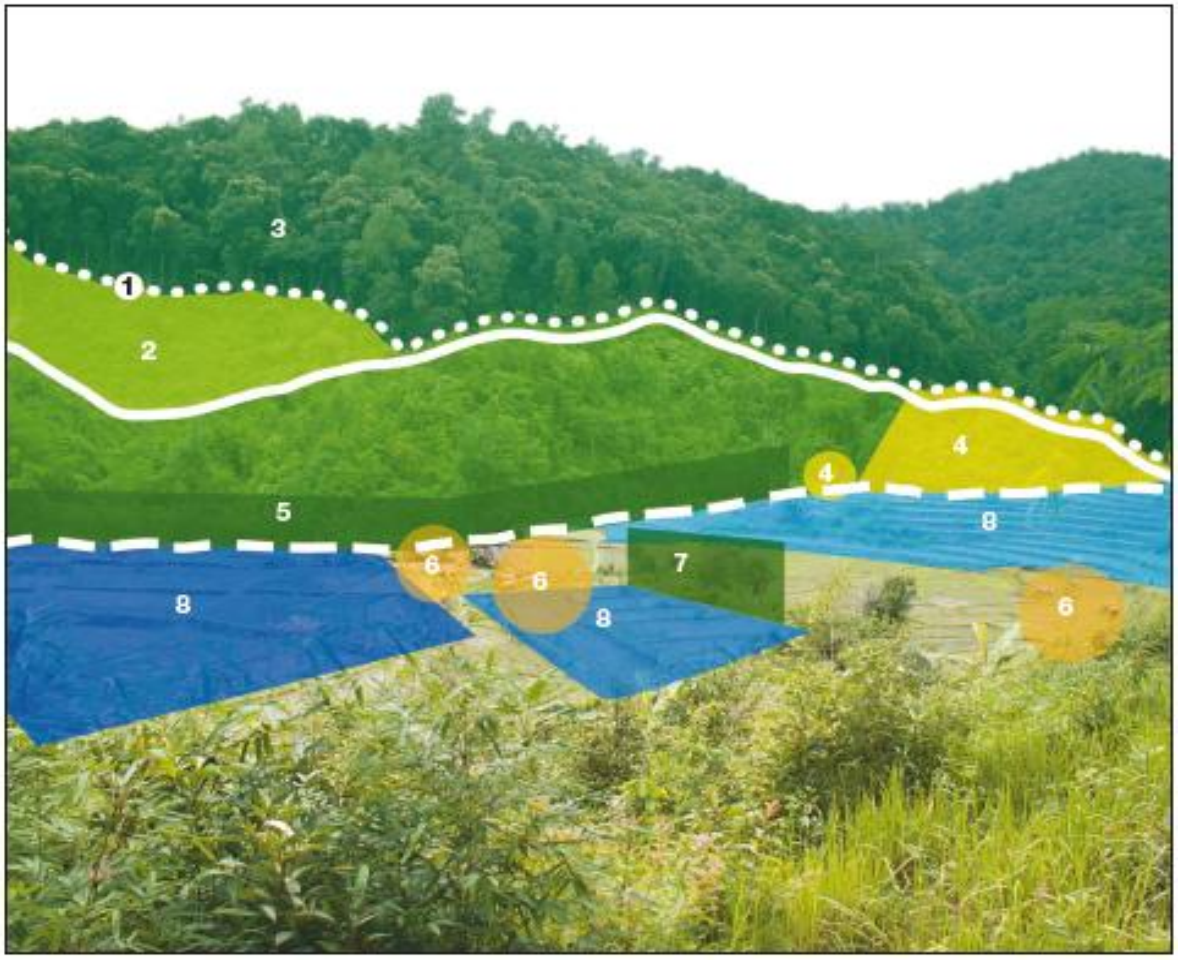
- ISI Partner developing measurable indicators of resilience, innovation, and well being in bio-cultural, mosaic landscapes that include wild and cultivated spaces.
- Assess their global contribution to biodiversity conservation, food and dietary security, and crop and livestock diversity.

http://www.bioversityinternational.org/

Karen rotational farming system (northern Thailand)

Rotational farming, or swidden agriculture is often misunderstood to be a destructive farming technique.
This farm in the north of Thailand shows the ingenuity of this system. Highly knowledge intensive, it is well-adapted to local ecosystem and climate and provides numerous environmental services.

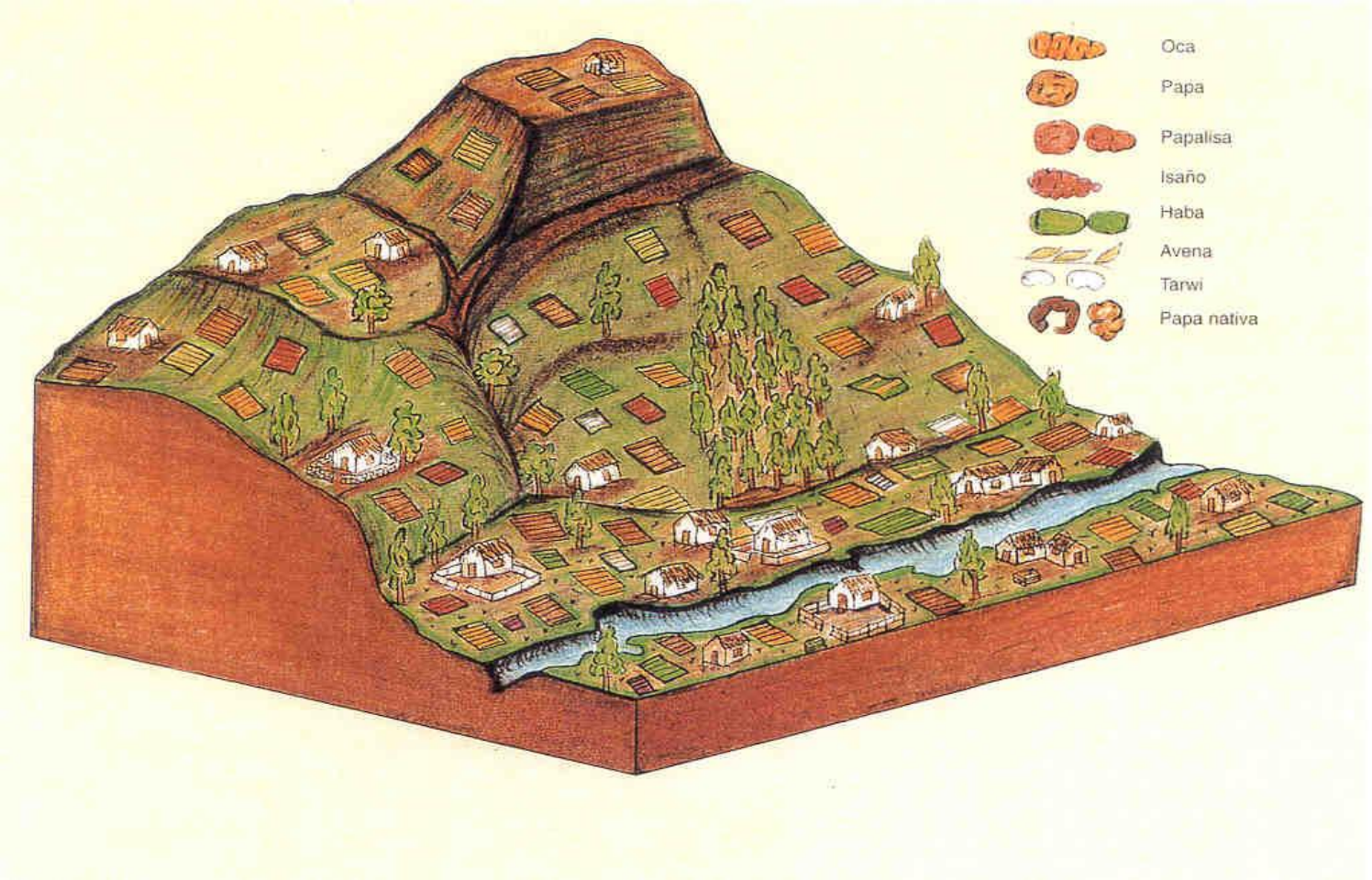
Fotograph: P. Bordoni Graphics: P. Tazza



Bioversity International

Farmers Develop and Adapt Crops to Niches in their Ecosystems

Local Rules and Institutions to Manage the Landscape



Bioversity International

Cultural Adaptation to Difficult Environments Increases Biodiversity: Arab and Berber peoples in desert oases maintain drought resistant plant varieties and plant communities around a key species, the date palm (Phoenix dactilefera)

Bioversity International

Why support the management of crop diversity in agroecosystems?

- **Adaptation to micro-niches and reduced agricultural inputs**
  - **Reduced costs for farmers**
  - **Human and ecosystem health**
- **A low cost source of vitamins and minerals**

- **Access for farmers to a secure source for locally adapted seeds**

Extreme drought (Oct 2009) and Extreme wetness (Mar 2010)

Both months are the hottest and driest in the year

Agro-biodiversity in East African drylands (north eastern Kenya)

- Cereals; Maize, Millets, sorghums, etc
- Legumes; pigeon peas, cowpea
- Commercial crops; cotton, mangoes, pawpaw, groundnuts
- Leafy vegetables; cowpea leaves, amaranth etc
- Indigenous fruits; tamarind, amarula, baobab, etc
- Exotic fruits; Mangoes, citrus fruits
- Fruit vegetables; edible gourd, pumpkin etc

Naturally growing fruit trees

Baobab trees in a field

Tamarind fruits

Using biodiversity for resilience and innovation in drylands

- Cultivating in different ecological zones/ habitats spreads risks and diversifies food.
- Farmers mix crops as a strategy to cope with erratic weather.
- Home gardens contain more biennial and perennial crops than annuals.
- Farmers in highlands keep more perennial crops including fruit trees.
- Farmers in lowlands keep more livestock.
- Two-season (biennial) crops are also considered hardy and include some important legumes such as pigeon pea, lablab, climbing bean and creeping forms of cowpeas.
- Markets provide an opportunity for farmers to access foods that are in season in other agroecological zones..

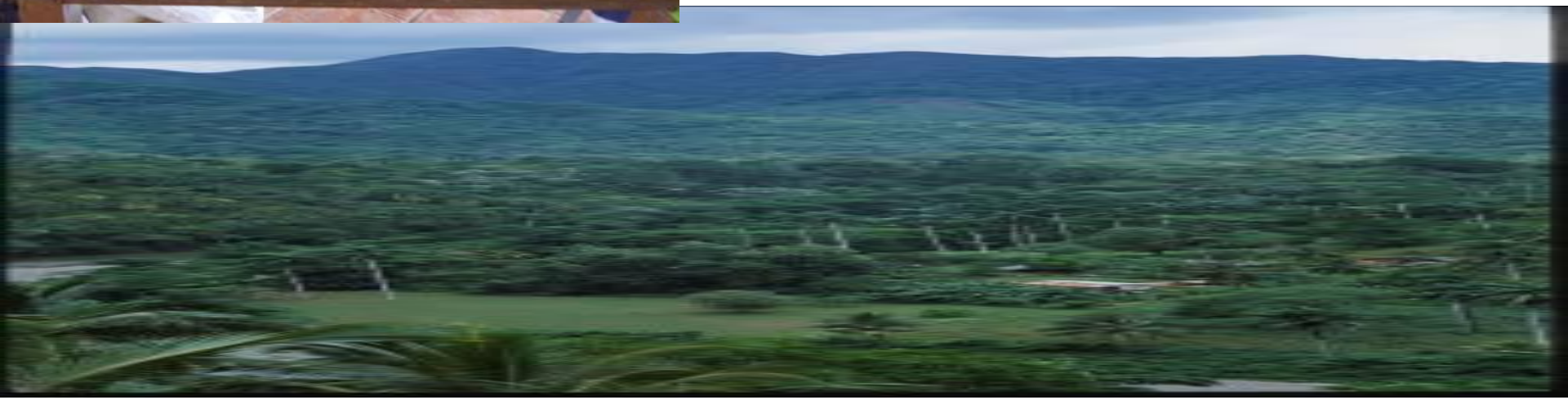
Bioversity International

- Cosmology and Rules
- Transmission
- Conservation
- Innovation

Farming in the Guantanamo Man and Biosphere

Agricultural Biodiversity Conservation and Man and Biosphere Reserves: **Bridging managed and natural landscapes**

- Restoring diversity and health to agrarian landscapes and food systems.
- Supporting protected area management and conservation of agricultural biodiversity (MAB – Cuba)



Indicators to measure the resilience of social-ecological systems