

Landscapes for agrobiodiversity: Documenting the livestock perspective

Toby Hodgkin, Stanley Zira, Taghi Farvar, Ghanimat Azhdari, Maede Salimi, Dunja Mijatovic



Photo: Maede Salimi

The project

Interdisciplinary landscape perspectives on the effects of land-use change on agrobiodiversity and resilience.

The research

- Assess crop, livestock (LIFE protocol) and wild species diversity
- Map land-uses and land-use change
- Understand local perceptions of ecosystem services and resilience

Photo: Epsha Palikhey



Aymara community of Cachilaya, Lake Titicaca, Bolivia

The Lake Titicaca landscape is a micro-centre of crop diversity for potato, quinoa, cañahua and other crops. Custodian farmers in Cachilaya safeguard about 100 potato varieties.



Lynggam community in Meghalaya, India

The Lynggams practice rotational cultivation and maintain a rich diversity of local crops. In the photo, community members are participating in an assessment of ecosystem services.



Abolhassani tribal confederacy in Touran Biosphere Reserve, Iran

In this desert landscape, the communities have developed ingenious strategies for the adaptive management of local resources and livestock diversity.



Hanku village in the Himalayan highlands, Jumla, Nepal

Under-researched crops, such as cold-tolerant rice, finger millet, foxtail millet and buckwheat, form the basis for food security for the communities in this high altitude agricultural system in Nepal.



Udakumbura in Kandy, Sri Lanka

Forests interspersed with black pepper gardens hold hundreds of species of wild plants, many of which are used for food and medicine. In the photo, community members are engaged in participatory mapping.



Sierra del Rosario Biosphere Reserve, Cuba

Shade coffee and home gardens are part of the agriculture-forest mosaic that hosts close to 900 species of plants, 115 birds, 35 reptiles, 16 amphibians and 11 bats.



Ndebele community in Tshongogwe, Lupane, Zimbabwe.

In the dryland savannah, communities rely on wild resources including forest fruits and insects. In the photo, community members are mapping land uses.

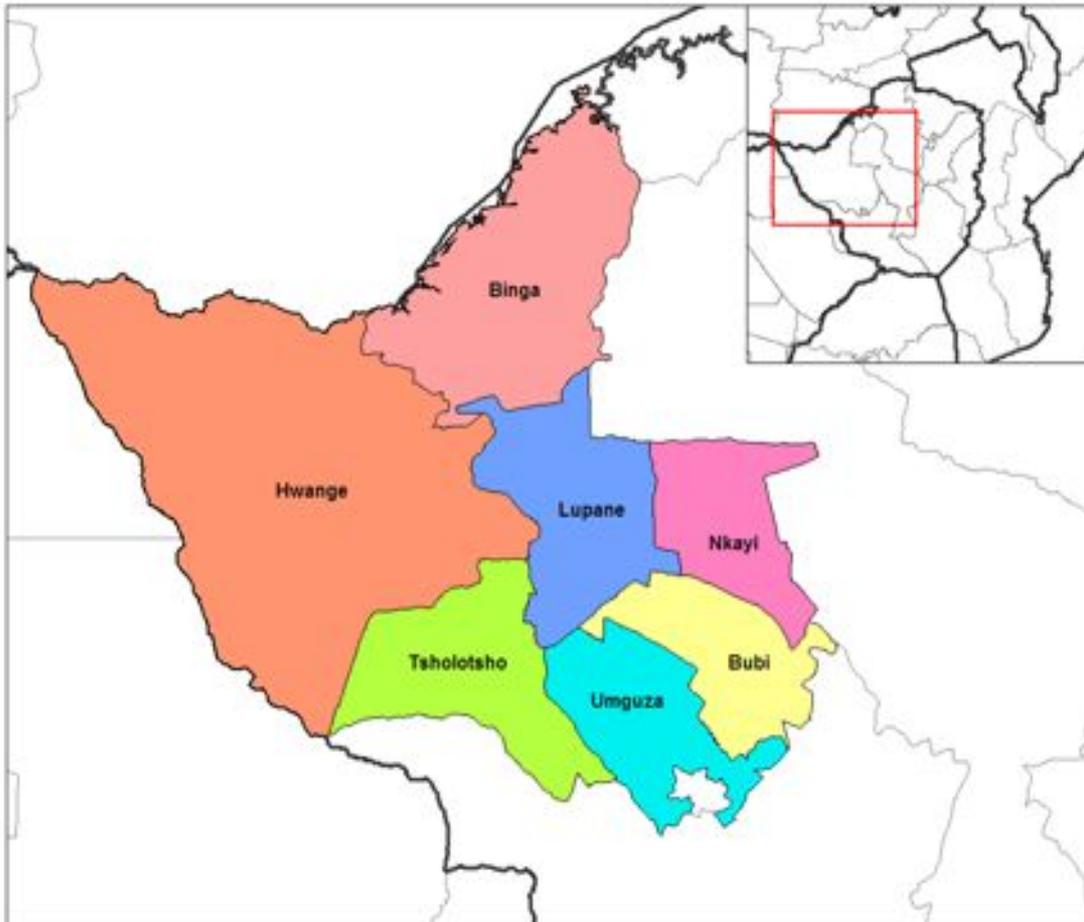


Karen communities in Inthanon National Park, Chiang Mai, Thailand

Indigenous Karen farmers practice rotational cultivation. Their land management based on traditional knowledge promoted the regeneration of the forest.



Tshongogwe



Tshongogwe is a communal ward with an area of 620 km² and a total population of 3789 people in Lupane, Zimbabwe.



Tshongogwe



Crop diversity

Maize (3 varieties), sorghum (3), bambara groundnut (4), groundnut (3) and cowpeas (2); local vegetables and agroforestry species.

Wild plants

Forest fruits, wild vegetables, mushroom and insects are commonly used as food.

Livestock

Indigenous cattle breeds (*tuli, nkone, brahman, mashona*); poultry (*isikhova, insingizi, ithendele, imbila, indiya*); and goats (*matabele, mashona*).





Tshongogwe



The importance of the conservation forest



Tuli cattle

Photo: Paul Bordoni



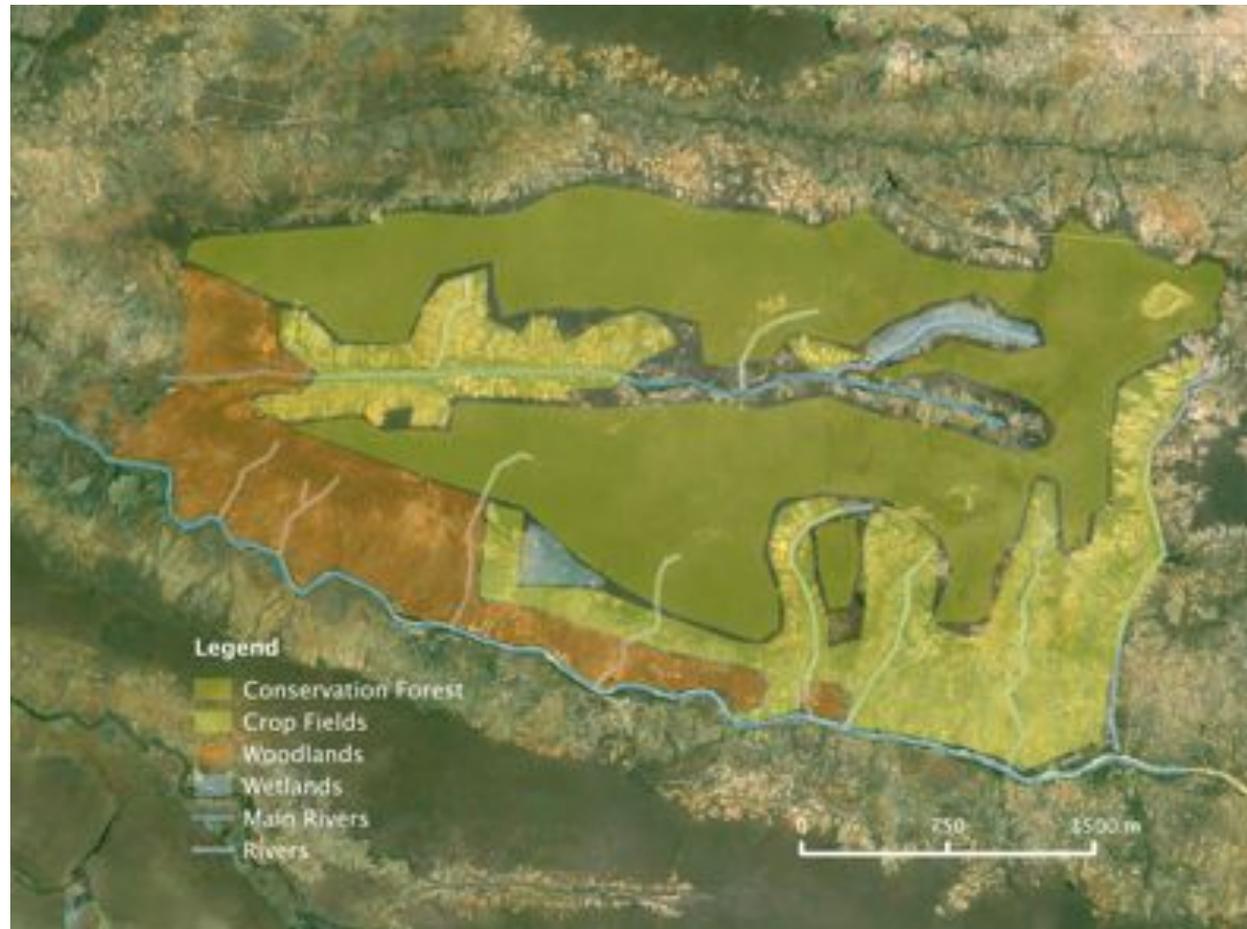
Tshongogwe



The importance of the conservation forest

Agroforestry species and wild fruit species

marula (*Sclerocarya birrea*),
azanza (*Azanza garckeana*),
clusterleaf (*Terminalia sericea*), **mopane**
(*Colophospermum mopane*),
chocolate berry (*Vitex payos*), **monkey
orange** (*Strychnos cocculoides*),
green monkey orange (*Strychnos
spinosa*),
mobola plum (*Parinari curatellifolia*),
African medlar (*Vangueria infausta*),
batoka plum (*Flacourtia indica*), **bird
plum** (*Berchemia discolor*), **black monkey
orange** (*Strychnos madagascariensis*),
large sourplum (*Ximenia caffra*),
jackalberry (*Diospyros mespiliformis*)





Tshongogwe



The importance of the conservation forest



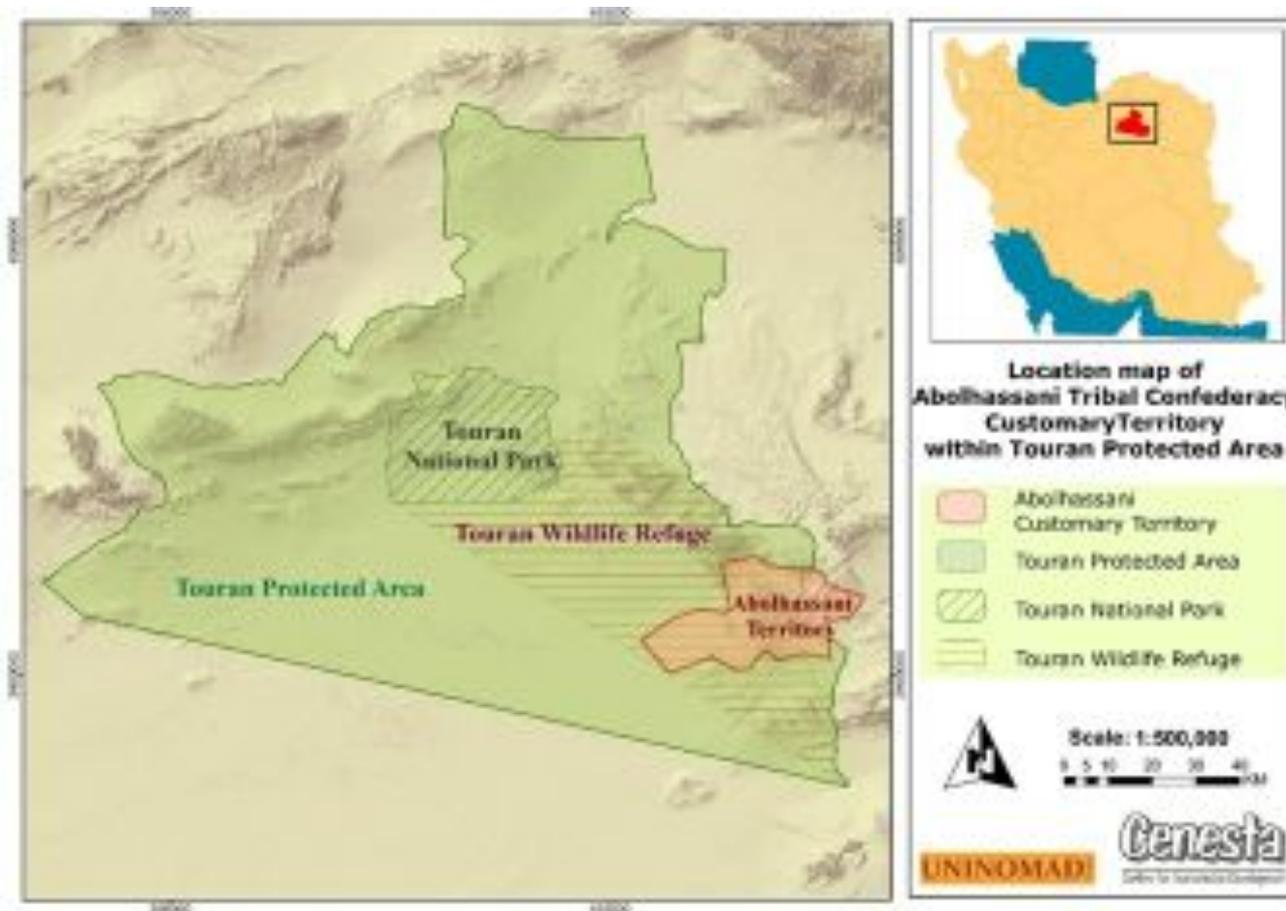
A herd of *tuli* and *nkone* cattle going into conservation forest:

Photo: Paul Bordini



The Abolhassani Tribal Territory

Indigenous peoples' and community conserved territories and areas (ICCAs) in a peri-Central-Desert area known as Touran, one of nine UNESCO Biosphere Reserves in Iran.





The Abolhassani Tribal Territory

Crop diversity

Local varieties of figs, grapes, pistachio and pomegranate. Barley and wheat have been recently introduced.

Wild plants

About 50 wild plants species, largely collected from the rangelands used as food, medicine, forage and fodder.

Livestock

Mahali and Pakistani goat breeds and Baluchi and Afshari sheep breeds.



Photos: Maede Salimi

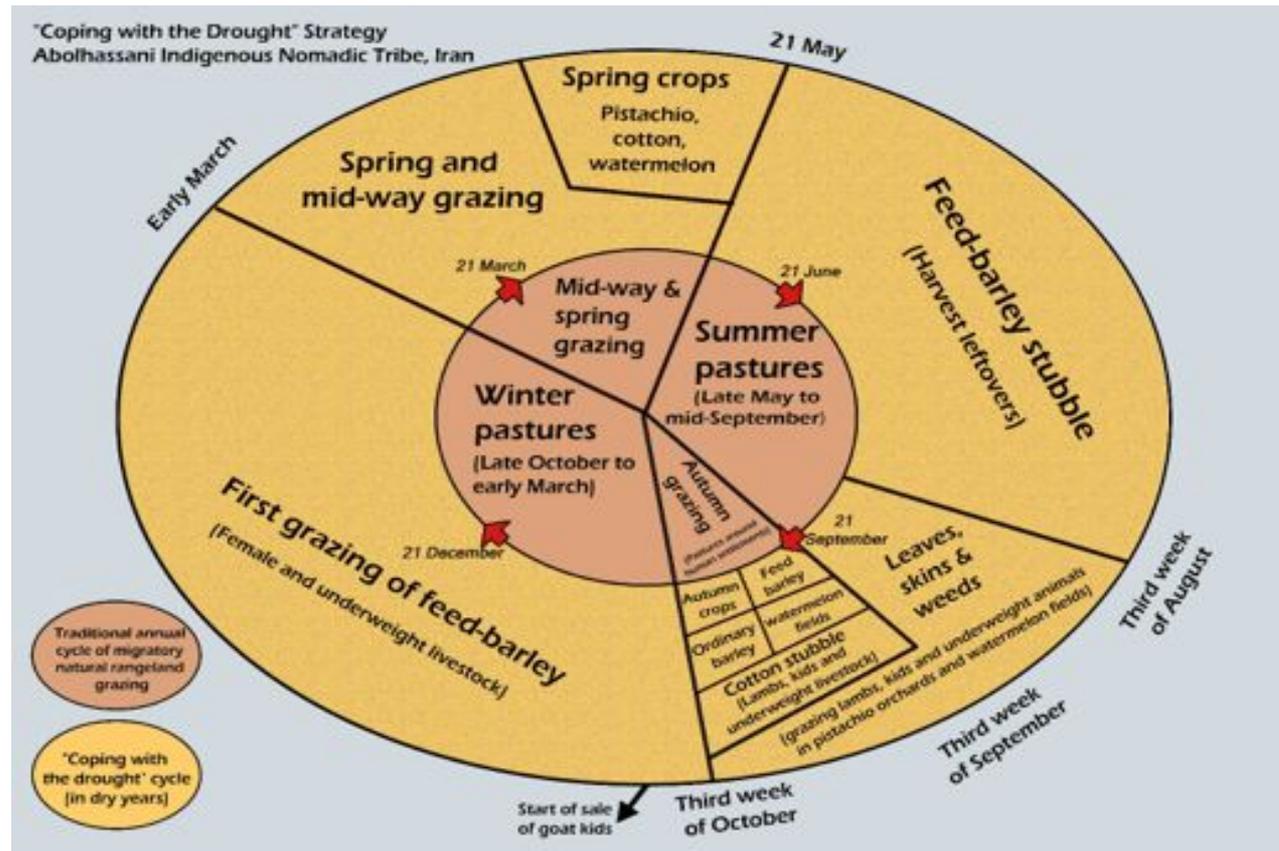


ADAPTATION: reintroduction of indigenous breeds, crop diversification and adaptive management of grazing lands.

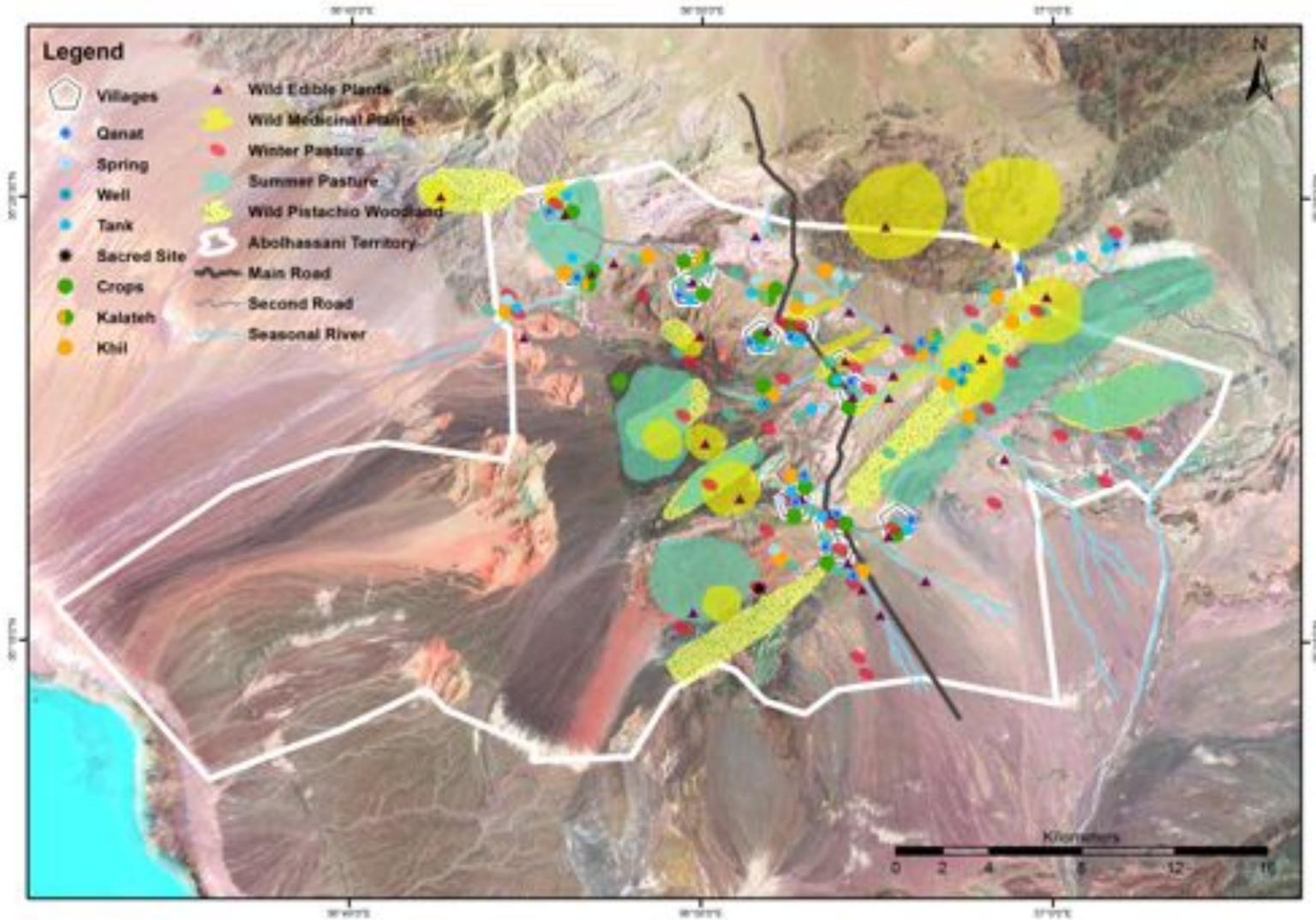




ADAPTATION: reintroduction of indigenous breeds, crop diversification and adaptive management of grazing lands.



Adaptive management cycle in Abolhassani.



Participatory land-use mapping in Abolhassani.
Map: Ghanimat Azhdari

Conclusions

- Including the animal diversity dimension
- Recognising the strength of local institutions and community values which support both maintenance and restoration
- Combining the traditional (customary laws, sacred forests) with innovation (grazing plans, community seed banks)



Agrobiodiversity perspectives in land-use decisions

Dunja Mijatovic, Stanley Zira, Sonthana
Maneerattanachaiyong, Reuben
Mendakor Shabong, Epsha Palikhey,
Sajal Sthapit, Ghanimat Azhdari, Maede
Salimi, Alejandro González Álvarez,
Alberto Tarraza Rodríguez, Helga
Gruberg Cazón, Lal Kumara
Wakkumbure, Natalia Estrada-Carmona,
Toby Hodgkin

LANDSCAPES FOR AGROBIODIVERSITY

Agrobiodiversity perspectives in land-use decisions

