

Competing land use in the area of the W Biosphere Reserve, Benin Republic



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Objectives

- To quantify the competing land use in and around the W Biosphere Reserve
- To analyse the drivers of the competing land use
- To analyse the effects of the drivers on crop farming, pastoralism and nature conservation

Background

- W Biosphere Reserve (WBR) is devoted to conserve biodiversity, wildlife and its habitat, and ecosystems
- Cropping, pastoralism and other human activities are prohibited in WBR
- Crop farmers, pastoralists and nature conservation competition for land affects surrounding people's livelihoods and nature conservation

Methods

- Analysis of land use maps of 1994, 2004 and 2014 of 6650 km² consisting of 20 km width inside and 25 km width outside the WBR
- Analysis of regional statistics of cropland, livestock, wildlife population (mammals) and human population
- Community meetings with crop farmers and pastoralists
- Individual interviews with crop farmers, pastoralists and other stakeholders

Results

- Expansion of cropland at the expenses of savannah (Fig 1, Fig 2)
- Decrease of cattle and wildlife (mammals) population (Fig 3, Fig 4)

Land use change: expansion of cropland area

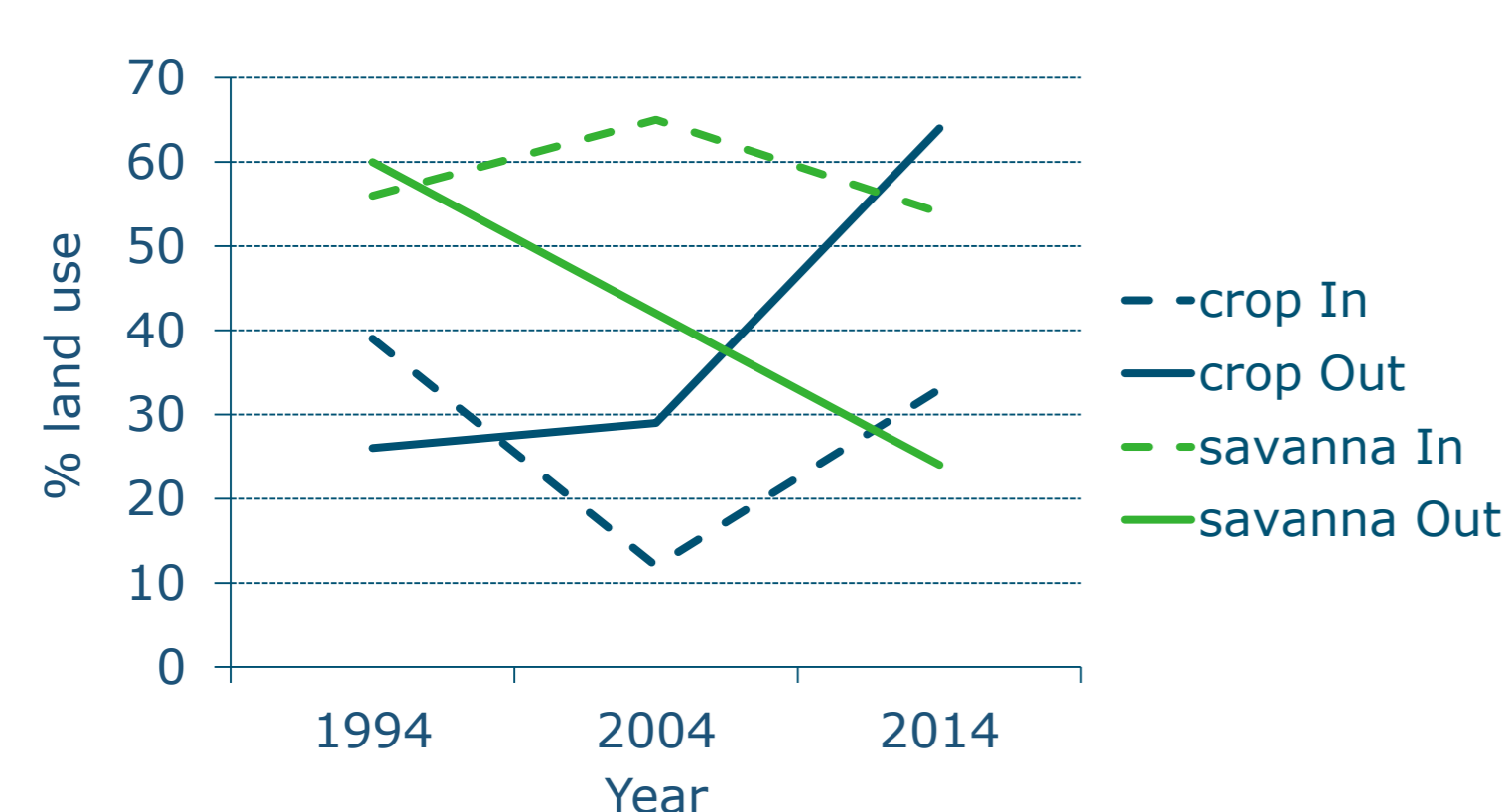


Figure 1. Percentage of land use classes

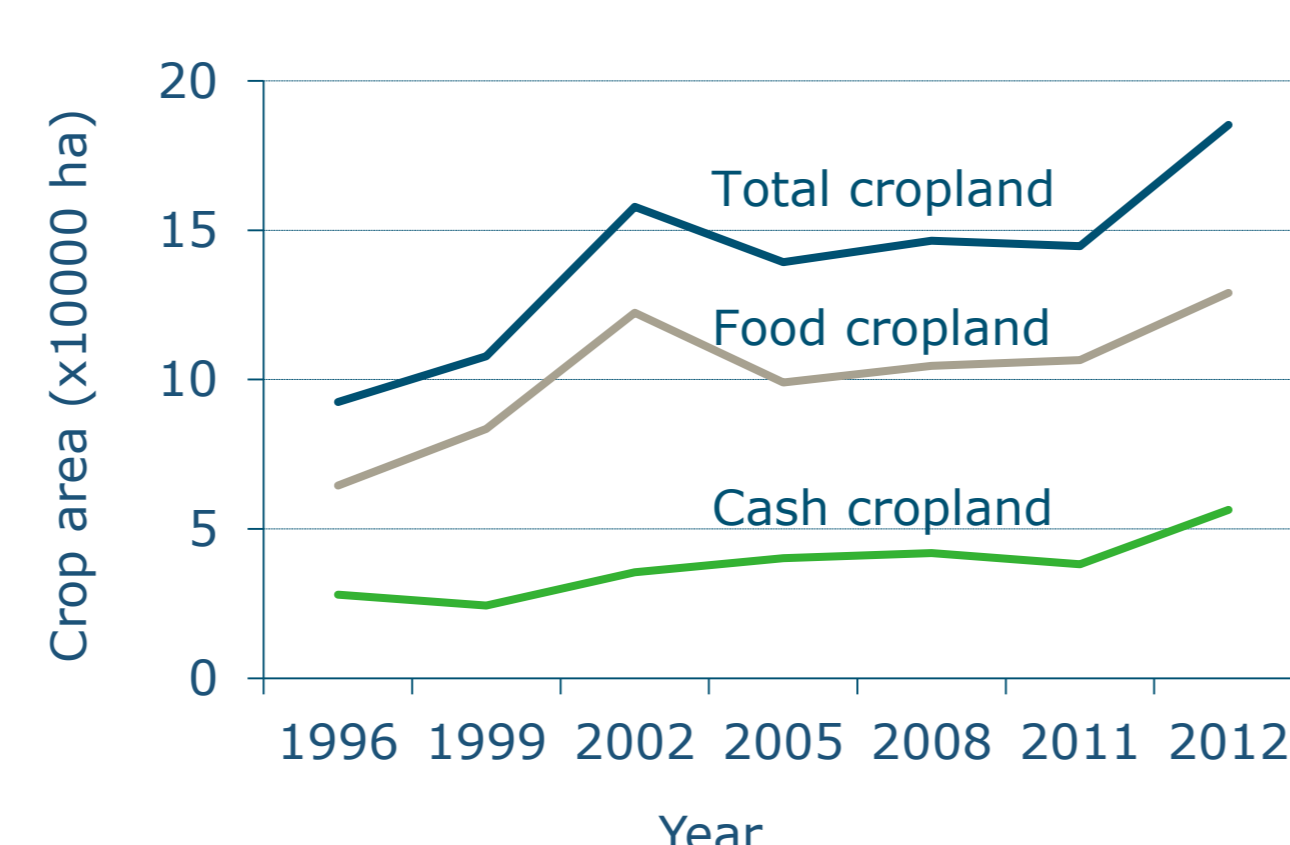


Figure 2. Food crop and cash crop area

Decline of livestock and wildlife population

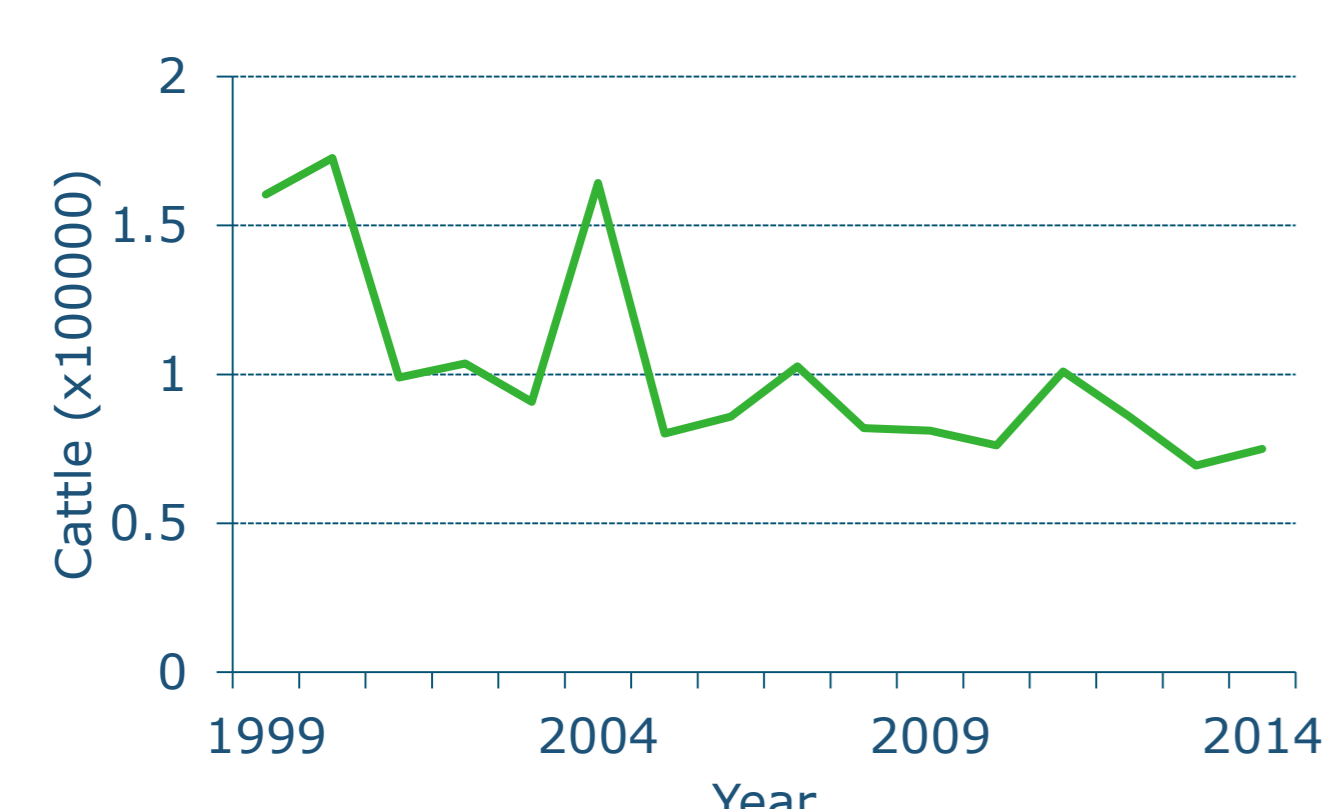


Figure 3. Cattle population in the study area

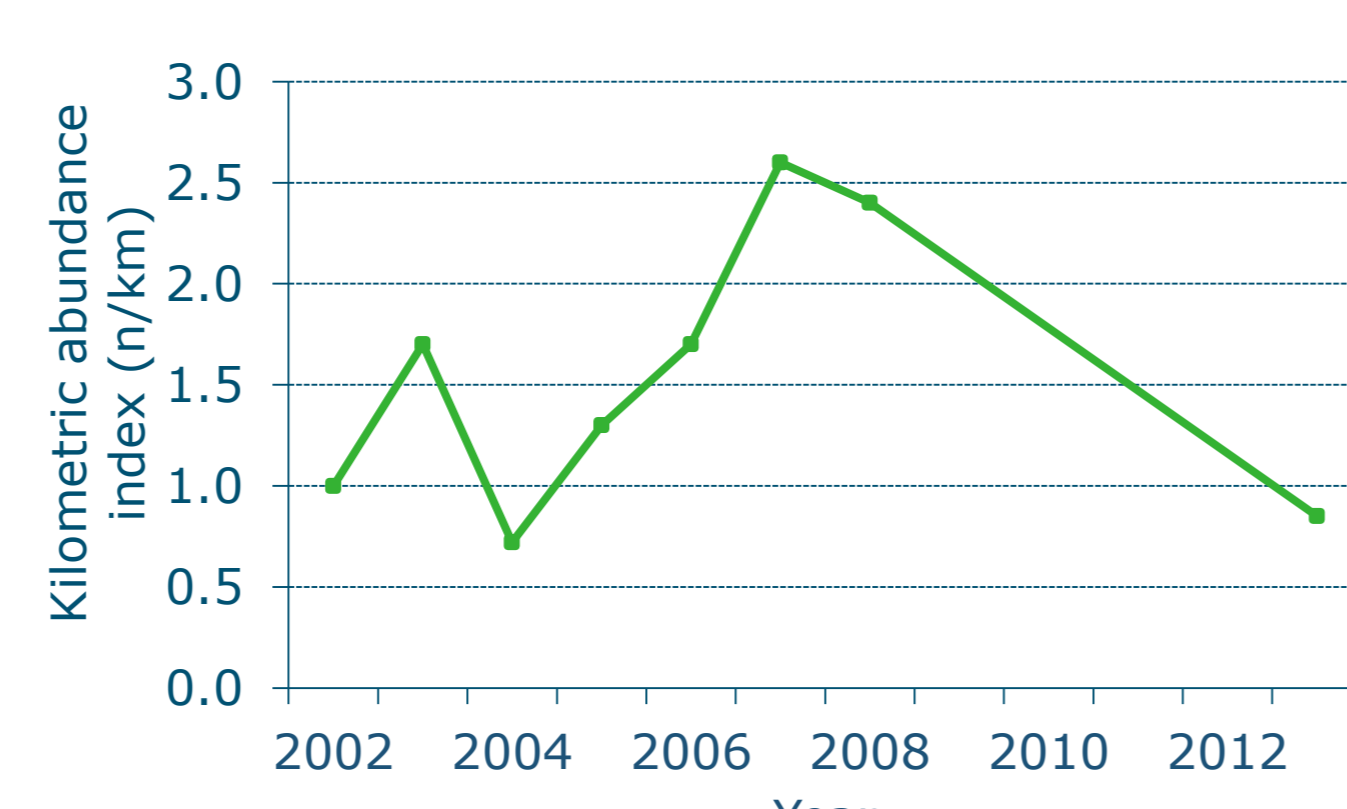


Figure 4. Wildlife (mammals) in the WBR

Conclusions

- Cropland is the dominant land use around the W Biosphere Reserve and it is increasing inside
- A combination of factors from local, national and international levels are the drivers of the increasing cropland
- Increasing pressure on W Biosphere Reserve from illegal grazing by pastoralists' cattle and crop frontier engulfment

Discussion

- Cropland has expanded around the W Biosphere Reserve and it is increasing inside
- Increased human population and other factors are drivers of cropland expansion (Fig 5, Fig 6)
- Increasing pressure on the W Biosphere Reserve, due to illegal grazing and crop frontier engulfment (Fig 6)

The increase of human population as one driving force of the expansion of cropland

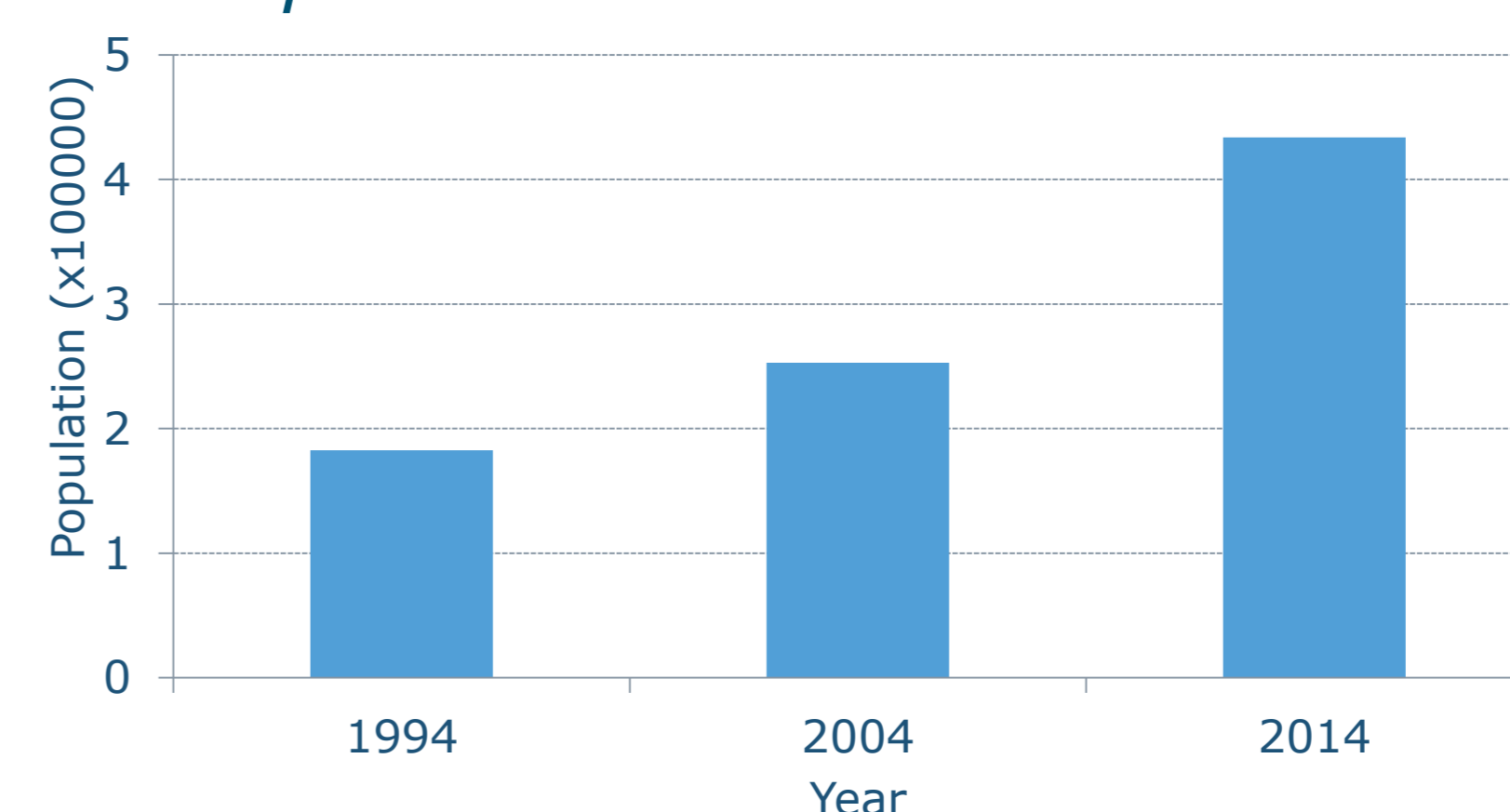


Figure 5. Development of human population

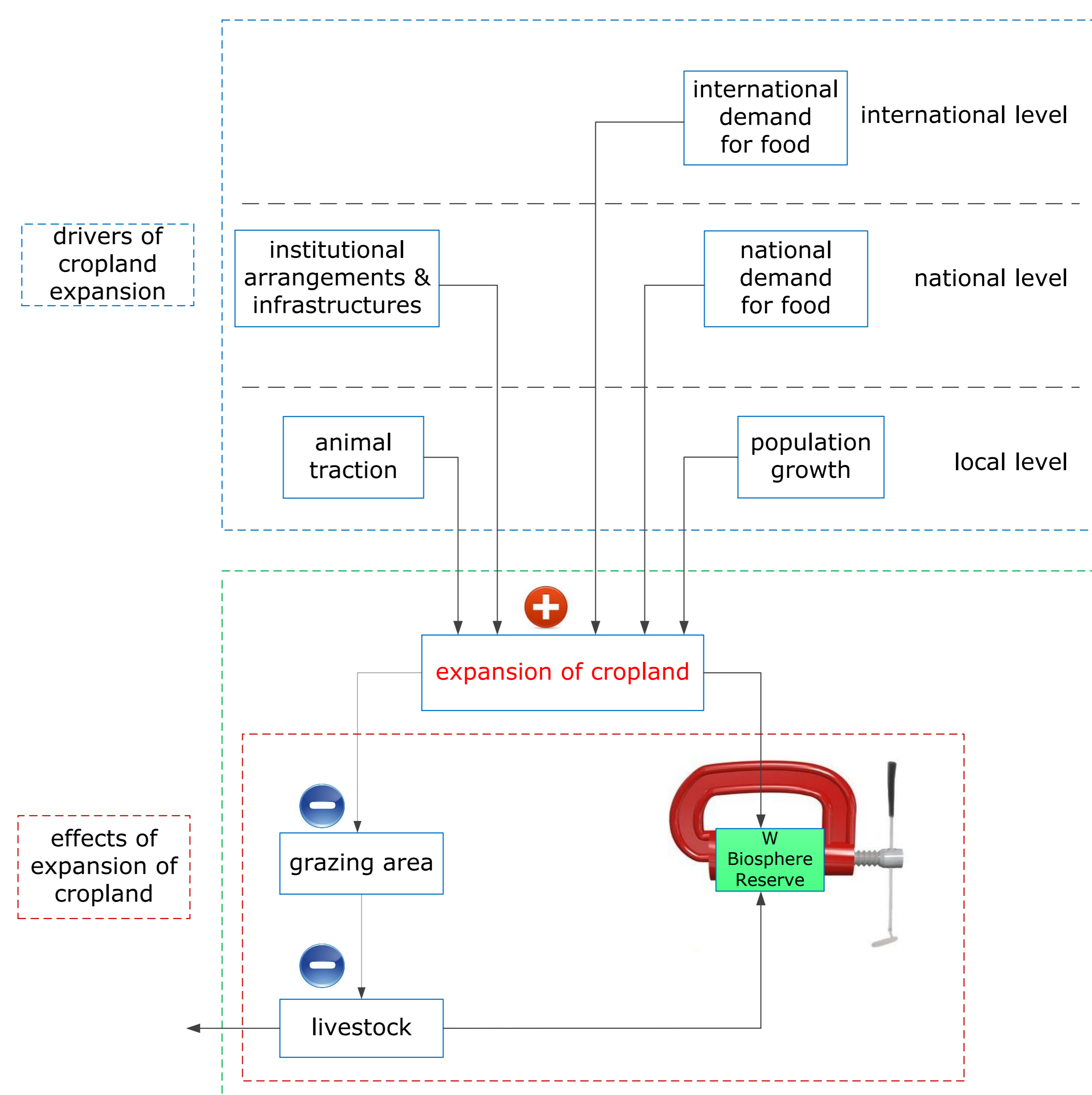


Figure 6. Drivers and effects of cropland expansion

