

# Spotlight 7: Environmental sustainability

## **Environmental sustainability is a precondition for inclusive transformation**

Ecologically sensitive forms of transformation preserve the capacity of the natural environment to sustain productivity and living standards. In turn, healthier environments allow further environmentally sensitive and sustainable transformation. This virtuous circle must be integral to inclusive rural transformation, in which the capacity of rural people to promote and pursue sustainable forms of development brings about environmental preservation and regeneration. By any measure, for transformation to be regarded as sustainable, it must encompass safeguarding – ideally renewing – ecosystems and biodiversity.

On the flip side, poverty, exclusion and inequality are linked to environmental degradation. Options to prioritize sustainable environmental practices are extremely limited for small-scale rural producers operating below or near the poverty line. Immediate survival, health and nutrition concerns predominate. Using marginal lands, destroying forests for fuel or production, over-extracting and polluting of water resources, and over-harvesting are commonplace, with predictable long-term consequences (see IFAD 2010 for examples). Natural resources are also under increasing pressure from climate change.

Although the technology and institutions exist to promote sustainable rural and structural transformation, extremely few of these elements have been scaled up. This is due to inappropriate or poorly implemented policies, plus gaps in environmental governance and institutions that create tradeoffs between long- and short-term goals. In many countries, such deficiencies have included insecure land rights, inadequate institutions for natural resource management and a plethora of distortions favouring large farms at the expense of smallholder farmers (Heath and Binswanger 1996; Lutz 1998; FAO 2011). Only transformation that is inclusive and

environmentally sensitive can be sustainable in the long term.

## **Threats arising from rural and structural transformation**

The effects of rural and structural transformation – notably urbanization and intensification of production – engender multiple environmental threats through increasing pressures on natural resources. Transformative processes are often matched by biodiversity loss, air and water pollution, and slum-growth issues (e.g. sanitation and waste management) (Roberts 2004). Each of these poses serious risks to humans and the natural environment, eroding the capital upon which future development depends. Rural and structural transformation and environmental degradation do not go hand-in-hand, however: suitable, policies, investments and innovations – especially in land rights of smallholders (see chapter 9) – can enhance environmental sustainability as production intensity increases (Tiffen et al. 1994).

With increased commercialization of agriculture, the pressure to intensify production rises, frequently degrading the soil – unless incentives and capacities are built – and exacerbating off-site effects such as groundwater depletion, agrochemical pollution and loss of biodiversity.

Further, as land pressures intensify the increased use of marginal land, damage to ecologically fragile systems is likely. Associated urbanization and rural-urban migration trends have worsened environmental vulnerabilities in cities and surrounding areas, as rising demand for urban housing against sluggish supply may force migrants to settle in ecologically sensitive and overcrowded areas (Awumbila et al. 2014).

Other examples of environmental threats from rural and structural transformation include habitat destruction and displacement of human and animal populations linked to hard-infrastructure projects, dietary shifts towards meat and dairy, increased demand from urban populations for environmental services, and

increased waste associated with changing consumption patterns.

Yet transformation may also have positive environmental effects, and some have argued that increases in environmental degradation during transformation are ultimately overcome as an economy reaches a post-industrial phase (Baker 2006). Partnerships between environmental groups and businesses and use of win-win opportunities (where greater resource efficiency lowers operating costs) can drive these changes. Equally, where production intensification processes have been accompanied by investment in conservation technologies and institutions, it has been shown that soil fertility can be restored and enhanced during transformation processes (Boserup 1965; Pingali et al. 1987; Tiffen et al. 1994).

Nonetheless, environmental threats should not be ignored as they show the long-term costs of transformation – degradation, loss of resources and biodiversity – undermining the prospects of future generations to maintain standards of living. In the long term, the costs of unsustainable transformation could outweigh the immediate benefits: annual real economic costs of agricultural soil degradation have been estimated at 2.5-4 per cent of real gross domestic product in Ghana (Fredua 2014). In Uganda, the cost in terms of gross national income of environmental degradation has been conservatively estimated at 4-12 per cent (Moyini et al. 2002). Promoting more sustainable transformations can bring high upfront costs, however, over the long term it is the only viable option.

#### **Lack of environmental sustainability is a major barrier to inclusive transformation**

Environmental degradation is more than a consequence of economic changes – it is a major barrier to inclusive transformation. The loss of resources erodes the natural capital upon which rural people depend, in turn undermining rural and structural transformation. People in rural areas (especially the poor) are particularly reliant upon natural resources for their livelihoods, with most engaged in farming. Environmental damage has particularly important implications

for increases in poverty and lack of inclusion (Cavendish 1999).

Rural people face many interconnected environmental and climatic challenges. They are frequently the most vulnerable to the worst effects of climate change, their access to fertile agricultural land is declining, forest resources are shrinking, water scarcity is rising and declining fish and marine resources threaten nutrition and income generation (IFAD 2012). Up to 100 million people could be pushed back into poverty by 2030 (Hallegatte et al. 2015).

#### **Policies, investments and institutions for inclusive and sustainable transformation**

Implications for policy centre on the following four areas:

##### *Promoting sustainable use of natural resources*

- Smallholders in different regions of the world have adopted multiple, overlapping approaches that preserve biodiversity and protect soils while contributing to agricultural productivity. They include conservation agriculture, agro-forestry, integrated pest management, landscape approaches, integrated plant nutrient management and organic agriculture.
- Such approaches are knowledge-intensive and must be tailored to local circumstances. To be viable at scale, they must rely on decentralized governance structures founded on empowered local groups and clear land access rights (see chapter 9). Local and indigenous knowledge (see Spotlight 8) must be linked to modern science and key institutions involved in natural resource management (CIRAN and UNESCO 1999; Pottier 2003; Kusimi and Yiran 2011). In particular, women are often the holders and conduits of key knowledge of local species, seeds and medicinal plants, and have a strong interest in managing water and marginal household land.

##### *Involving smallholders in national and local natural resource governance mechanisms*

- More specific strategies are needed at national and local levels. These strategies must emphasize and build mechanisms

for involving inclusive local organizations – especially farmers’ organizations and cooperatives – in policy and planning processes in key areas like natural resource management, climate change, spatial planning, agriculture and water. Empowering important rural actors – smallholder farmers, women, youth and indigenous peoples – is essential.

- More broadly, for these local actors to engage meaningfully, equitable relations must be established between decentralized authorities, collaboration built with civil society organizations and capacity of local authorities built to work with vulnerable groups, particularly smallholders (IFAD 2015).
- Links between local strategies and an enabling international governance agenda, where responsible investment safeguards are in place and respected, will be crucial.

#### *Developing global environmental governance mechanisms*

- Issues of environmental and climatic sustainability are global, and so solutions must be global as well. Rural communities in developing countries are particularly vulnerable to climate change and environmental degradation from the displacement of unsustainable environmental practices of multinational companies. In a globalized world, local authorities who try to protect the environment will be disadvantaged in attracting foreign investment.
- At the global level, inability to reach international agreements with binding targets and financing commitments has long undermined environmental sustainability. While these failures are well documented (e.g. Baker 2006; Adams 2009), less attention has been paid to key issues such as biodiversity loss. The Biodiversity Convention has been in force since December 2003 but is seen as having little practical impact (Dresner 2008) in preventing biodiversity decline (UNEP 2012). International agreements, with

associated binding targets recognizing the principle of common but differentiated responsibilities, and specific financing mechanisms will be a precondition for globally addressing environmental sustainability.

#### *Addressing and mitigating environmental threats associated with transformation*

- Integrated rural-urban planning – avoiding development dichotomies between the two sides – must be part of any sustainable rural and structural transformation (Hussein and Suttie 2015). Issues that must be addressed include paying for environmental services, acknowledging the pluralistic nature of natural resource rights and creating partnerships between rural and urban resource users. Also important will be the role of small and intermediate cities in maintaining flows of goods and services between rural and urban people, as well as providing centres to mitigate pressures associated with flows of migration from rural areas to large cities. These cities have often been associated with more inclusive and sustainable patterns of development (Tacoli 2015).

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