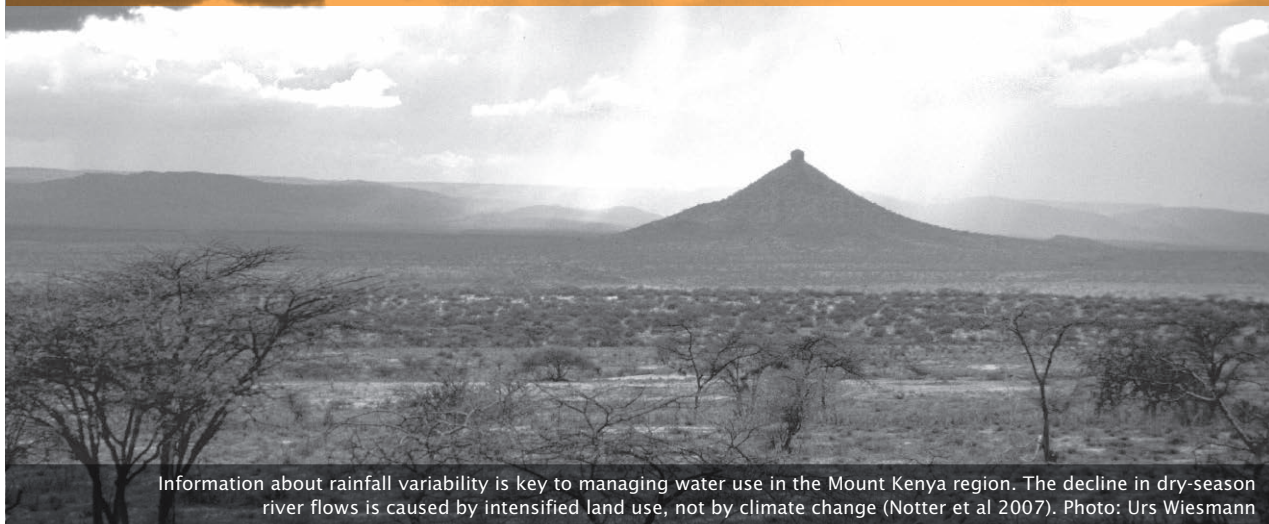


research evidence for policy



Information about rainfall variability is key to managing water use in the Mount Kenya region. The decline in dry-season river flows is caused by intensified land use, not by climate change (Notter et al 2007). Photo: Urs Wiesmann

Threats and opportunities for smallholders in rural development



Case studies featured here were conducted in: Kenya, Vietnam, and Laos

Policy message

- Trends in the global agricultural economy pose threats to small-scale farmers and pastoralists, but also offer them opportunities.
- Incorporating small-scale farmers and pastoralists into the globally growing agricultural economy is central to ensuring sustainable rural development, reducing poverty, and ensuring food security. Increasing their contributions to the economy requires investments in rural infrastructure, markets, and services.
- Cooperative arrangements between agricultural stakeholders can counterbalance competition and conflicts in hotspot areas of agricultural expansion.
- Transparent information is vital both to improve the planning of interventions and to give local communities a voice.

- After lying dormant on most development agendas for nearly 20 years, rural development is attracting renewed attention, mainly because of concerns over climate change. But other trends will have an even bigger effect on agriculture in the next few decades: rising food prices due to changing consumption patterns and speculation, increasing food insecurity, and rapid economic growth in big developing countries. In recent years, up to 2 billion people have adopted Western-like, resource-intensive food-consumption patterns. Global demand for crops and livestock products has risen sharply, along with demand for non-food agricultural products. In addition, biofuels, compete with other crops for land, and large-scale investors, often foreigners, are investing in agricultural land in developing countries.

Problems and opportunities for small-scale farmers and pastoralists

- These trends are likely to have a huge impact on rural areas in developing countries. Local and regional food security may suffer, as may the livelihoods of small producers. However, increasing demand and rising prices also open up new avenues for rural development.
- Small-scale farmers and pastoralists risk being sidelined by these trends.
- Importing countries and supermarket chains impose trade restrictions and standards, for example to ensure that products have high quality, are free of

disease and contamination, and can be traced back to where they were grown. It is difficult and expensive for small producers and traders to know about and comply with these requirements. Small-scale farmers thus risk being excluded from many markets.

Large-scale industrialised agriculture may have severe consequences: increased poverty, greater social disparities and segregation, conflict and degrading natural resources. It may also endanger food security, both for rural households and entire countries, since small-scale producers are the main source of food in developing countries. Large-scale farming cur-

Featured case studies

Cooperative arrangements in Kenya

The Ewaso Ng'iro river basin, near Mount Kenya, is the scene of rapid changes, big social disparities and high poverty rates, rapid soil and water degradation, and conflicts over natural resources. A potential solution lies with water users' associations that include agribusinesses, small-scale farmers, and pastoralists. These associations' collaborative arrangements now go far beyond water regulation to cover joint agricultural development efforts and social services (Kiteme and Wiesmann 2008).

Agricultural transformation in Vietnam

High-resolution maps show that the first phase of Vietnam's successful poverty reduction was driven by economic growth; a second phase was driven by social and structural development. The maps reveal that rapid transformation, intensification, and specialisation in small-scale farming occur when overall conditions improve (Eprecht 2006).

Socio-economic atlas of Laos

In Laos, most funding to combat poverty was going to the sparsely populated highlands, which have the highest percentages of poverty. But an online atlas shows that the largest numbers of poor people are in fact in the densely populated lowlands along the Mekong. This insight is enabling policymakers to direct interventions to where they are most needed. The atlas was developed by the NCCR North-South and the Ministry of Planning and Investment in Laos, and financed by the Swiss Agency for Development and Cooperation (www.laoatlas.net, <http://decide.la>). It shows demographics, migration, education, health, and economic activities.

- rently relies on imported fossil fuels
- and artificial fertiliser, so is not viable
- or sustainable for many countries.
- The expansion of cropping especially affects pastoralists, who migrate with their animals in search of pasture; barred from their traditional grazing lands, they are forced into even more marginal areas. The result is overgrazing and poor-quality, uncompetitive livestock products.
- Yet these trends offer opportunities for small-scale farmers. By organising into groups, farmers can produce enough to access better markets and attract higher prices. They can get credit, advice, and business services that are not available to individuals. They can do more of the sorting, grading, processing, and packaging, so increasing the value of the products they sell. They may also act as contract growers for processors or outgrowers for large-scale farms.

Risk and innovation in small-scale agriculture

- Because they are poor, many small-scale farmers avoid risks. Nevertheless, they are exposed to many threats: drought and floods, pests and diseases, uncertain markets and fluctuating prices. They rely on a broad range of crops and livestock to ensure their livelihood. They also try to earn money off the farm, and rely on family and friends for support (Figure 1).
- But such farmers can be very innovative if they can somehow reduce their risks. Some examples of how they can do this are:

- **Organising in groups:** A cooperative can help guarantee a market, raise and stabilise prices, and coordinate production.
- **Collaboration over resource use:** Groups can cooperate to manage a common resource, such as a river that supplies irrigation water (see: "Featured case studies"), or a forest that provides timber, fuelwood, and other products.
- **Communication:** Mobile phones make it possible to find out market prices and communicate with potential buyers.
- **Increased inputs:** Fertilisers and irrigation can boost production and cut the risk of a bad harvest. That increases incomes and gives people a cushion they can use to expand their enterprises.
- **Specialisation:** Specialising in one or a few products can enable farmers to improve their product quality and gain better prices.

Rural development efforts should aim to create conditions that enable farmers to innovate and specialise in response to new market demands. But they should not force farmers to abandon their underlying broad-based strategy. Small-scale farming has a high potential for adapting to change, adopting innovations, and contributing to poverty reduction (see: "Featured case studies").

Foreign investment in land

Big companies and foreign government are investing in farmland, often in poor countries with weak institutions and property laws, to produce crops for export. This may be seen as a welcome investment in underdeveloped regions; on the other hand, local people often see it as "land grabbing" by outsiders that deprives them of their land and livelihoods.

Large-scale investments in land peaked in 2009, but are still substantial. The Land Matrix database (<http://landportal.info>) details 1,217 such deals, covering 83.2 million ha of land in developing countries, or equivalent to 1.7% of the world's agricultural area (Anseeuw et al 2012). In Africa, the continent where the most deals have been made, they cover 56.2 million ha, or 4.8% of the continent's total agricultural area, or an area about the size of Kenya. Seven of the 11 countries with the most deals are in Africa:

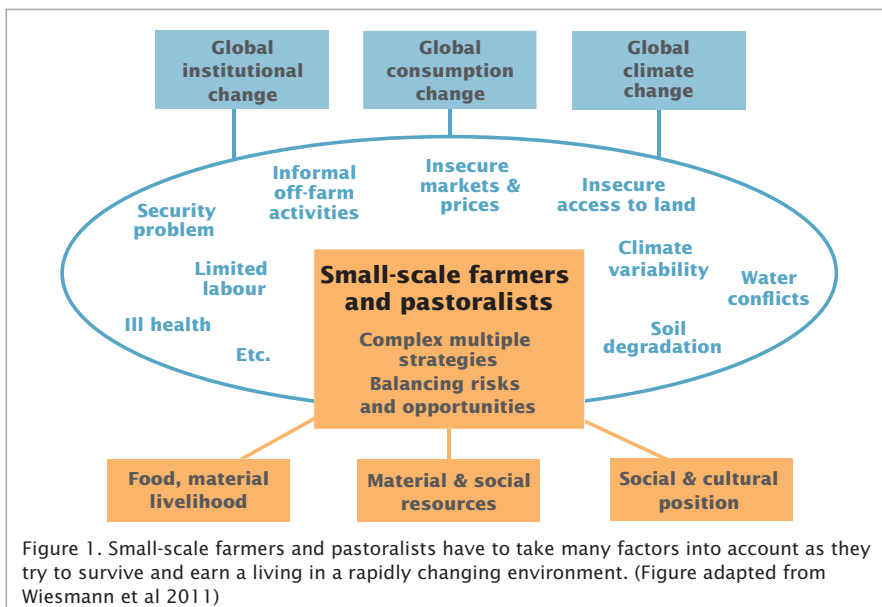


Figure 1. Small-scale farmers and pastoralists have to take many factors into account as they try to survive and earn a living in a rapidly changing environment. (Figure adapted from Wiesmann et al 2011)

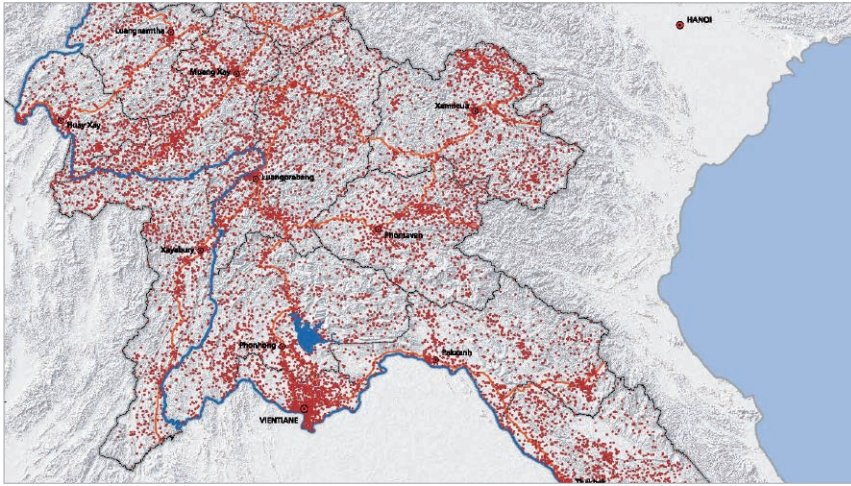


Figure 2. The socio-economic atlas of Lao PDR (Messerli et al 2008) showed that most poor people live around the capital, Vientiane, and in the Mekong Corridor. This insight helped to shift investments in rural infrastructure and market organisation to areas previously considered low-priority. Source: NCCR North-South

Sudan, Ethiopia, Mozambique, Tanzania, Madagascar, Zambia, and DR Congo. Other countries with large areas subject to investment are the Philippines, Brazil, Pakistan, and Indonesia.

In general, investors tend to focus on the poorest countries; 66% of the deals go to countries with hunger prevalence. Some 45% of all land deals include cultivated areas and farmland. This is contrary to the claim that such investments focus on uncultivated land. The most popular areas for such investment include cropland where inputs such as water, fertilisers, seeds, infrastructure, and know-how can raise yields significantly. Most projects are export-oriented, with the production expected to go to the investing country.

More than 60% of all land deals are located in areas with more than 25 persons/km². Most are less than 3 hours away from the nearest city. Thus, investors are competing for land with local farming communities. In addition, over 30% of the land is located in forested areas, raising fears of deforestation.

Agricultural expansion in hotspot areas

Rapid agricultural expansion and intensification occur mainly at the fringes of high-potential areas, where natural potentials are thought to be underused. Aside from forest edges and highlands, these areas are mainly semi-arid lands with good soils that yield well when water is provided.

Semi-arid regions are not only the main target area for expansion of small-scale farming; they also attract large-scale investments and high-tech agribusiness, particularly where con-

trols over access are weak. The resulting rapid transition and overlaps between different forms of agriculture lead to conflicts over land and water and trigger the overuse and rapid degradation of natural resources. The expansion of large- and small-scale cropping pushes pastoralists into more marginal areas, forcing them into a vicious circle of impoverishment and desertification.

Such hotspot areas of agricultural expansion thus deserve special attention. Suitable approaches to conflict mitigation, as well as locally negotiated arrangements to share resources, services, and technology, can pave the way to more sustainable development.

Planning where to intervene

National policymakers need accurate information to know where best to intervene. But this is scarce in many countries, or it is not collated into a form that they can use. It may be too general (summary sta-

tistics covering the whole country, for example), or too detailed (data covering local areas but not compiled into a national-level analysis). Even if they are available, the data may not be in a suitable form for use. Maps can be a very useful way of visualising complex spatial data on subjects such as natural resources, ownership and access rights, technologies and markets. They make trends and patterns obvious that are not visible from the same information in the form of, say, a table (see: "Featured case studies").

Collecting, analysing, and mapping spatial information on agriculture and making it available to policymakers and technical specialists would improve policymaking and planning. Making such information available to local communities would improve their ability to negotiate with governments and investors and to hold them accountable.



Food-security trainees learn about smallholder drip irrigation in a semi-arid area near Mount Kenya. Photo: Boniface P. Kiteme



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Policy implications of NCCR North-South research

Rapid global changes are posing serious threats to the environment and to small-scale farmers and pastoralists. But they also offer significant opportunities to the 2.4 billion people linked to small-scale farming and pastoralism. These trends necessitate a renewed focus on rural development.

Small-scale farmers and pastoralists are in danger of being excluded from the growing agricultural economy through trade restrictions, product standardisation, property laws, or decisions in favour of large-scale enterprises. Enabling them to increase their land and labour productivity is central to sustainable rural development, poverty reduction, and food sufficiency.

Investments in rural infrastructure and market organisation, as well as in financial and social services, are important to combat rural poverty and improve the livelihoods of small-scale farmers and pastoralists. Rural development efforts should create conditions for them to innovate, but should not force them to abandon their existing strategies to avoid risk.

Major investments in land in developing countries may lead to further impoverishment and conflict. Governments should ensure that information about proposed land transactions is made available and that local people have a voice in negotiations.

Adequate and transparent information is also vital in planning interventions to combat poverty. Mapping can identify hotspots where interventions are needed.

Further reading

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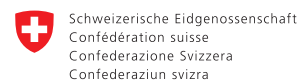
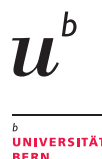
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