

# Integrative sustainable development in the Mount Kenya region



Conflicts over scarce resources – notably water – are often related to other underlying issues, such as poverty and the interdependence of upstream and downstream areas. To be successful, projects addressing such conflicts must be long-term and take into account all three dimensions of sustainable development – the ecological, the economic, and the sociocultural.

## Sustainable development challenge

Transnational river basins have received much attention in recent decades from international agencies and donors. Efforts were made to mitigate conflicts over natural resources, especially water, between upstream and downstream countries experiencing rapid economic growth. However, this attention largely failed to take into account that intra-national conflicts in dynamic highland–lowland systems are particularly widespread, critical, and pronounced. Promoting more sustainable use of natural resources and mitigating conflicts between upstream and downstream users in intra-national river basins is therefore an urgent, highly complex sustainable development challenge.

What this challenge entails can be seen at the Ewaso Ng'iro Basin, which originates at tropical Mount Kenya and extends north to semi-arid lowlands. This heterogeneous intra-national highland–lowland system is undergoing rapid socio-economic and land use change. The different land use systems – pastoralism, small-scale farming, large-scale ranching, and export-oriented horticultural production – evolved over time in a complex process. Historical and recent dynamics have created a situation of immigration-fuelled fast population growth, widespread poverty among smallholders and pastoralists, large disparities between different population segments, and multi-dimensional conflicts over scarce and increasingly degraded natural resources, particularly water.

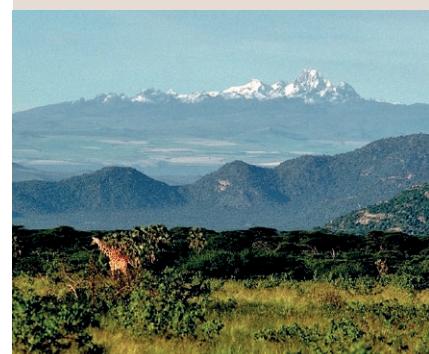
## ESAPP's response

Mitigating competition and conflicts over natural resources between diverse stakeholders at multiple levels is a difficult task that involves all three dimensions of sustainability. Resource conflicts usually arise when environmental services decrease due to overuse and degradation of resources (ecological dimension). At the same time, they are often rooted in widespread poverty and large economic disparities (economic dimension), while the social and cultural setting determines how they are expressed and handled (sociocultural dimension). In the case of water, this complexity is further augmented by the interdependence of upstream and downstream areas at various scales. Addressing such complexity requires a long-term, integrative approach that takes into account multiple levels, sectors, and stakeholders.

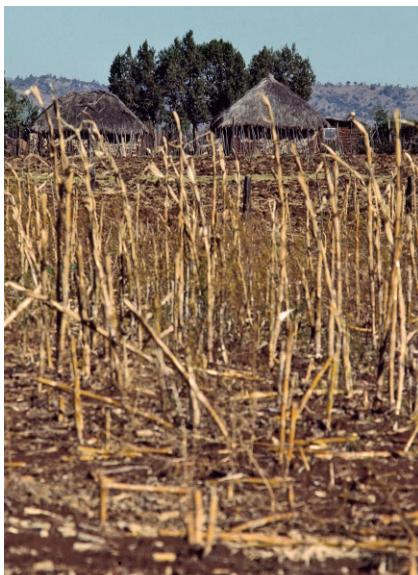
ESAPP developed and applied such an approach to address the multi-dimensional water conflicts in the Ewaso Ng'iro Basin. The strategy built on previous projects by ESAPP partners in the region, and simultaneously addressed the urgent need for reliable water supply and the requirement to reduce the demand for water, particularly river water, at all levels from household to national. This enabled ESAPP to carry out a range of priority action projects and demand-driven initiatives, each of which directly contributed to resolving the complex sustainability issues in the region.

## Main messages

- In most contexts there are no easy solutions to sustainability issues such as conflicts over scarce water resources. This is because they are related to other issues such as high poverty incidences and disparities, and can therefore only be successfully addressed in combination with these.
- Series of successive participatory action projects guided by a transdisciplinary sustainability strategy are a strong and successful alternative to large-scale and logical-framework-driven development programmes, as they build on social learning processes and can adapt to societal and political dynamics and transformations.
- Such an approach requires long-term involvement and commitment by research and development institutions. This means going beyond carrying out commissioned projects, and taking active responsibility for agenda-setting in relation to the sustainability issues at hand.



The water originating from Mount Kenya and its rainforest is vital to all downstream ecosystems and livelihoods. It is highly contested and heavily overused. (Photo: Urs Wiesmann)



## The project story

A wealth of information on the socioecological system of the Ewaso Ng’iro Basin had already been collected prior to ESAPP, through various projects carried out by ESAPP’s partners. Based on this knowledge, ESAPP developed a strategy that focused, at multiple levels, on the contentious issues of water supply, demand, management, and governance. Following this strategy, ESAPP identified several fields of activity, which were then addressed by successive priority action projects. The projects were implemented together with relevant stakeholders at the various decision-making levels.

A first succession of projects dealt directly with issues of water management and governance. These projects focused on providing information for better management and planning, creating and compiling detailed information in the form of sub-catchment directories, a wetland inventory, and maps of water use conflicts in the region. Substantial contributions were also made towards the creation of Water Resource Users Associations (WRUAs), and to developing their capacities as participatory governance structures in the water sector, particularly in the fields of water allocation, control, and conflict resolution (see Highlight 3).

Demand for irrigation water and conflict over that water within and between different actor categories – such as poor small-scale farmers and international agribusinesses – were identified as two of the most critical sustainability issues. For this reason, activities were expanded, with additional series of successive projects simultaneously aiming at lowering demand for irrigation water and reducing poverty. More specifically, a second strand of projects dealt with conservation agriculture, which in this region mainly meant water-conservation agriculture. It addressed issues of agroforestry, mulching, minimum tillage, drought-resistant crops, and capacity development among farmers. A third strand successfully explored avenues of alternative income sources, in particular for small-scale farmers and pastoralists (see Highlight 11).

Finally, a fourth series of projects aimed at environmental sensitization by focusing on two important wild animals. Sensitization and capacity development in relation to the rare and endangered Bongo antelope emphasized the importance of mountain rainforests for biodiversity but also for water resources. Further, by extensively addressing human–elephant conflicts (see Highlight 5), attention was directed towards the danger of further subdividing large-scale ranches into smallholder settlements, as these would significantly increase conflicts over scarce water resources.

**Top:** After Kenya became independent, former colonial large-scale farms in the footzone of Mount Kenya and on the semi-arid Laikipia plateau were subdivided into small plots. In the decades that followed, small-scale farmers immigrated to the area and settled on these plots, causing rapid population growth. They came from Kenya’s high-potential farming areas, where land had grown scarce. In the Mount Kenya area, they now face the risks of semi-arid conditions. Low harvests and crop failures contribute to high poverty rates and insecure livelihoods, resulting in heavy pressure on water flowing from Mount Kenya. (Photo: Urs Wiesmann)

**Bottom:** In the highly dynamic and conflictual highland–lowland situation there is no silver-bullet solution to prevent overuse and degradation of water resources and achieve sustainable development. These goals can only be attained through a multi-level and multi-stakeholder strategy that aims at enhancing water supply to secure livelihoods while reducing water demand to safeguard critical water flows even in the dry seasons. ESAPP helped implement crucial components of this strategy. (Source: Wiesmann et al. 2000)

## Multi-level strategy

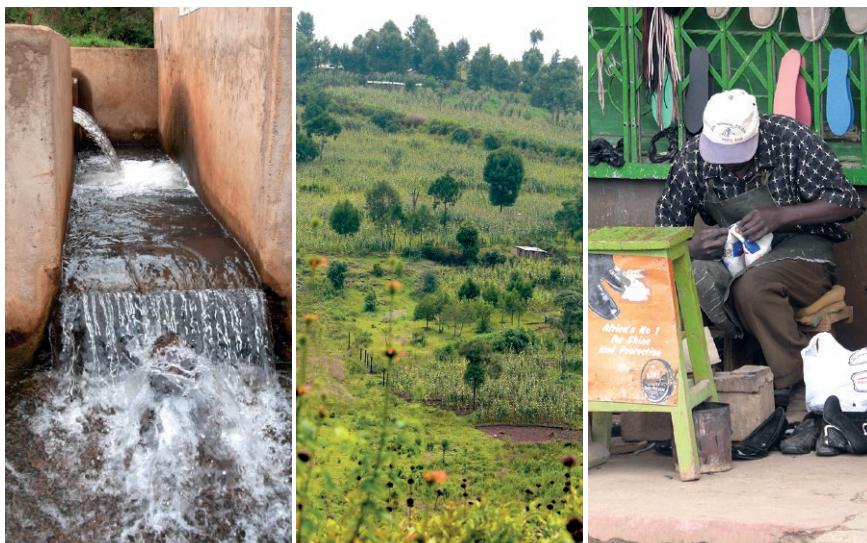
Relevant levels	Enhance water supply	Reduce water demand
(International)		
Country	Legal framework	Land tenure policy
Province		Infrastructure
Basin	Negotiations & control	
District	Supply planning	Land use planning
Location		Infrastructure
Community	Water use efficiency	Off-farm jobs
Household	Water use efficiency	Farming techniques

## Innovation and relevance

There are no silver-bullet solutions to sustainability issues in certain contexts. This was an important conclusion of ESAPP's involvement in the Mount Kenya region, and applies to areas in which dynamic socio-economic and land use change is coupled with high poverty rates, disparities, insecure resource access, high dependencies between upstream and downstream communities, and overused and increasingly degraded natural resources, particularly water.

ESAPP's strength lay in its innovative multi-level, multi-sectoral, and multi-stakeholder approach in the region. This approach involved systematically portioning complex sustainability issues into manageable fields of participatory action. This constituted a structural innovation, as it enabled a departure from large-scale and logical-framework-driven programmes that raise high expectations but lack the flexibility needed to have a societally and politically sustainable impact. Instead, it allowed for small, participatory, and targeted initiatives that could be executed independently and still contribute to overarching sustainability goals. At the same time, it enabled sequences of participatory action to be fine-tuned, based on the social learning processes triggered by the various projects. This, in turn, led to higher impact and multiplier effects in relation to overarching sustainability goals. ESAPP's basic programme structure was ideal in promoting this participatory action approach, which it successfully scaled out by establishing exchanges and joint learning platforms with similar contexts in the programme region, for example the Pangani Basin in Tanzania.

Nonetheless, it is important to note that some conditions have to be met before applying such an adaptive and participatory-action-based approach. It requires (1) an integrative strategy that combines a wide range of disciplinary knowledge with intense science–society interactions, to take into account the normative nature of sustainability; (2) a long-term involvement by contextually rooted institutions that bridge research and development and are able to guide and fine-tune projects in line with the integrative strategy; and (3) that the involved research and development institutions actively take responsibility to guide and harmonize successive initiatives in the direction of the overarching sustainability strategy. These requirements mean that such approaches cannot simply be commissioned by development agencies or governments.



**Top:** Prior to the colonial era, pastoralist communities occupied the entire region north of Mount Kenya. The colonial regime forced them to withdraw to the semi-arid and arid downstream areas, cutting them off from their former dry-season pastures. In recent decades, the arrival of immigrant small-scale farmers, the expansion of horticultural farms, and rapid growth of urban centres have created a highly dynamic situation in the Upper Ewaso Ng'iro Basin that has heightened pressure on water resources and turned the region's perennial rivers into episodic streams. These developments are heavily affecting the livelihoods of pastoralists downstream. (Photo: Urs Wiesmann)

**Bottom:** ESAPP helped to implement the multi-level and multi-stakeholder strategy for more sustainable development and better water management in the Mount Kenya region. In particular, the programme supported the formation of Water Resource Users Associations (WRUAs) to improve water management and sharing (left), promoted conservation agriculture for more efficient soil-water use (middle), and fostered the development of alternative income sources for poor small-holders and pastoralists to reduce their dependency on primary production (right). (Photos: Urs Wiesmann)



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## References and further reading

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## Highlight profile

This highlight is based on the achievements of 10 ESAPP priority action projects.

### Implemented during:

1999–2014

### Total funds contributed by ESAPP:

CHF 384,000

### Implemented by:

Centre for Training and Integrated Research in ASAL Development (CETRAD), Nanyuki, Kenya

### Supported by:

Centre for Development and Environment (CDE), University of Bern, Switzerland

### In collaboration with:

Numerous development partners and stakeholders in the region

### Main beneficiaries:

Communities in the Mount Kenya region

### This highlight

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## What is ESAPP?

The Eastern and Southern Africa Partnership Programme (ESAPP) is a research implementation programme funded by the Swiss Agency for Development and Cooperation (SDC), coordinated by the Centre for Development and Environment (CDE) of the University of Bern, Switzerland, and implemented jointly by CDE and a network of partner institutions in Eastern and Southern Africa. Launched in 1999 and completed in 2015, ESAPP implemented over 300 priority action projects in the programme region, which included Eritrea, Ethiopia, Kenya, Tanzania, Mozambique, and Madagascar.

## What are ESAPP Highlights?

ESAPP Highlights are a series of 24 project descriptions providing insights into ESAPP's research and implementation partnerships. Each Highlight describes a succession of demand-driven priority action projects addressing local and regional sustainability issues. The 24 Highlights are collected in a publication that includes additional background information on ESAPP (see citation above). The individual Highlights and the entire publication are also available for download on CDE's website: [www.cde.unibe.ch](http://www.cde.unibe.ch) (keyword search: "ESAPP").