

Policy Brief on Integrative Land Use Management Approaches (ILUMA)



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By examining all uses of land in an integrated manner, it makes it possible to minimize conflicts, to make the most efficient trade-offs and to link social and economic development with environmental protection and enhancement, thus helping to achieve the objectives of sustainable development.

(United Nations Conference on Environment and Development, Rio de Janeiro, 1992).

1. Land degradation and climate change in Central Asia

Appropriate land use is crucial for sustaining ecosystem services, ensuring environmental sustainability and maintaining agricultural productivity. The land-use sector also plays a central role in climate change mitigation and adaptation as it is both the sink and the source of greenhouse gas (GHG) emissions. Transitions in global and regional land use are found in all pathways limiting global warming to 1.5°C (IPCC, 2018). In 2014 CO₂ emissions from forests and soils, which were released due to land-use changes, made up 5 percent of the total greenhouse gas emissions (Edenhofer and Jakob, 2017).

The countries of Central Asia face common problems regarding land use, in particular land degradation and desertification¹. Of the 399.4 million hectares of land in Central Asia, about two thirds are dry land with extreme biophysical constraints common to arid and continental climate zones (Gupta et al., 2019; Quillérou et al., 2016). Extensive land degradation, loss

of soil fertility, overgrazing, deforestation and loss of biodiversity are driven by anthropogenic pressure from unsustainable agricultural and grazing practices and overusing forest resources. It is estimated that land degradation affects 4-10 percent of crop land, 27-68 percent of pastures and 1-8 percent of the forests in Central Asia (Quillérou et al., 2016).

A significant part of the population of the five countries in Central Asia (Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan) relies upon land resources to sustain their livelihoods. Pastures, cropland and forests are the basis for food security and provide income opportunities for many people in the region. About 60 percent of the region's population lives in rural areas and depends upon land and its respective ecosystems. Development based upon these ecosystems therefore plays an important role in fostering national economic development.

In addition to the widespread degradation of productive land resources, climate change will further increase pressure upon the Central Asian countries

Country	Population in 2017			GDP		Employment in agriculture in 2016 [%]	
	Total [Million]	Rural in [%]	Urban in [%]	per capita [USD]	contribution by agriculture [%]	Male	Female
Kazakhstan	17.09	46.8	53.2	7715	4.8	19	17
Kyrgyzstan	5.89	64	36	1078	14.9	28	32
Tajikistan	9.0	73	27	796	23	45	73
Turkmenistan	5.5	49.2	50.8	6389		19	17
Uzbekistan	30.45	63.4	36.6	2111	17.6	30	27 ²

¹ According to the Ministry of Agriculture of Kazakhstan, 70 per cent of the country is considered degraded (Thevs, 2018).

² Source for table: Thevs, 2018; NDS, 2015

to sustain the production base of sectors that depend upon land resources. Forecasts of the effects of climate change predict multiple threats, including extreme temperatures, the retreat of glaciers and disruptions in precipitation and snow melt patterns that change the hydrology of mountain rivers and cause water shortages, droughts and floods (ENVSEC, 2017; Fay et al., 2010; World Bank, 2014).

2. Integrative Land Use and Management Approaches

The implementation of land-based mitigation options is not only a technological challenge. Socio-economic, institutional, financial and environmental issues that differ across regions must be considered. Integrative land management approaches are based upon understanding landscapes as ecosystems comprising environmental, human, cultural, technological and institutional dimensions, amongst others. Potentially harmful effects of land-use changes are the result of complex interactions between these different dimensions. Hence, addressing only one dimension will not lead to sustained landscape management. Therefore, Integrative Land Use Management Approaches (ILUMA) address not just the key challenges of land management, which are related to desertification, land degradation or climate change adaptation, but also challenges related to the behaviour of people, their culture, interests and conflicts, the management of the environment, sector policies and organisational development, as well as technical solutions to prevalent problems (Izakovicová et al., 2017).

Central Asians have already accrued quite some experience in sustainable management of land resources. Oftentimes, these land resources are managed in immediate vicinity to each other, sometimes with trans-boundary impacts, or are even interwoven in common land-use systems, as, for instance, pastures and forests. Yet, in most cases the lessons-learned and experiences of the approaches on land use end up not being used outside the specific interventions within which they were developed. To make better use of Central Asians' valuable experiences, these should be organized within a conceptual and operational framework designed to serve the following functions:

- As a tool to create a common understanding and vision on integrative land use management.
- As a framework to develop sector policies: guiding principles for integrative land use management.
- As a framework to design new programmes and projects.

- As a framework to monitor and evaluate ongoing programmes and projects in a strategic way.
- As a knowledge management tool.

ILUMA offers precisely such a “master” framework. The different dimensions considered by it are:

1. Institutions & Institutionalization: building strong institutions and institutionalizing core processes
2. Organisational Development: strengthening and developing effective organisations and performance based organisational mechanisms
3. Competence Development: strengthening core competences of key stakeholder for better performance
4. Knowledge Management: constantly improving knowledge management and fostering ongoing learning to better adapt to change
5. Socio-cultural relations: taking social relations and culture as strong foundations for integrative land use management
6. Planning & Monitoring: adequate planning, management and monitoring instruments, structures and processes
7. Economy & Financing: emphasizing economic viability and fostering economic development by sustainable investments
8. Environmental Conditions: consciously knowing and integrating environmental conditions and functions in land use management

These eight dimensions must be considered in one way or the other when making interventions related to land-use management, so as to ensure sustainability in the medium and long term.

In other words, whenever assessing whether a land-use approach will work, it should be assessed in terms of all the ILUMA dimensions: simply put, if one dimension is missing, the land-use approach will not work to its full extent. However, ILUMA is by no means rigid, as the extent to which the respective dimensions should be taken into consideration depends upon the status quo and must be determined by the respective decision-makers, e.g., policy makers, government officials or programme managers. Finally, there are of course many practical examples showing what historically has worked or not worked well, which can be used for the implementation of the ILUMA approach.

Integrative Land Use Management Approach for Central Asia (ILUMA)



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