



Integrative Land Use Management Approaches in Kyrgyzstan

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Executive Summary

A significant part of the population of the Central Asian countries (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 directly depends upon land resources and its respective ecosystem services. Development efforts to sustain these ecosystems consequently play an important role in alleviating poverty, enhancing food and nutrition security as well as foster the economic growth. Land degradation is, however, a shared problem of all five Central Asian countries. In addition to the widespread degradation of productive land resources, climate change will further increase pressure upon the Central Asian countries to sustain their production bases. Forecasts of climate change effects predict multiple threats, including extreme temperatures, retreat of glaciers and changes in precipitation and snowmelt patterns that will change the hydrology of mountain rivers and cause water shortages, droughts, and floods¹.

Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH (German Federal Enterprise for International Cooperation) has been working on land use management in Central Asia since early 2000. The interventions started with the implementation of the United Nations Convention for Combating Desertification (UNCCD). In the past, GIZ approached land use challenges in a more traditional sense, by tackling land use types individually. In Tajikistan specifically, GIZ worked foremost upon sustainable forest management and community-based wildlife management approach. Pasture management and biodiversity-enhancing agricultural practices were subsequently added to the portfolio. With climate change having a significant impact upon Central Asia's land resources, in particular in the mountainous landscapes of Tajikistan, climate change adaptation measures were also included into the scope of activities, in recognition of the important role of the land use sector for limiting global warming and building resilience of rural communities. GIZ's multi-level approach proved to be successful in tackling forest and pasture degradation, conservation of mountain ungulates and halting the loss of wildlife habitat. Now, after more than ten years of engagement in the land use sector of Central Asia, ranging from direct community-level forestry management to processes of policy development and mainstreaming on the national level, the progression of the multi-level approach into a more holistic and integrative land use management approach was an inevitable evolution.

The real challenge of sustainable land use management cannot be solved with technical solutions only. 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 comprised of environmental, human, cultural, technological and institutional dimensions, among others. Potentially harmful effects of land use changes are the result of complex interactions between these different dimensions. Because addressing only one dimension will not lead to sustained landscape management, GIZ has developed the Integrative Land Use Management Approaches (ILUMA) as a simultaneous conceptual framework and knowledge management and dissemination tool to address all dimensions and their interactions and interconnectedness.

ILUMA consists of the following eight dimensions, each of which must be considered to a variable degree when planning, designing and implementing land use measures to ensure sustainability in the medium and long term:

- Institutions and Institutionalisation: building strong institutions and institutionalising core processes
- **Organisational Development:** strengthening and developing effective organisations and performance- based organisational mechanisms.
- **Competence Development:** strengthening the core competencies of the key stakeholders for better performance.
- **Knowledge Management:** constantly improving knowledge management and fostering ongoing learning to better adapt to change.
- Socio-cultural Relations: taking into consideration social relations and culture as strong foundations for integrative land use management.
- Planning and Monitoring: adequate planning, management and monitoring instruments, structures and processes.

¹ ENVSEC - Environment and Security Initiative (2017). Climate Change and Security in Central Asia – Regional Assessment Report.

- Economy and Financing: emphasizing economic viability and fostering economic development by sustainable investments.
- Environmental Conditions: consciously knowing and integrating environmental conditions and functions in land use management.

Fundamentally, ILUMA will enable creating among stakeholders a common vision of integrative land use management, including guiding principles in policy development, framing the planning and designing of new programmes and projects, and monitoring and evaluating ongoing land use measures. Within this report, the conceptual framework is introduced in detail for its application in planning processes. The second part of this document consists of a documentation of the experiences in four land use practices that GIZ has implemented in Tajikistan. These land use management approaches are forest, pasture and wildlife management as well as biodiversity-enhancing land use practices. Further, a selection of successfully applied methods and methodologies is introduced that is particularly well suited for the socio-cultural setting of Tajikistan.



Conceptual Framework

for Integrative Land-Use Management Approaches (ILUMA)

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Introduction to Land Use in Central Asia

Production systems that depend upon land resources, such as livestock farming, production of agricultural crops, fruits, nuts, and forest products, constitute the basis of the livelihood for much of Central Asia's rural population. Indeed, approximately 60 percent of the region's population lives in rural areas and depends upon land and its respective ecosystems. Hence, such ecosystems play an important role in fostering national economic development.

Unfortunately, the core functions (e.g. ecosystemservices) and the productivity of these natural resources have been threatened in Central Asia by increasing land degradation, desertification, and biodiversity loss. Especially problematic for the region have been overgrazing, which has spurred on soil erosion and deforestation and poor management of forest resources both contributes to greenhouse gas (GHG) emissions and prolongs unsustainable agricultural practices, such as monocultures. Additionally, excessive use of fertilizer and pesticides contaminates water sources. The only way to maintain core functions is to switch to sustainable land-use management, which is vital for maintaining the core functions of natural resources.

Sustainable land management becomes even more important under a climate change perspective. With its complex hydrological balance and steep slopes, Central Asia is a particularly vulnerable region to climate change. It is expected that climate change will further increase the pressure on Central Asian countries' landrelated production bases. Forecasts of the impacts of climate change predict multiple threats, including extreme temperatures and changes in precipitation patterns. Such impacts will be felt especially hard during the dry and hot summer months. The vast glacial systems of the Pamir and Tian Shan Mountain Ranges are the water reservoirs for the whole region, and increases in average annual temperatures which will amplify glacial melt. Initially, this situation will result in increased water discharge and a shift in seasonal water availability. In the long run, however, both water discharge and total rainfall will be reduced. Peak water discharge from glaciers is expected to occur during the middle of this century¹. Even though there is currently general water availability, satellite observations indicate that the productivity of crops

in Central Asia have already decreased due to water stress². The mountainous regions of Central Asia are especially vulnerable to climate change while having the least resources for adaptation. Climate change will lead to increased competition for water and land resources. Consequently, current political tensions may further intensify.

Already today there are lines of conflict regarding land-use rights and management. Yet, natural resources in Central Asia remain largely neglected at the macro-political level, as policy-makers instead focus on short term economic benefits. At the same time, natural resources form the basis of the livelihoods for a mostly poor, rural population. Of the 399.4 million hectares of land in Central Asia, approximately two thirds are dry land with extreme biophysical constraints common to arid and continental climate zones³. It is estimated that land degradation affects 4-10 percent of cropland, 27-68 percent of pastures and 1-8 percent of the forests throughout Central Asia. Sustainable land use management approaches can thus help to maintain the functionality and productivity of the region's natural resources.

Integrative Land Use Management Approach (ILUMA) for Central Asia

The implementation of sustainable land use management is not just a technical challenge that can be tackled by a one-dimensional approach. Socioeconomic, institutional, financial and environmental concerns must all be addressed. Therefore, a landscape perspective has been introduced to all landscape management approaches implemented by GIZ. The landscape approach enables tackling land-use challenges from several dimensions and balances competing land-use demands, all the while paying attention to conserving the ecosystem as well as ensuring enough benefits to the land user. The Global Landscapes Forum, a leader in land-use management, introduced the concept with the following definition:

"The Landscape Approach is about balancing competing land-use demands in a way that is best for human well-being and the environment. It means creating solutions that consider food and livelihoods, finance, rights, restoration and progress towards climate and development goals." (GLF, 2013)

¹ <u>https://doi.org/10.1038/s41558-017-0049-x</u>

² https://www.ipcc.ch/site/assets/uploads/2019/08/Fullreport-1.pdf

³ http://geoagro.icarda.org/downloads/publications/geo/Sustainable_Agriculture_1.pdf

The integration of different dimensions of land use at the landscape level, managed by multiple actors with varied and sometimes conflicting interests, as well as competing policy frameworks and state institutions, call for an inclusive approach that we are calling the Integrative Land Use Management Approach (ILUMA). The concept is based upon the understanding of landscapes as ecosystems comprising environmental, human, cultural, technical and institutional dimensions (visualized in figure 1). Negative impacts of land-use changes are conceived as the result of complex interactions between these different dimensions. ILUMA thus addresses not just the key challenges of land use management – which are related to desertification, land degradation, or climate change adaptation – but also those challenges related to peoples' behaviours, cultures, interests and conflicts, environmental management, sector policies, and organisational development, as well as technical solutions to prevailing problems.



Figure 1: Dimensions of the Integrative Land Use Management Approach (ILUMA)

Approaching land-use systems in an interdimensional manner fosters better organisation of the integrative and interdependent nature of land use management. ILUMA has been designed in such a manner as to reorganise the dimensions of land use management according to different purposes depending upon the stakeholders' needs. The conceptual framework shall function as:

• a tool to create a common understanding and vision on integrative land use management

- a framework to develop sector policies: guiding principles for integrated land use management
- a framework to design new programmes and projects
- a framework to monitor & evaluate ongoing programmes and projects in a strategic way
- a knowledge management tool

Surveying the Dimensions of ILUMA

ILUMA has not been conjured out of thin air. Rather, it is based upon more than 12 years of practical experience in Central Asia, such that the conceptualisation of each dimensions draws heavily from the region's distinct context. ILUMA thus deploys innumerable lessons-learned from on-the-ground – it is, in other words, the conversion of practice into theory, not the reverse.

The land use management experiences of GIZ that have served as the concrete basis for our new

different institutions and other actors.

conceptual framework have all been documented. Alongside a detailed description of ILUMA, they can be accessed via our webpage. Additionally, each ILUMA dimension has been described in detail in the following chapter. The below table gives an overview is also provided here. For each dimension, the aim, focus, and key challenges are delineated, with ILUMA's guiding principles articulated throughout:

Competence Development	Knowledge Management	
Aim: To develop key stakeholders' core competencies for improving their performance in land management. Focus: Personal development: team building	Aim: To support knowledge management and to foster ongoing learning of key stakeholders in order to achieve better management of land resources in Central Asia.	
and capacity development of change-makers within	Focus: Information management, exchange of knowledge,	
key organisations; facilitation and communication; and	and learning.	
technical expertise.	Key challenges: Official data and information is often	
Key challenges: Lack of awareness of the need for changing and adapting core competencies by many stakeholders; no conducive frameworks and constraining work environments within many government organisations; distracting behavioural changes, including high staff turnover; common understanding of competence development that over-prioritises 'hard skills' and neglects 'soft skills'; culturally-embedded individualism; lack of an established culture of sharing and learning; and administrative culture of state apparatus that takes top-down approaches and inhibits collaboration between	scattered across different institutions and inaccessible for technical or legal reasons; data is sometimes of unreliable quality; little experience with systematic documentation of processes for learning; absence of an established culture of sharing and learning; 'silo mentality' in which very few state organisations are spontaneously willing to share their data and information with other stakeholders; restrictive legal frameworks that discourage information exchange and transparency; and low level of IT literacy.	

Planning & Monitoring



Aim: To improve planning and monitoring of land use management and to adapt it to changing framework conditions.

Focus: Planning mechanisms, monitoring systems, and technical guidelines.

Key challenges: No reliable and up-to-date data available; Soviet-era state management systems remain in place with senior government officials not willing to change or adapt ineffective planning and monitoring systems; and land-use practices derived from out-dated management schemes that do not consider the current conditions of land resources.

Socio-cultural relations



Aim: To include the social-cultural relations of key actors when developing and implementing integrative land use management measures.

Focus: Gender, social mechanisms, recognition of cultural rules, and strategic communication.

Key challenges: Identifying socio-cultural 'Do's and Don'ts'; actively involving women and young people in land use management while taking traditional roles into account; and developing mechanisms that best fit to the social-cultural context yet also promote transformative change.

Economy and Financing



Aim: To achieve inclusion of land use management in national development planning processes, thereby supporting economically viable and sustainable land use.

Focus: Economic valuation of natural resources; financing of sustainable land use; and environmental-economic accounting.

Key challenges: Obtaining economic gain from land resources without reciprocating any benefits to society through wealth creation (rent-seeking); limited understanding of the economic value of natural resources; lack of trust regarding the general framework conditions for long-term investments in land use management; high costs for switching from current land-use patterns to integrative land-use approaches; limited short-term benefits from sustainable land use; land users are economically obliged to generate immediate income; and almost no public policies and mechanisms to foster public or private investments in maintaining and improving the productive capacity of natural resources.

Organisation Development



Aim: To advance organisations in the field of land use and to improve the interaction between key stakeholders for better land management.

Focus: Strengthening existing organisations, land and water user organisations; coordinating interests and needs,

Key challenges: Strong individualism at all levels; limited experience with democratic processes; limited exchange of knowledge; strong lack of trust between state and private/ civil society actors; frequent changes of governmental structures; and indistinct functions delineated within and between government organisations.

Institutions & Institutionalisation



Aim: To strengthen existing institutions and legal frameworks, which are key for sustainable and integrative use of land resources and institutionalising socially agreed rules and guidelines on land use management.

Focus: Inclusiveness, active participation, and involvement of all key stakeholders; fair share and joint management; transparency and flexibility.

Key challenges: Unclear priorities and policies; inappropriate regulatory frameworks; national regularisation and policy-making versus final and practical decision-making on land use by private and community stakeholders; and lack of clear land-use rights.

Environmental Conditions



Aim: To maintain and strengthen indispensable ecosystem functions within integrative land use management.

Focus: Ecosystem services; climate change; environmental landscape boundaries; ecosystem resilience.

Key challenges: The value of ecosystem services (especially biodiversity) for human well-being and their importance for land-use systems is not clearly understood and acknowledged by key stakeholders; conflict between landscape perspective versus political/legal units (e.g. municipality, district) in which ecosystem boundaries usually do not correspond with political boundaries, thereby challenging a landscape approach.

Dimension 1: Competence Development

Strengthening core competences of key stakeholders for better performance.

The competences of key stakeholders are central for managing land resources in an effective and sustainable fashion. Land users, government officials, development workers and entrepreneurs constantly need to adapt to rapidly changing environmental, economic and political conditions by improving their performance and maintaining their competitiveness. Competences are required to facilitate and manage these change processes in a systemic and strategic manner.

Land resources, policy frameworks and economic conditions in Central Asia today have changed immensely since the end of the Soviet Union. These new framework conditions oblige actors to change their behaviours, acquire new knowledge and develop additional abilities.

Although 'hard' competences, such as technical knowledge and skills, are clearly important for better managing land resources, 'soft' competencies of values, belief systems and attitudes must also be substantially changed if key stakeholders are to perform better.

Guiding questions:

- What are the core competences for integrative land use management?
- What and whose competences should be strengthened?
- What is the purpose of competence development?

What are we aiming at?

Focusing on the development of key stakeholders' core competences so as to improve their land resource management performance can be best achieved by carrying out different competence development measures aimed at the following goals:

- Developing the attitudes, values and belief systems of individuals, thereby enabling them to look for innovative solutions for known challenges.
- Supporting stakeholders to work together in teams for collective action.
- Supporting members of organisations to clarify their role within their teams, so as to better

perform their jobs by feeling accountable and responsible for the organisation's success.

- Improving the competence of individuals to facilitate change processes and communicate appropriately and constructively with other actors.
- Improving technical expertise of key stakeholders for better personal performance in managing land resources.

What are the major issues / challenges?

There are several challenges for developing and undertaking systemic and strategic competence strengthening. These challenges are primarily found within governmental institutions:

- Lack of awareness of the need for changing and adapting core competencies by many stakeholders, who are accustomed to a 'business as usual'-style approach.
- No conducive frameworks coupled with limiting environments and distracting institutional behaviours (this is likewise primarily an issue within governmental institutions).
- High staff turnover results in diminished knowledge transfer within institutions, thereby undermining build-up of institutional memory.
- Widespread notion that competence development is primarily attained via participation in training courses, and should primarily concern 'hard skills', thereby neglecting other development opportunities and the importance of 'soft skills'.
- Strong and culturally-embedded streak of individualism within institutional contexts that negates the worth of and need for working in teams or any form of collaboration.
- No established culture of knowledge-sharing and learning
- Working styles and attitudes inherited from Soviet governance-administrative culture remains dominated by bureaucratism, thereby ignoring sectoral and external interests.

What are common principles for guiding action in the framework of this dimension?

Focal area	Guiding principles		
Personal Development	Strong focus upon developing values and belief systems that emphasize sustainable land resource management.		
	Harnessing creativity, critical thinking and innovativeness.		
	Support the development of empathy for and understanding of the interests and need of other actors.		
Team Building	Focus upon the advantages of working in a team versus individual performance.		
	Support the capability to trust other team-members.		
	Foster the ability to cooperate between the different team-members.		
	Ensure mutual accountability and responsibility.		
The Individual Within the Organisation	Support self-management competencies (managerial skills) to improve the organisations' performance as a whole.		
	Support rewarding individuals' good performance.		
	Focus upon a clear understanding of each individual's role.		
Facilitation and Communication	Develop leadership skills (e. g. visioning, systemic and strategic thinking) to facilitate change processes.		
	Support learning to communicate effectively with both internal and external audiences.		
Technical Expertise Technical	Develop competences for analysing current technical problems.		
Expertise	Develop competences for planning land use.		
	Develop competences for selecting and implementing different options on sustainable land use.		

Dimension 2: Knowledge Management

Constantly improving knowledge management and fostering ongoing learning to better adapt to change.

Fact-based and empirically-informed decisions on land use can only be made based upon information that has been obtained via transparent methodologies:

- To whom does this plot of land belong to?
- What is allowed and what is forbidden to do on this land?
- What is the potential productivity of this field / plot?
- How will climate change affect this area in the short and long-run?

Currently, in most Central Asian countries, such information is either non-existent, unavailable, inaccessible or of poor quality.

That being said, knowledge management is about more than managing information within databases and document repositories; it is also about using and communicating knowledge more effectively so as to improve the way land resources are managed, thereby making an impact. Reducing knowledge as such to data would thus limit the scope of the term, for knowledge is the ability to know how to apply, create, organise and transfer information, as well as to be able to use it for making decisions.

Transparent and efficient exchange and use of knowledge and information increases efficiency and reduces duplication of efforts. Implicitly, supporting knowledge management and exchange between institutions can be a means to increase their overall level of cooperation and performance. Knowledge usage is directly linked to the learning processes of the key actors. Hence, knowledge management must also consider the ways in which an organisation functions, as the same piece of knowledge might be used differently in different organisations. This is a key, although often overlooked, challenge of knowledge management. Only when knowledge is used to develop innovative ways of land use management can the ongoing trend of degrading land resources in Central Asia be halted or reversed.

Guiding questions:

- Who possesses which knowledge and how can it be managed and utilized for the benefit of all?
- How do actors learn and how can learning, and experimentation be fostered?
- How can information on strategic issues related to integrative and sustainable land use management be disseminated and shared in appropriate ways between key stakeholders?

What are we aiming at?

Developing better knowledge management and learning to achieve a better management of land resources in Central Asia can be best achieved by aiming at:

- Supporting decentralized knowledge management platforms in order to make relevant knowledge available to a broader interested audience.
- Developing knowledge exchange and learning formats adapted to the respective needs of different groups of land use stakeholders.
- Developing more harmonised national data and information systems.
- Documenting, analysing and synthesising learning processes ('lessons-learnt').
- Documentation of lessons-learnt for collective and individual learning.
- Establishing feedback mechanisms and processes to integrate lessons-learnt at different stakeholder levels.
- Fostering a work culture of feedback and learning.

What are the major issues / challenges?

The following issues have been identified as major challenges related to managing knowledge and learning-for-change:

- Official data and information in Central Asia is often scattered across different institutions, inaccessible due to technical or legal reasons, and sometimes of unreliable quality.
- Little experience with systematic documentation of processes for learning, as well as the absence of

an established culture of sharing and learning.

- A prevailing 'silo mentality', according to which very few state organisations are spontaneously willing to share their data and information with other stakeholders. Knowledge is considered a source of power, and hence not provided to others. Restrictive legal frameworks amplify this problem, as such frameworks discourage information exchange and transparency.
- In general, a low level of IT literacy prevails, a key consequence of which is sow adoption of modern knowledge management tools.

Focal area	Guiding principles		
Information Management	Support the collection, documentation, analysis and synthesis of data and information as a basis for informed decision-making.		
	Create common pools of data.		
	Improve national data and information systems.		
	Improve the technical infrastructure for storing and exchanging information and data.		
	Design and package information formats appropriate to the intended user.		
Knowledge Exchange	Source new ideas and innovations on land use, disseminate them to a wider audience.		
	Support / develop decentralized knowledge management platforms.		
	Develop knowledge exchange formats, appropriate for different groups of land use stake- holders.		
Learning	Foster a work culture of feedback and learning.		
	Support collective learning by documenting and analysing experiences ('lessons-learnt').		

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What are common principles for guiding action in the framework of this dimension?

Dimension 3: Planning and Monitoring

Developing 'best fit' planning, implementation and monitoring instruments, structures and processes.

Planning and monitoring of land use systems are still based on mechanisms put in place during the Soviet Union decades ago. Since the collapse of communism, the framework conditions for land use management have completely changed. Today, Central Asian countries are exposed to multiple challenges regarding the planning and monitoring of land use management:

- They are subject to market-driven economic processes.
- They must generate their own income, instead of receiving a budget from Moscow, as during the Soviet era.
- In those countries with democratic structures, there is increasing demand for an active participation from all key stakeholders.
- They face increasing pressure of local populations upon finite land resources, resulting in serious degradation.
- They have rapidly growing populations which need to be fed and employed.
- They have developed new governance structures, including for land use management.

These challenges call for the adaptation of planning and monitoring mechanisms for land use management. Such management requires innovative ways of planning and monitoring land use, adapted to the current situation and future challenges (e.g. climate change).

Guiding questions:

- What technical aspects of land use management are crucial?
- What planning mechanisms are needed for integrative land use management?
- What monitoring system best fits to which land use system?
- How and by whom planning and monitoring will be best done; who must be involved?

What are we aiming at?

In order to develop 'best fit' planning, implementation and monitoring instruments, structures and processes for land use-related organisations, the following core elements should be in place:

- State-centred Information Systems⁴ on the different forms of land use. These systems should be available for all land users who require information and data for planning and monitoring.
- Appropriate planning mechanisms for land use at different levels – central / national, regional, local – actively involving all key actors (government agencies, land user organisations, land users, private sector).
- Appropriate monitoring systems for different forms of land use at different levels.
- Technical guidelines for different forms of land use.

What are the major issues / challenges?

The following issues have been identified as the most important with respect to planning and monitoring for land use management:

- No reliable and up-to-date data is currently available, resulting in unreasonable planning figures and useless monitoring schemes.
- State management systems of the Soviet era still remain in place among senior government officials who are also unwilling to change or adapt these systems.
- The land use practices that are being applied today remain based upon out-dated management schemes and do not consider the current conditions of land resources.

⁴ The details are explained in the ILUMA dimension on Knowledge Management.

What are common principles for guiding action in the framework of this dimension?

Focal area	Guiding principles		
Planning mechanisms	Support the development of national, governmental planning systems (e.g. strategies) for land use management. Such systems should be based upon empirical facts and figures, and whenever possible, practical experience.		
	Develop planning mechanisms at the local level that involve all key stakeholders (e.g. participatory pasture management plans).		
	Link national, regional and local planning to foster coherence.		
	Base planning upon the sustainable use of natural resources.		
	Combine short and mid-term planning with a clear vision on what to develop in the long term.		
Monitoring systems	Develop monitoring systems for different forms of land use that will collect data and information for planning and decision making.		
	Involve those stakeholders in monitoring who will make use of the information /data for their planning and decision making.		
	Develop systems for Monitoring, Reporting and Verification (MRV) for alternative forms of land use.		
Technical guidelines	Look for innovative ways of sustainably managing land resources.		
	Test and experiment new ways of managing land resources, emphasizing participatory forms of managing the resource base.		
	Develop descriptions of land uses, which can be used as practical guidelines by end users (technicians, land users).		

Dimension 4: Organisational Development

Strengthening and developing effective organisations and performance-based organisational mechanisms.

A clear theoretical definition of organisations does not exist. Usually organisations refer to entities that are comprised of people, in contrast to institutions which are a set of rules. The people that form the respective organisations usually do so with a particular purpose or with the goal to meet the needs of the members. Examples would be a company or a government department. Often, the terms 'organisations' and 'institutions' are used as synonyms. We propose that an organisation is an open system, in the sense that such entities not only affect their environment but are themselves affected in turn. Such a definition offers possibilities for change.

The way land resources are managed is determined by a broad array of different stakeholders, ranging from policy makers of state institutions, technicians of government organisations, NGOs and private advisory services, farmers, agro-businesses, herders, private business companies, land users, local authorities (religious / traditional / government) and many others. Each of these stakeholders decide at different levels on how to use land. Organisations are the entities under which all the stakeholders are brought together and which provide the platforms for exchange and change. The management structures of organisations thus determine the way that certain things are done (e.g. relationships between members, roles, responsibilities, and authority to carry out different tasks).

Effective land use management calls for key stakeholders to organise themselves effectively and to perform well. This refers to the organisation of different stakeholders and stakeholder groups (e. g. state forest enterprises or pasture user organisations), as well as the way in which the interaction between these stakeholders is conducted.

Guiding questions:

- What is the overarching purpose for which key stakeholders in land use management are organised?
- Which organisations are involved in land use management and how can their performance can be improved?
- What are these organisations' internal management structures?

- What are the most appropriate forms of organisations in the given context?
- What are the 'best-fit' organisational mechanisms for the given purpose?

What are we aiming at?

In order to strengthen and develop effective land use-related organisations, including fostering performance-based organisational mechanisms, the following elements are central:

- Improve the internal management structures of existing organisation in order to facilitate better completion of their core functions.
- Promote and support building-up strong, effective local land user organisations.
- Strive for the representation of the interests of local land users at the national level via national umbrella organisations.
- Establish collective mechanisms to coordinate the needs and interests of different stakeholders.
- Support innovative forms of collaboration between state-sector organisations and local land users.
- Support networking within and between organisations.

What are the major issues / challenges?

There are several challenges for developing strong, effective organisations or organisational mechanisms in Central Asian countries:

- Strong individualism at all levels, but first and foremost at the level of local land users.
- Little to no experience with democratic structures and respective decision-making mechanisms.
- Little will and/or interest to exchange knowledge or to engage in exchange mechanisms, as knowledge is considered to be a source of power.

- Strong lack of trust between state and private / civil society actors.
- Weaknesses in sectoral 'visioning' among many state-sector organisations.
- Frequent changes of government structure, organisational structures of state agencies and

replacement of leadership at the strategic level of governmental organisations.

• Promiscuity of functions in governmental organisations leading to inefficient performance of governmental organisations.

What are common principles for guiding action in the framework of this dimension?

Focal area	Guiding principles		
Strengthening Existing Organisations	Identify or develop 'working processes' that define what tasks have to be done and by whom, then determine the best-fit organisational structure, including job definitions and descriptions of all members / employees of the organisation.		
	Enhance competence in major management functions (e.g., decision making, planning, budgeting, accounting).		
	Strengthen the organisation's leadership.		
	Focus on change management and developing learning within organisations.		
	Foster ownership of the organisations' core functions, processes and goals.		
Assessing Land User Organisations	First verify whether there are traditional local organisations that have a stake in land use management.		
	Clarify whether there is a clear need and benefit for local land users to organise themselves, including potential organisational visions, purposes and objectives.		
	Clarify the roles and responsibilities of women in land use management and their role in local organisations.		
	Determine the geographical scope of the local organisations, depending on their purposes and objectives.		
	Identify major benefits to people joining local organisations.		
	Consider establishing umbrella organisations of local organisations look to represent their needs and interests at the national level to politicians and policy makers.		
Coordinating Interests and Needs	Identify whether at the local level there are mechanisms in place through which the interests of all key stakeholders involved in land use management are negotiated and coordinated.		
	Link coordination mechanisms at the local level to a certain land use or a cluster of land uses in a given geographical area (e. g. a micro-watershed or village) so that concrete and tangible issues can be negotiated.		
	Develop new organisational forms of joint land resource management with shared responsibilities and benefits in order to address the state's dual problem of dominating land resources yet lacking capacity to manager them.		
	Establish policy dialogue or coordination mechanisms at the national level to provide a platform to negotiate interests and needs of all relevant stakeholders regarding policy development.		
	Network information and knowledge exchange.		

Dimension 5: Socio-Cultural Relations

Deploying social relations and culture as strong foundations for integrative land use management.

The ways in which land resources are managed largely depend upon people's interactions and interdependencies. In particular, social-cultural relations within land user societies and between land users, state agencies and market actors (buyers of land use products) strongly influence decisions on land use management. 'Unwritten' rules set the framework within which land users and other key actors can make decisions on land use – essentially, the 'Do's' and 'Don'ts', including with respect to gender roles.

Consequently, technical and managerial decisions regarding land use must be based upon the social environment of decision makers and not just on bestfit technical approaches.

Guiding questions:

- How can ethnicity and culture be considered?
- How do social relations within communities' influence land use management?
- How can gender equality be considered?
- How does kinship influence decision-making on land use management?

What are we aiming at?

In order to take into account, the social-cultural relations of key actors when developing and implementing integrative land use management measures, the following elements must be grappled with:

- If feasible, develop land use management mechanisms based upon established social structures.
- Establishing mechanism, that ensure fair and democratic participation of all key actors in decision-making processes.

- Establishing mechanisms that ensure nondiscrimination due to social status, ethnicity or gender.
- Improve communication between key actors to ensure understanding of and commitment to agreements.
- Support generation of trust between key actors (trust building measures).
- Integrate gender perspective in natural resource management planning.
- Recognise social-cultural 'Do's' and 'Don'ts' regarding land use management
- Foster planned, targeted communication and packaging.

What are the major issues / challenges?

The following are the major challenges for considering social-cultural relations in integrative and sustainable land use management:

- To become acquainted with social-cultural 'Do's' and 'Don'ts' and to integrate them in land use planning.
- To actively involve women and young people in land use management while taking in consideration local paternalistic social-cultural patterns.
- To develop mechanisms that best fit the given social-cultural context and, at the same time, promote innovative change.

What are common principles for guiding action in the framework of this dimension?

Focal area	Guiding principles
Accounting for Gender	Ensure taking into account women's and young people's perspective in planning land use.
	Consider gender when implementing land use measures.
	Ensure fair sharing of economic benefits between men and women.
	Ensure equal access to information on land use.
Develop Social Mechanisms	Develop social mechanisms that institute innovative ways of sustainable land use management (e.g., giving social weight to innovators).
	Ensure the fair participation of all relevant social and ethnic groups of society in land use management (i.e., inclusion).
	Develop mechanisms for fair and democratic participation of all key stakeholders in land use management.
	Build land use management mechanisms as far as possible upon existing social structures, in particular at the local level.
	Identify trust issues between stakeholders and apply appropriate trust building measures.
Recognising Social-Cultural Rules	Identify the social-cultural 'Do's' and 'Don'ts' and consider these when planning for and implementation of land use management.
	Question cultural rules that favour unsustainable land use and unfair treatment of social groups in an appropriate way, emphasizing that new challenges to land use require adaptation, including of social-cultural rules.
Strategic Communication	Develop mechanisms and formats for clear, transparent and targeted communication between key stakeholders.
	Establish feedback mechanisms between stakeholders to ensure a shared understanding of agreements.
	Foster 'free' communication to foster creativity and innovation in land use management.

Dimension 6: Institutions and Institutionalisation

Building strong institutions and institutionalizing core processes.

Theoretically-speaking, institutions can be defined as 'humanly devised constraints that structure political, economic and social interactions'⁵ – or in other words, very generally, like a set of rules. Following this logic, institutions consist not only of formal legal rules but also encompass informal social norms. As such, institutions are central for governing individual behaviour and structuring social interactions.

Following the dissolution of the Soviet Union, the fifteen-former member-states embarked upon a process of great transformations. Reforms in the newly independent countries' economic and social spheres wrought changes in the legal status of those resources that in the Soviet era had been owned and managed by the government. These change processes also wrought significant alterations in the system of relations between land resources owners, that in turn have since necessitated revising those institutions responsible for regulating land use and developing and institutionalizing new efficient approaches on managing land resources.

Institutions and institutionalisation are thus critical factors in the promotion of integrative land use management approaches, as these form the framework for implementing management mechanisms. Specifically, they ensure consistency and coherence of approaches, regardless of the ownership and legal status of the actors involved in the system of relations arising over land use. Additionally, the institutionalized processes of such relations are more likely to be retained and improved over an extended period of time.

Guiding questions:

- Which institutions are key for land use management and how could these be strengthened or built up?
- How and which land-use mechanisms shall be institutionalized?

What are we aiming at?

Facilitating the process of strengthening existing institution – which are key for sustainable and integrative use of land resources and institutionalizing socially agreed rules and guidelines on land use management – can best be achieved by focusing upon the following aims:

- Support setting-up new institutions in response to emerging social, economic and environmental demands.
- Facilitate policy dialogue (e.g. interdepartmental, or government-civil society) and the establishment of coordination mechanisms.
- Support institutionalisation of tested, successful and practice-proven approaches on integrative land use management.
- Strengthen the institutional and legislative framework on integrative and sustainable land use.

What are the major issues / challenges?

The following are the major challenges that face any attempt to strengthen institutions and institutionalise integrative land use management approaches:

- Unclear priorities and policies of state-sector organisations regarding land use.
- Non-participatory monopoly of the state sector over regularisation and policy making, versus a better possible reality wherein private and community stakeholders make the final and practical decision on land use.
- Inappropriate regulatory frameworks that contradict and thus impede the implementation of integrative and sustainable land use management approaches.

⁵ Douglass C. North (1991). Institutions. The Journal of Economic Perspectives, Vol. 5, No. 1, pp. 97-112.

What are common principles for guiding action in the framework of this dimension?

Focal area	Guiding principles		
Inclusiveness	Develop conceptual schemes for ensuring equal opportunities, equal access to decision- making and equal economic benefits to all stakeholders when developing land-use regulations.		
Active Participation and Involvement of All Key	Develop mechanisms for appropriately involving all key stakeholders in the process of land use regulations development (e. g. consultation mechanisms).		
Stakeholders	Develop mechanisms to ensure the fair and democratic participation of all relevant groups of interest at local level in land use management process.		
Fair Share and Joint Management	Ensure that state authorities acknowledge the need for the possession of the economic benefits of land use management implemented by stakeholders at local level.		
	When building joint land-use management mechanisms at local level, consider real and short-term benefits for relevant key stakeholders to participate in such mechanisms.		
	Developing sharing mechanisms (e. g for the lease of State Forest Fund land) that provide economic and other benefits for both the tenant and the government.		
	Consider fiscal measures to enable the use of land-use revenues for the benefit of stakeholders.		
	Ensure fair sharing of economic benefits among key stakeholders, in particular between local land users and State organisations, responsible for leasing land.		
Transparency	Make use of communication media and platforms to inform land users about all relevant issues related to land use management.		
	Develop standards and norms by which information on land tenure rights awarding is made public.		
	Ensure that when strengthening of the legal and institutional environment, open competition and accountability are favoured.		
	Network information and knowledge exchange.		
Flexibility	Consider flexible use of land use options (as compared to traditional statutory instruments) that allow fostering community-driven and context-specific (territorial, social, economic, environmental, cultural) efficient management of land resources.		

Dimension 7: Economy and Financing

Emphasizing economic viability and fostering economic development via sustainable investments.

Central Asian countries show little consideration of land resources as a crucial production factor for generating their wealth and contributing to their economic growth. Instead of sustainable and profitable management of renewable natural resources, such as forests and pastures, these are overused and increasingly degraded. Stagnant land productivity, land degradation and loss of biodiversity are some instances of unsustainable land use that are now besetting the region. Appropriately managed, however, land resources could significantly contribute to national GDPs on a sustainable basis.

Currently, there are little to no economic incentives that encourage investments in sustainable land use management in Central Asia. Land users increase the demand for and use of land by raising the number of livestock and the exploitation of remnant forests every year. However, only if they are given the opportunity to economically benefit from sustainable and integrated land use management will they maintain and even improve land resources.

In addition, land resources do not factor into existing national accounting systems and thus are not sufficiently considered in national development planning. Natural Capital Accounting methods, such as the System of Environmental-Economic Accounting (SEEA) enable 'translating' the non-monetary benefits of natural resources (socio-cultural values, tourism, carbon sequestration, protection against disasters, etc.) into monetary terms and thus to include them into national accounting systems. In general, successfully demonstrating that natural resources account for a significant share of the national economy provides a stronger justification for their rational use.

Guiding questions:

- How can sustainable and integrative land use management become an attractive income source for land users?
- How can sustainable land use contribute significantly to the GDP of Central Asian countries?
- How can methods for economic valuation of land resources be introduced and used for decision making?
- How to bridge short-term economic benefits with long-term sustainability?

What are we aiming at?

Incorporating integrative land use management into national development planning processes and supporting economically viable and sustainable land use can be achieved if the following actions are done:

- Implement economic valuation method (e.g. costbenefit analyses of land degradation).
- Verify and test which incentives are needed to mobilise land users into switching to sustainable land management practices.
- Foster those factors that promote private sector investments and integrative and sustainable land use management.
- Improve framework conditions so that private and public finances are released for sustainable land use management.

What are the major issues / challenges?

The following are key factors that hamper sustainable economic development related to land use management:

- Obtaining economic gain from land resources without reciprocating any benefits to society through wealth creation (rent-seeking).
- Little to no knowledge / understanding of the economic value of natural resources / ecosystem services by nearly all stakeholders.
- Lack of trust regarding the general framework conditions (policy framework, political situation and economic situation) for long-term investments in land use management.
- Relatively high costs for switching from current land use patterns to integrative land use approaches, especially if the latter does not bring immediate economic returns.
- Limited short-term benefits by sustainable land use.

- Limited readiness for embarking upon long-term sustainable management approaches, as land users are economically obliged to generate immediate income.
- Lack of public policies and mechanisms that foster public or private investments in maintaining and improving the productive capacity of these resources.

What are common principles for guiding action in the framework of this dimension?

Focal area	Guiding principles		
Economic Valuation of Natural Resources	Conduct cost-benefit analyses of the most important products or value chains to assess their economic viability (e.g. by showing the cost and benefits of land and land-based ecosystems in cooperation with the Economics of Land Degradation Initiative for political and public awareness).		
	Assess the option to enter niche markets (e.g. organic and fair-trade certification of natural resource products).		
Financing of Sustainable Land Use	Assess options for creating economic incentives (e.g. savings book approach, tax exemptions, payment of subsidies, micro-credits with low interest rates).		
	Clarify whether there is a clear need and benefit for local land users to organise themselves, including potential organisational visions, purposes and objectives.		
	Channel remittances into sustainable and integrated land use management.		
	Improve the quality and outlook of adding value to the production of primary goods.		
Environmental Economic Accounting	Establish satellite accounts to assess the monetary value of land resources for economic development (e. g. forest accounting).		
	Use the outcomes of such satellite accounts to broadly advocate for sustainable use of land resources, shifting focusing away from short-term monetary benefits.		

Dimension 8: Environmental Conditions

Consciously knowing and integrating environmental conditions and functions in land use management.

Land use is delineated by the biophysical limits of the ecosystem and its respective carrying capacity. These environmental or ecological limits depend upon biotic (e.g. pests) and abiotic factors (e.g. availability of soil nutrients or water). Land users who wish to maintain or increase the productive capacity of land and water resources should thus be aware of these limiting factors so as to consider the sustainability of available management options. Indeed,

assessing the environmental conditions and current and future impacts, threats and pressures related to different land use practices via a systems approach to the agro-ecosystem (e.g. plot, farm, landscape) forms the basis of sound risk evaluation and decision making for land use planning and management options.

Currently, many ecosystems in Central Asia are under pressure from overuse and unsustainable management practices focused upon short-term benefits. To maintain ecosystem resilience and adaptive capacity, land use management must consider, and where necessary restore ecological buffering capacity, as an integral part for fulfilling its principle environmental functions and providing important ecosystem services.

Meanwhile, climate change is strongly affecting Central Asia's ecosystems. Changing precipitation patterns, increasing temperatures, and more frequent extreme weather events restrain the development potential for Central Asian nations or even reverse progress that has been achieved so far. Central Asian countries should therefore make use of adaptive approaches to land use management and resource governance to adapt to the dynamics of non-linear ecosystem change and remain well within essential environmental thresholds. Enhancing socioecological diversity and overlapping redundancies of environmental functions is hereby a key strategy.

Guiding questions:

 How should the environmental capacities (e.g. ecosystem resilience) of the land resources be taken into account by decision-making on land use options?

- How can the principal environmental challenges (climate change, desertification, loss of biodiversity etc.) be considered and integrated into development planning?
- How can ecosystem services be considered in land use planning and be part of land use practices?
- How can land use planning focus on the landscape level?

What are we aiming at?

In order for land use management to maintain and strengthen indispensable ecosystem functions, the following goals must be aimed at:

- Improve environmental quality, reduce greenhouse gases, and enhance the adaptive capacity of ecosystems.
- Consider the different land use types within a given ecosystem and their interconnections and interactions.
- Highlight the significance of well-functioning ecosystem services and their conservation, restoration, and enhancement for the long-term viability of land use practices.

What are the major issues / challenges?

The major challenges for considering environmental conditions in integrative land use management are the following:

- The value of ecosystem-services (especially biodiversity) for human well-being and their importance for land use systems is not clearly understood and acknowledged by key stakeholders.
- Disconnects between a landscape perspective and political/legal units (e.g. municipality, district), such that ecosystem boundaries usually do not correspond with political / legal ones.

What are common principles for guiding action in the framework of this dimension?

Focal area	Guiding principles		
Ecosystem Services	Assess which ecosystem services the land use system depends upon.		
	Analyse the positive and negative impacts of land use measures upon ecosystem services.		
	Identify land use management options that conserve, restore, or enhance ecosystem services.		
	Raise awareness on the concept and value of ecosystem services		
Climate change	Conduct a vulnerability and risk assessment for the area of intervention.		
	Assess the current and future impact of climate change in the area of intervention based on climate projections.		
	Identify land use management strategies and options that help the local communities in adapting to climate change.		
	Raise awareness of key stakeholders on the implications of climate change in their particular context.		
	Consider the potential for climate change mitigation within a given intervention.		
Environmental landscape boundaries	Consider the different land use types within an ecosystem or landscape and how they are interconnected and interdependent (e.g. different land use types in a watershed or forest landscape).		
	Identify the main landscape elements (e.g. land uses, ecosystems) and identify linkages between them, then decide on how these should be sustainably managed.		
Ecosystem Resilience	Identify and decide options for land use planning and management based upon assessing ecosystem boundaries and the ecosystem's buffering capacity.		
	Strengthen ecosystem resilience, so that ecosystems can cope with environmental shocks (e. g. Ecosystem-based Approach), and improve related infrastructure when/ where required.		





for Integrative Land-Use Management Approaches (ILUMA)

Forest Management

Sustainable Forest Management for Increase of Forest Cover and Fostering Forests' Ecosystem Functions and Economic Benefits

1. What is this land use practice about?

Although Kyrgyzstan's forests cover only about 5.6% of the country, they play important social, economic and environmental roles. After the collapse of the Soviet Union's centrally planned economy and the breakdown of social security systems, forests made an important contribution to the livelihoods of Kyrgyz rural communities, which became increasingly dependent on household-based subsistence farming. About 65% of Kyrgyzstan's population lives in rural areas and more than 40% reside near forests, from which they obtain timber, fuelwood, non-timber forest products - e.g. fruits, walnuts, mushrooms, medicinal herbs - and upon which they depend for livestock grazing and haymaking. A steady increase in the country's population and in livestock numbers in the post-Soviet period, forestry management approaches inappropriate to the new economic context, and challenges associated with climate change have put the sustainable use of the forest resources in Kyrgyzstan under great threat.

Thus, to stimulate sustainable and rational use of available forest resources the paradigm of forest management policy had to shift from a protectionoriented approach towards sustainable, participatory forest management models. A transition to innovative and adapted principles of management in the forest sector was needed. Previous reform attempts in the forestry sector did not result in a comprehensive vision supported by all stakeholders, but in 2015 the State Agency for Environment Protection and Forestry (SAEPF), with GIZ's technical support, initiated piloting of the forest sector reform - a process at national and local levels, with participation of a wide array of stakeholders including government organizations, the non-government sector, private sector and development partner organizations.

Nowadays, the Kyrgyzstan government sees that forest management should encompass: "sustainable and rational management and use of forest land resources implemented in a way and to the extent that allows maintaining their biodiversity, productivity, regeneration potential, climate resilience and capacities to fulfill, now and in the future, environmental, social and economic functions that do not affect other ecosystems".

2. Cornerstones

Achieving sustainability of forest management in practice requires rethinking the overall strategic vision of the role of forests in Kyrgyzstan, the institutional and legal framework, and organizational settings of the forestry sector, as well as forest management practices. In this regard, the following cornerstones are considered of prime importance for implementing sustainable forest management in practice in Kyrgyzstan:

Effective Forest Governance,

Sustainable Forest Management

Forest Economy

3. What are possible ways to implement different forest management measures, linked to ILUMA dimensions?

The below matrix represents a description of GIZsupported interventions undertaken in the context of the respective cornerstones.

¹ The State Agency for Environment Protection and Forestry of the Kyrgyz Republic <u>www.ecology.gov.kg</u>

² Population of Kyrgyz Republic: 6,5 million people. National Statistical Committee 2019. <u>www.stat.kg</u>

Cornerstone 1: Effective Forest Governance

GIZ Experience for Implementation	 GIZ has supported the Piloting of Forest Sector Reform since 2015. This process aims at testing innovative and adapted mechanisms of decentralized and participatory forest management approaches in pilot leskhozes (state forest management enterprises). The testing is followed by a comprehensive analysis of the strengths and weaknesses of such approaches. The piloting is summarized in a forest sector reform document based on the lessons learnt and experiences gained in result of the piloting. The forest sector reform aims at a gradual transition to innovative and adapted principles of management in the sector with a view to stimulating sustainable and rational use of available forest resources with the participation of local communities and due regard for potential climate change impacts. The reform is based on decentralization (of forest management practice), partnership (between the government, public sector and communities), and crosssectoral cooperation with related sectors. Piloting is implemented at both national and local levels. At the national level the Consultative Coordination Council (CCC) steers the piloting process, compiles and documents lessons learnt, coordinates development partners' support, and helps to identify legal bottlenecks. At the local level the roles of Joint Forest Management Councils (JFMC) include exchange of information, coordination and monitoring of leskhoz participatory operational plans, cooperation between different interest groups, addressing complaints and conflicts (grievance mechanism), and ensuring transparency and accountability of leskhoz activities.
	Reference material (legal and normative documents):
	 Kyrgyz Republic Government Decree #367 as of June 16, 2015 "On Arranging and Implementation of Measures to Elaborate Areas and Approaches to Reforming of Forest Sector of the Kyrgyz Republic (RU);
	- Provisional Regulation on Joint Forest Management Council (RU);
	 Statute on Consultative and Coordination Council (CCC) for Arranging and Implementation of Measures to Elaborate Areas and Approaches to Reforming of Forest Sector of the Kyrgyz Republic (RU);
	- Rules and Procedures of Consultative and Coordination Council (RU);
	- Regulation #192 of the Kyrgyz Republic State Forest Fund Land Lease (RU);
	- Memorandum of Cooperation on the Use (lease) of Forest Fund Lands for Livestock Grazing (RU, KG);
	- Forest-Use Project Assessment Methodology (RU, KG);
	- Procedure of Issuance of Ticket for Livestock Grazing in State Forest Fund (RU, KG);
	- Procedure of Zoning of State Forest Fund by Forest Use Types (RU, KG);
	- Procedure of Forest-Use Monitoring in the State Forest Fund (RU, KG);
	 Procedure of Completion of a Standard Agreement about Use (lease) of State Forest Fund (RU, KG);
	- Form of Standard Agreement on the Use of State Forest Fund Land (RU, KG);
	- Guidelines on Development of Livestock Grazing Management Plan in State Forest Fund (RU, KG);
	- Model Regulation of Interaction between Territorial State Body for Forest Management (leskhoz) and Local Self-Governance Body on Issues Related to Governance of State Forest Fund (RU, KG);
	- A Model Regulation of the District Pasture Commission (RU);
	 Instruction on the Procedure of Preparing, Consideration and Execution of Programme-Based Budgets of Leskhozes (RU);

Key Elements of the Experience	 Regulation of Model Statut Standard For Pilot Leskhoz Coefficient (F Pilot Leskhoz Guidelines of Management 	n Forming a Fund of Stimulation and Bonus for Pilot Leskhoz Staff (RU); e of a Stimulation Special Committee (RU); m of Staff Performance Record (RU); z Employee Model Performance Indicators for Calculation of Input RU); zes' Model Performance Indicators (RU); n Development of State Forest Fund Natural Resources Integrated : Plan (RU). les and the Way How They Are Related to ILUMA Dimensions
Laperience		
Testing and Adaptation of Management Approaches The piloting of forest sector reform supported by GIZ includes testing of innovative forest management approaches at the level of pilot leskhozes, analysis of the findings and institutionalization of the adapted proved mechanisms.		 Involve representatives of all stakeholders at national level in the piloting process through a formalized coordination and counselling platform to coordinate the intervention, analyse progress and ensure informed decision making. Involve representatives of all stakeholders at local level through a participatory platform to ensure consideration of the stakeholders' interests. Ensure that all stakeholders are informed about the piloting objectives. Document progress and lessons-learnt to enable analysis and learning.
	3	 Establish a steering process and monitoring and evaluation framework to ensure that lessons are learned from the pilots. Consider consultation with experts in law, forestry, economy to analyse the piloting results, address the identified issues and mainstream positive experience. Study and analyse international best practice: test, adapt to local context and formalize in legislation.
		 Consider socio-economic variation across pilot areas, e.g. population density, availability of land, to ensure that management approaches are tested in different contexts and adapted to the local situation. Consider cultural factors, e.g. women's role in the family and society, when mapping local stakeholders for participatory forest management.
	⁶ ∰ ≯⊜	• Ensure that situation analysis of the forest sector includes not only current legislation and formal institutions, but informal practices in forest management.
		• Consider economic incentives for local forest and pasture users when considering their participation in JFMCs.
		• Consider different ecological conditions, e.g. forest type, climatic conditions, in the country to ensure testing of forest management approaches in various environmental conditions.

Improvement and Development of Legal and **Regulatory Norms**

Based on the findings of the testing of innovative forest management approaches, amendments to current legislation have been proposed to promote integrative and participatory principles.



Organisational Arrangements and Partnership Development

The interaction among all relevant stakeholders within and outside of the forestry sector, in the context of joint forest management, must be analysed and well structured to achieve sustainable forest management goals.



- Ensure access to information (training materials, seminars, etc.) by forest users.

- Ensure that leskhozes' new functions are reflected in their legal organizational form, staffing structure and job descriptions.
- Relations between leskhozes and JFMCs and their rights and responsibilities must be clearly regulated by legislation.
 - . Forest governance structure must clearly define forest management planning processes: top-down and bottom-up, with sector subdivisions structured accordingly (including differentiation of the roles of forest management and forest inventory departments).
 - Decentralization shall clearly separate functions and responsibilities between the administrative levels of forest sector: leskhozes (local) and forest department (national).
 - A merit-based appointment process and performance evaluation framework for leskhoz directors must be clearly stipulated in regulations.
 - Leskhoz staff performance evaluation must be aligned with relevant and clear job descriptions.

Train stakeholders: leskhoz staff, tenants, local user groups and local governments to correctly interpret new legislation and regulations.

		 Consider a need for introduction of new leskhoz positions such as pasture management and fruit plantation specialists. The scope of monitoring and inspection of leskhozes by overseeing authorities must be clearly regulated by legislation to eliminate "overcontrol". Consider establishment of a reform policy and coordination platform with participation of representatives of concerned ministries and agencies. Consider establishment of an inter-sectoral (forestry-agriculture) working group to facilitate coordinated development of regulations for seasonal grazing in forestry and agricultural territories.
		 The roles and functions of parties – regional state administration, local authorities, pasture committees, forest users, private sector, local communities - interested in joint forest management must be determined, clearly separated and formalized. Multi-stakeholder – forestry, agriculture, regional state administration, local authorities, user groups - cooperation platforms at local level must be tested and institutionalized if proved to be successful. Ensure that interests of stakeholders are identified, and partnership and conflict resolution mechanisms at local level elaborated. State forest fund land plots must be leased out based on an open tender announced by leskhozes well in advance. Tender procedures must be clearly described and formalized in accordance with national legislation. Tenders should be organized by leskhozes and transparency ensured by a tender commission comprising representatives of all local interest groups. Tender participants must be requested to submit their forest-use projects. This is meant to minimize "idle" leasing of forest lands. Lease agreements are initially concluded for a short term (up to 5 years). Once verified that the tenant is fulfilling his/her commitments, the agreement is extended to a long term (up to 25 and 50 years).
Financing Forest Management One of the tasks of the piloting of forest sector reform is to test, adapt and introduce new approaches for efficient public finance management in in the forestry sector, through the transfer to lekhozes of authority for allocation and use of government funding for forest management and forestry staff.	1	 Elaboration of leskhoz program-based budgets should be the responsibility of management and technical staff, not only that of the accountant. All relevant staff need to be trained in this respect. Leskhoz staff must be trained on principles and mechanism of performance-based remuneration.
		 Under conditions of deficient government financing, leskzhozes need to be enabled to prioritize objectives that contribute to achievement of the sector's strategic goals, and orient available human and financial resources to their achievement. Consider introducing results-oriented budgeting of leskhozes to improve efficiency of expenditure for the achievement of the forest sector objectives. Elaborate mechanisms for sustainable financing of leskhozes' operations.

		 Ensure that forestry staff remuneration and incentive schemes are sustainable.
		Consider non-financial staff incentive mechanisms.
		• Ensure that leskhozes have a right to retain a share of lease income to finance staff incentive schemes and maintenance and renewal of forest management infrastructure.
		• Consider involvement of JFMCs and local communities in the review of leskhozes' financial affairs, particularly concerning investment projects.
		• Consider forest tenants' trust in forest lease policy as a factor that influences direct investments into the sector.
		 Forestry staff remuneration and incentivization schemes must be based on clear job descriptions, performance, and clear performance indicators and a fair evaluation system.
		• For leskhozes with profit generation potential, consider providing special legal status and rights to retain a share of income from leasing, whilst putting in place a compensation (from such profits) scheme for those leskhozes that mostly implement forest protection function.
		• Forest land lease regulation must consider incentives for land users to take up and maintain sustainable land management practices.
Participatory Forest Management Planning Leskhoz Integrated Management plans consider all eligible land use activities in the defined area and over a certain period.	4	 New leskhoz functions - such as pasture use monitoring and lease fee collection, need to be tested, documented and reflected in leskhoz structure, regulation and staff job descriptions.
	5 ₩ ¥	• IMP must consider the local context specifics: such as social context (e.g. population profile) of the area of its application.
		Forest sector reform implies institutionalization of leskhoz integrated management planning (IMP) practice.
		• Consider elaboration and testing of IMP with participation of local stakeholders and mainstreaming of the proven practices.
		• Each leskhoz IMP shall define all activities to be implemented by leskzhoz, forest users and other stakeholders in the leskhoz territory over a three years' period.
		• IMP must be oriented towards the achievement of forest sector strategic objectives and serve as a basis for preparation of three-year program-based budget planning.
		• IMP format must be standard and approved as required by national legislation.
		• IMP must consider seasonal grazing rules to maintain pasture use rotation.
		Consider options for the operationalization of participatory forest management through JFMC, lekshoz IMP, and transfer of leskhoz operations to the private sector and local community.
		• IMP should:
		 ensure joint forest management by involving stakeholders in forest use planning and decision-making processes;

 extend participation of local communities in forest management and support their initiatives; improve planning of forest management activities and their financing; ensure integrated management of natural resources by facilitating cross-sectoral cooperation at the local level. A participatory annual operational plan shall define all activities to be carried out during a calendar year in a leskhoz's territory.
• IMP must consider the local context specifics: such as ecological conditions (e.g. forest type) of the area of its application.

Cornerstone 2: Sustainable Forest Management

GIZ Experience for Implementation	Participatory modalities in forest management in response to changing economic and social demand, and global and local environmental alterations, require revising of conventions and adoption of innovative forest management technologies and methods at leskhoz level to facilitate the achievement of the sector's ultimate objective - forest cover increase. GIZ supports SAEPF in testing and institutionalizing innovative forest management approaches and technologies in the territories of pilot leskhozes, specifically in the walnut forest area in the south of Kyrgyzstan. Relevant, accurate and more accessible data on forests are critical for strategic planning and monitoring of change in forest composition and cover. GIZ supports the Kyrgyz Republic's national processes of digitalization of public administration; establishment of spatial data infrastructure; enabling demand-specific access to data about forest resources; and supporting institutional capacity for forest monitoring at the SAEPF.
	Reference material:
	- Walnut Forest Regeneration Guidelines (RU);
	- Assessment: Potential of Fast-Growing Tree Plantation in Kyrgyzstan (RU, EN);
	- Walnut Surplus Tree Selection Guidelines (RU);
	- Guidelines on Ball-Rooted Seedlings Production (KG);
	- Draft of the Key Provisions on Forest Restoration, Afforestation and Growing of Fast- Growing and Walnut Plantations (RU);
	- Temporary Regulation of Leased Forest Plots Fencing Mechanism for Sustainable Afforestation and Restoration (RU), including;
	- Basics of Nursery-based Planting Stock Production (RU);
	- Temporary Regulation of Leased Forest Plots Fencing;
	- Procedure of Provision and Return of Forest Plots Fencing Materials;
	- A Model Procedure for Tender Commission Operation;
	- An Addendum to Agreement on Procurement of Fencing Materials;
	 Evaluation: GIS Infrastructure and Management of Spatial Data of State Agency on Environment Protection and Forestry of Kyrgyz Republic (RU, EN);
	- Training materials on QGIS (RU).

Key Elements of the Experience

Innovative Forest Management Technologies

Test innovative forest management technologies at the level of leskhozes, adapt to local environmental and social conditions and, once proved to be successful introduce the know-how into normal forest management practice through the approval of relevant regulations by SAEPF.

Guiding Principles and the Way How They Are Related to ILUMA Dimensions



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1	 Ensure improvement of technical expertise of foresters and forest users for better management of forest resources. Train forestry staff on correct application of new regulations and guidelines. Consider building the capacity of the Forest Department and leskhozes to provide extension services and raise forest users' awareness of sustainable forest management practices. Inform forest tenants about innovative forest management technologies approved for use in their area. Ensure that stakeholders at local level are trained on pest management methods.
5 ₩ • #	 Involvement of land user groups and interested parties in integrated management planning contributes to awareness amongst users of mutual land-use rights, thus reducing conflict potential. It also helps preventing illegal logging. Forest users' sense of ownership helps mobilization and engagement in pest management activities.
	 Within leskhozes' operational plan consider testing integrative reforestation on the lands of state forest fund, local municipality and on private plots. Within the participatory forest management approach consider testing the establishment of (walnut) plantations jointly with tenants and in coordination with local authorities. Within the participatory forest management approach consider involvement of local forest users in testing new methods of forest regeneration in state forest fund land. The benefits of innovative revolving forest-plot-fencing mechanism should be clearly documented and formalized in compliance with national legislation, to enable subsequent upscaling.
	 To ensure sustainability of the tested technologies they must be economically feasible. Co-financing must be sought for whenever financial or in-kind assistance is offered to support forest users' sustainable land-use initiatives. The tested energy-efficient water pump technology should include technical specifications, demonstrate benefits and be financially affordable to be taken up by local users
	 Support for natural regeneration and tree planting activities contributes to increased carbon storage. Selection of plus-trees helps improving climate-resilience and adaptive capacities of planted walnut forests. When elaborating the plus-trees (walnut) selection methodology, ensure that forest scientists are involved, the know-how is carefully tested in the area of concern with due regard for local environmental conditions, and the resulting knowledge is formalized as guidelines. When elaborating ball-rooted seedling production methodology, ensure that forest scientists are involved, the know-how is carefully tested in the area of concern with due regard for local environmental conditions, and the resulting knowledge is formalized as guidelines.

tested in the area of concern considering local environmental conditions, and resulting knowledge is formalized as guidelines.

Forest Inventory Availability of actual forestry geo-data and information is critical for forest use management.	1	 Improve GIS skills of government land-management organizations' staff for better land-use management. Improve institutional capacities of land-management organizations to facilitate harmonization and integration of their spatial data and information management systems.
	3	 Consider conducting an assessment of GIS data/information management and infrastructure capacities of the Forest Inventory Department within the SAEPF.
		• Consider the need for revision of geographical data management and database infrastructure of the Forest Inventory Department to update them and ensure their compatibility.
		 In the context of deficient government financing of land- management organizations, encourage the use of open-source GIS software/applications for inventory needs to ensure sustainability.
		• Consider enabling improvement of forest users' access to information about the leasehold status of forest land plots.

Cornerstone 3: Forest Economy

GIZ Experience for Implementation	In the Soviet period, the forestry sector's share in the national economy was insignificant as forests were heavily protected for nature conservation. All forests were owned, protected and managed by the state. Although forest administration was executed through leskhozes, literally forestry enterprises, their main objective was not to bring economic benefit, but to protect existing forests and increase the forest cover. At present, the forestry administration is transiting to joint forest management, mainly implemented through the lease of forest land plots to local communities and the private sector. Thousands of forest tenants ³ now benefit from this policy. However, officially the forestry sector's share in Kyrgyzstan economy remains low: around 0.05% of GDP ⁴ . These figures do not reflect the real economic output of the forest sector because of inadequate economic accounting.		
	value of products generated in the forestry sector. At the local level GIZ helps communities and business entities to identify value chains for forest products (wild walnut, mushrooms, medicinal herbs, fruits, etc.), in product standardization, and marketing. Likewise, GIZ has supported cost-benefit analysis of agroforestry models.		
	Reference material (legal and normative documents):		
	- Regulation #192 of the Kyrgyz Republic State Forest Fund Land Lease (RU);		
	- Statistical Form "2-LH Forest Users – Report About Performance of Forest Users in the State Forest Fund" (RU);		
	- Assessment: Potential of Fast-Growing Tree Plantation in Kyrgyzstan (EN);		
	 Training documents on Forest products processing by local communities in compliance with food safety standards (RU); 		
	- Wild walnut kernel standard for promotion on the global market;		
	- Database on Organic certification of walnut kernel;		

³ More than 20 000 forest tenants, 2016. Forest Department, SAEPF. ⁴ Orozbaeva K., National Statistical Committee of the Kyrgyz Republic. June 2016. International Conference on Natural Capital for Transition to Green Economy, Kyrgyzstan.

Key Elements of the Experience

Support of Forest Business **Development and Economic** Accounting

Improvement of forest land lease legislation and relevant institutional arrangements should enhance transparency of forest governance, secure private investments into the forest sector, and protect forest land tenants' rights.





1	 Promote awareness raising for forest users and the broader community (including secondary school students) of the ecological and economic value of walnut forests.Ensure that local communities involved in forest product processing and production are trained on certification standards. Ensure that forestry staff, local statistical officers and forest users are trained to correctly use the statistical form on forest tenants' economic performance ("2-LH Forest Users"). When testing the draft statistical form on forest tenants' economic performance, ensure that forest users and other involved parties are well informed of the purpose of the form.
5 ₩ • #	• Evaluation of potential for development of fast-growing tree plantations must also consider traditional local tree species, e.g. willow in the north, and poplar in the south of Kyrgyzstan.
	 Support the discussion of a draft national statistical reporting form on forest tenants' economic performance, with participation of experts and forest tenants, and testing of the form in pilot areas prior to its approval. Ensure guaranteed protection of information about forest users' economic performance – as this is critical to building trust in the information gathering process.
	 Improving livelihoods of local communities involved in forest use requires supporting the establishment of organized user groups empowered for collective action. Consider organization of forest user groups to meet the non-timber forest products (NTFP) certification requirements and enabling maximum economic benefit. Consider possible impact of forest regulation on forest tenants' interests, ownership rights and investment potential into the forest sector. Consider disincentives (e.g. extra taxation) when regulating forest tenants' reporting on their income from forest business. Consider improving qualities of NTFP to increase their export potential and subsequently improving reinvestment potential. Consider improving access to domestic and foreign markets for NTFP producers to support economically viable forest use types. Ensure compliance with NTFP processing standards (Organic, Good Hygiene Practice, Good Manufacturing Practice) by local communities for higher marketing potential. Assessment of potential for fast-growing tree plantations must provide clear financial (cost-benefit) and technical data (details on tree species, infrastructure requirements). Consider supporting economic assessment to facilitate the change from current land-use practices to sustainable approaches creating both short-term and long-term economic benefits.



Pasture Management

for Integrative Land-Use Management Approaches (ILUMA)

Pasture Management

Sustainable pasture management for improving pastureland ecosystems and livelihoods of users

1.What is this land use practice about?

The Kyrgyz Republic (Kyrgyzstan) is a landlocked country; approximately 90 per cent¹ of whose territory is occupied by mountains. The total area of the country is 19.9 million hectares, of which slightly more than 9 million ha are pastures and hayfields, comprising 85 per cent of all agricultural lands. Pastures are an important source of income for about 60 per cent of the population, which depend on extensive livestock production. More than 6 million heads of small ruminants and 1.5 million heads of cattle currently graze on pastures and according to available sources² 49 per cent of pasture area has been affected by degradation processes to some extent.

Steady increases in the livestock population are certainly one cause of pasture degradation, but institutional issues also contribute to the problem. Starting in early 1990s, reforms of the agricultural sector in general, and pasture management in particular, included dismantling of the centrally governed system, transfer of authority to the local level, and privatization of land and agricultural services. This resulted in fragmentation of responsibility for pasture management between different stakeholders at the local level. nonobservance of seasonal livestock movements and disruption of investments in pasture infrastructure. The 2009 law "On Pastures" addressed these issues, determining the transfer of authority for pasture management to municipalities and pasture management functions to local pasture committees with institutionalized pasture management planning rules.

Likewise, the forest pasturelands, administered by the State Agency for Environment Protection and Forestry, although constituting a single ecosystem with "agricultural pastures", have also been subjected to degradation as a result of the sector-wise difference in management methods. The recently introduced GIZ-supported amendments to forest use legislation, promote integrated approaches to management of both pasture and forest resources for economic and social gains along with the maintenance of ecological resilience.

2.Cornerstones of Sustainable Pasture Management

Institutional reform of the pasture sector in Kyrgyzstan was concluded with the enactment of the Law "On Pastures". All the pastures in the country were recognized as a national resource and cannot be subject to privatization. All the rights and authority for pasture management were given to the Pasture User Associations and relevant local Pasture Committees – non-government organizations. Although various development organizations invested financially and technically in the capacity building of pasture management organizations there are still outstanding issues related to strengthening and retaining their institutional capacities both at national and local levels. In this regard and in the given context:

- Pasture Sector Governance; and
- Pasture Management Techniques are seen as important cornerstones through which to consider management approaches to pasture use.

3. What are possible ways to implement different pasture management measures, linked to ILUMA dimensions?

The matrix below offers a description of GIZ's interventions and relevant experience that were arranged around the cornerstones.

¹ http://stat.kg/ru/opendata/category/131/

² the State Agency on Environment Protection and Forestry under the Kyrgyz Republic Government, 2018.

Cornerstone 1: Pasture Sector Governance

GIZ Experience for	Support of Legal and Institutional Framework Improvement
Implementation	 Functional Analysis of the Pasture Department and the District Department of Agrarian Development of the Ministry of Agriculture in order to assess their institutional capacity to coordinate pasture management tasks and identify areas for support;
	- Climate Data Processes Analysis in the Ministry of Agriculture of the Kyrgyz Republic, looking at awareness of the national adaptation plan within the Ministry and at the flow of data needed to implement this plan;
	 Introduction of amendments to laws regulating management and melioration of unproductive lands, as these lands are classed as pastures, but hardly used as such due to their poor productivity. At the same time these lands have great potential once reclaimed for perennial plantations;
	 Production of national norms and standards for calculation of pasture stocking rates;
	- Testing of a District Pasture Commission mechanism as an approach to coordinate livestock grazing issues with wide participation of stakeholders at local level, and production of model regulations for such an institution.
	Support of Inter-Sectoral Policy and Implementation Platforms
	 Setting up of inter-departmental working group, including agricultural pasture and forestry experts, to explore mechanisms for integrated management of grazing on pasture and forest lands;
	- Development of forest pastures grazing regulation.
	Reference Materials:
	 Report on Functional Analysis of the Pasture Department and the District Department of Agrarian Development of the Ministry of Agriculture and Melioration of the Kyrgyz Republic (EN);
	- Report on Climate Data Flow Processes Analysis (RU);
	- Analysis of legal situation regarding unproductive lands (RU);
	- Amendments to legislation on reclamation of unproductive lands (RU);
	- Recommendations for drafting of standards for stocking rates (RU);
	- Draft standard procedures for determination of stocking rates (RU);
	- A model Regulation of the District Pasture Commission (RO),
	for Livestock Grazing (RU);
	- Guidelines for Development of Livestock Grazing Plan in the State Forest Fund Land (RU).

Key Elements of the Experience Guiding Principles and the Way How They Are Related to ILUMA Dimensions GIZ supports the improvement of legal A functional analysis of the Ministry of Agriculture and institutional framework in the conducted with the view to improve the organization's pasture sector. structure to enable better response to specified functions; Support of innovative forms of collaboration among the Besides, the technical assistance focuses wide array of stakeholders at local level, including the state on supporting intersectoral (forest and and municipal organisations, NGOs and land users; pasture) policy and implementation • The District Pasture Commission (DPC) represents a platforms. collective mechanism that helps to coordinate the needs and interests of local land users and land managers. DPC represents a new institution set up to test possible ways



- of response to the increasing demand of local land users for pastures of the forest sector and insufficient coordination among the local land management organizations;
- The elements aim at facilitating policy dialogue both • between the government organizations and civil society.



- Supported policy dialogue and implementation coordination platforms improve communication between key actors and thus ensure agreements are understood;
- Such platforms are designed in a way to allow ensuring equal access for key actors to decision making with regards to land use matters and thus create trust between the actors.

Cornerstone 2: Pasture Management Techniques

GIZ Experience for Implementation	Testing and Mainstreaming of Innovative Approaches to Sustainable Pasture Use
	- Elaboration and testing of integrated management planning (IMP) in the state forest fund. This experience focuses on the walnut forest area in the south of Kyrgyzstan, where the population is dense. Accordingly, the demand for, and pressure on forest pasture resources, is high;
	 Testing of a District Pasture Commission mechanism as an approach to coordinate livestock grazing issues with wide participation of stakeholders at the local level;
	 Studies on beef value chains demonstrate that improving production efficiency holds considerable potential for the decrease of GHG emissions in Kyrgyzstan and is also one way to solve the pastures degradation problem through market mechanisms;
	 Support to pasture assessment, monitoring and planning manuals for pasture committees;
	- Support to testing and documentation of SLM approaches and technologies for pasture management.

GIZ Experience for Implementation

Support to research on pasture assessment and management

- Economics of Land Degradation case study in Kyrgyzstan comparing costs and benefits of baseline scenarios (no action), and scenarios with improved pasture management;
- Study on pasture condition and carrying capacity and testing of state and transition approach to pasture assessment;
- Analysis of actual and potential conflicts of pasture use and mining with conservation and sustainable use of wildlife.

Support to Cooperation and Networking

- Regional Pasture Network to promote exchange of experience and expertise in pasture management in Central Asia, China and Mongolia. The network focuses on pasture management, but also includes aspects of forest and wildlife management. It has a digital library, Facebook page and Newsletter for dissemination and exchange of information;
- Study tours organized to Kyrgyzstan from other Central Asian Republics (Tajikistan & Turkmenistan 4-11 August 2014; Kazakhstan, Tajikistan, & Uzbekistan 15th - 18th of May 2017; from Turkmenistan October 2017);
- Conferences to promote international experience exchange on pastoral property rights systems (Bishkek 2014 and Ashgabat 2018) including focus on lessons learned in Kyrgyzstan.

Reference material:

- Guidelines on Development of State Forest Fund Natural Resources Integrated Management Plan (RU);
- A Model Regulation of the District Pasture Commission (RU);
- Scoping study on Nationally Appropriate Mitigation Actions (NAMA) for Kyrgyzstan in the livestock sector (EN);
- Report on Climate-Smart Beef Production (RU);
- Manual for Pasture Committees on the Development of Community Pasture Management Plans, including a description of pasture improvement technologies (RU);
- Manual on pasture management with simplified pasture monitoring methods (RU);
- Four technologies documented and available in the WOCAT SLM online database (EN/RU);
- Assessment of the land condition in the Kyrgyz Republic with respect to grazing and a possible development of a quoting system on the local governmental level (EN/RU);
- ELD case stud policy brief (EN/RU);
- Report on visit to Kyrgyzstan by delegation from Tajikistan and Turkmenistan 4-11 August 2014 (RU);
- Report by Turkmen delegation on lessons learned from visit to Kyrgyzstan in October 2017 (RU);
- Publication on Bishkek conference: Pasture Management in Central Asia (EN/RU);
- Short report on Ashgabat conference (EN/RU).

Key Elements of the Experience

GIZ actively supports elaboration, testing and, whenever possible, mainstreaming of innovative approaches and mechanisms that help to instill sustainable use of pasture resources. Opportunities to exchange relevant knowledge and experience in management of pasture resources have also been a part of GIZsupported interventions. Thus, the key elements comprise:

Testing and Mainstreaming of Innovative Approaches to Sustainable Pasture Use; and

Support of Cooperation and Networking

Guiding Principles and the Way How They Are Related to ILUMA Dimensions



IMP approaches and DPC structures have been tested and could be further developed through capacity building and formalisation.



- The DPC experience fostered collaboration between involved parties at different administrative levels and helped to address individualism and to promote the culture of sharing, learning and free communication;
- The development of pasture management and monitoring manuals improves access to tools, based on international best practice, for national and local pasture management institutions.



- Economic costs and benefits were considered and analyzed as a key incentive for land users to take up the climate-smart beef production model;
- The Economics of Land Degradation studies supported, demonstrate the true value of ecosystem services and estimate costs and benefits of action against land degradation



- The 'cooperation and networking' element includes supporting decentralized knowledge management to make relevant knowledge available to a broad interested audience regionally and beyond;
- The 'cooperation and networking' element also seeks to addresses the lack of culture of sharing, learning and free communication.

Methodologies and methods for implementing integrative land use approaches

The success of the implementation of an integrative land use management approach does not solely depend upon the approach itself. How the approach is implemented, and which methodology and methods are used, are equally important. In this section, we will introduce a selection of methodologies used within our approaches. Choosing the right methodology depends upon the context, which can vary not only between countries, but even within a single country. Always, the methodology of implementation must be adapted to fit the given context.

Methodologies and methods include cross sectoral / overarching topics, such as climate change, raising awareness about environmental problems and the value of ecosystem-services, and ensuring the inclusiveness of an approach. Accounting for climate change within a project and climate-proofing each implementation measure to be suitable for the current and future climate is indispensable. Depending upon the local environmental conditions and topography of the region of implementation, either the a) Open Standards-based framework for planning or b) the Climate Risk and Vulnerability Assessment should be applied. The first focuses upon climate-proofing adaptation measures according to their climate robustness, while the second focuses upon potential risks arising from climate change. A further core area of work is awareness-raising. Heretofore, there has been little awareness about adaptation needs and options, both on the local and national level. Consequently, environmental education is central for all stakeholders of the project implementation. An overall participatory form of implementation, including regional, national, district and local level stakeholders, can guarantee the success of the implementation and the aspired sustainability. Only if all stakeholders are part of the process, their opinions considered, and the project planned, implemented and monitored in a participatory manner, can we expect the continuation of the introduced integrative land use management approaches past a project phase.

Open Standards-based framework for planning and implementing¹

Before starting any field activities, it is important to scope the environment. In a setting where climate change has severe impacts upon the landscape, it is recommended to follow the Open Standardsbased framework for planning and implementing Ecosystem-based Adaptation (OS-based EbA)². The Open Standards-based EbA framework is a methodology for participatory strategy development, planning and adaptive management of ecosystembased and other complementary climate change adaptation measures. It was derived from the CMP Open Standards for the Practice of Conservation and consists of nine essential steps. The framework has been designed for use by communities with support from an experienced facilitator to guide the process. The full facilitators guide takes readers through nine steps and provides information and tools to facilitate ta workshop. It also includes a climate vulnerability assessment that evaluates the vulnerabilities of ecosystems, as well as vulnerabilities of people who depend on them, via ecosystem services. The Open Standards-based framework puts a special emphasis upon a participatory approach. This means that the local community is consulted and forms a part of the decision-making process for each step. This is ensured by a team of facilitators that go through the adaptation cycle together with the local community. Another pillar of the Open Standards-based framework is the integration of localised climate information: i.e. detailed climate projections for the pilot region are derived from global models, allowing for precise knowledge of predicted climate change impacts. This allows for science-based decision and policymaking.

Climate Risk and Vulnerability Assessment (CRVA)

Climate Risk and Vulnerability Assessments (CRVA) aim to quantify risks and identify adaptation options that can be integrated into the project design. A CRVA

¹ https://panorama.solutions/en/solution/open-standards-based-framework-planning-and-implementing-ecosystem-based-adaptation

² https://link.springer.com/chapter/10.1007/978-3-319-72874-2_2

can help determine the impact of climate change, the costs of the impact, which adaptation options are technically and realistically feasible, as well as the cost of adaptation³. CRVAs can be done for any sector, including for those in which climate change impacts are not (yet) routinely considered. This might, for example, be the transport or tourism sector. The CRVA is a well-established tool that helps to raise awareness for projected climate change impacts also among policymakers that have not yet considered climate change as relevant for their sector.

The complementarity of OS-based EbA and CRVAs was tested as part of the pilot study in the Jabbor Rasulov district of Tajikistan. This study illustrated that a CRVA can benefit from the EbA, in particular by strengthening the ecosystems and ecosystem services' perspective in the former. Furthermore, a CRVA's findings (which concern impact chains) serve only as a starting point for the identification of adaptation options. Thus, the complementary assessment of the state of ecosystem services via the OS-based EbA provides an appropriate entry point for selecting EbA measures, albeit as part of a separate next step requiring additional expertise.

Environmental education

Environmental education is a process in which individuals gain awareness of their environment and acquire knowledge, skills, values, experiences and resolve that enables them to act - individually and collectively - to solve present and future environmental problems. As a result, individuals develop a deeper understanding of environmental issues and acquire the skills needed to make informed and responsible decisions. The main aim of environmental education at the grass-root level is to make individuals and communities understand the complexity of interrelations between humans and natural environments. This enables individuals to understand environmental problems, derive solutions to these problems and act based upon acquired capacities and opportunities to participate responsibly at all levels. Thus, environmental education serves as an instrument for both a) protecting and enhancing the environment and b) improving the quality of life of human communities.

For each measure and target stakeholder, GIZ aims at providing capacity-building training that widens the understanding and increases the awareness of people on climate change, land use problems and/or the value of ecosystem-services. A special training that has been applied and further developed for the region is a 3-5-day course on *integrating ecosystem-services into development planning*⁴. This course provides an overview of all ecosystem-services and engages the participants through a case study and role-playing in which they solve a variety of environmental problems and related conflicts of interests.

Participatory planning and monitoring

Participatory planning and monitoring processes focusing upon the engagement of all stakeholders empower beneficiaries and project stakeholders to develop interventions in a way they consider most suitable. The beneficiaries themselves set the direction for change, plan their priorities and decide whether the intervention has made progress and made relevant changes. It sets in motion social processes of decisionmaking and consensus-building regarding the use and protection of different land use types. Participatory planning, implantation and monitoring consequently ensure the sustainability of the approach.

Two examples of participatory methods applied in the project are the Joint Forest Management approach and Farmer Field Schools.

Joint Forest Management

With the Joint Forest Management (JFM) approach implemented in Tajikistan, GIZ has introduced a participatory forest management approach that focuses strongly on the participation of local communities in forest management. This participatory forest management approach enables the local population – either individuals or groups - to become involved in forest management and support the rehabilitation of degraded natural forests over the long term. The local population signs a contract for the land use rights with the State Forest Enterprises for a period of 20 years, with the possibility of prolongation. This encourages the tenants to sustainably manage and rehabilitate their forest plot of usually 1-2 hectares. In addition to the contract, management and annual plans serve as tools for forest management planning and monitoring activities and results. They are developed jointly by the State Forest Enterprises and the respective tenant for each individual plot. Typical tasks specified in the annual plan include measures to protect the plot from livestock overgrazing, planting of trees, harvesting and pruning. Further, the annual plan specifies the harvest

³ A guidebook developed by GIZ in collaboration with Eurac Research and United Nations University – Institute for Environment and Human Security (UNU-EHS) helps planners and practitioners in designing and implementing climate risk assessments in the context of Ecosystem-based Adaptation projects. It provides a standardized approach to assess risks within social-ecological systems based on two application examples (river basin and coastal zone management) by following the methodology of the GIZ vulnerability sourcebook (2014) and its Risk Supplement (2017). It helps to improve adaptation planning by considering both ecosystem-based and conventional options in the form of integrated 'adaptation packages':

https://www.adaptationcommunity.net/wp-content/uploads/2018/06/giz-eurac-unu-2018-en-guidebook-climate-risk-asessment-eba.pdf

⁴ <u>http://www.aboutvalues.net/trainings/</u>

shares of the State Forest Enterprises and the forest tenant according to a fair sharing principle defined in the contract. The management plan is developed for a five-year period and specifies long-term goals, such as the installation of an irrigation channel or diversifying a forest plot.

Farmer Field Schools

GIZ has worked with Farmer Field Schools (FFS) to actively involve farmers in the process of learning through the exchange of knowledge, experience and best practices in agriculture. This process must be facilitated at the beginning, although in the long run FFS can be maintained by the farmers themselves either formally or informally.

Methods to be applied within the scope of FFS are:

- Group training, including presentation of videos to distribute useful information about the approach.
- Field visits for assessing crop condition and identifying problems on the ground.

- Learning-by-doing / practical training in the field for discussing problems with trainers and other farmers and putting the new techniques into practice.
- Exchange visits or study tours involving farmers from other areas so that they can gain theoretical and practical knowledge to apply to their plots.
- Field days involving non-target farmers into project activities and motivating them to replicate innovative techniques promoted by the project in their own plots.

Conclusion and outlook

The majority of Central Asia's people depend directly upon the land they live upon – and yet, mismanagement of land resources, including overgrazing, deforestation, and monocultures, have taken their toll on the land's productivity. Increasing land degradation, desertification and biodiversity loss are challenges the region is facing and urgently needs to address. Climate change will only serve to exacerbate these problems, as increased temperature and shifting precipitation patterns will further decrease the productivity of arable land.

Sustainable land management can alleviate environmental problems, but technical solutions alone will not suffice. To conserve and restore ecosystems and their functions, a wider perspective needs to be applied that incorporates the human factor. ILUMA offers precisely such a perspective to tackle these challenges by accounting for multiple dimensions that encompass the human and non-human elements of the situation. Only if all dimensions are addressed can we ensure implementation of truly integrative land use management approaches that in turn guarantee sustainability.

The aims of GIZ's ILUMA conceptual framework introduced are manifold:

- To deepen the discussion on integrative land use schemes in Central Asia, together with Central Asian governments, as well as with donors, development partners, civil society and other relevant stakeholders. Ultimately, the goal is to agree upon common standards regarding sustainable land use practices, particularly in the face of climate change.
- To support Central Asian governments in their efforts to develop national and regional policy frameworks, and to strive to create an improved institutional setting for sustainable land use, thereby also contributing to economic development.

- Together with Central Asian partners, donors and development partners, to develop programs at a scale that is appropriate and powerful enough to make a real impact, such as multi-donor development funds.
- To support land users in sustainably managing their land resources by applying a landscape perspective and using the dimensions as guiding principles on integrative land use management.
- To use ILUMA as a knowledge and experience management tool.
- To use ILUMA to set up suitable systems to monitor and evaluate the effects (environmental, societal, etc.) of current and future forms of land use, as well as to adapt existing policies and communication / mediation channels accordingly so as to be able to respond to problems in a timely manner.

All experiences in land use management in Central Asia can be redeployed as valuable, tested-in-practice information for policy-makers. Not only can the lessons learned be used for developing realistic and innovative policies, but can also serve as hands-on examples for practitioners on the ground, potentially bridging an important knowledge and experience gap, and thereby, in turn, improving the effectiveness of policies.

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