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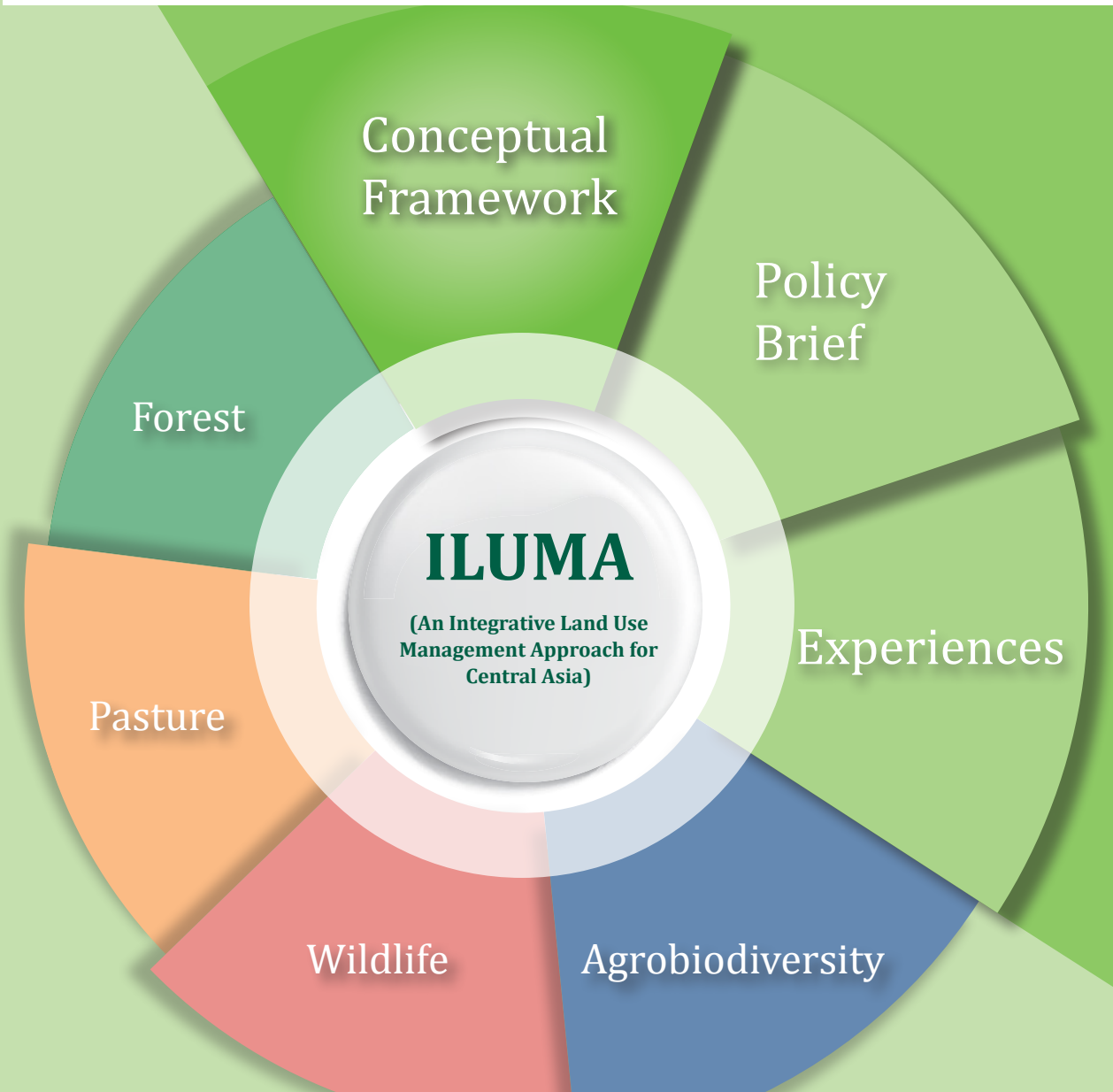
Conceptual Framework for Integrative Land Use Management Approaches (ILUMA)



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for Integrative Land Use Management Approaches (ILUMA)

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, development based upon these ecosystems plays an important role in fostering national economic development.

Of the 399.4 million hectares of land in Central Asia, about two thirds are dry land with extreme biophysical constraints common to arid and continental climate zones[1]. Were this not challenging enough, extensive land degradation, desertification, and biodiversity driven by unsustainable land-use management threaten the core functions (e.g. ecosystem services) and productivity of these natural resources. Particularly problematic practices are overgrasing and poor management of forest resources. 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[2]. Sustainable land use management approaches can thus help to maintain the functionality and productivity of the region's natural resources.

Climate change is an additional factor that will further increase pressure on Central Asian countries striving to sustain their production bases for land resource-dependent sectors. Forecasts regarding climate change's impacts predict multiple threats, including extreme temperatures and changes in precipitation patterns. The vast glacial systems of Central Asia's mountain ranges serve as water reservoirs for irrigation systems and are vital during the hot and dry summer months. Unfortunately, it is also these very glacial systems that are the most susceptible to dramatic change.

Increased average annual temperatures will lead to accelerated melting of glaciers in the near future. The effects of this change will vary from the short-term to the long-term. Initially, there will be greater water drainage coupled with a shift in seasonal availability of water, i.e. increases during the early summer and decreases during the late summer. In the long run, models forecast that total discharge of meltwater will subside, with peak water discharge from glaciers expected to be reached during the middle of this century[3].

The threat posed by climate change is not a fiction of mathematical models, as the effects are already being felt. Satellite observations indicate that the productivity of plants in Central Asia have decreased, largely as a result of water stress[4]. Mountainous areas are especially vulnerable to climate change, as not only will they experience the greatest intensity of the impacts, but also have the least resources for adaptation. Also elsewhere in Central Asia will climate change lead to increased competition for water and land resources, and in fact the signs of brewing conflict regarding land use management are becoming visible. Yet, natural resources in Central Asia remain largely neglected at the macro-political level because of their perceived insignificance for short-term economic gains. So long as decision-making adheres to a 'business-as-usual' approach, political tensions will further intensify.

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. Socio-economic, institutional, financial and environmental concerns must all be addressed. 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 which 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

[1] http://geoagro.icarda.org/downloads/publications/geo/Sustainable_Agriculture_1.pdf

[2] https://www.eld-initiative.org/fileadmin/pdf/ELD_CA_regional_report.pdf

[3] https://doi.org/10.1038/s41558-017-0049-x

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

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 prevalent 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 Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH (German Federal Enterprise for International Cooperation) that have served as the concrete basis for our new 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 Appendix 1. Nonetheless, 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 and capacity development of change-makers within key organisations; facilitation and communication; and technical expertise. **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 different institutions and other actors.	 **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. **Focus:** Information management, exchange of knowledge, and learning. **Key challenges:** Official data and information is often 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.

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.

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.

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.

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.

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.

Concluding Remarks and Outlook

In Central Asia, most people depend directly upon land resources, yet mismanagement of these resources is rampant: overgrazing, deforestation, and monocultures, have all taken their toll on productivity. The region is now facing a three-headed dragon of increasing land degradation, desertification, and biodiversity-loss. Climate change is further exacerbating these problems, for as temperatures rise and precipitation patterns shift, productivity of arable land will decrease further.

Sustainable land management cannot be achieved by technical solutions alone. To conserve and restore ecosystems and their functions, a wider perspective must be applied. GIZ's new conceptual framework ILUMA offers precisely such a new perspective. By accounting for all the dimensions of land use management, including not only technical factors but also the human ones, we can implement programmes and projects that guarantee sustainability.

The aims and capacities of ILUMA are manifold:

- Deepening the discussion on integrative land-use schemes in Central Asia together with the governments of the Central Asian countries, donors, development partners, civil society, and other relevant stakeholders, in order to agree upon common standards regarding sustainable land-use practices (particularly in the face of climate change).

- Supporting Central Asian governments in their efforts to develop national and regional policy frameworks, to creating an improved institutional setting for sustainable land use, and ultimately to foster their peoples' economic development.

- To develop programmes and projects together with Central Asian partners, donors and development partners at a scale that is appropriate for making real impact, e.g., example multi-donor development funds.

- To support land users in sustainably managing their land resources by applying a landscape perspective and using the dimensions of land use management as guiding principles.

- To manage knowledge and experience in such a fashion as to establish suitable systems for monitoring and evaluating the total effect pattern (environmental, societal, etc.) of current and future forms of land use, and to adapt existing policies and communication/mediation channels accordingly to be able to respond in a timely manner to problems as they arise.

Finally, ILUMA has been derived from GIZ's concrete experiences in land use management within Central Asia. However, it itself also serves as a dynamic archive of new experiences, thereby improving its own deployment in the field. In this way, ILUMA can serve as valuable information resource for policy makers who rely upon approaches tested in practice. The lessons learned can not only be used for the development of realistic and innovative policies, but can also serve as hands-on examples for practitioners on the ground, potentially bridging an important gap and thereby improving the effectiveness of policies.

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 Expertise	Develop competences for analysing current technical problems.
	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.

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

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').

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 Systems[4] 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 best-fit 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 non-discrimination 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 Stakeholders	Develop mechanisms for appropriately involving all key stakeholders in the process of land use regulations development (e. g. consultation mechanisms).
	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. cost-benefit 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 socio-ecological 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.

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