



Commons in Transition

THE IMPACT OF THE TRANSITION PROCESS ON HUMAN-ENVIRONMENTAL INTERACTIONS IN SOUTHERN KYRGYZSTAN

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- *shorted version of a project proposal* -

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Summary

The project sets out to explore the effects of the transition process on human-environmental interrelationships in the Jalal-Abad region in southern Kyrgyzstan. Using a *political ecology* approach as a conceptual framework, the project aims at investigating the nexus of socio-economic and environmental change, focusing on changing forest utilization, its political, social and economic root causes and its ecological consequences. Globally unique walnut-fruit forests in the region, characterized by remarkably high biodiversity, are of considerable importance for sustaining the livelihoods of the local population. These forests are now in a critical condition. The status as biodiversity-hotspot of international significance and the maintenance of their manifold landscape-ecological functions is seriously threatened. Forest utilization appears to reflect the intensified pressure on natural resources under the conditions of the transition process.

The state of research reveals that interrelationships between the transition process and ecological change in these forests and woodlands have neither been addressed in a larger and sectoral framework nor using interdisciplinary approaches so far. There is a general lack of data on the socio-economic position of the study area within Kyrgyzstan, trans-regional economic exchange relations, local property rights and land tenure issues, external interferences and political-economic power structures. At the same time, hardly any quantitative data are available on effects of multiple uses on forest ecosystem processes, biodiversity dynamics and forest condition. In order to analyse how the transition process is linked to environmental change, the approach of the project is threefold:

- The socio-economic approach focuses on political, economic and social changes and processes as consequences of the collapse of the authoritarian state-centred socialist system. It needs to differentiate the framework conditions on various levels by taking into account the relevant elements of the transition such as institutions and actors, property rights, and resource management strategies.
- The landscape-ecological approach seeks to clarify the implications of human activities for forest landscapes in the region and aims at investigating the capability of forests and woodlands to cope with increased utilization pressure. Ecological alteration processes at work along utilization pressure (disturbance) gradients will be analysed and evaluated in order to assess ecological potentials and constraints of sustainable resource use.
- Within the scope of the synthesis, the results of both approaches will be linked in an integrative, spatial-functional perspective. By directly relating constellations of socio-economic and ecological factors and processes at different spatial and temporal scales, a comprehensive, functional understanding of human-environmental interrelationships shall be achieved. A model of regional man-environment-relationships will be developed allowing to outline scenarios for the conditions of ecologically, economically, and socially sustainable land-use within the transition process. On this basis, strategies will be derived to support a development process, which is orientated towards the leitmotif of sustainability.

Project rationale

1. The transition process in Middle Asia

Government leaders in Middle Asian States of the Former Soviet Union have taken several steps towards the creation of a private sector, introducing new legislation, putting privatization onto the political agenda and creating appropriate administrative structures. However, massive system transformations resulted in growing social and economic disparities. The decline in living standards and the creation of new groups of impoverished, such as unemployed, put added pressure on the states. But with the abrupt end of transfers and subsidies from the Soviet Union, the shrinking of the domestic tax base and the breakdown of the inter-republic trade, the governments had fewer resources with which to alleviate the effects of transition. Poverty along with growing corruption and ideological differences, emphasized upon in ongoing power struggles, are the main problems of transition the new governments are confronted with in the years to come.

The socio-economic transition processes are, of course, intimately connected with changing land-use systems and often environmental degradation. The generally adverse state of the natural environment in the former Soviet Union, largely resulting from outmoded, inefficient, and polluting industrial enterprises, military activities, as well as from waste and inefficient use of natural resources, has been well known for over two decades (cf. PRYDE 1995; STADELBAUER 1996, 1998). The creation of a centralized control system resulted in the disempowerment of rural populations - thereby losing valuable knowledge about local agro-ecological conditions and applied technologies with exclusion of stakeholders for ensuring sustainability - and in a fundamental change in their style of livelihoods and resource use (e.g. the sedentarisation of nomads and expropriation of farmers).

2. The Kyrgyzstan context

Among the newly independent states, Kyrgyzstan has made similar experiences regarding the loss of livelihood assets for the majority of the population after the collapse of the Soviet Union. The unique historical situation is characterized by a more or less abrupt change from a state-dominated, protected and controlled socio-economic system to a clustered societal set-up of newly independent states confronted with the frame conditions of a globalized economy and prone to external interference.

Besides certain specified areas of production, Kyrgyzstan's function in the command economy of the Soviet Union was mainly characterized by the production of meat while utilizing abundantly available natural resources in the form of grazing grounds. After independence this system collapsed and, to give an example, the number of sheep decreased from 11 to 3 million during the last decade (SCHMIDT 2001). At the same time, international intervention in the form of development programmes, biodiversity conservation projects, animal husbandry support programmes etc. was asked for and provided in order to mitigate the adverse effects of the so-called transition process from a state-controlled society to a market economy based on private property and entrepreneurship (cf. e.g. PANDEY & MISNIKOV 2001). Obviously the transition to an independent state was accompanied by several so far unexperienced side-effects:

- The nation state has to rely mainly on its own resources and expertise in running the state economy and managing the available natural resources.

- Despite a decrease of livestock numbers the pressure on natural resources intensified. This on first sight paradoxal observation can only be explained by a growing pressure on natural resources due to an increase of subsistence-oriented survival strategies.
- Lack of experience of farmer-led resource management after 70 years of Soviet rule created a socio-political environment in which control mechanisms, power relations and access rights are not yet defined in a manner which seems to find a consensual balance and to become sustainable.

The present-day observation that a modern agriculture of former times was replaced by subsistence-oriented survival strategies in the rural areas poses a major challenge for development theory, its practice and related research. In order to understand the complex situation clear-cut models leading the path for modernizing traditional rural economies do not apply as this new situation seems to be an upside-down case. The adoption of subsistence strategies for sustaining livelihoods in newly independent states such as Kyrgyzstan suggests that the pressure on locally available natural resources might be reduced and that the adopted model might ease the competition for access to environmental wealth and the threat on biodiversity conservation. Again the observation is contradictory to accepted conventional wisdom. The "tragedy of the commons" (HARDIN 1968) is not relieved by these new developments as Kyrgyzstan is moving towards a market economy in a globalized world. The pressure has increased as former rules and regulations are not in force anymore - the "tragedy of enclosure" (BRYANT & BAILEY 1997: 163) from the enterprising farmer's perspective -, new actors are on the scene, and their actions are more complex than former approaches in a state-run planned economy. The need to adopt a locally applicable survival strategy forces inhabitants of rural areas to seek opportunities in exploiting local resources. The observation of the developments described above results in the conclusion: Research about the transition process in Central Asia in general and specifically in Kyrgyzstan needs to conceptualize the sociopolitical dimension of resource use in a manner that the actors and their actions are identified and interpreted in the framework of politics and power, development strategies, ideology and institutions.

2.1 Relationships between socio-economic transition and ecological change in forests of the Jalal-Abad region

The Jalal-Abad region of southern Kyrgyzstan, the study area (Fig.1), reflects in many respects general problems resulting from the transition to a market economy. Increasing pressure on natural resources is a concomitant of a local population facing severe economic hardships. Additionally, high population pressure and lack of land resources are typical problems, leading to outmigration to big cities (UNDP 1998; ABAZOV 1999). Today, land-use is practised with low efficiency since the state's support of the agricultural sector is no longer available. Moreover, many people were deprived of other income opportunities after the collapse of the Soviet economic system. Now the population largely depends on subsistence „kitchen garden farming“, and/or agriculture for their livelihood. Thus, the utilisation pressure on the limited natural resources considerably increases, resulting in unsustainable land-use, which again has negative repercussions on socio-economic conditions. A major problem is the degradation of forested areas with its inevitable consequences on landscape functions. At the same time, the lack of land resources provokes the risk of social and ethnic conflicts among the ethnically diverse population.¹

¹ Apart from numerous ethnic minorities, the population of Jalal-Abad oblast consists of 67% Kyrgyz, 25% Usbeks, and 3% Russians (NATSIONALNYY STATISTICHESKIY KOMITET KYRGYZSKOY RESPUBLIKI 1998).

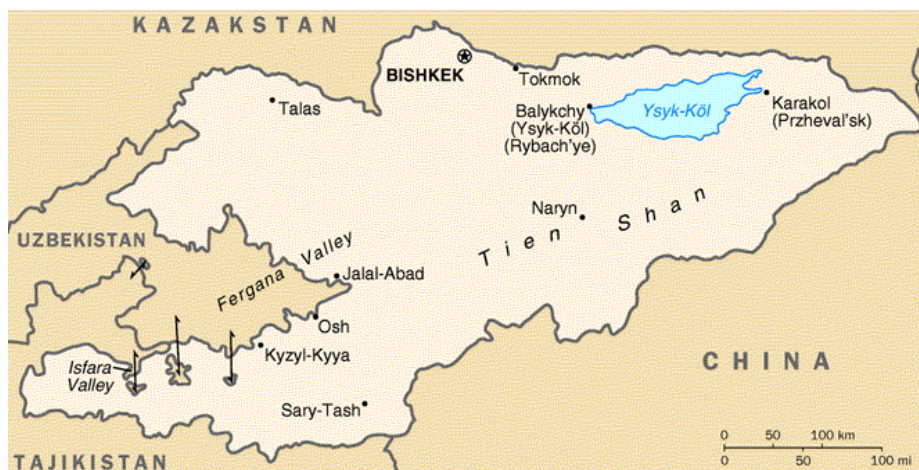


Fig.1 Map of Kyrgyzstan

The study area in the Jalal-Abad region is situated on the south slope of the Fergana range and extends to the fringes of the Fergana basin. The area is characterized by steep climatic gradients with arid to semi-arid conditions in valley bottoms and lowlands, and high precipitation amounts in upper mountainous areas. In the semi-deserts, dry steppes and pistachio woodlands of the lowland areas, irrigated agriculture and pastoral use are predominant. At higher altitudes, forest steppes with arable lands, natural walnut-fruit forests, and occasionally coniferous forests occur. Due to rugged and steep topography, only very small areas are suitable for summer grazing above the timberline.

Globally unique forests of walnut and fruit-bearing tree species, occurring within an altitudinal band of 800-2400 m above sea level, play a major role among locally available natural resources. These forests are unique due to their particular species composition and their high economic value. In spite of a huge decrease in forest cover, southern Kyrgyzstan still boasts the largest naturally-occurring area of walnut-fruit forests in the world. They are considered a biodiversity-hotspot of international significance. In addition, the walnut-fruit forests greatly contribute to the regulation of water supply to the Fergana valley and offer protection against soil erosion.

Moreover, the walnut-fruit forests are of considerable importance for sustaining the livelihoods of over 100.000 people living in the forest area (FAVRE 1997). Agriculture (cropping and animal husbandry) is the mainstay of the majority of the residents on the *leshoz* territories, with the forest and its non-timber forest products supplying a secondary income. Forests are indispensable for e.g. firewood collection and for additional income generation from nuts and fruit (JULDASHEV & MESSERLI 2000). Moreover, other forest issues of regional importance are their vital role as a place of relaxation and as a focus for the gradual growth in tourism.

The walnut-fruit forests are now in a critical condition. Overexploitation coupled with overharvesting, overgrazing and insufficient silvicultural treatment has shaped their present-day appearance (cf. SCHEUBER et al. 2000a; MÜLLER & SORG 2001). Suffering great damage from human activities in the area, the maintenance of the manifold functions of the forests is seriously threatened and even their existence is at risk, despite decades of efforts into their conservation (Ministry of Environmental Protection 1998).² Problems presently exerting heavy pressure on these forests can be summarized as follows:

² Until 1917, the walnut-fruit forests were felled for timber extraction, and large areas were deforested. After the establishment of the Soviet regime, forest management was transferred from department to department several

- Grazing with cattle, sheep and goats is taking place in the walnut-fruit forests destroying young growth of tree and most shrub vegetation.
- Hay-making, carried out in the forests, results in the destruction of the natural regeneration of tree and shrub vegetation.
- Since collecting of nuts and fruit is of immense economic importance for the households in the region, virtually 100% harvesting of nuts takes place, rendering natural regeneration impossible.
- The mountain forests have been exploited for timber, fuelwood, and charcoal since ancient times, while in recent years illegal cutting has increased due to the energy crisis, and a growing demand for timber.

In addition, the breakdown of an effective forest management system is a major obstacle to sustainable management and biodiversity conservation. Today, forestry has to accommodate a changing administrative and economic environment. The recent changes have withdrawn the previous centralized institutional support and control without yet developing an alternative system and approach to replace it. Unlike agricultural land, State forest land has not been distributed to private individuals, and officially remains the property and responsibility of the State. Forests in the Kyrgyz Republic form a unified State Forest Fund, which comprises both forested areas and lands which are not covered with forests but intended for forestry purposes. However, conflict over tenure is an unsettled problem in many areas. During the Soviet era, forest management, as elsewhere in the Union, was organised through collective forest farms, or *leshozes*, which, unlike the collective State farms, continue to exist in post-independence Kyrgyzstan. These *leshozes* have undergone a radical reduction in staff numbers, struggle to continue implementing their management plans on a greatly reduced budget, and are no longer able to function as they did in the past (HALDIMANN et al. 2001). Present difficulties include (cf. YUNUSOVA et al. 2000; CARTER et al 2001a):

- lack of capacity to meet the new challenges
- lack of financial resources and material-technical resources
- excessive centralization and outdated bureaucratic systems
- inappropriateness of existing legislation
- poor links between forest protection and use
- walnut stands are over-mature and infested by pests and diseases
- relations between State and local authorities and local population are not always based as yet on cooperation and democratic principles

In particular, there is an urgent need for new ideas to develop multifunctional management schemes that involve the local population. The role of local actors and their necessities and responses to the challenges of transition needs to be highlighted and discussed within the framework of available coping strategies.

As a particular result of the transition process, a currently unsustainable use of forest resources, widespread forest degradation and biodiversity erosion are to be lamented. Taking the limited forest areas in Kyrgyzstan and the low extension and poor condition of most remaining stands into account, it is self-evident that great importance must be attached to sustainable, multi-purpose management and protection of these unique forests and their biodiversity (MINISTRY OF ENVIRONMENTAL PROTECTION 1998).

times, including local level management by *narkomles* (People's Forest Committees) of the Kyrgyz SSR. In 1945, the walnut-fruit forests were declared State-Fruit Forest Reserves. A few years later, they were classified as belonging to the first major Soviet forest category, in which timber extraction was prohibited (MUSURALIEV 1998).

3. Conceptual Framework³

The *political ecology*⁴ approach focusses on relationships between society and its various actors (state, classes, social groups etc.) on the one hand and natural resource use/landscape dynamics on the other. It hypothesizes that changes of the natural environment are to be related and respond to actions rooted in the sphere of markets, governments and the international political economy, and that it is essentially a politicised environment today, in which these changes are to be witnessed. Thus, in the framework of *political ecology*, a clear understanding has to be developed how ecological change is grounded in a multi-level web of socio-economic relations that ties households together and links them to larger economic and political entities such as market, access to assets, land tenure, systems of surplus extraction, and the state. Based on different development theories and ecosystem theories respectively, polit-ecological analyses focus on the roles of state and economy with regard to sustainability of development processes in politicised environments. Different geographical scales and hierarchies of socio-economic organisations (e.g. person, household, village, region, state) apply for the analysis of locally and regionally relevant options and constraints. The research perspective may be broadened to include the roles of conflicting ideologies, culture and/or demography. At the same time ecological consequences of society's use of natural resources (resource exploitation, land degradation) are in focus as well as resulting marginalization (land-use conflicts, food crises, impoverishment etc.) and accumulation processes (land concentration, large plantations/former collective farms, large-scale government projects etc.). Based on polit-ecological analyses, strategies are to be developed towards an economically and ecologically sustainable, socially and culturally adapted development planning and policy.

4. Objectives and methodical approach

Using a *political ecology* approach as conceptual framework, the proposed project aims at investigating the nexus of socio-economic and environmental change within the transition process in the Jalal-Abad region, focussing on forests and woodlands as part of the prime local quasi-natural assets. In order to analyse how the transition process is related to environmental change, the approach of this project is threefold:

1) A **socio-economic approach** aims at

- analysing the impact of political-social and economic structures and developments on the intensity of forest resource use and their interrelationships with other regionally accessible assets;
- recognizing connections and interactions of root causes of forest degradation as a result of human intervention and an indicator for land-cover change;
- identifying main protagonists and interest groups of forest exploitation and their utilization strategies as actors in a regional model influenced by outside interests.

2) A **landscape-ecological approach** aims at

- analysing the difference between the natural spatial structure and the land-use structure of the landscape;

³ Chapter 3 and 4 include only those parts of the original proposal with relevance to the workshop.

⁴ Comprehensive accounts of the *political ecology* concept, which has emerged from the interlinkage of human ecology, cultural ecology and political economy, were provided by BLAIKIE & BROOKFIELD (1987), BRYANT (1992, 1998), BLAIKIE (1985, 1995, 1999), BRYANT & BAILEY (1997), KEIL et al. (1998), KRINGS (1998), LOHNERT & GEIST (1999), PETERSON (2000), ADGER et al. (2001).

- assessing alterations of stand structures and stand dynamics as indicators for the extent of forest degradation;
- analysing consequences for structure and function of forest ecosystems;
- revealing spatial and temporal differentiations of alteration processes.

3) A **synthesis** aims at

- linking the results of both approaches in an integrative, spatial-functional perspective and establishing a regional human ecosystem model, taking also external influences into consideration;
- achieving a comprehensive, functional understanding of human-environmental interrelationships and utilization strategies;
- creating a basis for the development of strategies towards sustainable resource management and biodiversity conservation.

4.1 The socio-economic approach

The socioeconomic approach focuses on political, economic and social changes and processes as consequences of the collapse of the authoritarian state-centred socialist system. It needs to differentiate the framework conditions on various levels by taking into account the relevant elements of transition: a) institutions and actors, b) property rights, and c) resource management strategies. For maintaining or enhancing livelihood security for the local population the various local strategies will be analyzed, and regional and social specifics as well as external interferences highlighted.

Research topics and questions:

a) Institutions and political actors within the process of transition and globalization

In the framework of political ecology, we hypothesize that changes of the natural environment in southern Kyrgyzstan are mainly related to actions rooted in the sphere of governments, markets and international political economy. Thus, the role of the main actors and institutions in the transition process such as states, multilateral institutions, enterprises, NGOs, *leshozes*, local farmers and part-time agricultural entrepreneurs has to be explored in detail.

b) Access, utilization and property rights in a politicised environment

Access, utilization and property rights are the underlying entities that govern land-use. We need to analyze the defined rights, rules and regulations in legal and practical terms in order to estimate the scope for action for specific groups, households, or individuals. Land-use conflicts, impoverishment, or marginalization on the one hand, and accumulation processes such as land concentration on the other, are often the result of inadequately defined land rights. We assume that forests, pastures, or arable land are used and thus degraded in various ways and to a different extent when defined as private, common-pool or governmental resources (cf. BERKES 1989, OSTROM 1990, OSTROM et al. 2002). Sustainable land-use strategies in favour of livelihood enhancement and biodiversity maintenance can only be formulated when the legal rights and practiced customs are analyzed, understood and compared.

c) Strategies for management of land and forest resources

In a politicised environment, as stated, we hypothesize that the transition and globalization processes have major impacts on the utilization of land and forest resources. In this respect, a clear understanding has to be developed on how and by whom the different land and forest resources have been utilized in the past and how they are used today. It is presumed, that different methods of land utilization by various groups (*leshozes*, villagers, private enterprises), have different impacts on forest cover, stand structure, and biodiversity.

New ways of land resource utilization and forest protection must not be formulated when the basic needs of the local population are neglected. We need to analyze and understand the different strategies of the local population to secure their livelihood (DEPARTMENT FOR INTERNATIONAL DEVELOPMENT 2001, BOHLE 2001). With regard to the central research topic the role and importance of land resources in general and walnut fruit forests in particular within the livelihood strategies of the local stakeholders is to be investigated. This knowledge is indispensable for formulating alternative ways for protection and sustainable utilization of forests while securing the livelihood of the local population in a sustainable way.

5. Expected results and their applicability

On the basis of a quasi-holistic natural and social sciences approach, a comprehensive functional understanding of human-environmental relationships with the focus on changing forest resource utilization patterns under the conditions of the transition process is expected to be achieved. The fundamental nature of our research programme will help us to identify respective patterns and processes that might be of relevance not only for the Jalal-Abad region, especially under applied aspects, but also in general for the transforming CIS-states and neighbouring regions.

The results will be of direct interest for the Kyrgyz government, as it has identified sustainable management of forest resources as one of its core priorities (MINISTRY OF ENVIRONMENTAL PROTECTION 1998). Based on the results, strategies are formulated towards an economically and ecologically sustainable, socially and culturally adapted development planning and policy. A thorough understanding of factors, processes and relationships within a regional man-environment-system, and the identification of decisive driving forces and self-regulatory mechanisms are crucial for land managers and decision-makers. Planners and decision makers have to know the dimensions of e.g. external development impacts, they have to be informed about limits and threshold values within subsystems of the ecosystem and the anthroposystem in order to operate on a solid basis and to support the development process towards sustainable development.

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