

Methodology and case studies on linkages between poverty and forestry:

Afghanistan, Iran, Kyrgyzstan and Turkey



Tadashi Shimizu and Monique Trudel
with case studies by
Ainur Asanbaeva, Mona Kananian, Gh.Naseri and Melekber Sülüšoğlu

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FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS

Livelihood Support Programme (LSP)

An inter-departmental programme for improving support for enhancing livelihoods of the rural poor.

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The Livelihood Support Programme

The Livelihood Support Programme (LSP) evolved from the belief that FAO could have a greater impact on reducing poverty and food insecurity, if its wealth of talent and experience were integrated into a more flexible and demand-responsive team approach.

The LSP works through teams of FAO staff members, who are attracted to specific themes being worked on in a sustainable livelihoods context. These cross-departmental and cross-disciplinary teams act to integrate sustainable livelihoods principles in FAO's work, at headquarters and in the field. These approaches build on experiences within FAO and other development agencies.

The programme is functioning as a testing ground for both team approaches and sustainable livelihoods principles.

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Access to natural resources sub-programme

Access by the poor to natural resources (land, forests, water, fisheries, pastures, etc.), is essential for sustainable poverty reduction. The livelihoods of rural people without access, or with very limited access to natural resources are vulnerable because they have difficulty in obtaining food, accumulating other assets, and recuperating after natural or market shocks or misfortunes.

The main goal of this sub-programme is to build stakeholder capacity to improve poor people's access to natural resources through the application of sustainable livelihood approaches. The sub-programme is working in the following thematic areas:

1. *Sustainable livelihood approaches in the context of access to different natural resources*
2. *Access to natural resources and making rights real*
3. *Livelihoods and access to natural resources in a rapidly changing world*

This paper is one of a series which addresses the linkages of poverty and forests in West and Central Asia within the context of sustainable livelihood approaches. It presents the methodology used for case studies on the forest-poverty linkages in Afghanistan, Iran, Kyrgyzstan and Turkey, and describes the results of the field work in each country.

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List of acronyms and abbreviations

4Rs	Rights, Responsibilities, Revenues and Relationships
CIFOR	Center for International Forestry Research
CIS	Commonwealth of Independent States ¹
COP	Country Outlook Paper ²
DFID	Department for International Development
FAO	Food and Agriculture Organization of the United Nations
FONP	Forestry Policy and Institutions Service, FAO
FOPE	Forest Economics Service, FAO
FOWECA	Forestry Outlook of West and Central Asia ³
GDP	Gross National Product
LF	Sustainable Livelihoods Framework
NGO	Non Governmental Organization
PRA	Participatory Rural Appraisal
PRSP	Poverty Reduction Strategy Paper
SLA	Sustainable Livelihoods Approach
UNDP	United Nations Development Programme
WECA	West and Central Asia

¹ In this report CIS refers to all former soviet countries in WECA, i.e. Armenia, Azerbaijan, Georgia, Uzbekistan, Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan.

² Draft national papers prepared and submitted to FAO by National consultants.

³ FOWECA comprises the following countries: Afghanistan, Armenia, Azerbaijan, Bahrain, Cyprus, Georgia, Iran, Iraq, Jordan, Kazakhstan, Kuwait, Kyrgyzstan, Lebanon, Oman, Qatar, Saudi Arabia, Syria, Tajikistan, Turkey, Turkmenistan, United Arab Emirates, Uzbekistan, and Yemen.

1. INTRODUCTION

FAO has initiated a series of global and regional sector outlook studies to examine linkages between forests and societies and to indicate emerging opportunities and challenges. The Forestry Outlook Study for West and Central Asia (FOWECA) has considered these issues through an extended consultative process in 23 different national contexts in West and Central Asia. Using 2020 as a reference year, FOWECA aims to analyze the trends and driving forces that will shape the forestry sector during the next two decades and to identify policies, programs and investment options that can enhance the sector's contribution to sustainable development. Country Outlook papers outline the current situation, trends and future scenarios at the national level. In addition, FAO has commissioned a series of studies on thematic issues relevant to the forest sector including: (a) policy and institutional changes and land-use dynamics, (b) urban and peri-urban forestry, (c) watershed management, (d) environmental aspects of forests and trees, (e) wood energy, (f) forestry and poverty alleviation, (g) wildlife management and (h) wood consumption trends.

To support the FOWECA project, work on the linkages between forests and poverty has been carried out the Sub-programme on access to natural resources of the Livelihood Support Programme (GCP/INT/803/UK).

This paper presents the methodology used for case studies on the forest-poverty linkages in Afghanistan, Iran, Kyrgyzstan and Turkey. It represents part of an area of work on linkages between access to forest resources and poverty in West and Central Asia. Information on the work is provided through a series of LSP Working Papers.

- 13: Poverty and forestry: A case study of Kyrgyzstan with reference to other countries in West and Central Asia by R.J. Fisher et al.
- 33: Assessing the access to forest resources for improving livelihood in West and Central Asia countries by Tadashi Shimizu.
- 34: Forest - poverty linkages in West and Central Asia: The outlook from a sustainable livelihoods perspective by Pari Baumann.
- 35: Methodology and case studies on linkages between poverty and forestry: Afghanistan, Iran, Kyrgyzstan and Turkey by Tadashi Shimizu and Monique Trudel, with case studies by Ainur Asanbaeva, Mona Kananian, Gh.Naseri and Melekber Sülüşoğlu.
- 36: Urban and peri-urban forestry and greening in west and Central Asia: experiences, constraints and prospects by Ulrika Åkerlund in collaboration with Lidija Knuth, Thomas B. Randrup and Jasper Schipperijn.
- 37: Greening cities for improving urban livelihoods: Legal, policy and institutional aspects of Urban and Peri-urban Forestry and Greening in the WECA Region (with a case study of Armenia) by Lidija Knuth.

The LSP Sub-programme on access to natural resources initially intended to begin its work in support of the FOWECA project with a regional desk study. However, with

sparse literature available, a decision was made to focus the initial work on Kyrgyzstan given the experience of the Collaborative Forest Management (LSP Working Paper 13). That platform provided an understanding on which to base fieldwork to examine the linkages between poverty and access to forestry resources. In preparation for the fieldwork, material was prepared to demonstrate the forest-poverty linkages from a SLA perspective (LSP Working Paper 34).

This report describes the training provided to the national consultants and the methodology used for the case studies. It provides a summary of the findings as well as more detailed reports for each country.

2. APPROACH AND METHODOLOGY FOR THE CASE STUDIES

2.1 Background

Four countries (Afghanistan, Iran, Kyrgyzstan and Turkey) were selected to conduct a study on the use and access of forest resources for poverty alleviation and livelihood improvement in West and Central Asia. The specific objectives were:

- To provide an overview and a general understanding about livelihoods and access to mountainous forests and trees resources in the selected countries,
- To assess trends, potential and constraints of use and access to forests and trees resources by poor population for poverty reduction and livelihood improvement in selected countries, and
- To develop and test the survey method to analyse forest-livelihoods linkages and potentials, including the analysis of forestry's contribution to poverty reduction in the selected countries.

During 16 months of the implementation period, the activities were organized in four different phases as below:

<i>Phase</i>	<i>Main activities</i>	<i>Period</i>
Phase I	Plan and design of the study / Recruitment of national consultants	Aug. - Sep. 2004
Phase II	Desk study, developing study methodology and one-week Workshop (Izmit, Turkey, 21-27 Feb. 2005) with international and national consultants	Oct. 2004 – Feb. 2005
Phase III	Survey (implementing study methodology), include field work	Mar. 2005 – May 2005
Phase IV	Analysis and write up of the country report	June – Nov. 2005

Phase I

With FAO staff, the international consultant (IC) prepared a preliminary methodology based on the available information and references considering the lead countries in WECA. Under the supervision of FOPE and the FOWECA study team, four national consultants were recruited. Focusing the forest-dependent rural poor in each country, this preliminary methodology was tested and further developed in the phase II.

Phase II

FAO Forestry staff and the IC organized a one-week workshop (training and planning) for the national consultants (NC) from four countries in West and Central Asia with following objectives;

- to improve the methodology to be used by national consultants, and
- to develop national work plans of selected countries.

During the training workshop, NCs were provided with training in the methodology to be used to collect information for the preliminary assessment on poverty and forestry in WECA. The activities in this workshop were to:

- Identify how the draft explanatory framework and indicators might be used to guide the survey.
- Design and implement small-scale trials of methods for using the framework and indicators.
- Monitor and analyse trial results.
- Refine methods and test again.

The training workshop was realized in two parts: first, two days were spent with 13 participants from Afghanistan, Kyrgyzstan, Iran and Turkey; and second, five additional days were spent with the four National Consultants who conducted the field work.

Phase III

After the workshop, each NC carried out the survey including field work. The duration of the survey varied according to national condition such as the size of the country. During the period, the IC and responsible FAO officers monitored and supported the work.

Phase IV

Each NC analyzed the fieldwork and provided a preliminary assessment at the national level. The survey methods and findings in the four reports were then synthesised to produce practical products for general use.

2.2 Use of the Sustainable Livelihood framework in the countries

The Sustainable Livelihoods Approach (SLA) was chosen as a conceptual and methodological framework because it provides a way of thinking about the linkages between the context, vulnerability, poverty and access to forest / tree resources. Training course on the use of the livelihood framework (LF) and different tools for implementation was realized in Turkey, February 2005. At that course, it was possible for the researchers to test the LF and different tools in the field prior to their country field work.

The different countries examined through their field study the livelihoods that are partly or entirely, directly or indirectly, dependent on the use of forest resources. The consultants considered the entire range of factors involved at the macro and micro-level, with the sustainable livelihoods framework being at the heart of the approach. They were able to test its applicability and come up with important issues to be taken into account in future research.

For example, in Kyrgyzstan, it was concluded that the LF provides a way of thinking about the linkages between context, vulnerability, poverty and access to forest resources. It is a good instrument to examine the poverty and the forestry-poverty linkage in a broad sense:

- i) To collect and compare the information gathered from the different sources. The official and non-official information is not always reliable, and sometimes is not

- up-to-date and therefore not comparable, but using multiple sources gives better global overview.
- ii) To evaluate the level of knowledge of actors who are involved in different ways.
 - iii) To evaluate the effects of intra-household relations on national economy development.
 - iv) To evaluate the national poverty reduction policy from the point of view and voices of rural people.
 - v) To identify the gap between the official arrangements for forest management and poverty reduction, and the actual situation.
 - vi) To involve and train people, to establish the common understanding of the problem and to develop the better long-term poverty reduction strategies based on the forestry-poverty linkages context.

In Iran, it was recognised that for the researcher, the SL framework helps clarify topics to focus on, all the way on from the micro to the macro level. The framework helps to organize work groups and analysis teams, and the data collected gives a realistic picture of what is actually going on. For the first time in Iran, research was people-centred, not forest- or timber-centred. In Turkey, one benefit is that the villagers have come to realize the importance of the resources around them.

The major convenient of the LF is its implementation as it is a long process, requires a time, involvement and training of all stakeholders and it is rather difficult to assess policy and processes due to sensitivity and power relations.

2.3 Relevant methodologies

In order to apply the LF, participatory rural appraisal (PRA) tools were chosen as they have been developed to assist participatory learning, analysis and development planning. Different tools to conduct these studies were presented, discussed, and tested at the village level during the training workshop held in Turkey in February 2005. It was agreed that four of them would be used in each country (mapping, time-line, seasonal calendars, diagrams, H-Form, 4Rs) and additional ones on the basis of the need and experience of the researcher.

During research at the four countries level, the tools selected were useful as they were used in the context of a good fieldwork plan and triangulation, as well as in group, individual, formal and informal discussions using the principles of sensitivity to power issues, open discussion and exchange.

In Kyrgyzstan, Iran and Turkey the consultants used all the proposed tools and came up with some conclusion about their usefulness and applicability. In Turkey, it was noted that the methods used have the capacity to bring villagers together with the researcher. Villagers found the technique easy to understand and apply. Use of visually-oriented aids increases the attraction as it made it possible for villagers to be comfortable without having to write their thoughts and utter their names. Opinions written on Post-it notes were placed openly and discussed freely. These methods enabled to communicate with each other and to come to consensus. It helped people to look at their situations more

objectively and develop a willingness to improve them, although they also became aware that improvement would take great effort.

In Iran, it helped to create a friendly atmosphere to speak and to enhance the collection of accurate information. It was crucial to select a suitable time to use these participatory methods as it was the first time that the rural people in these forest villages encountered these methods. One effect of this was an increase in the relationships between different groups such as elders emphasised important points to young people. For both study villages, all age groups (children, teenagers, youth and adults) came together to try to help each other to explain everything completely, and with the satisfied results. Although, it was highlighted that men do not like to ask about what the women do, and the women preferred to speak about their assets and activities separately. This illustrates the importance of being aware of the gender differences and cultural issues.

2.4 The use of relevant methodologies

1. Participatory mapping and transects

Maps are used to identify forest resources, as well as other natural resources, infrastructure, water, agro-ecological zones and other places of importance to the local community. The map can help to identify ownership and access patterns as well as distributional and locational issues.

In all the studied countries, mapping was the first tool used to open the discussion and it was recognised as being especially useful as it encouraged much participation. It was also a good exercise for the elderly and illiterate people to participate in the study. In Turkey, sometimes it was the only one used with the women, as they did not show much interest in H form, Venn scheme and time-line methods. In Iran, it was agreed to draw a map without labels illustrating ownership differences between members of the community.

2. Time-line and trend analysis

Historical profiles of events and trends that can be applied to various themes relevant to understanding forestry-poverty linkages such as forest degradation, use of forest resources, market trends etc. The time-line is drawn using dates chosen by the participants and the trends can be plotted on a graph.

The time-line was very useful in comparing old and new. In Turkey, it was used just after the mapping exercise and provided a great advantage to order the information chronologically, showing the social changes in the village. In addition, men were interested in the chronological changes and in comparing the past with today. This tool made possible to go into the details of the effect of change.

3. Seasonal calendars

Seasonal calendars can be used to analyse seasonal or periodic constraints and opportunities related to forest-poverty linkages (for instance employment, labour shortage, market, availability of forest products, cash / credit etc)

Seasonal calendars were applied to analyze seasonal constraints and opportunities related to forestry-poverty linkages. For Turkey, the seasonal change diagram was not as

beneficial as might be expected, as there is no major seasonal change. In Iran, the seasonal calendar was a circular drawing in the North Forest as it was seen as an easier method to show the cycle of moving to different pastures. This raises the importance of adapting these methods to the local situation and cultural issues.

4. H-Forms

Tool to evaluate and score the importance of forests in overall livelihood system and to provide scores and explanations for importance

In Turkey, people were asked their positive and negative opinions about the subject under study. From this method, it can be seen that persons who are the nearest to the resource and take the most advantage are not always aware of them. In Iran, as most of the interviewees could not write, the analysis was done through group discussion and transcription by two young boys.

5. 4 Rs Analysis

Tool to examine the relationship between various stakeholders and the nature of their roles, rights and responsibilities.

Of the five applied PRA tools, only the “4 Rs Analysis” was not easy to apply and use during the field study, because this method requires time on explaining its content and goals, and the level of the local people’s knowledge was insufficient to understand and to formulate their opinions about Rights, Responsibilities, Revenues and Relationships. In addition, in many countries such as in Kyrgyzstan, where people are generally cautious and sometimes unwilling to discuss the topics related to “Role” and “Power”. In other situation, the “4 Rs Analysis” does not give a clear picture because the majority of the population does not see the need to change, preferring to keep the *status quo*. Use of this approach was timeconsuming, and its application in a short analysis was difficult.

6. Other methods

Additional tools were used such as in Iran and Kyrgyzstan, where key informants and elders, headmen, women and poor were included in formal interviews, in comparison to Turkey where discussions were on a more informal basis during house visits. Kyrgyzstan and Iran used in-depth household interviews and participatory observation.

Face-to-face meetings made it possible for the people to get to know the consultants and representatives, and to develop a dialogue with them. In Turkey, photos of other villages with ongoing projects had a positive impact on women who showed an eagerness to be opened-minded with their own life style.. In addition, photos were given of the first visits; people felt respected and became more willing to commit themselves to the discussion. The use of direct questions on the second visit resulted in accurate responses.

3. FINDINGS IN THE COUNTRIES

3.1 Situation

Afghanistan has a population of 65.2 million, with over 80 percent being dependent on agriculture and other natural resources. The prolonged war (since 1978) and conflict, together with concurrent devastating droughts, have had severe impacts on the environment and poverty issues. The selected villages for the field study relies largely on forest products especially on intensive collection of pine nuts in Oghs, Nangrahar province and pistachio in Sherikya, Samangan province.

In **Iran**, 30 percent of the population lives in rural area. A variety of tribes – mainly nomads- reside in different regions and each of them has its own set of customs, leadership and power structures, as well as decision-making systems, social norms, caste, and common law and sanctions. The tribes' traditional management system for natural resources is in conflict with the central government's "Forest Publication Law" from 1963. Taking these into account, the two forest area "West" and "North Forests" were chosen as they represent the well-known tribes: the Lor and the Talesh. The Talesh households are permanent, with men practicing transhumance while women stay with children and carry on other activity such as agriculture. The Lor are nomadic herders who live permanent at village with 2-3 months of transhumance (spring and summer). They both live on pasture and forest resources.

Kyrgyzstan, with a population of 5.092 million, of which over 65 percent lives in rural areas. Some 94 percent of the area is mountainous, 40 percent lies at an altitude over 3000 meters, with three-quarters of the area under permanent snow and glaciers. The collapse of the USSR has resulted by an economical crisis and changes in the landownership gave rise to problem with access to forests. Forests provide an increasing source of income for the local population even if they have to face annual floods and mudflows. The field study was held in villages surrounded by a highly productive walnut fruit forest and a relatively unproductive juniper forest. Dubitel village, Osh province, is an old village with 60 percent of the population being poor; and Urumbash village in Jalal-Abad province is a new settlement of 42 households with 10 percent being poor.

In **Turkey**, forests cover a total area of 20.7 million ha, approximately 26 percent of the land area, representing 11 percent of the national population and 51 percent of the rural area. Income levels of people living in forest villages are low, and their living conditions are poor as forest villages are generally located in remote and mountainous areas. The main sources of income for these villagers are tillage agriculture, animal husbandry, and forestry activities. Conflicts are mainly caused by unmapped boundaries and for grazing land. Two villages were selected from the Antalya region, in the south of the country, and two were selected from Trabzon region in the north. They were chosen for their different conditions. The villages from Antalya region in the south have better livelihoods options, strategies and conditions such as on going eco-tourism activities. In Trabzon region in the north, the population is very poor and is confronted with agricultural areas mostly illegally converted from forest, and low

crop yield capacities due to the steep slope and predominance of water erosion, poor livelihoods assets and options.

3.2 Comparison

The SL approach provides the opportunity for the researcher to better identify and understand the different aspects of livelihoods strategies and processes, *assets and income which translates into lack of basic needs and services*, which influence people's outcomes.

The natural capital is the term used for the natural resource stocks (e.g. trees, land, clean air, water resources) upon which people rely. The benefits of these stocks are both direct and indirect. For example, land and trees provide direct benefits by contributing to income and people's sense of well-being. For this asset, the lack of agriculture land is one of the major limiting factors identified, often because of topography such as in the studied villages in Kyrgyzstan and Trabzon in Turkey where the lack of access to grazing is also a major issue. On the other hand, in Antalya, Turkey, agricultural lands are productive; there are enough water resources and highly productive forests. In Kyrgyzstan, access to forest resources and pastures remained under the control of the local administration or the state forest farm. In Iran, common law which regulates the sharing of pastures and livestock, and summer pasture is managed as commonage.

Human capital represents the skills, knowledge, capacity to work, and good health that together enable people to pursue different livelihood strategies and achieve their livelihood outcomes. It was observed that the population of studied villages of Iran is very young (16-25 years) with very low education where in Kyrgyzstan the population is mainly composed of widowed or disabled people or older people with no children (a majority in the first village and ten percent in the second). For education assets, in the case of Iran, the level of education is very low compared to Kyrgyzstan where education used to be very high but since the collapse of USSR, only the rich can afford to send their children to university. In the case of Turkey, the education situation varies from one to the other depending on the location; in the remote and mountainous area it is very low. In Afghanistan, decades of war and recent droughts have caused a massive displacement of people and contributed to the low level of education; the study highlighted the literacy issue is one major effect on gender difference (98 percent of the women are illiterate).

Social capital relates to the formal and informal social relationships (or social resources) from which various opportunities and benefits can be drawn by people in their pursuit of livelihoods. It was observed that social relationships are strong in Turkey and Iran where villagers help each other, and where community decision-making process includes the different groups of the society such as elders, rural council, householders. Many forms of association can exist but for example in Kyrgyzstan, there is no common organization but many local associations at village or *Aiyl-okmot* level, such as the council of elders, school council, women's council or young people committees, but none of these really plays a leading role. The family plays a central role and relatives are always ready (obliged) to help each other. In Iran, the social assets is translated in commonage for grazing in mountainous areas, commonage pasture around the village and common rights and shifts for using water

resources for irrigation. In Turkey, farming is carried out using traditional methods and with family members as the workforce.

The **financial capital** is defined as the financial resources that people use to achieve their livelihood objectives. In Kyrgyzstan and Iran, many poor villagers live on credit, with loans from their relatives or neighbours, extra money or savings, they buy more livestock (walnut forest: cash income from the sale of products on market in Kyrgyzstan). In Iran, agricultural loans are available but with a high rate of interest. In Iran, the government implemented in 2005 an old age pension for rural people and a “Rescue Committee” for poor families with no or low capacity to work where training is provided for this group. In Turkey, access to loans and technical support from ministries is available and hunting as a tourism activity can be a good income.

Physical capital comprises the basic infrastructure and physical goods that support livelihoods. Key components of infrastructure include affordable transport systems, water supply and sanitation energy, good communications and access to information. In almost villages encountered there is a lack of health services e.g. in Iran, Turkey, Afghanistan, clinics are closed, there is no clinic at all or it is some distance away (e.g. 30km). Poor water system leading to water contamination are problems in Turkey and hygiene and nutrition are problems in Iran. In almost all remote area, roads are in bad conditions. Access to information is a major issue. In Iran, solidarity amongst the population contributes to access of information: people who returns to the village are obliged to share their knowledge as benefits should to be shared amongst the community (competition exists but is not welcome). In comparison in Kyrgyzstan, people who have access to information (local officials, foresters) do not like to share their knowledge / power.

3.3 Commonalities between countries

Livelihood strategies are the range and combination of activities and choices that people make in order to achieve their livelihood goals. Livelihood strategies include how people combine their income generating activities, and the way in which they use their assets. During the field study, livelihood strategies have been identified and can be seen as common between countries with their own specificity such as the role of women compared to men and youth, the role of the authorities and institutions and how they influence the livelihoods strategies and outcomes.

For example, for villages visited in Iran, the livelihood strategies can be described as: 1) A mixture of animal husbandry and farming; 2) Raising livestock, farming, and supplementing wages as a labourer in industry or forestry; 3) Herder, farmer, or labourer; 4) Peddler in cities (30 km distant); 4) Migration to cities: youth (20-30 years old); 5) Children do not attend school in summer as they work in the field; 5) Animals are insurance for hard times; 6) Some villagers share their land (e.g. brothers) as there is not enough land and money for new house or new lands for young families after.

In Kyrgyzstan, rural people’s dependence on natural resources is total and leads to the absence of any other source of income. All activities are related to the use of natural resources: 1) Livestock raising; the majority of rural people own livestock; 2) Haymaking: a limiting factor; 3) Altitude limits the agricultural possibilities at the

village level; 4) Firewood collection is poor; 5) The collection of nuts is a main source of income.

In Turkey, 1) Village people make their living from agriculture, forest use, and jobs outside the village; 2) Sındıran villagers rely on wages from work outside the village; 3) Development of private hunting areas is being encouraged; 4) The Village Legal Entity and individual villagers are being encouraged to carry out private afforestation; 5) Loans and training courses are also provided to support and improve beekeeping, 6) Training courses are organized for encouraging using good seed and modern techniques with appropriate machinery.

In Afghanistan, 1) Livestock and pistachio nuts are the main source of income; 2) Men carry out farming activities and women are skilled at weaving coarse carpets, large woollen socks, and felt carpets; 3) Fuel wood, and grazing play an important role in the livelihood of the poor and the landless in rural area

Migration exists in all countries and represents mostly male-oriented livelihood strategies, either temporary or permanent, for income generation. In Iran, young men migrate leading to women carrying out both traditional female and male tasks such as ploughing, repairing the wooden tile roofs, etc. In Turkey, emigration has increased, and the loss of young people has also adversely affected production even as villagers rely on wages from work outside the community.

Vulnerabilities: the Vulnerability Context refers to the shocks, trends and seasonality that affect people's livelihoods such as floods and mudflows, snow, etc. The climate is the major vulnerability factor as they all depend on natural resource. Viruses and pest are other vulnerabilities factors in Iran. In Turkey and Iran, drought is the most important problem. In Kyrgyzstan, the use of natural resources in mountainous areas is affected by natural and social factors such as limited agricultural and fodder production due to climate (cold winters and hot summers).

Livelihood insecurity comes from economic crisis as in Kyrgyzstan, civil war and long term conflict as in Afghanistan.

The Policy, Institutions, Processes (PIP) dimension of the SL framework comprises the social and institutional context within which individuals and families construct and adapt their livelihoods. As such it embraces quite a complex range of issues associated with power, authority, governance, laws, policies, public service delivery, social relations (gender, caste, ethnicity), institutions (laws, markets, land tenure arrangements) and organizations (NGOs, government agencies, private sector).

The field studies highlighted land tenure issues as a common factor affecting people's livelihoods in all of these countries as land belongs to the state. In Kyrgyzstan, after the collapse of the Soviet Union, the agricultural lands were distributed amongst the local people, but the forests remained under state control, and access to forest resources and pastures remains under the control of the local administration or the state forest farm. This has led to conflicts between foresters on one side, and *Aiylokmot* or local people on the other side for access to land and resources.

Similar situations exist for the forests in Turkey which belong to the state, and are managed in the name of the State by the General Directorate of Forestry. The collection of non-wood forest products is done by the residents on a tariff basis. The forest laws describe “forest villager’s rights” as part of the new regulations in the Turkish forestry system, leading to direct income to the village. In Iran, lands are considered public lands by the state, making activities illegal according to the “Forest conservation law”. As the forest is very valuable to the Talesh nomads for its cultural and social values, the restrictions have meant for many a loss of income and an increase in poverty.

Gender issues are different from one country to the other: tradition in southern Kyrgyzstan places emphasis on the social role of men, and particularly of old men. Women take part in decision-making, field work, selling products in the market, and dealing with the family budget. There is no obvious difference of power between men and women. Regarding leadership, men hold elected positions. Women traditionally represent the majority of doctors, teachers and sellers. In Afghanistan, tradition has separated the role of men and women, e.g. men carry out farming activities and women are skilled at weaving coarse carpets, large woollen socks, and felt carpets.

4. CONCLUSIONS AND RECOMMENDATIONS

4.1 Conclusions

The different studies showed that LF can be applicable taking into account local conditions, and that stage-wise use of different techniques may increase the completeness and accuracy of the information collected. Semi-structured interviews with key informants, agencies, institutions and authorities are more often used than visual aids in order to collect secondary data or general information. Visual aids such as mapping, and seasonal calendars are more adequate for the population as a whole, including different groups of age, gender, literacy, education, etc. The LF provides opportunities to reinforce the link between people, groups for discussion, build trust and understanding of different issues and factors influencing their livelihoods, in order to think and implement strategies for future actions in a cohesive way.

It also highlights that the level of participation depends on the approach and methods used to convey confidence and trust, and they must be adapted to different target groups.

It is recommended, in all cases, to convey the results of the studies to the villagers. It has been perceived by almost all the researchers the necessity of explaining the results to the villagers in an understandable way. Doing so helps to gain their trust, and helps to ensure greater commitment among the villagers and make them more open to new studies in the future.

The experience in Turkey showed a value in the use of Venn diagrams in order to determine relationships of resources with interest groups and resource-interest group closeness.

The use of the SL framework for this work has demonstrated that people's choice of livelihood strategies, as well as the degree of influence they have over policy, institutions and processes, depends partly upon the nature and mix of the assets they have available to them. Some combination is required by people to achieve positive livelihood outcomes. The work highlighted some differences: in Iran the importance of tradition and decisions to be taken as a group is ongoing even if many conflicts exist between locals and officials of the state as the village has little voice and no power to be part of the decision making process. In contrast, in Kyrgyzstan, the village have a *stronger voice* as the village has been part of a project implementation over the last seven years, and this has lead to access to forest plots and the establishment of a cooperative association. In Turkey, support from institutions and government contributes to create new source of income for the villagers.

4.2 Recommendations

Forestry sectors in WECA countries are not large enough to have a broad impact on growth and poverty reduction at national level. Using a livelihoods perspective along with appropriate methodologies, however, can contribute to poverty reduction and enhance the quality of a wide range of approaches to improve the lives of the rural

poor who depend on forests and trees. To make country studies and related research more geared toward reduction poverty, methodologies and approaches could be improved in several areas.

Identify clearly the ultimate beneficiaries in rural poor

In remote areas, any strategy for poverty reduction needs to begin with the identification of the rural poor. Identifying the rural poor is informationally demanding, especially since poverty is to be measured in terms of a range of attributes.

In order to draw out the necessary information in a cost-effective way, innovative mechanisms will have to be designed, probably using a combination of quantitative and qualitative methods. The preferred method will depend on the particular circumstances of a region or community in which the work is to take place. If the current capability of the region or community is not adequate to draw out the desired information, steps should be taken to develop the capability as in a quick and effective way as possible.

Whatever method is actually used to identify the rural poor, it should be guided by some special considerations.

Firstly, the objective of the exercise should not merely be to come up with a number, such as the proportion of rural poor people in the population, but to know who these people are. Thus it is necessary to identify specific groups – in terms of various characteristics, such as gender, geographical location, ethnicity, religion, age, caste or occupation.

Second, special efforts must be made to identify those among the rural poor who are especially deprived (e.g. women, handicapped) and vulnerable (e.g. landless families, people living at disaster prone areas and war affected families). This is necessary for the sake of equality. These groups should be entitled to receive prior attention.

Combination of quantitative and qualitative methods

As commonly and widely being applied, PRA tools are still effective to assist participatory learning, analysis and development planning if it is used properly. PRA tools often involve visual presentation of information such as maps, diagrams, charts, graphs, photographs and cartoons. Some of the tools identified for the study will overlap; they are different ways to ask very similar questions. Importantly, it must be remembered that these are only tools used to represent local opinions and act as a physical point of convergence to focus a group discussion. The tools themselves will only be useful if they are used in the context of a good fieldwork plan, triangulation, as well as a discussion group that has been established using the principles of sensitivity to power issues, open discussion and exchange.

Measuring progress with indicators

As quantitative way to measure, counting the number of poor people using the World Bank benchmark of US\$1 per day is more straightforward than determining the nature and extent of their poverty. Several organizations are conducting ongoing research to develop indicators that will help shed light on these aspects, including the Center for

International Forestry Research (CIFOR), FAO, the World Agroforestry Centre and World Bank.

Initially, indicators can be applied at the local level to monitor livelihood changes that occur as a result of investments, some of which take into account inequity among and within households. The intention should be to gather consistent and comparable information about livelihoods and livelihoods change using low-cost and easily accessible data. The data can be used to analyze such aspects as welfare at the village level and equity between households. While still in the preliminary stage of development, the following table lists possible indicators of livelihood and livelihood change at the village level.

FAO is supporting the use of sustainable livelihood approaches to improve the understanding of poverty and formulate effective interventions. In one initiative, the Organization examined case studies, noting instances where livelihood approaches successfully alleviated rural poverty. The study also identified operational and institutional elements that consistently had a positive impact on rural poor people and compiled a list of general indicators of poverty (see box).

Box: Looking for Evidence of Positive Impact on the Rural Poor

General Indicators of Poverty Reduction

- *Improved income levels of poor and non-poor*
- *Changes in household food security*
- *Improved basic needs (shelter, health, nutrition)*
- *Changes in income distribution and decreases in inequities*
- *Diversification of income sources*
- *Changes in income security*
- *Improved human rights*
- *Increased access to public goods and services*
- *Increased yields*
- *Changes in consumption and diet*
- *Improved quality of life*

Indicators of Increased Resilience and Reduction in Vulnerability/Volatility

- *A reduction in frequency/severity of shocks.*
- *An increase in risk preparedness.*
- *Increased capacity to cope with/prepare for/adapt to natural or economic shocks.*
- *Increased capacity to cope with/prepare for/adapt to seasonality (IMM 2004⁴)*

Indicators of Long Term Sustainability

- *Increase in environmental sustainability*
- *Reduction in conflict or increase in peace/resolution*
- *Changes reflecting livelihood sustainability*
- *Sustained Post Project Activities*
- *Sustained Post Project Institutional Changes*
- *Sustained Post-Project poverty reduction*
- *Sustained or permanent removal of groups from social exclusion*
- *Addressed inequities faced by disadvantaged groups*

(Source: Do Sustainable Livelihoods Approaches Have a Positive Impact on the Rural Poor? A look at twelve case studies. 2004. Neely C., K. Sutherland & J. Johnson. LSP working paper 16. FAO, Rome.)

⁴ IMM Ltd. 2004. Poverty Impact Assessment Guide [<http://www.ex.ac.uk/imm/>]

CASE STUDY I: AFGHANISTAN

Gh.Naseri

I.1 Background

Afghanistan is a country covering an area of 65.22 million ha (1). The country can be divided into four regions: plains in the north, mountains that reach 7,485 m in the centre, an area of mountain and foothills in the east and south east, and lowlands to the south and west. Rainfall is low and uncertain, with an annual maximum of 1000 mm in the mountainous east and a low of 50 mm in the western desert. The temperature can reach over 35°C during the summer in low lying areas (3).

Over 80 percent of the population is dependent on agriculture and other natural resources. With the population currently increasing due to the return of refugees, the agricultural resource base is under increasing stress. Satellite images from DAI indicate that currently only 10 percent of Afghanistan's area is used for agriculture. Half of the agricultural area is rain-fed, and half is irrigated. The availability of water, unreliable during the growing season, is a key factor determining crop intensity. A recent series of dry years has reduced the amount of land being used for non-irrigated agriculture. Rain fed agriculture is largely practiced in the northern provinces, where the main crops are cereals. Productivity in both types of farming is low compared to other countries in the region. One reason may be that the existing irrigation systems are operating at low efficiency rates about 25 percent. There is considerable scope for reducing wastage of water and increasing the area irrigated.

Afghanistan has an extremely low level of forest cover. There are three main types of forest: (i) a mixed forest in the southeast provinces of the country, composed of conifers at higher elevations with oaks at lower elevations; (ii) a pistachio belt in the north; and (iii) irrigated agro- forests and home gardens throughout the country where water is available.

The prolonged war and conflict, together with concurrent devastating droughts, have had severe impacts on the environment. Most of the country's natural resources, including forests, have been sold outside the country for cash. The little that remains (50 percent of the 1.9 million ha that were forested in 1971) (4, 5) is being further depleted by local communities, as people are desperate to cover their urgent needs for fuel and to gain income through cross-boarder smuggling of timber for cash.

I.2 Selection criteria and description of field sites

There are two main areas in Afghanistan with natural forests: oak and conifer forests in the south-east, and the pistachio forests in the north. Two villages, Sherikyar in the north and Oghs in the east, were selected for this survey, using the following selection criteria:

Poverty level of the community:

The last five years of drought have devastated the primary livelihoods of the population of the two villages, which are wheat and livestock production. The heavy dependence of both villages on farming renders the population highly vulnerable to disaster such as drought, flooding etc. The war also created special categories of vulnerable people, such as returnees, the displaced people (IDPs) and woman-headed households, who are not currently involved with farming and clearly need opportunities to make a living.

Level of forest degradation:

A United Nations Environment Program (UNEP) assessment conducted in 2002 -2003 indicated that about 70 percent of pistachio woodland cover and 50 percent of conifer forests

have been lost over the last 3 decades (6). Forests of the villages in the current study were included in the UNEP assessment.

Number of households in the village:

Oghs village consisted of 700 families (on average, each family includes 7 persons). Sherikyar village is approximately 300 families.

Villages relying on forests

Both communities (Sherikyar in the north and Oghs in the east) rely largely on forest produces especially on intensive collection of pistachio and pine nuts (locally called jalghosa and derived from *Pinus gerardiana*) (7).

Description of target areas / villages

Oghs village is located in a mountainous area of east Afghanistan in Nangrahar Province, close to the border with Pakistan and some 75 km east of the provincial capital, Jalalabad. This area lies at an altitude between 1300-2100 m and has an average annual rainfall of 400 - 700 mm. the average annual temperature is between 10 and 16°C. Topography is considered to be one of the main factors affecting the climate of the area. The high mountains of eastern part of the country play an important role in condensing concentrated water vapours which have been brought from the Indian monsoon (8). This area is therefore covered with dense conifer and broadleaf forests.

Over the years these natural forests have been steadily depleted, although forest loss has not been uniform throughout the area. In many places, forest cover has been almost completely removed, while in other places, communities have adhered to traditional council regulations, which require council approval for all forest uses and limit the exploitation of the forest to community members. These areas have resisted the influences of those involved in illegal felling and smuggling.

Oghs village also lies close to some non-forest natural assets. For example, a nearby mountain peak (Sycaram) reaches a height of 3900 m above sea level (9). The mountain is one of the most important historical sites in the region, and is covered by a very beautiful aromatic scrubland. A Buddhist historical heritage site, as yet undamaged, is also present in the region. A mine of precious stones is located near the Buddhist site. In the past, products of this mine have been smuggled to Pakistan, but recently the community council has decided to prohibit stone smuggling.

Sherikyar village, Samangan province

Sherikyar village lies in the north of Afghanistan, in Samangan Province, approximately 23 km southeast of the provincial capital, Aibak. The area within the boundaries of this village ranges in altitude from 600 to 1800 m above sea level. It receives an average annual rainfall of 300-600 mm and has an annual temperature of between 12 and 16°C (12).

This region comprises a series of mountain chains separated by broad valleys. The majority of land in the valleys is undulating and is classified as forest land and pasture. From field observations, it appears that the dominant soil types are calcareous in origin and medium- to fine-textured sandy clay loams and clay loams. This means the soils are inherently quite resistant to erosion, much more so than in areas with sandy parent materials. Thirty years ago the undulating valley lands supported substantial areas of pistachio forest. The forest was protected by the Department of Forestry and Range Management, and involvement of local communities was minimal. However, in more recent times, much of the pistachio forest has been felled, and this clearing is still going on in some places

I.3 Result and analysis based on the sustainable livelihood framework

Livelihood Assets

Livelihood assets of Oghs village

The villagers in Oghs village, in the east of Afghanistan, are members of the Pashtoon ethnic group (10). There are 7000 inhabitants in the village, comprising 700 families. With regards to education, only one primary school for boys is available. Widespread illiteracy, particularly among women, is a common phenomenon. According to a survey conducted in March 2005, about 99 percent of the people are illiterate. Most of the health problems in the area are related to malnutrition and under-nourishment, particularly among children and women. However, there is no medical clinic in Oghs village.

Decades of conflict have caused a mass-displacement of villagers from this region. Approximately 98 percent of the people from this region became refugees in neighbouring countries during the period of conflict. However, since the peace returned in the country, about 97 percent of the mentioned refugees have returned to their villages.

The village consists of a number of homesteads, each surrounded by a mud wall. Within this homestead live members of the same family. The women of the village work at housework and collection of firewood for cooking. The men carry out farming activities, although some seek work in Peshawar or other big cities inside Afghanistan. Only a few of the villagers rely on their limited agricultural production and livestock as their main source of income. Other sources of income include forest products, support from relatives working outside the district, and employment in various formal or informal sectors. In the higher lands of the village, where the valley is narrow, sufficient water is available, but the small plots of arable land and the short growing season are both limiting factors. A small proportion of villagers own 36 ha of irrigated land (in form of terraces) close to the village. The main crops are irrigated wheat, barley, potatoes, and beans. A variety of vegetables are also cultivated. Agricultural activities are practiced using traditional tools and technology, and cattle and donkeys are used to prepare the fields for cultivation. Seeds, fertilizers and pesticides are procured in Jalalabad market and are used in their daily agricultural activities.

The remaining area of the village, about 950 ha, is covered by forest. The forest consists of a mixture of broadleaf and coniferous tree species such as *Quercus baloot*, *Pinus gerardiana*, *Picea smithiana*, *Pinus wallichiana*, *Juniperus* spp and *Cedrus deodara*. These forests are heavily exploited for nuts, fuelwood, timber, and charcoal production. The upper slopes of the mountain, which is also covered by forest, are used for grazing, fuel wood and grass collection.

Among the above mentioned coniferous tree species is *Pinus gerardiana* (called Jalghoza locally, 11) which produces very delicious nuts suitable for human consumption. Because of the value of its nuts, this species has generally been protected. In this village, the local council enforces their own local laws, and these prohibit the cutting of Jalghoza trees. This protection of forests located close to the village was initiated in 2000, when the local council was established through the support of Agency for Rehabilitation and Energy Conservation of Afghanistan (AREA).

The community council is elected by the villagers and consists of community elders. Customary law and traditions are used as the basis for the decisions of the council. Access to forests and forest management is regulated according to a plan prepared by the council members, and the forest resources are managed jointly by the community members. The 35-ha area protected for Jalghoza near the village has naturally regenerated with the pines, forming dense young stands currently about four years of age. Exploitation of forests for wood and non-wood products, particularly Jalghoza nut collection, is shared equitably by the

community members, as these harvests make a significant contribution to their economy and livelihood. There are common rules and sanctions regarding the management and use of the forests, and these are enforced from time to time by the local community council.

During the field visit, all community members confirmed the usefulness of the local council in protecting the opportunities for a sustainable income, particularly in times of economic hardship. Part of the harvests is saved and used at the time of wedding ceremonies, for overcoming of tough winters, and in other times of need. Many of the villagers are employed as daily labourers in Peshawar or Jalalabad city, where the wage is \$4 per day. In addition, income from Pakistan or from other parts of Afghanistan such as Jalalabad has become more important in village livelihoods. Some locals interviewed during the current study mentioned a relative, usually a son or brother, who is sending money home from a job in Pakistan. Micro-credit institutions do not exist in this village, and the low level of literacy does not allow for the accounting needed in a normal loan system.

The distance between this village and provincial capital (Jalalabad) is 75 km. A road has been constructed which runs from Jalalabad to a bus station 5 km from Oghs village. The villagers carry all their needed materials to the bus station either on their shoulders or by pack animal. The road is in a bad condition, and so few vehicles use it on any one day. No villager has a private vehicle.

There is sufficient water for drinking and irrigation, but there are no provisions for health and sanitation. A micro hydro power plant was constructed by joint effort of the community members and provides 650 families with electricity.

Villagers reported in the course of this study that many local populations of mammals have declined over the past several years. For example, gazelle are much reduced in number, and only small populations remain of ibex, wolf, fox, jackal, monkey and bear. Hunting occurs throughout the area.

Livelihoods assets of Sherikyar village

The second study site was Sherikyar village in the north of Afghanistan. The villagers here are ethnically Uzbek (13). The population numbers about 2100, comprising 300 families. There are two primary schools in the village, one for boys and another for girls, but no facilities for further educational. About 98 percent of the people are illiterate, and women are particularly likely to be illiterate. Health services are provided by two nurses.

Decades of war and recent drought have caused a mass displacement of people. Some of the people were IDPs but all of these have returned to their areas of origin. Women carry out takes of housework, milking sheep and collecting fire wood and animal dung, while most men work in agriculture. Agriculture and livestock herding are the main sources of livelihood. Some of the village women are skilled at weaving coarse carpets, large woollen socks, and felt carpets.

The surface water quality is saline and not suitable for drinking or for irrigation. There is also an insufficient supply of water for drinking and irrigation. Drinking water is supplied from Kandas, which is an underground water reservoir.

The majority of the villagers own at least 10 ha of rain-fed agricultural land, although a few villagers have even less or are landless. The main agricultural crops are wheat, barley, melon and oil crops. Landless villagers generally work as labourers in agriculture or animal husbandry. Daily wages in the village average approximately \$3 per day.

The main occupation of the people is animal husbandry. People in Sherikyar village own substantial numbers of livestock, mostly sheep, goats and cattle. There are at least 12 small

animal herds, consisting of almost 400 sheep and goats, in this village. Most families also have 3-5 cows, which are milked by the woman of the house. Livestock are grazed on the grasses, herbs and shrubs in the forest and rangeland areas, with supplemental fodder from crop residues. The undulating terrain and paucity of irrigated fields mean that forest and meadow grazing is the main food source for domestic animals in this areas.

In the region surrounding the village, there used to be pistachio forests (*Pistacia vera*) but these forests have been felled. This felling is said to be due to (a) groups of fighters who wished to exploit the timber value of the forest, and (b) local people who were forced to exploit the forest because they could not exploit their normal livelihoods during the times of insecurity. In the case of Sherikyar, it is thought that the first was the primary reason for felling. The villagers state that only 20 percent of the forest that was there 25 years ago remains.

Most of the surviving pistachio forest is low density, and all of what remains is in remote locations away from the village. The land where the pistachio forest was cleared is now used for grazing or has been ploughed for rain-fed farming. However, pistachio trees produce very valuable nuts which are used for human consumption. Pistachio forests play an important role in the livelihood of the poor communities. In the past, pistachio nuts were harvested according to a particular system called Shul. The shul (protection) system is part of a government system to control the pistachio nut harvest. In the shul system, all pistachio forests were regulated by provincial and local authorities and the forest department, and they were closed to all other actors. However, the forest protection task was carried out by the forest protection guards, and the illegal grazing and tree cutting took place regularly. When the pistachio nuts reach their maturity, the Shul would be officially opened by the local or provincial authorities, and the people were allowed into the forest to collect as many nuts as they can. The opening of the Shul lasted no more than two or three days.

People interviewed in this study indicated that the market chain for pistachios reaches from the collectors, who are local residents in north and northwest Afghanistan, to India, where the nuts are processed into sweets and drinks. It should be noted that the Shul system was used in a time when pistachio forests were of great importance in terms of environmental benefit and market values. During the recent period of war (1979-1990), the Shul system has fallen out of use, leaving a management void and an opportunity for uncontrolled exploitation. With the gradual breakdown of government control and with increasing economic and political insecurity, grazing, dry land cultivation and timber harvesting in pistachio areas accelerated, and large-scale deforestation followed. The harvest of pistachio nuts was controlled by local commanders and war lords.

This village has a local community council composed of community elders and influential people who are elected to the council by the villagers. However, access to forests and forest management is not regulated by the council. Mediation and arbitration with the local and provincial administration is the main task of this community council. People interviewed indicated that the council is ineffective in terms of providing a sustainable income opportunity.

As stated before, agriculture, livestock and pistachio nuts are the main source of income. Part of this income is saved and used at the time of economic hardship, or to buy agricultural land or livestock. As in Oghs village, Sherikyar village has no micro-credit institutions.

The distance between Sherikyar village and the provincial capital (Aibak) is 23 km, which can be traversed by road and is travelled by at least 3-4 vehicles a day.

The village consists of a number of homesteads, each providing a residence for members of a single family. Agricultural activities are carried out using traditional tools and sometimes by

machines. Tractors are used for field cultivation, and a thresher is used for harvesting. Seeds, fertilizers and pesticides are procured in market.

People interviewed indicated that some wildlife species such as wolf, jackal, fox, wild boar, and ibex are found in this area. It should be noted that the remaining components of the SL framework are similar for both villages in the study.

Vulnerability context

The people of Afghanistan are exposed to many risks and hazards arising from the past three decades of conflict and, more recently, five years of drought (14). Some people are able to cope with the risks by using their own resources. Others, especially the poor, are suffering from food insecurity, diseases and forced displacement. The warlords and criminal militias are accustomed to forcing people (women, girl, boys), using their vulnerable condition to their own advantage. Government institutions and social infrastructures have been destroyed and lack resources. Roads have been mined and stores looted, increasing the isolation of rural communities. The political instability and economic uncertainty have caused intensification of agricultural production and an increase in natural resources utilization. Over the recent years of disruption, both forests and pastures land have been severely degraded.

Afghanistan's few remaining natural forests, both the mixed forest in the south east and the pistachio forest in the north, have been depleted illegally. At the present rates of felling, Afghanistan will have no natural forest at all in 30 years. This trend of forest loss is continuing, and the costs to Afghanistan are colossal. Valuable forest resources are being lost. Rapid run-off is having negative impacts on water supplies to irrigation schemes, and irreversible soil erosion is taking hold in many areas. In addition, there is an increasing risk of drought with loss of forest cover.

Most of the forests belonging to Oghs and Sherikyar villages have been felled in the past 30 years. The only exceptions are the forests located in remote highlands, which are difficult to access. Natural regeneration has taken place in the cutover forests, and young stands of trees of age class I-III (15) are present in fields neighbouring the forests, although these are threatened by grazing of domestic stock.

The situation in the pistachio forest is the same as described above for the mixed forests. In the course of the past 23 years of war and political instability, approximately 98 percent of the population fled as refugees in Pakistan or became displaced persons (IDPs) inside Afghanistan. During this period, the pressure on the forest for fuel wood collection and grazing declined greatly. However, at the same time, mature trees were harvested by Pakistani timber contractors. The forest cover has therefore largely been reduced. The local people interviewed in this study indicated that the combination of drought and conflict has caused the gradual loss of jobs and employment opportunities in all other sectors. In order to vouchsafe a small wage for their family's livelihood, local people cut trees for timber smugglers. The illegal cutting of trees is carried out by chainsaw, allowing a complete depletion of forest resources.

Unemployment, drought, floods, war and political instability are typical economic and environmental shocks in the Afghan countryside, and they are related to crimes by timber smugglers in the forests which have led to the total destruction of all forest vegetation. The prolonged war together with the recent drought have now caused a decrease in production, as well as increases in prices, unemployment, lack of access to health care, and internal displacement. Seasonal factors also accelerate fuel wood collection, tree cutting, and overgrazing. The population has also been increasing due both to refugee repatriation and birth rate. People have lost their household assets, income-generating opportunities and, finally, the control over their normal living conditions.

However, in 2005, both climatic and political changes are expected. There has been more precipitation during the most recent winter and spring seasons, and it is anticipated that this year the drought will end and sufficient water will be available for rebuilding of the rural agriculture and economy. The recent elections and formation of a new government is also a step towards peace and prosperity. Villagers interviewed in the current study indicated that signs of violence and the influence of warlords have been decreasing. These changes also lend support to the idea of creating a suitable forestry administration (including community or participatory forestry).

Policies, institutions and processes

During the last four decades, Afghanistan has undergone drastic policy changes, from the semi-market-led economy of the 1960s and 1970s to a highly centralized state-controlled system in the 1980s and early 1990s, with a dearth of sound economic policy or efficient public institutions. With the fall of Taliban at the end of 2001 and the creation of the Afghan Interim Authority in December 2001, followed by the establishment of the “Islamic Transitional State of Afghanistan” in July 2002, the scale of social and economic destruction in the country became more visible. In response to the vast need for recovery and reconstruction, a large number of international organizations (UN Agencies, World Bank, ADB, NGOs and donor organizations) have started work in Afghanistan, following international pledges at the Tokyo conference in January 2002.

The Afghan government has reformed its institutions to facilitate effective and efficient responses to the growing needs of the Afghan people. The National Development Framework (NDF) outlined major national policies and strategic issues for the recovery and reconstruction of the socio-economic sector. The NDF clearly articulated the division of responsibilities between the public and private sector. Provision of security, justice and equality, investment in human capital and social safety nets remains the responsibility of the state, which will simultaneously create and enable an environment for the private sector to actively engage in production and marketing activities. The NDF assigns the government to tasks of regulation, policy/strategy making and monitoring, evaluation and promotion of the people’s entrepreneurial energies, while production and management of the economy is assigned to the private sector.

In the past, both forest land and grazing land were largely defined as public land, held in trust by the state on behalf of the people of Afghanistan. Several forest laws have been in draft form for years, awaiting clarification of tenure and land use rights of local tribes in any parts of the country. A common feature of all these laws has been the declaration that forests are state property, and that the government is responsible for their protection, utilization and management. At the same time, lack of a legal framework clarifying tenure, user rights and oversight responsibilities, combined with the collapse of the government institutions, has led to forest benefits being controlled and exploited by local elites (ADB, 2002). Forest management trends that have emerged in the few past decades, such as community forestry, social forestry, agro-forestry, and participatory forestry, are not reflected in these laws.

In contrast, for example, community forestry programmes are highly prioritized in Nepal. The community forests are defined as part of national forests handed over to the community forest users group for development, utilization, protection and management together with authorization of sales and distribution of forest produce according to an approved operational plan. The aim of the operational plan is to carry out forest development activities according to the need of the community (the forest user group) and the condition of the forest, to provide the system for managing the forest through community or forest user groups. To manage the forest means to fulfil the user’s demand of forest products, as well as objectives of soil conservation, environmental stability and suitable silvicultural operations.

There is substantial evidence that the natural forest area in Afghanistan has steadily declined over the last 150 years (16), to a total of 52 percent (17). The main reasons for the recent rapid decline in the natural forest cover are the lack of laws and the inability of the government to implement its direct role of managing and protecting the resources.

The main institutional problems currently faced by the Department of Forestry and Range Management, and its representatives at the provincial level, stem from the previous policy of focussing only on managing the forest itself. Involvement with people and communities has been negligible. In fact, the official emphasis has been on protecting the natural resource and denying or controlling access (for example to the pistachio crop). A new forestry strategy, based on the community approach, is currently being implemented. It should be noted that without an effective forest administration, policy, strategy and laws that reflect new trends in forestry cannot be developed, and can any participatory management plan be implemented.

The process of internalizing the new government's vision for reshaping the public sector institutions of central, provincial and district levels will be gradual. It will involve: a) design of an administrative structure consistent with the principles and approach envisaged in the National Development Framework, and b) initiating the change process by bringing about fundamental change in the attitudes of staff consistent with the future mandate of the government. The Ministries will be responsible for overall natural resource planning, policies and related management parameters, while local communities will be empowered to decide their own development priorities, to contribute to implementation of local projects and to monitor the work of government, agencies and the private sector.

At the moment, with regard to forest protection issues, there is only one actor and caretaker in Afghanistan. This is the Department of Forestry and Range Management (DFR), which functions within the framework of the Ministry of Agriculture and Animal Husbandry. DFR is responsible for the management and protection of the country's natural forests, pasture, national parks and wildlife resources. The Department has 11 directorates in its headquarters in Kabul, and a forestry office in each of the 34 provinces of the country. DFR employs approximately 196 technical staff of various backgrounds, and 1215 administrative and support staff all over the country. Staff are highly motivated, but they are working under difficult conditions, with very limited budgets and with little access to practical training in modern forestry. There is no other organization responsible for forest protection, not political parties, corporations, or judicial bodies.

At the moment, forest-dependent communities or villagers living close to the forest areas are not included in forestry policy activities. Villagers state that they wish to become involved in decision making about forest management. And the government's new strategy will initiate this increased participation.

Livelihood strategies

The goals of the agriculture and natural resource sectors are stated in the National Development Framework as being to preserve, invest in and exploit in a sustainable manner the agricultural and natural resources of the country in order to improve the standard of living of the people, especially poor small farmers. The strategic objectives for forestry are as follows:

- Expansion of the national forest cover through the mobilization of a "national reforestation campaign", rehabilitation of degraded forest areas, natural regeneration and promotion of viable alternatives for fuel wood and timber, and livelihood alternatives for forest communities who depend on forest resources for their livelihood.

- Use of a community forestry approach in selected areas to facilitate greater sense of ownership and local protection of the forest resource. Support of use of non-timber forest products, such as berries, mushroom, herbs and fodder, to generate additional income and assist in involving the communities in effective and efficient management of the forest, including enhanced reforestation efforts.
- The emphasis in all strategies is on increasing the productive capacity and efficiency of farming, livestock and forestry, and all in an improved private sector environment. For these reasons, the strategic approach will be to investigate, decide upon and implement measures which achieve the optimum balance between productive and biological aspects of the natural resources (forests).

An outline of the forestry policy and strategy based on a community approach was completed by MAAH and the ADB-supported team in July 2004. The proposed policy and strategy has as its main objective the development of community capacities to organize and implement community forestry programs and projects for the improved sustainable utilization of forest and grazing land. Thus use of the forest will contribute to increase income and food security, and reduce vulnerability.

The overall policy objective of the forest and rangeland sub-sectors can be stated as follows: People and institutions throughout Afghanistan aim to establish and maintain forest and meadow cover, as well as patterns of use that achieve a balance between, on the one hand, maximization of production and productivity in all agricultural land uses (dry land farming, irrigated farming, live stock husbandry, forest product harvesting, and exploitation of wildlife) and, on the other hand, effective maintenance and enhancement of the natural and wildlife resource bases (18).

The policy is directly linked to the strategies. Each paragraph of the strategies addresses a key phrase in the policy, explaining it further and describing how it will be addressed. Some key strategic paragraphs are shown below:

- The development of a full range of forest, rangeland and wildlife uses that achieve a balance between productive uses (such as forest products and pastures) and enhancement of the environment for other uses, especially irrigated and rain-fed farming.
- The adaptation of a community approach to forestry and community management, under which the community develops new capacities, independently organizing, implementing and sustaining improved forest and range management with a minimum of support from outside.
- The emphasis is on the developing of community capacities to discuss and decide which land uses are to be implemented. Assistance from the outside is to be provided as facilitation.
- The development and implementation of legislation and regulations for allocating land user rights over the forests and rangeland near communities.

In order to ensure the success of the above-mentioned strategic tasks, people and institutions involved will have strategic roles. These are:

- The local communities (communities located close to the forest areas) are the main beneficiaries as well as the main stakeholders. They are therefore expected to play a prominent role in decision-making and implementation of the community forestry initiative. This initiative puts the emphasis on capacity building for the local community as well as skill development.

- The government is a major stakeholder, guaranteeing the environment in terms of sectoral and national policies and strategies, as well as peace and security to facilitate the implementation of this initiative. The related staff of the governmental ministries will be expected to serve as resource people for the skills training and extension services in forestry and livelihood sectors.
- International agencies are seen as providers of support for the local beneficiaries, as well as for national and provincial government, and for the implementation of the community initiative.
- Non-governmental organizations are seen as agents who are cost-effective and can react rapidly, although they also have limited capacity. There are local NGOs, who are planning to get involved in the rehabilitation and development efforts in the target areas, particularly in the health and community forestry domain.

I.4 Conclusion

The impact of instability over the last 25 years has had devastating impacts on rural people and communities in Afghanistan. Rural infrastructure was damaged. Forests were cleared, and livestock were barred from traditional grazing areas. Private sector services were disrupted. Governmental organization and services ceased to operate, and government control over forest land and rangeland declined. The vast majority of rural Afghanistan came to be dominated by warlords. In virtually in every area, life became a matter of survival, an existence in which the agendas of both locals and those fighting in the conflict were dominated by strategies of survival and short-term gain involving exploitation of resources regardless of the long-term consequences.

Over the last three years, matters have improved somewhat. Therefore in regard of future strategies for forestry in Afghanistan, two possible ways forward could be considered, namely:

- A re-establishment and strengthening of the government's control and direct management of forest land and the uses made of them by the people.
- The establishment of a new system of management of forests by rural communities within which community members are permitted to act on their incentive to manage the resources in ways that are both productive and sustainable.

The second option is here chosen as the way forward on two main grounds: (a) it is directly in line with national policies, and (b) experience in neighbouring countries (Nepal, India, Iran, Pakistan, Burma) has shown that it can succeed and produce rapid beneficial results. In addressing the second option above, the immediate problem is the fact that Afghanistan presently lacks any system or clear precedent whereby management rights over forest land can be transferred to local people, groups or communities. However, participatory management and data collection methods show that the involvement of the people can be the link between increased forest production and sustainable livelihood.

Livelihood outcomes

Livelihood outcomes, as understood in the sustainable livelihoods model, may reduce or increase vulnerability. Livelihood outcomes are not immutable, but rather change in response to changing policies and processes. Because of the years of conflict in this region, the natural resource base, especially forest resources, is now degraded, a situation which negatively affects the livelihoods of the people of Afghanistan. To reduce vulnerability and improve the livelihoods of the people, strategies should be adopted to achieving security, financial stability and well-being, and to decrease poverty without creating additional risk or exposure to threat. To achieve these objectives, it is necessary to pursue strategies that create job opportunities

and sources of income through attracting assistance of aid agencies and mobilization of community resources to gain reasonable management of the limited natural resources-natural forest- which remain in the country.

Forestry-poverty linkages

Income that could be generated by pistachio and Jalghosa harvesting, fuel wood and medicinal plant collection, and grazing play an important role in the livelihood of the poor and the landless in rural Afghanistan. Many of the landless poor do have some livestock, so access to the grazing areas will benefit them as well. People who live close to the pistachio forests could partly or completely meet their livelihood needs each year through the harvesting of pistachio nuts. This was true in the period that the Shul system controlled the harvests.

However, at the moment forest products provide a benefit without community investments. The government is the owner and caretaker of natural forests. Local villagers receive some small of benefits (fruit and fire wood) from these forests, but they are not encouraged to make any investment in improving the resource because they are not sure that the benefits from an investment will return to them. Trees grow relatively slowly, and there are alternative activities in which a community can make an investment and be more certain of receiving a return. The longer people have to wait for benefits, the more uncertain the outcome of the investment. Therefore forestry is often unattractive as a single sectoral livelihood option for communities, especially for poor populations.

In the last 25 years, which was a time of war, the Shul system has broken down, and the benefits from the pistachio and Jalghosa nut harvests has fallen into the hands of warlords and influential community elders. Poor community members were involved as day labourers, receiving a wage for their nut collection efforts.

Afghanistan is a country which currently lacks a system for the sustainable management of forest land. Forests are legally defined as public land, but the government is not able to manage and protect them. People have no legal, but only traditional rights of access and use.

Advantages and disadvantages of Sustainable Livelihood Framework

Advantages

The following is a list of advantages of using the SL framework in the current study of rural Afghanistan:

- The most important advantage of the livelihood framework is that it coordinates efforts undertaken by different stakeholders (the government, NGOs, international agencies, private sector, and the local community).
- For development of an appropriate policy, strategy or programme, a comprehensive baseline survey is needed. The livelihood approach provides practical basis for such a survey.
- The livelihood framework approach could help coordinate policy making activities.
- The institutional analysis carried out in the livelihoods approach provides a basis from which one can work to improve the lives of vulnerable populations.
- The livelihood approach is useful for a country such as Afghanistan as it enters a fragile post-conflict era.
- The livelihood sustainable framework can provide a mechanism by which the linkages among various livelihoods assets are analysed and addressed.
- The sustainable livelihood approach offers an opportunity to address the poverty facing rural people.

Disadvantages

The following is a list of disadvantages associated with the SL framework:

- The Sustainable Livelihood framework is a concept that cannot be translated into a country which is in process of re-establishing itself.
- The SL framework includes some complicated issues which are difficult to operationalize into a clear plan of action.
- The livelihood framework approach requires understanding, learning and capacity building, none of which have been initiated in Afghanistan.
- The significant disadvantage of the framework is the poor relationship between the theoretical framework and decision-making between key actors. This limitation induces a delay in responding to a crisis.
- The livelihoods framework considers sustainability rather than vulnerability. Focusing on improvement of sustainable livelihoods in times of war can increase the vulnerability of the poor.
- There is little understanding of the livelihoods approach. Therefore its implementation will be a complicated issue in the countries such as Afghanistan.

Lessons learnt from the methodology and application (strengths and limitations)

Strengths

The lessons learnt from applying the SL framework in this study of rural villagers in Afghanistan are several:

- The tools used for working on livelihood issues were easy to understand.
- A suitable opportunity was created for effective negotiation between the relevant communities, agencies and institutions.
- A particular focus on the key resources of the villages studied was provided.
- The methodology as applied in the field highlighted the important role of the stakeholders.
- Exploration of the changes in the livelihood system of the community took place over the period of a year.
- Improved capacity changes were needed to enhance sustainability.
- The sustainable livelihood framework was useful in the post-conflict situation as a rapid way to gauge the principle poverty issues when quantitative data were not available.

Limitations

- Issues related to some methods were considered culturally offensive and community members were not willing to discuss them openly.
- In neither Sherikyar nor Oghs villages were women willing to give their opinions.
- The influential men of the communities could easily dominate the many other participants of the meetings. They often attempted to derail the process in a meeting. Therefore it was difficult to obtain the necessary and accurate information.
- The forest villagers, especially the poorest, had not been consulted in the past, and they found it difficult to express their ideas in public.
- In the villages, both men and women were consulted, but responses were not categorised by gender.
- It was difficult for a national consultant to analyze and organize information in the field within the limited time frame, especially with regard to data related to the asset framework. Therefore some analysis might not have been accurate.
- The primary lesson learned is that the perception of poverty issues by major stakeholders is a key element in understanding the linkages between forestry and poverty, and this analysis will be taken into account in future projects, programmes and policies dealing with poverty reduction in Afghanistan.

I.5 Recommendations

A lack of sufficient information about many aspects of natural resources has made it difficult to effectively develop national policies. This information gap is especially critical because of the intended move towards a transfer of user rights to local communities. Some aspects of this approach are essentially new in Afghanistan, which highlights the need to adopt a pilot approach at the start of program implementation. It is therefore strongly recommended that 'learning by doing' is prioritised in the implementation of the community forestry program

In addition, in order to ensure sustainable livelihood component of the forest dependent groups in Afghanistan, the following are recommended:

1. The forest laws should be fully finalised and enforced, including a clarification of the ownership of and access to forest land.
2. The clearing of forest and export of timber should be prohibited. Mutual understanding between the government and local communities is needed for this to be effective.
3. A comprehensive awareness-raising program should be implemented among the people living close to the forest areas, focusing on the values and benefits of forest.
4. A pilot project on forest protection and management is needed.
5. The introduction of alternative fuel and energy sources, such as solar energy technology, micro hydro power enterprises, wind power plants, biogas plants etc., is recommended.
6. A special plantation programme should be implemented in order to produce wood for fuel purpose. Species such as *Tamarix* spp, *Eucalyptus* spp, *Populus* spp and fast growing willows are recommended.
7. All stakeholders should be identified and encouraged to cooperate with each other.

Based on experience, the community approach seems to be the best way forward for the future of the forests of Afghanistan.

I.6 References

- 1) Technical annex. Securing Afghanistan's future. January, 2004.
- 2) UNEP, Afghanistan Post Conflict and Environmental Assessment. Switzerland,2003.
- 3) Nedialkov, S.T.Etude sur la classification legneus natural in Afghanistan. UNDP/FAO/67.
- 4) Forstgruppe Paktia. Forst and Holzwirtschaft in Afghanistan.
- 5) Asian Development Bank(ADB), (UNDP) and World Bank (sep,2002).
- 6) UNEP, Afghanistan post- conflict environmental assessment. Switzerland,2003.
- 7) Nancy MacPerson. Opportunity for improved environmental management in Afghanistan. World Conservation Union. Switzerland,1991.
- 8) Nedialkov, S.T. Etude sur la classification ecologic dela vegetation legneus natural in Afghanistan. UNDP/FAO/67.
- 9) AREA surveying report. Jalalabad, 2000.
- 10) Pashtoons are tribes, living in Afghanistan and Pakistan.
- 11) Jalghoza (*Pinus gerardiana*) have delicious nuts that can be eaten by humans.
- 12) Nedialkov, S.T.Etitud ser la classification ecologic dela vegetation legneus natural in Afghanistan. UNDP/FAO/ 67.
- 13) Uzbeks are tribes living in the northern part of Afghanistan.
- 14) Adam Pain and Sue Lautze, Adressing Livelihood in Afghanistan. Arue, Sep, 2002.
- 15) I-III means from 1-60 years old young stand.
- 16) ADB. Draft of a forest project for Samangan Province. Kabul, 2004
- 17) UNEP. Afghanistan Post- Conflict Environmental Assessment.Swiz.2003

CASE STUDY II: IRAN

Mona Kananian

II.1 Background

"Members of the human species are children of the forest. The evolution of civilization is intertwined with forests, at the center of our history lies the story of their use" (Durska & Kontinen 1997, p.15)

Iran is an ancient country and civilization. Iran is also now a developing country and so poverty is a problem for Iranian politicians.

For the last many thousands of years, Iranians have been nomadic shepherds. They moved from one place to another for their livestock pasture and acquired necessities from the resources around them. Today, approximately 30 percent of Iranians live in villages. The majority of this rural population, particularly those in remote mountains or villages, are dependent on natural resources for their livelihood just as their ancestors were.

A variety of tribes still exist in different regions of Iran. Each has its own set of customs, leadership and power structures, as well as decision-making systems, social norms, caste, and common law and sanctions. The tribes' traditional management systems for natural resources are at odds with those embodied in the central government's "Forest Publication Law" from 1963.

Today, it is important to resolve the conflicts related to management of natural resources through cooperation and also with situation-specific information at several different levels, from micro to macro. Information is needed about each tribe and the assets they manage, and their regulatory structures with regard to customary rights, etc.

This paper is a case study in two forest regions of Iran: "West" and "North Forests" with two well-known nomad tribes, the Lor and the Talesh, using the Sustainable Livelihood framework and P.R.A methods.

II.2 Selection criteria and description of field sites

The criteria for selecting the study sites were:

1. Poverty
2. Forest degradation
3. Rural population
4. A village size of 25-40 households.

Sites in two different forest regions which fit the above criteria were selected for study. The first region is in the "North forest" of Iran (Guilan province) with high quality forests, timber-oriented forestry plans, and a tradition of pastoralism among the Talesh nomads dating from at least 4000 years ago. Within this region, two villages were selected, Khoj-dara and Lotum. Khoj-dara lies at an altitude of 200-700 m above sea level and contains 24 households. It is the winter pasture of the Talesh nomads. The second village is their median pasture, used from about 15 March through 15 May and located at 1800 to 2000 m above sea level. The second village contains 25 households. The local people get what they need from the forest as they move from one place to another in an annual cycle. The households in each village are permanent, but the men move the livestock in an annual cycle from lowlands to upper pastures to access sufficient fresh fodder, while women generally stay with the children in the village for agriculture and other activities.

At the same time, “forest and wood commercial companies” have harvested every suitable tree that was growing on a relatively low slope, resulting in the degraded forest in the region today as well as a history of relationships (positive or negative) between foresters, rural people and forestry officers. This history has resulted in very complex issues in management of these forests. Any new policy therefore needs to try to explore a sustainable approach for both the people and the forests.

The second study site is located in the “West Forests” of Iran, with oak coppice stands, relatively infertile soils, problems with soil erosion and floods, and continuing traditional use of forest lands. The sites are pastures associated with the Lor nomads. The first village is called Ti and is within the region of the Bakhtiari nomads, a subgroup of the Lor. It contains 26 households. The second village, called Shaaban-Kosh, is composed of Popi nomads, another group within the Lor. Both of these tribes are well-known and ancient herder nomads of Iran. They have become more sedentary in recent time because of low herb density in their traditional pastures. Both groups stay at the village most of the year but move to the mountains for 2-3 months in spring and summer. As they live quite far from any city, these people get most their necessities from natural resources.

The “West Forests” region is a protected area managed by two organizations, one concerned with the environment and the other with forest and soil management. Both of these organizations attempt to prevent people from accessing the natural resources around them. At the same time, the state harvested in these forests, and causing watershed erosion, poverty among the locals, and conflicts between different stakeholders.

II.3 Result and analysis based on the sustainable livelihood framework for Khoj-dara and Lotum villages in the "North Forest" of Iran – tribe of Talesh nomads

Livelihood Assets

Human assets

There are a total of 49 households in these two villages comprising 330 persons, 168 male and 162 female. The most common family size is 6-9 persons per household. Men marry young (between ages of 16 and 20), and most choose their father’s traditional vocation of herder. The population is very young with the largest group being those between 16 and 25 year olds. There are just 8 people here over 60 years old.

The majority of people resident in these northern villages (205 people) have had no education at all. Less than 10 percent of those over 7 (26 people) have completed primary school, 9 went to guidance school (for pupils aged 12-14), and 4 people have had some high school education (for pupils between 15 and 18).

The livelihood approaches used by these villagers are one of four systems:

- 1) A mixture of animal husbandry and farming
- 2) Raising livestock, farming, and supplementing wages as a labourer for industries or forestry
- 3) Either herder, farmer, or labourer
- 4) Peddler in cities (30 km distant).

There is relatively little illness in this region. The locals believe this is because they have access to healthy and fresh food resource. However, there are no health services.

Cash income per household from various sources ranges from US\$ 20 to 350 dollars per month depending on the season and type of income sources. Three of the young men whose fathers could afford tuition fees have completed a husbandry training course by "Jehad-e-

Keshavarszi". Those who cannot afford training rely on traditional knowledge to acquire fuelwood, fodder, and grazing from the forest.

Information is brought to these villages when somebody returns from a trip or work in the nearby cities, when the children come back from (secondary) school, when the primary school teacher arrives, from forestry officers, the rural council, a meeting in a tea-shop near the village, in the daily market, or via radio and television. The primary topics of interest are penalties for tree-cutting, new forest policies and decision-making about forest-villagers, livestock and land prices, floods, late cold in spring, and every important development pertaining to their livelihoods.

These villages are mountainous and 30 km far from nearest city with the only access being a dirt road that is often closed in autumn and winter due to floods and snow. Teenagers between 12-18 who are attending school in the cities must lodge in boarding-houses, which is an extra expense for their parents. Some of the local teenagers remain in the villages to help their fathers once they complete primary school at age 11, and they do not attend guidance or high school at all. Other teenagers work as labourers in city, and some do not return to the village after graduation from high school. Many youths between 20-30 emigrate to the cities, but some return after the age of about 30. Because of these dynamics, the village population is mostly made up of adults over 30 years old, and the capacity to work is limited by the lack of young people and their related work potential.

In the last 25 years, the population in these villages has decreased from 68 households to 49. In the past, the herders would move to other pastures with all members of family but now just men move with the livestock, while the women and children stay in the villages. The women who stay in the village during this time must carry out both traditional female and male tasks such as ploughing, repairing the wooden tile roofs, etc.

Natural assets

The villagers at Khoj-dara and Lotum use forest to obtain products to build their houses and farms, as well as for grazing. In this northern region, there is enough rain to provide water resources throughout the year.

This region has suitable ecological condition for a high diversity of trees, shrubs and herbs around these villages. The species which are useful for food or income include *Fagus orientalis*, *Berberis vulgaris*, *Taxus baccata*, *Crataegus monogyna*, *Populus caspica*, *Salix aegyptica*, *Morus alba*, *Alnus glutinosa*, *Prunus laucera sus*, *Diospyrus lotus*, *Sorbus torminalis*, *Quercus castanefolia*, *Zelkova carpinifolia*, *Prunus avium*, *Mespilus germanica*, *Spirea crenata*, *Acer minsigne*, *Cornus iberica*, *Punica granatum*, *Ficus carica*, *Parrotia persica*, *Ulmus glabra*, *Castanea sativa*, *Buaus hyrcanum*, *Juglans regia*, *Pyrus boissicriana*, *Prunus caspica*, *Ptero caria fraxinifolia*, *Gleditshia caspica*, *Carpinus betulus*, and *Vitis silvesteris*.

The local agricultural production system is irrigated farms for vegetables and orchards. The products of the orchards are walnuts, grapes, quince, apples and pears, while the vegetables produced are potato and green bean. Barley and alfalfa are grown on lands with slopes greater than 20 percent under dry systems as the sloping field are not suitable for irrigation.

The "Forest publication law" outlaws local use of the forest for grazing and fuel wood Ti and Shaaban-Kosh as well as clearing them for farms. The forestry office also believes that many of the farms and orchards are illegal and wants to limit them with fences, but the local people do not concur with this position.

The productive potential of the originally rich closed forest has been reduced over time by a variety of actions. These include illegal cutting and harvesting on steep slopes by both

foresters and smugglers, and rural people pollarding and girdling trees to encourage herbaceous growth. The result of these different operations has been the development of an open forest with few wild animals (most wildlife has retreated to less disturbed areas) and poorly formed trees. At the same time, this forest is very valuable to the Talesh nomads for its cultural and social values. It represents their ancestral lands, and they have customs and livelihood management traditions related to this particular forest.

Physical capital

There are several types of roads locally. A main road 200 m long links the village. Nine km of the road to the nearby towns is asphalted, and 21 km is dirt road. In addition, some forest roads were built for timber harvesting by a timber company called Shafaroad Co. These roads are not maintained after the harvesting of the commercial timber, and these unmaintained roads are now damaged and a source for increased erosion, especially after rain. The forest roads also provide access to the forest for smugglers.

There is a mini-bus service twice a day, at 6 o'clock at the morning and 17 o'clock evening. At other times, people use lorries for transport, but this method of transport is very expensive for the local villagers.

Water is frequently accessible in springs in and around the village, and it is brought to the houses and farms using traditional wooden equipment. There is no problem for irrigation. However, bathing can be difficult in times of cold weather, especially for women and children. Water is boiled in the houses for baths to help protect themselves from diseases. There are no medical services in the village. Locals use honey and forest-herbs to increase their resistance to illness. The nearest city with medical services is 30 km away.

There is a primary school in the village but no guidance or high school. Pupils must stay in the cities in order to obtain post-primary education, and this is the reason that girls mostly don't continue education after primary school. There is no access to training or equipment for farming and livestock such as seeds, fertilizer, or pesticides.

Financial capital

Agricultural loans are available to farmers from government banks, but these carry a high rate of interest. Special husbandry loans are also available for those who start up livestock breeding enterprises, but these loans require certification by the environment conservation office of environmental standards. The standards include locating stables or sheds at least 250 to 500 m from any human residence. However, in the mountainous landscape of this village, with steep slopes, infertile lands, and public forest-lands boundaries, all the houses are clustered together and it is impossible to build stables far enough away from the residences to meet the environmental standards. For the same loans, villagers must be able to show authorization from the forestry office stating that the land they want to use is not public or state land. These requirements mean that starting up any husbandry enterprise is a very long official process requiring private land, money and free time, enough official information, and support, none of which are available to the villagers. Some villagers start but cannot finish the process of obtaining certification and authorizations required for the loan procedure. Those who live in the village are very busy with their agricultural and shepherding responsibilities and do not have free time to seek certifications in the city.

Wages paid to labourers depend on the location and type of work done. Most people work at a combination of subsistence tasks, such as livestock, poultry products, a small garden or fields, and orchards, (0.5-2 ha), in order to make a living. The economy is generally a subsistence one, with each household directly producing enough for their own consumption. In addition, some rural residents supplement their income with small, low-paid projects, such as handicrafts, seasonal non-wood forest products, seasonal labour in industries or forest management, or by having small poplar plantations. They may have some savings depend on

their income and on the size of their livestock herd, but mostly they save any extra money in order to buy more livestock, buy land, or build a house in the city, or buy a lorry.

The government of Iran has recently (2005) implemented an old age pension for rural people. There is also a "Rescue Committee" for poor families with no or low capacity to work. They receive a monthly subsistence payment as well as opportunities to develop skills or acquire training.

Social capital

These nomadic tribes have a system of common law which regulates the sharing of pastures and livestock. For example, if a tribe member does not have enough land for winter pasture, he will combine his herd with the livestock belonging to a big land-owner, and pay some cheese, butter, wood or one lamb as rent. The price depends on the numbers of animals being grazed and the period of time for which the pasture is used. The summer pasture is managed as commonage. The farmers also cooperate together to plough their farms by lending each other cattle. They help each other to move their herds between pastures by lending each other lorries or horses. If a family loses everything in a flood or fire, other families will come together to build a house for them and give them 1 or 2 goat or sheep, or perhaps some money, so the family can begin to rebuild their lives.

Community decision-making is carried out during meetings held on special days such as religious feast days. The elders, members of the rural council and all householders of the village participate in these meetings, during which vital issues are discussed, including access to pastures, the period they will stay in each region, the right time to plough, shearing the sheep, selling lambs, prices and suitable time, going to the market, fuel wood collection (from where, how and who?), road repair, electricity, obtaining wood for building and repair of houses, etc.

But if something arises which brings benefits only to one family, other families not only will not participate but they will try to prevent it. For example, families who had individually taken out husbandry loans were stopped because their neighbours had reported pollution from their stables to the Environment office, which then closed down the enterprise. This happens most often when it is a rich and famous family which is attempting to advance itself. This competitive atmosphere is hidden: you can feel it but nobody mentions it. The competitiveness is strongest between the richer and more powerful households, in particular because these families are competing for land and herd ownership.

In spite of this competition in social relationships, the households in each tribe cooperate very well together, and all kinships (extended families) will cooperate together against an external threat. For example, in one village there 13 Nasiri households, and all members will together work on land belonging to any Nasiri family. The land is seen as belonging to all Nasiri, and as representing their honour.

Summer pasture is managed as commonage by several extended families, and members of these groups cooperate to protect and restore the commonage. Long ago, the tribes divided forest and range lands amongst themselves. Even today, despite many political, legislative and judicial changes in Iran, they continue this traditional management system.

Each household can pollard up to 10-15 trees in the common winter pasture called "Ajoor". The leaves of the pollarded trees are used as winter fodder. Hornbeam (*Carpinus betulus*) is a preferred fodder source. The boundaries of these lands are delineated by wooden fences. However, all of these lands are considered public lands by the state, making all these activities illegal according to the "Forest conservation law".

Vulnerability context

Risks

The following are risks faced by the villagers in the North Forest:

- Floods may destroy their houses and herds.
- Late spring frost/cold may damage orchards and crops.
- Viruses and pests may attack their crops and assets, including bees, turkeys, and fruit-trees.
- They may be arrested and their activities halted by forestry officers, who will require payment of a fine under the “Forests conservation law”.
- There are fewer labour jobs in the region since agriculture has been mechanized. The only labour jobs available are in forestry and industry.

Seasonality

- Heavy snow may cut their connection with the cities, especially with the market place or bazaar.
- Heavy snow may cover all the trees, forcing livestock into stables where they will require feeding. City-bought fodder is expensive, so evergreen leaves are used. In particular, locals seek *Prunus laurocerasus* and *Ilex spinning* hidden under the snow.
- The fresh leaves and terminal buds of *Ulmus glabra*, *Carpinus betulus* and *Quercus castanetifolia* are also gathered for fodder, usually in the end of summer or in the middle of autumn. The leguminous pods of *Gleditschia caspica* and leaves of *Vitis silvestris* are also used for fodder.
- *Fraxinus persica* and *Parrotia persica* are cut for fuelwood in winter.
- Fallen and dry stems or branches of trees are gathered for dairy-product processing in summer; there is traditional prohibition against collecting live parts of the trees in summer or spring for this purpose.
- The winter and spring are called the “costs season” because this is the time when many bills are due. These include school fees for children, transport to the city for children attending secondary or guidance school, oil, and fodder such as straw, alfalfa, and barley. Other needs may arise, such as medicine for ill livestock, and the household may have nothing to sell except several eggs or a chicken.
- Conversely, the local people have named autumn and summer “Benefit season”, as they usually have sufficient dairy- products to sell, along with lambs, wool, and hand-crafts.
- Locals use forest herbs.
- The villagers can only sell forest fruits, including the fruits from trees and shrubs such as *Pyrus bioisierana*, *Mospilus gornonica*, *Rubus caesius*, *Morus alba*, *Punica granatum*, *Ficus carica*, *Castanea sativa*, *Prunus easpica*, *Juglans regia*, etc. Other fruits can be processed: syrup is made from *Diospyrus lotus*, juice from *Punica granatum*, jam is made from “wild-carrot”. Medlar (*Mospilus gornonica*) is also used.
- Some fodder is collected from the forest and from crop residues, while firewood is collected in the forest.
- Walnuts, apples and grapes are grown in their orchards.

The children do not attend school in summer, so there are more hands available for work. There is also some paid employment in the cities for young people.

If the rural poor were able to fulfil enough of their needs from the forests, they would be able to survive without a cash income, but application of the “Forest conservation law” has meant for many a loss of income and an increase in poverty. Some households have had to sell several livestock to pay for other expenses. After the implementation of the “livestock extraction of forest” and “forest-dwellers centralization” laws (described below), some people left the forest lands and received a compensation payment. However, when they went to the

city, they found that their compensation was only just enough to buy a small plot of land and build a house. Since they had no skills useful in an urban environment, they are unable to find employment. Instead, they might buy a few animals with the remainder of the compensation payment and ask some relatives to look after the animals in their ancestral village in the mountains. In this way, the pressure on the forests has increased. In addition, other former herders who have left may return to the forest-lands because of their belief that these are their ancestral father's lands.

- After the introduction of mechanized agriculture, many of the village people lost their seasonal jobs as agricultural labourers, making them more dependent on forests because they do not earn enough for expenses such as petrol and fodder for livestock.
- In recent years, the cold season has become longer. It is now seven months long instead of the five months it was before. This means that farmers must keep their livestock in the stables for longer, and this forces them to cut more evergreen trees for fodder, including *Ilex spinigera*, *Prunus lauroceracus* and *Buxus* sp.
- There seem to be fewer fish in the river in the village, something locals blame on timber harvesting. In specific, they conclude that the noises of harvesting frightened the fish. In addition, aquatic pollution appears to be increasing, and local populations of bears and deer have also retreated from the forests.
- The human population is increasing, and the villagers need more land for farming and grazing after marriage. This expansion has forced the villagers to take possession of forest lands and convert them into farms and orchards, an action which is illegal.

Policies, institutions and processes

There are several laws which impact on resource access and forest management in this region. One is the “Land publication law”, which was in conflict with the system of management by elders and resulted in an increase in poverty and a lack of equipment. This stress resulted in a decrease in the traditional mutual support within a community. Trust was also damaged between different extended families (kinships) when they came into conflict over land ownership.

The “Forest conservation law” makes all forest and meadows public, or state, properties. Responsibility for forest management in the region studied was transferred to a timber company, Shafarood Co. The company is required to plan and carry out forest use in accordance with the “Forest conservation laws”, but in fact the harvesting was unsustainable and has resulted in erosion and land degradation. Other unintended effects have been an increase in timber smuggling facilitated by the forest-roads network and illegal cutting by rural people without any concern for regeneration or the future of the forest future. The forestry officials believe that the degradation of the forest is due to the actions of the local people fault, so their solution is to exclude rural people from the forest lands with two more programs, the program for livestock removal and one to encourage villagers to move away and resettle in towns and cities.

The “Livestock extraction from forest” program compensates people for removing their livestock from the forest, and the “Forest-villagers centralization and move out of forests” scheme gives compensation to rural villagers in place of access to their commonage in the forest. When these schemes were first implemented, many people participated, thinking that the plans were just and legitimate. However, when they moved to the cities, they found that land prices are much more expensive in the city, and their compensation money could not cover the price of land and livestock. In fact, they could only buy a small plot of land to build a house, retaining nothing to support them in their new location. Since they have no marketable skills to start a new job in the city, many returned to livestock raising. Most bought some livestock and sent them to their relatives in the mountains villages. For example: a family with 100 sheep can 3500 dollars profit each year, but when they move to the city,

they receive only 3000 dollars in total to support them in buying land, building a house, and finding a new job in the city, where prices are more expensive and job opportunities are few. The newly arrived people often remain unemployed, while some become peddlers, or industrial labourers if they are very lucky. This means that the former farmers are no longer producers; they will have become consumers when they move to the cities. Therefore, migration to big cities is not a suitable way to decrease forest degradation.

In contrast to the official position, rural villagers believe that the main problem in with forest management is that the managers are outsiders who do not know the local situation and its complexities.

There is no accurate official information about the households in “North forest” with regard to their assets, vulnerabilities, livelihood strategies and their traditional approaches. Many Iranians believe the rural people are guardians of the forests and that if the state allows them freedom of action, they can protect and restore forests. However, trust between rural people and forestry executive body is at a very low ebb.

The decision-making system in Iran is top-down and centralized, with a “North forests office” in the capital which dictates to the local office. Without official acknowledgement of the benefits rural people can get from the forest, illegal cutting and clearance for agriculture are continuing. More recently, since 2004, forest politicians have developed a “National strategy of forest preservation”. A first glance, it appears seems that this strategy gives special attention to socio-economic issues, but in fact the executive of the forestry authority are continuing with the same methods that they used before. This is because the executive part of “North forests office” believes that commercial timber production is a primary objective in forest utilization, and not any community-based system. Foresters tend to try to use expensive machinery in the forest work, instead of using the assets around them, in particular the capacity of rural people to work.

Rural people would not like having forest managers who are outsiders. The villagers prefer to have local people managing their forest, as they are familiar with the strength and weaknesses of rural life.

II.4 Result and analysis based on the sustainable livelihood framework for Ti and Shaaban-Kosh villages in the "West forest" of Iran

Livelihood Assets

Human assets

There are 26 households comprising 284 people (138 female and 146 male) in Ti village, and 35 households containing 410 individuals, 200 male and 210 female, in Shaaban-Khosh. The most common family size is 8-11 persons/household. The largest population group are those between 10-30 years of age, making this quite a young population. Each household attempts make a living from several simultaneous income sources. Strong relationships between members of the extended families have kept the rate of emigration low. Young people may work in the city, but they return during the more demanding seasons, such as harvest time, because they must help their parents.

The men are healthier than the women. Women marry at a young age and they lack a health service to teach them about nutrition and female hygiene, especially during pregnancy. The women work as hard as the men, but they eat and rest less than the men do. Poor health is obvious from loss of teeth, dry and damaged skin, and damaged hair in young women (20-30 years old).

There is no education system or training here because the village is remote from the city. The only exception is the teacher who comes to work with five classes of primary school every two weeks. Four or five of the young men (19-21 years old) who live in the village have a "Diploma" degree. They would like to start up new projects such as a walnut plantation or a fishery project, but it is too difficult for them to get enough useful information to help them to begin. This group would prefer to modernise and does not want to continue traditional but unskilled approaches.

Villagers have access to information from those who return from cities, teenagers returning from return from guidance or high school, the visiting teacher of primary school, and "Environment office" members. There are some televisions and radios in the village, but these have poor reception because of mountains around.

Natural assets

The capital assets around Ti and Shaaban-Kosh villages include:

- Flat land for agriculture,
- Walnut orchards,
- Commonage for grazing in mountains,
- Commonage pasture around the village,
- Common rights and shifts for using water resources for irrigation, and
- Mountain herbs and mushrooms in middle of spring provide rich food for them, because they often just eat dry bread with milk or "Kashk" (Dry whey) and yoghurt, especially in hard season.

The villagers grow alfalfa, barley and clover for fodder, and wheat for baking bread, but the productivity is not high because the locals have not had enough training to develop skills in agriculture. This lack of training is true for traditional forest management as well. There is management planning with regard to harvesting trees (which species, which part of the tree, how many to be harvested or when), but, the low level of skill and lack of training has resulted in a forest of small, forked trees, with a coppiced, open-canopy structure.

Villages collect acorns, oak leaves for fodder, and cut some stems of a coppiced tree for fuel wood. The entire region is protected, and villagers' use of pasture in the mountains and the forest trees is illegal according to the "Natural resources law". This low level of skills in use of natural resources, the pressure on trees by the cutting of fodder in dry periods, and the difficult climate with drought periods, have together resulted to unbalancing the ecosystem. In addition, the increase in pigs, which eat acorns, has reduced oak regeneration, resulting in soil erosion and floods.

Some fodder is grown as alfalfa and clover crops, some is cut from the oak trees, and some is purchased in the city. However the city-purchased fodder is expensive to transport to the village. The main agricultural products in this region are green beans and wheat. People also buy potatoes and onions from the city. Villagers do not have enough money to buy and transport fruit from the city to the village, so most families do not eat fruit. They do not collect any fruit from the forests except walnuts. Villagers also do not like to butcher their livestock for consumption. Instead, they keep the animals as insurance for hard times, to sell and earn income in times of need.

Some villagers will share their land (for example, several brothers) because there is not enough land and money to build a new house or buy new lands for young families after marriage.

People in the West Forest use *Platanus orientalis* for their house roofs; *Acer sinerascence*, *Pistachia khinjuk*, and *Vitis silvestris* for fuel wood, and, in hard times (especially a long

war), they extract the gum of a local tree called “Saghez” (Turpentine), which comprises is a very important medical and chemical product.

They divide water sources for irrigated farms at the beginning of the new year in a meeting with elders of all kinships and rural council members. The standard is to allow one day’s access for each person.

Villagers must receive permission to graze the pastures around the villages from the forestry office, but in several cases, the grazing rights were given instead to outsiders. Lack of access state-owned pasture causes hardship for local families.

The villagers have traditional knowledge of how to manage coppice forests for their livelihood. They cut one whole tree, the stems of another, the branches of a third, etc., to help the tree to produce more fruit or wood. However these are not viewed as skills, and the forestry officials will arrest those who use this method. Locals when interviewed are afraid to explain the method and claim it is haphazard. However, some elders can be persuaded to describe this traditional technique. Tradition is important in this region: the villagers in this area identify strongly as nomads of a certain tribe using ancestral lands. For example, most households have the same surname, a phenomenon which is a sign of an ancient Nomad tribe.

Physical capital

The transportation system in Ti and Shaaban-Kosh is a narrow, dangerous dirt road, used by several motorcycles plus a lorry every two weeks. Local people cooperate with each other to transport fuel to the village, but the amount imported is less than they need, so they have to use wood also. The houses are made of stone, wood clay and straw. There is not enough material to complete the building of the mosque and build new houses for young families.

A river passes through the village, and concrete diversions bring its water to the farms.

There is a health service, and villagers also rely on medical plants and traditional healing methods for the first 10-15 days that they feel ill. If they don’t feel better after this treatment, they go to the city.

Financial capital

Men sell surplus products or herbs or mushrooms and dairy-products and handicrafts in cities and buy necessities for the household, leaving little extra to save. Any savings are used to purchase more livestock, or a motorcycle or lorry.

The “Rescue committee” can help the poor people if it is known where they live and in which situation. However, since these villages are very isolated at the end of a dirt road, and there is little information in the outside world about the rural living conditions. That is why there is little financial assistance to villagers, and that only after a long official process. Villagers therefore prefer do not apply for these supports. There is a pension and "Household necessities basket" each month for elderly people or for households with little equipment or capacity to work, such as those who are disabled.

The “Agriculture bank of Iran” gives some fishery, farming or husbandry loans in this region, but the interest rates are not suitable for rural people with few or no savings. The “Tribe cooperative” also has a livelihood plan, but their estimate of what people need is not unrealistically low.

Social capital

There are strong relationships between all members of an extended family, a social connection which inhibits emigration. Locals instead stay in the village and help each other, especially their parents. It is not easy to cut these traditional roots. They make decisions as a

group with regard to access to forest and water resources and agriculture work, and the whole community and elders play their roles as consultants.

Each household's access to the forest depends on their caste or social grade within the tribe. This access is structured according to traditional common rights. The same traditions define pasture and forest-lands and give the time for moving the livestock. The power structure works via the elders of tribe and, more recently, the rural council.

Vulnerability context

Shocks

Every several years, there is a drought in the West Forest. People believe that the regular droughts are a result of climatic conditions and ongoing natural resource degradation. There are floods every year after rain in spring and autumn.

Forest resources are a complementary source for livelihood especially in hard times: they are used for pasture in summer, wood in winter, and mushrooms and herbs in spring. In difficult times such as periods of drought, use of forests assets increased because they cost nothing and are accessible.

The population is increasing, and related unemployment has resulted in increased pressure on forests because new families need land and pasture when they marry. This higher pressure resulted in lower productivity and fewer financial benefits.

Seasonality

Villagers decide at the beginning of spring on a program for the year. In this program, decisions are made about each person's duties, including ploughing farms and gathering herbs, sowing seed, moving to the spring pasture in the middle of spring (this is a role for men; women stay in the village.) They start to gather fuel wood and fodder for winter at the end of summer and continue to the end of winter. They use forest resource all year long according to the season and their needs.

Locals expect the forestry officials to stop and fine of them for illegal cutting of forest trees and for the environmental officers to fine them for use protected areas as their pasture. They pay these fines and continue the same way, because there is no other option. They are worried about future of their children.

They must repair their houses before the rainy season. Boars may attack to the farms and destroy everything, while wolves may attack the herds and kill livestock to eat. Jackals steal chickens and geese.

Policies, institutions and processes

The traditional resource utilization system was disrupted after the publication of the "Land publication Law". Now the pattern is that all rural people use the natural resources around them, despite it being illegal under current laws. Villagers are sometimes halted in their activities and fined or arrested under the "forest conservation rules". At the same time, their practices are in accord with the more informal common law. The illegal cuttings are of more volume than the regeneration potential of the forest, resulting in forest degradation, loss of several species of trees and shrubs, disturbance of the environmental balance, decreasing land productivity, desertification, and increasing floods and droughts.

People believe that the most important organization influencing their access to the forest is the forestry office and the most important tool the "Forest conservation laws". They see no scope for improvement in policies, although in fact some changes have occurred recently which

bring hope for change. These include a multi-functional forestry plan, which will transfer the rights to non-wood products utilization to the local people. Livestock have also been removed from Zagros forest. However, villagers must promise to not move back to forests, and it is forbidden to cut forest trees, gather firewood, cultivate plants, or develop orchards.

Recently the World Bank and IUCN have attempted to affect policy through macro-policy influences on Iranian politicians at the international level. Because of this, watershed managers in Iran are attempting to make management plans in accordance with international environmental and social criteria. This has resulted in increased concern for what has happened in this region and attempts to enhance the conditions for both people and natural resources.

Livelihood strategies

Many studies of rural resource use indicate that rural people prefer to use a mixed livelihood approach to provide a more stable and sustainable living. This is possible in the North Forest region because of the variety of forest products grown there. Rural people are dependent on the forest for firewood, fodder, and land for cultivation and orchards throughout the year, while forest fruits and herbs bring them a seasonal income, increasing their food security and income. Monthly cash income among villagers generally depends on livestock, poultry products and vegetables they produce, and all these are also indirectly dependent on forest land and trees.

A poor rural man in Iran rises in the morning (4 or 5 o'clock), spend his time with goats and sheep till noon (12 o'clock), and then works in the forest till 5-6 o'clock in the evening. Teenagers herd the cows in common forest lands around their houses, and women and young adults work in the fields. One small girl stays at home all day to cook and wash and mind the smallest children. However, this pattern of life is likely to change, as the young people choose to work in the city, and parents want their children be educated and learn more skills, especially about modern husbandry systems. The villagers do not want to continue this difficult life if they can change it; they would prefer to reduce the amount of hard work and the difficulties of living in an isolated village in the mountains. Those villagers younger than 60 years old in particular desire a different lifestyle.

Some patterns have already changed. Women no longer move with the herds as they did in the past. They stay in the village and work at agriculture, while young girls can go in school. The women like to plant some poplar and walnut, although not for the "Forestry plan" but rather as an investment. The rural women also like to grow vegetables, but they do not like to keep livestock or move with them.

In the West Forest region, the degraded forest and poor pasture mean that all the traditional activities together cannot provide a sustainable livelihood strategy. In the West Forest, everything is more fragile than North Forest, and it is a more difficult place to live although people are doing their best.

II.5 Conclusion

Livelihood outcomes

The livelihoods of rural people in Iran are based on unbalanced and fragile assets. As most of their activities on the land are illegal, there are many conflicts between locals and officials of the state.

Rural villagers in these areas are not able to sustain their livelihoods in the face of shocks, changes or trends, especially political changes, and they do not trust state officials. They are

never asked about what they think or need, so they have no clear imagination about future. They are simply expected to obey laws decided upon by others. They have little voice or power to decide about what will happen in their lives or surroundings. They also lack enough equipment, training and awareness to use different approaches, and they do not like to take risks.

There are some weak supports for these rural poor, but their lives are actively obstructed by policies, institution and processes, which have also frightened them and reduced their confidence in the state. Rural people in these areas see the administrative framework for forest access as unjust. Forest-dependent groups are not involved in decision-making about forest management.

All of the above has resulted in a gap between official forest management and actual access arrangements and practices.

Forestry-poverty linkages

Forestry policies obstruct rural people's access to forest assets, and therefore the villagers end up paying for fodder and fuel they formerly obtained from their local forest. Or, they increase illegal practices such as timber harvesting, and then pay the fine when they are arrested by forestry officers.

All these happen because forest politicians, from the first laws they designed, conceived of the forests in Iran without considering the rural population dependent on them. The politicians assumed that rural people would willingly leave the forest lands when excluded by law, but to the rural people, this is their ancestral land, and the local tribes consider themselves to be the owners of this land.

The forest policies are technical. Politicians planned for each technical issue, including silvicultural methods, harvesting, transport of timber, forest-roads, utilization, etc, but they did not collect any data about the locals' livelihood approaches and the products derived from the forests. And therefore the forest politicians did not develop a plan for the management and activities actually taking place in forest lands. They did not try to account for traditional use or enhance it with some training, etc.; they just planned to exclude traditional use despite the historical roots and cultures based on living in the forest.

Because of these policies of excluding rural people from the forests, other organizations have ceased their activities in these regions. The types of activities that were halted include: laying main roads with asphalt, distributing of fuel and electricity, and creation of husbandry establishment. Distribution of straw and barley was also halted or reduced. All of these actions had the effect of increasing poverty in rural areas. The objective of these organizations is to encourage people to emigrate out of the forests by making their living conditions untenable. The idea is that the villagers will relinquish their traditional residences and migrate to cities, but this concept does not allow for the fact that people have no savings to begin a new life with the expensive prices in the cities, even if they really wanted to move.

Advantages and disadvantages of Sustainable Livelihood Framework

Bad memories of conflicts between local people and officers of the state make it difficult to collect information about rural people's assets, livelihood approaches and especially the informal use of the forest. The SL method helps to create a friendly atmosphere in which to speak with locals, and this atmosphere enhances collection of accurate information. Speaking about their social capital requires an investment of additional time, because the villagers are wary: they are aware that their informal use of the forest is blamed as the only cause of forest degradation.

It is crucial to select a suitable time in using participatory methods. For example, the data collection in the North Forest was first obstructed by a heavy snow, then by the closure of the roads. Later, the "Nowrooz" holidays, the busy seasons for agriculture, and the time of moving livestock to another pasture came, reducing the amount of free time villagers had available for participation in the PRA data collection.

The SL approach recognizes that there is a big gap between forest policy on the international level and local management, as well as a gap between local formal management and informal livelihood approaches. There is a consistent problem with lack of monitoring and evaluation of previous plans. There is also a gap between the state forestry officials, research institutes, and forestry professors in university with regards to power and income. None of these three groups that plan forestry programs together have a clear idea about how local people relate to the forests for their livelihood. The only data which existed heretofore is some fairly inaccurate statistical information about population and herd numbers. In addition, because of ongoing challenges on power in Iran, everything is seen as political, especially "natural resources", as they are a source of power. Politicians want to save the resources for themselves but not necessarily with a workable idea about how that is possible. Nobody wants to research actual options for the conservation of natural resources because of the complexity of the topic and the arduous field work conditions, so officials write reports based on suppositions from their desks, with short or no trips to the region for which they are making plans.

The SL framework helps clarify for the researcher topics to focus on, all the way on from the micro to the macro level. The framework helps to organize work groups and analysis teams, and the data collected gives a realistic picture of what is actually going on. And, for first time in Iran, it is people-centred, not forest- or timber-centred.

Analysis of applied methodology and applicability

It was first time that the rural people in these forest villages encountered these methods. They were very interested in the methods used, especially the seasonal calendar and benefit analysis. Most of them could not write, so the analysis was done using group discussion and transcription by two young boys.

The villages were very pleased that an outsider came to their isolated village to learn about their livelihood approaches, traditional knowledge, and the assets they have or need. They tried to explain and show everything and attempted to complete others' explanations. The elders emphasised important points to the young people. When read the text board was read out loud for them, they laughed and confirmed or corrected it.

In the North Forest, men didn't like to ask about what the women do, and the women preferred to speak about their assets and activities separately, rather than in a mixed group with the men.

People liked to show the seasonal calendar as a circular drawing in the North Forest; they thought it was an easier method to show the cycle of moving to different pastures. The villagers, however, did not like drawing the map of the village, especially depicting rich families with big areas of land and farms. This hesitation was overcome when it was explained that this is just a method to provide an overview of access issues and the state of resources, etc. Participants then agreed to draw the map without labels showing owners' names.

In the West Forest, the locals participated in all methods. It was a new approach for them to collect information with no questions about number of their livestock, the area of their farms,

etc. As the queries were about assets, activities, vulnerabilities and opportunities, the locals remained interested in the methods.

For both study villages, all age groups (children, teenagers, youth and adults) came together to try to help each other to explain everything completely, and they were satisfied with the results as read to them.

CASE STUDY III: KYRGYZSTAN

Ainur Asanbaeva

III.1 Background

Kyrgyzstan occupies an area of 199,900 sq km, about 94 percent of which is mountainous. The country's average elevation is 2750 meters, but about 40 percent of Kyrgyzstan lies at an altitude over 3000 meters, with three-quarters of this area under permanent snow and glaciers. Most forests are natural forests, of which there are four main types: a walnut-fruit forest complex, forest dominated by juniper, spruce forest, and riparian forest. The mountain ranges of southern Kyrgyzstan bear globally unique natural forests of walnut and fruit-bearing species, and these are widely considered to be biodiversity hotspots of global significance. In comparison with the walnut-fruit forest, which contains about 130 tree and shrub species, the nearby juniper forest is much less diverse (about 20 tree and shrub species) and is less important for locals in terms of forest use. Forests provide a source of income for the local population, and this has become increasingly important in recent times.

After the collapse of the Soviet Union, the agricultural lands were distributed amongst the local people, but the forests remained under state control. The state forestry farms (leshozes, usually consisting of between 3 and 10 forest rangers) continued to have the legal responsibility for the forest territories and their management, but with a significantly smaller budget than they had in Soviet times.

In Soviet times, the state forest management units gave work to almost all the people living in the forest area and catered to most of their needs. The forest farms provided education, medical care, communication, house and road-building, etc. Access to energy resources (electricity, gas, coal) was easy for everyone. Demography was mainly stable in the rural areas as people had opportunities to find employment in the different rural and urban industries functioning in that time.

With the collapse of the Soviet Union, the living standard of most of the forest inhabitants declined: many lost their jobs, facilities were reduced or closed, yet the workers also were denied the benefit of receiving private land. As a consequence of this economic hardship and the general breakdown of an effective forest management system, the pressure on the walnut-fruit forests increased significantly, resulting in degradation of the unique forest ecosystem of the walnut-fruit forests.

III.2 Selection criteria and description of field sites

The following were the criteria used to select particular communities for the study:

Selection criteria:

The following are the selection criteria under which the study sites were selected:

- Level of poverty: poor and very poor
- Rural population: increased and highly dependent to forest resources,
- Forest degradation: increased during last decade,
- Village size: 2 small villages, located in the forest area.

Other important criteria are the following: access to forest, development and implementation of the Collaborative Forest Management (CFM) approach.

Description of fieldwork sites:

Two small villages located in the walnut fruit forest zone were selected for data collection in the current study: Dubital village in Osh province, and Urumbash in Jalal-Abad province:

- 1. Dubitel village (1) in Osh province is an old village of 55 households surrounded by a highly productive walnut fruit forest and relatively unproductive juniper forest. The population is very poor population and heavily dependent on forest resources. However, only a few families have access to the forest plots. There are conflicts in this region between the traditional forest users and groups driven to the forest lands from outside the area.
- 2. Urumbash village (2) in Jalal-Abad province is a new settlement of 42 households. They also have a highly productive walnut fruit forest and a poor population that has increased during last decade. The population is heavily dependent on the forest resources. The forest plots are given to local people through short and long-term leases.

	Village 1	Village 2
Name	Dubitel	Urumbash
Province	Osh	Jalal-Abad
District	Uzgen	Suzak
Village size	55 household, old village	42 household, new settlement
Level of poverty	Very poor (no rich people, 40 percent of the villagers are middle class, and 60 percent are poor)	Poor (10 percent of villagers are classed as rich, 80 percent middle class, and 10 percent poor)
Population	Very densely populated close to the forests, immigration from urban to rural areas	Increasing population due to high birth rate; no immigration
Proximity to forest	Close	Inside
State forest farm / forest range	Uzgen / Jazy	Kara-Alma / Urumbash
Dependence on forest resources	Very heavily dependent; this village is more dependent than village 2	Heavily dependent, but the villagers have a bit more wealth
Relations between local governance and local foresters	Good, but could be improved	Very close – head of local government is a forester by profession
Access to the forest resources	Limited access; only few families lease the forest plots	Legalised access; each family leases forest plots
Forest degradation	Increased during last decade	Increased during last decade

These two villages are both poor rural populations undergoing demographic growth. They have increasing needs with regard to land and fodder needs as well as energy needs. Although the people themselves consider the part of villagers as “rich” and “middle-class”, in comparison with the state of citizens or farmers, the living and cultural standards of forest villagers is the worst in the country.

III.3 Result and analysis based on the sustainable livelihood framework

Livelihood Assets

The main distinction among local stakeholders is between foresters and non-foresters, or villagers. Through foresters are not numerous compared to villagers, they are present in most villages around forests. They therefore play an important role at the local level. Usually foresters belong to the powerful and middle class category of the population.

The villagers can be further divided into three groups based on wealth (this division is relative and based on the locals' own subjective conception). Wealth is primarily based on livestock ownership and not on ownership of land. The three groups are:

- The rich own more than 50 cows and horses, a few hundred sheep and goats, a big house, and a car or truck. The rich can sell most of their production on market and have enough money to invest in new projects. For instance, they can rent additional agricultural land, buy farming equipment or send their children to university. (There are no rich people in the first village, while about 10 percent of villagers in the second village fall into this group.)
- The middle class have between 2 and 20 cows, a few horses or donkeys, or 20 to 60 sheep or goats. They produce enough for domestic consumption and manage to sell some products in the market. Some members of this group have permanent jobs, such as positions as teachers, and their wages help make ends meet. The middle class find the cost of transport to trade goods onerous. They lack extra money to invest or send children to university. They often live on credit, which they repay upon receipt of pensions, public welfare or revenue from the sale of their products. (This group represents about 40 percent of the people in the first village, and the majority of people in the second village.)
- The poorest have no livestock at all, or only 1 or 2 cows and a few sheep. They do not sell anything and are very dependent on public welfare (welfare payments are very low and averages 100 soms (or 2 US dollars) per month). This group is composed primarily of widowed or disabled people, or older people with no children. (This group represents the majority of the people in the first village, and about 10 percent of villagers in the second village).

Interest and influence of local stakeholders regarding the access and use of natural resources:

	Foresters	Villagers		
		Poor	Middle	Rich
Interest	+	++	++	+
Influence	++	-	-	++

(- very low; + medium; ++ high)

Natural assets

Former land repartition: During the period that Kyrgyzstan was part of the USSR, ownership of private land was abolished. All land was considered public land, apart from a small private plot automatically given to each family in order to build a house. The rest of the land was divided between the forest fund controlled by leshozes (state forest farms), and the administrative fund land. This distinction was mainly based on the following criteria: potential for irrigation, slope, presence of forest vegetation, and distance from village. All the irrigated lands, as well as the majority of flat non-forested lands and pastures closest to villages, were managed by the administrative fund. Most of the summer pastures high on

mountains, as well as the forested land, usually located on mountain slopes, belonged to the forest fund. Infertile lands (low-productive agricultural land having shallow and unstructured soil layer with low site class score and requiring vast expenses for their improvement) were generally used for haymaking or sometimes to grow potatoes. These poor sites can be part of either administrative fund land (around villages) or forest fund land (farther from villages), and they are grouped by their poor productivity. There were also small areas of forests which belonged to the administrative fund despite their being forested.

Agricultural land privatisation: The lack of agricultural lands is one of the major limiting factors in local development in this region. This is because of the steep topography of Kyrgyzstan, which means that only 7 percent of the land area is suitable for tillage. As a result, every plot of land suitable for agriculture was registered, assigned and strictly controlled during the Soviet times. In early 1990s, the collapse of the USSR and collapse of public farms resulted in the privatisation of agricultural lands all over the country. People living in the cities were not given anything, but the rules of distribution in the countryside were quite fair. In each *Aiyl-okmot* (the smallest administrative organ at local level and the district managed), 75 percent of all agricultural lands were distributed on a per capita basis. The remaining 25 percent remained in the ownership of the *Aiyl-okmot*, to be used as a reserve in case of further village extensions.

No change of status for forests and pastures: Although most agricultural lands were privatised, all forests and pastures as well as the infertile plots belonging to the forest fund land were maintained as public land. As a matter of fact, no land from the forest fund land was distributed among the people. The access to forest resources and pastures remained under the control of the local administration or the state forest farm.

Financial capital

Macroeconomic framework. The present economic situation in Kyrgyzstan is a vicious circle: a setback in production results in a decrease of tax proceeds, which causes a financial deficit and therefore a decrease in budget allocations. This results in a decrease in total investment volume, which in turn caused a setback in production. There are several reasons that Kyrgyzstan is in this vicious circle, including the lack of a national economic development strategy, financial deficits, the complexity of the tax policy, lack of consideration of the interests of producers, and high bank interest rates.

At the village level. In the last 10-15 years, the standard of living has declined for most villagers in the two sites of this study. Many have lost their jobs, the formerly good social facilities were eliminated, and many villagers did not benefit by receiving private land. Among the villagers, only the rich and middle-class people are willing to get loans from commercial banks for farming (to purchase more livestock, buy farming equipment or rent additional agricultural land) or starting up a small business. The reasons given by locals for not taking up loans are: the small proportion of credit given per project, the high interest rates, the requirements for quarterly repayment, and the long application processing period (up to 6 months).

Year	Amount, USD	Interest rate, percent	Duration, month
2002	100	32	12-36
2003	160	27	12-36
2004	300	16	12-36

Many poor villagers live on credit, with loans from their relatives or neighbours just to make ends meet - not from credit institutions and not for the production purpose. If forest villagers have some extra money or savings, they always buy more livestock.

Traditionally people support each other by organizing a credit union shared between groups of villagers. Everyone regularly contributes a small amount of money to a common fund. This fund may be used in its entirety by any of its members for investment purposes, to help someone in a need or to fund public works in the village.

People living in and around the walnut forest can get cash income from the sale of their products on market (from livestock breeding and farming or from the forest, usually nuts), wages (people who have the permanent jobs such as the local officials, foresters, teachers and doctors represent about 5 percent of villagers), and public grants and pensions.

Human capital

Kyrgyzstan has a population of 5,092,000, 65 percent of whom live in rural areas (data from 2004, National Statistic Committee). The official unemployment rate is 2.9 percent (or 8.8 percent of the potential workforce, or economically active population). The percentage of women who are unemployed is 56.8 percent, while the percentage of rural people who are unemployed is 44.6 percent.

Indicators	2004
Unemployment, percent	2.9
Poverty rate, percent	35
Poverty rate in rural areas, percent	45
Infant mortality per 1000	35.6

The villages in the south of Kyrgyzstan are generally composed of between 40 and 500 families, with an average of 3 to 4 children per family, depending on the region. Most people are Kyrgyz, but there exists a kind of ethnic gradation between Kyrgyz and Uzbeks which can be related to altitude. Kyrgyz traditionally live on the mountains because their main occupation is livestock breeding while Uzbeks, who are known as excellent field-crop growers, traditionally settled lower in the valleys.

The rural population is increasing. However, in most high-altitude villages, there is no more free land for new families, and this forces young people to leave. They may settle in another village in the same *Aiyl-okmot* or leave for big cities or foreign countries such as Russia or Kazakhstan. These emigrants always keep in contact with their families in the village.

Between 1990 and 2005, about 70 percent of the Russians and Russian-speaking people who lived in Kyrgyzstan emigrated abroad– to countries such as Russia, Germany, and Israel, among others. This has resulted in a drop in the number of well-educated professionals such as engineers, doctors, and teachers. This, together with the current economic crisis, has negatively impacted the health and education services available in rural areas. The state budget only covers a portion of the health care system. The health care system is no longer the free medical service as it was in the USSR. Patients now need to pay for treatment, medicine, and transport costs. In addition, the quality of the service is low. With regards to education, it is still compulsory for children to finish secondary school, but only the rich are able to send their children to university (for example, there are only three university students in Village 1). Those who have the higher education tend to have completed their education 25 or 30 years ago. Because most of the people in the villages were formerly forestry workers, their skills are suitable for all kinds of farming and forestry-related activities but not for business activities.

It is difficult to access the information important for the people’s livelihood: people who have an access to the information (local officials, foresters) do not like to share their knowledge / power.

Social capital

Social organization at local level. Although people were accustomed to working together, the common organization of labour has completely disappeared with the collapse of the Soviet Union. Since that time, every family has been working only for itself. There is almost no common organization to collect firewood, to raise livestock, to share agricultural tasks or to sell crops on market. There is no shared strategy between villagers, and market exchanges remain at a very low level. Trade is made difficult by the fact that the each market place is full of locals with the same sort of products and needs, rather than a varied mixture which would encourage trade. There are, however, many local associations at village or *Aiyl-okmot* level, such as the council of elders, school council, women's council or young people committees, but none of these really plays a leading role.

Relations between local stakeholders. Relations are generally good within the village, through the worsening of the standard of living since the early 1990s has weakened social links. Most conflicts occur between villagers and foresters, and not among villagers or with the representative of the *Aiyl-okmot*. The family plays a central role and relatives are always ready (obliged) to help each other.

Gender issues. The tradition in Southern Kyrgyzstan puts an emphasis on the social role of men, and particularly of old men. However, there is no obvious difference of power between men and women, though women worked harder than men. Women take part in decision-making, field work, selling products in the market, and dealing with the family budget. Many activities can be carried out by either men or women equally, but some tasks are systematically allocated to one gender and not the other. For example, women are considered responsible for domestic work. They milk cows and prepare yoghurt and crème, make bread, cook and sometimes deal with handicrafts. Men are in charge with the tasks that require more physical strength, like ploughing fields.

Leadership pattern. One of highest authorities at the local level is the village head, the representative of the local administration, and the other one is the local forest ranger. In the southern part of the country traditionally only men hold elective positions, such as the position of village head and posts that require technical education, such as the position of forest ranger. Women traditionally represent the majority of doctors, teachers and sellers.

There are no policemen in countryside and hardly any other official representatives. The village head is the village representative chosen by the community, and any project or activity at village level must go through him. He generally is seen as having a certain authority in addition to his official function, and may be asked providing advice and resolving conflicts.

The local forester has usually been living for a long time in the village where he works, or sometimes it is his village of origin. He knows everybody well, but generally he does not get much support from the local population. The only traditional group of importance is the council of elders, although over the last few decades; they have gradually been losing authority. In the past, the elders were considered the wisest in the village and they took part in all decisions at the village level. The village head, local forester, and the council of elders represent the three main actors in the forest communities. Any decisions endorsed by them are very likely to be approved by the rest of population. In addition to that, the *Imam* (priest), the school director, and the best-educated and richest villagers, also have influence and play a role in community leadership.

Physical capital

All infrastructural assets are ones which remain from the Soviet period; they are now in need of renovation or repair. There is no longer any public transportation: part of the fleet was privatised, and another part was lost. Local people use private taxis and buses, although the

latter don't function on a regularly basis. The costs of transport are expensive for poor people, and this limits their ability to travel to other villages or markets.

The majority of the houses in village 1 and 2 were built almost 50 years ago; during the last decade only 2 new houses was built up in village 1. Village 2 is a new settlement of young families, who recently got the house-building sites a few kilometres far from their native village.

In the Soviet times, rural villages were supplied with electricity, and with coal or gas for heating. With the breakdown of the USSR, electricity began very expensive and coal output dropped, which has driven people to rely mostly on firewood. The results of this fuel problem is that, while most people use firewood, the poorer have fewer alternative energies and therefore collect more firewood in the forest.

The state budget is not sufficient to provide significant support to local socio-economical development; at the same time, there are no private or community based investments to improve the infrastructural assets held by forest dependent groups

Vulnerability context

Shocks

Shocks may be natural (floods, droughts) or economic (economic crisis).

- *Natural shocks:* Climate changes: earthquakes, floods, mudflows; degradation of environment.
- *Economic:* Collapse of the USSR; economic crisis: breakdown of the former state farms and enterprises, decreasing of the people's wealth, unemployment; changes in the land ownership; incursions or expropriation from outside interests.

Trends

The transition period to the market economy has created an increased pressure to the forest resources, resulting in forest degradation. The following list itemises some aspects of this degradation:

- Decreased state capacity for management and control due to lack of financing;
- Decline of employment possibilities in the forest regions;
- Increase of illegal forest resource use by employees of the state forest farms due to the very low salaries;
- Migration from urban to rural areas in the Fergana valley foothills, increasing the population density in and close to the forests;
- Field-crop cultivation in the forest for self subsistence;
- New private livestock management resulting in local overgrazing in forests, mainly in the former protected zone of the walnut fruit forest;
- Unregulated extraction of forest products, including timber and non timber forest products (NTFP);
- Extraction of wildlife and loss of biodiversity;
- Few investments in forestry, both from State and private forest users.

Seasonality

The use of natural resources in these mountainous areas is affected by the following natural and social factors:

- the limited agricultural and fodder production potential due to the continental climate with cold winters and hot summers;
- seasonality of the NTFP harvest in the walnut fruit forest (mainly nut harvest). Fruit production is affected by cold springs; statistical data shows that the good harvest

happens on average every five years, but sometimes there are several good years in a row;

- seasonal dimension to employment opportunities – March to October is the period of time with the most opportunities for work as labourers;
- autumn harvest and therefore concentrated autumn market results in lack of financial assets during other seasons;
- unregulated market related to demand and forest product prices.

Policies, institutions and processes

Local administrative patterns

Multiple State bodies exist at the local level. These were inherited from the former system and are still oriented primarily towards controlling activities. The main ones are the *Aiyl-okmot*, which can be compared with a village council, and the *Forest Service*. Among their various roles, the *Aiyl-okmot* is in charge of the “administrative fund land”, while the Forest Service is in charge of the “forest fund land”. In addition to these two organizations, there are two other public institutions with less importance at the local level: *Gosregistor* is responsible for the land registration and *Goscontrol* is in charge of livestock and natural resource control.

Aiyl-okmot: The word *Aiyl-okmot* refers both to the smallest administrative organ at local level and to the district this organ is responsible for. A typical *Aiyl-okmot* comprises between 2 and 5 villages which are generally located close to each other in the same valley. This structure means that there is no formal decisions are taken at the village level. Decisions are either made by or processed via the *Aiyl-okmot*. The main administrative building of the *Aiyl-okmot* is generally located in the largest village in the area. The council is led by the chief of the district, who is elected by the local populace. There is usually also one representative of *Aiyl-okmot* in each village. This representative, who is chosen by the villagers, is primary in charge of collecting land tax and is responsible to *Aiyl-okmot*. He may also be responsible for special tasks, such as helping families, organising funerals, or promoting local organizations. Although the *Aiyl-okmot* can be compared to a village council, in reality, it has less autonomy than a typical village council. Despite the process of decentralization initiated in early 1990s, the *Aiyl-okmots* are still dependent on higher authorities. There are few conflicts between *Aiyl-okmot* and local people. Indeed, representatives are drawn from the local population and support local interests.

Forest Service: The Forest Service in Kyrgyzstan is divided into Territorial Management Units (TMUs), formerly called *leshoz* (state forest farm, usually consisting of 3 to 10 forest rangers, which is the small subdivision of the state forest farm), which are responsible for the management of the forest fund land. The TMUs are state enterprises directly responsible for the control of natural resources and implementation of forest management, and consequently, they represent central actors at local level.

Conflicts between local administrations: At the local level, the control of public lands is shared between the *Aiyl-okmot* and the *leshoz*, which may have conflicting interests and different appreciations of the importance of natural resources. The *Aiyl-okmot* council is elected for a limited period of time and tends to plan natural resources management only in the short-term. The objective of *Aiyl-okmot* management tends to eschew preservation of resources in favour of getting the best benefit from them, preferably in a way that promotes local development and ensures support from local voters. For this reason, *Aiyl-okmot* generally facilitates the local population in access to the administrative fund land, sometimes at the expense of the resource itself. In contrast, the Forest Service chain of command ensures strict control of forest management to prevent overuse and degradation in the long run. *Leshoz* also get most of their income from the use of the forest resources. The foresters may take advantage of their authoritative position, as it confers a real power. As a result, some

conflicts spring between foresters on one side, and *Aiyl-okmot* or local people on the other side.

Problems of long-term leases transferred back to the forest fund: During the Soviet period, administrative lands were given to the State farms called *sovhozes* (state farms) and *kolhozes* (community farms), while the forest lands, with the exception of some pastures, were theoretically devoted to forestry. However, in order to supply the demand for more pastures, more and more forests were transferred to *sovhozes* and *kolhozes* through long-term leases. Ecological concern helped reverse this trend in the 1970s, but many lands were still being used as grazing for cattle even in the late 1980s. With the breakdown of the USSR and the decline in livestock herd size, these lands have been gradually been returned to the *leshozes* with the expiry of the long-term leases.

However, these changes in landholding from the administrative fund land to forest fund land are the source of many disagreements. While the *Aiyl-okmot* made access to public land easy with low taxes for land use and weak control, taxes to *leshozes* are higher and the foresters' control much more stringent. As a result, local people prefer to deal with *Aiyl-okmot* rather than with the *leshoz*, and the make claims to the *Aiyl-okmot* in order to impede the transfer of the long-term leases back to the *leshoz*. As the *Aiyl-okmot* supports local population, this sometimes results in conflicts between villagers and foresters.

Problems with land boundaries: There are also regular arguments about the boundaries between the administrative and forest lands. Since the collapse of the USSR, many changes of land ownership have not been registered and have scarcely been marked on the ground. The principle is that all lands suitable for farming belong to the administrative fund, while all forests belong to the forest fund. However, in practice the delineation of the sites can be very complex, and sometimes even local foresters may be confused about the exact location of boundaries of the land managed by the forest fund.

Overlapping functions between local administrations: Overlapping functions between local administrations are mainly related to regulation. The overlaps create bureaucratic redundancies as well as misunderstandings and sometimes conflicts. A relevant example is the overlap between the Forest Service and the *Goscontrol*: both are responsible for regulation in the forest.

Access to the administrative lands

Agricultural lands allocation and Rules for newcomers. In rural areas of South Kyrgyzstan, new land owners are not immigrants but rather represent the natural growth of the population. During the land privatisation at the beginning of the 1990s, 75 percent of agricultural land was distributed among local villagers. The 25 percent that was kept as a land reserve under the local authority's control has been gradually given out to new households. In many places, these reserves were rapidly exhausted, and so later applicants did not get anything. The size of the private garden given to new families has also been getting smaller and smaller. The average garden allocated during the Soviet period was about 0.20 ha, whereas today gardens allocated can be as small as 0.07 ha per family. Although the majority of agricultural lands were returned to local communities during the process of privatisation, private gardens and allotments are barely large enough for rural people to be able to subsist only on farming activities on their private lands. They need to rely on additional revenues or to use more agricultural lands.

Leasing for agricultural lands. In some villages, it is possible to lease agricultural lands from *Aiyl-okmots*, both irrigated and the infertile plots used for hay or potatoes. Because of the scarcity of the resource, leases for irrigated lands are expensive, and these are utilised by only a few villagers. Infertile land is much cheaper, and generally cheaper than what *leshozes* demand for the same quality land within the boundaries of the forest fund land.

Pastures and forests located on administrative lands. Pastures adjacent to villages are generally part of the administrative lands and, as such, are controlled by the *Aiyl-okmots*. They are used in spring and autumn, when summer pastures are not accessible, and sometimes even in winter. Access is by payment, which is based on the area and the size of the livestock herd; this is also the method used for access to summer pastures. Slack control of these pastures, access and modalities of payment, have resulted in a higher risk of degradation than on summer pastures.

In addition to agricultural lands and pastures, a few forests also belong to the administrative fund land, although the *Aiyl-okmot* in charge of this resource usually does not have the skills required to manage it. These forests are generally located close to human settlements, and they are badly controlled and probably more susceptible to illegal use than forests managed by the *leshoz*.

Strict control of forest fund land

Legal access to forest resources. Collaborative Forest Management (CFM) was introduced in 1998 on an experimental basis as a specific form of local involvement in forest management. Other forms of access for private people to forest resources already existed, but none of these arrangements had room for a substantial role of the communities in forest management. On the contrary, the role of the leaseholders is generally limited to harvesting of resources, with no participation in other stages of forest management expected. CFM is expected to be a more sustainable forest management, based on responsibility carried by the local communities, as well as an improvement of the livelihood of the local population through sustainable use, processing and marketing of NWFPs.

Summer pastures. All villagers are allowed to raise livestock on summer pastures around their residences, as long as they pay the tax for pastures to the *leshoz*. The amount paid is based on the size and kind of stock (horses, cattle, sheep and goats). Livestock owners agree on the plot they will graze with the local forester. In practice, there are few newcomers: most people come on the same place every year and therefore they know the other land users. Access to pastures has not been a source of many conflicts since the drop in livestock herd size at the beginning of the 1990s. Although the numbers of stock have been increasing again over the last decade, many of the pastures in the forest fund land remain unused. The majority of protests come from the prohibition on building houses in the pastures. Kyrgyz people traditionally live in “yurts” or tents, when breeding their livestock during the summer, but they now complain that yurts are not convenient. They would prefer to live in houses but any construction on forest lands for personal purpose is prohibited.

Land for haymaking. Access to hay fields is organised in a similar manner to access to pastures. Villagers rely first on private, relatively unproductive lands to make hay. If it is not enough, they agree with the local forester on a plot of land in the forest fund where they can cut hay. They pay a tax based on the size of the plot and the amount of hay collected. It is also possible to rent lands for hay making in the administrative lands, depending on the local situation. Above an altitude of 2000 m, lands where hay can be cut are generally few and badly productive, demanding much more labour. Because of this, villagers prefer to make up the quota of hay needed by buying from other places.

Firewood collection. Every family in the villages close to forests of the forest fund land is allowed to collect a limited amount of firewood as long as they pay the tax to the *leshoz*. The quantity of wood permitted per family is generally between 1 and 3 m³/year, and sometimes up to 6 m³/year, depending to the village. In theory, the local forester allocates plots of forests where villagers can collect firewood, but in practice people concentrate firewood collection in the forest closest to their residences. The volume of firewood allowed to be collected is established by the *leshoz* without taking into account the local demand for cheap energy. As a

result, villagers pay annually for a few cubic meters of wood but actually use much more. This discrepancy between the real amounts of firewood needed and the amount that people are allowed to collect represents a major source of conflicts. In addition to that, the firewood collected should be only dead wood lying on the soil or being swept down by avalanches and water. Collection of more than the small amount permitted is likely to be fined by the local foresters.

Non Wood Forest Products (NWFP). Legally, one needs to pay a tax to the *leshoz* to collect more than a limited amount of NWFP (mainly honey, mushrooms, wild berries and medical plants). In practice, NWFP are mainly used for domestic purpose and are generally collected for free. Hunting, like fishing, is usually forbidden, and that NWFP do not represent significant incomes in rural areas.

Forbidden access to forest resources. All state forests in the South are protected, which means that all tree felling is forbidden. Villagers themselves are never allowed to fell trees in the forest, not even for forest health reasons. At the same time, the market price for timber is very high because of the lack of wood for construction. Timber imported from Russia is expensive for rural people, and on the whole *leshozes* do not sell timber. Consequently, villagers rely only on private plantations for timber, traditionally *Poplar (Populus pyramidalis, P. bolle)*, or break the law.

The case of irrigated lands on forest fund. By definition, irrigated lands are part of the administrative fund land and are not part of the territory controlled by the Forest Service. However, there are numerous small plots of watered lands included in the forest fund lands which are suitable for agriculture. These are usually scattered on the shores of streams and other flat places. Some of these plots (the largest and the most accessible) are already used by TMUs for tree-nurseries, or to rent to villagers. However, most are either not used, or they are used illegally by the local population. The point is that these very small plots of irrigated lands (often just a few hundred square metres) are not used by TMUs. They are not registered as watered lands and therefore are legally included in the surrounding pastures or forests, where farming is always forbidden. As a result, although they represent potential resources for the local population, these lands are scarcely developed.

Livelihood strategies

Local dependence on natural resources

The main reason for rural people's dependence on natural resources is the absence of any other source of income. There are almost no industries or service enterprises in the countryside, and, apart from civil servants, nobody receives a salary. All activities are related to the use of natural resources.

Land use

Livestock raising is an active part of the culture and heritage. Animal husbandry has always used to be the main occupation of the Kyrgyz population. It suits the mountainous topography of the country and takes advantage of the numerous pastures all over the territory. A majority of rural people own livestock, although the importance of the livestock breeding varies from one place to another, and generally domestic animals represent the main source of income in the countryside. People sell animals when they need funds for an extra expenditures.

Haymaking: a limiting factor. A task directly related to livestock raising is haymaking. It is often a limiting factor preventing people from owning more domestic animals. Villagers make hay everywhere possible on private lands, for domestic consumption or for sale. They also rent land from the *Aiyl-okmot* or *leshoz* for this purpose.

Farming activities depend on natural resources. Second to animal husbandry as a main activity is tillage farming, although its importance varies greatly from one village to another. Altitude limits the agricultural possibilities at village level, because it is directly related to the length of the winter and the local climate. Altitude also appears to be correlated with the area of irrigated lands available, on which farming activities depend.

The importance of livestock raising also depends on farming activities. If villagers are already busy ploughing fields, they can not keep stock on the pastures during the summer. In fact, with decreasing in altitude, natural conditions become less severe, and this allows for an increase in farming activities and, conversely, a decrease in livestock production.

Forest use

Firewood collection. In the time of the USSR, heating in rural areas was derived from mainly from coal, with a small proportion being derived from gas or electricity. The heating supplied was cheap and very convenient, and there was no demand for firewood from the forest, except maybe on pastures during summer. However, with the breakdown of the Soviet systems, electricity began very expensive and coal output dropped. This has driven people to rely primarily on firewood. Coal is currently used only around the few working mines or by the richest families. The average family using coal would use 2 or 3 tons in a year, and the price is very dependant on transport. With regard to firewood, villagers have clear preferences. Poplar is the most important tree species planted on private lands, but it is rarely used for energy. Its primary use is as a building material. There are no private plantations devoted to firewood production and no firewood market. The poorer people are, the fewer alternatives they can access for energy, and the more firewood they collect in the forest.

Influence of natural and social factors. There is no cooperative organization for firewood collection, and each family works for itself. This is the reason why wood collection is so badly distributed, with severe over-collection and forest degradation around villages, whilst there is still a lot of dry wood in parts of the forest farther away. In fact, human pressure on the forest is directly related to forest accessibility, which depends on the available means of transport, and the distance between the forest and the residences. Where there are only footpaths, people usually carry firewood on horses or donkeys, walking a maximum of 10 km each way. However, if there are roads, they can go farther and bring much more wood in one journey, depending on the foresters' control. The amount of firewood annually used per family is quite difficult to assess, but it is most likely between 5 and 30 m³. The main concern is that this amount is far more than people are legally allowed to collect. In many places, this activity is not sustainable, and people complain that each time they need to go farther from villages to find dry wood. In addition to these natural factors, some social aspects should be taken into consideration in order to understand and assess the local consumption of firewood.

The first one is certainly the density of population. The more populated a village – from 50 up to 500 houses – the more acute the pressure on the surrounding resources. The second factor is probably the local people's awareness of ecological issues and the authority of local foresters. Ultimately, the amount of firewood collected by villagers depends on their wealth.

Timber for construction and commercial purposes. Use of timber for construction and commercial purposes is another aspect of forest use; there are some major differences between the uses of timber and firewood:

- Rural people consume firewood daily, while they rarely need timber for domestic uses;
- With the exception of private plantations, tree felling is forbidden everywhere while firewood collection is only limited, which allows a certain degree of freedom;
- Harvesting for timber results in tree felling, whereas firewood collection does not necessarily change the canopy or degrade the forest immediately;

- There is a limited market for firewood (during the last decade, some people started to collect firewood also for sale, transporting the firewood to the market, but this activity is illegal) whereas the sale of timber can be lucrative.

Most of timber in the countryside is used for building houses. Local people manage to use other materials, such as adobe and stone, where possible, but they also need wood to build houses. Timber is used extensively, for the frame, the roof, to consolidate the walls, and for a multitude of inside and outside decorations. This means that a minimum of 100 trees is required to construct a new house. About five new houses are built every year per 100 families. In addition, minor activities such bridge building or house maintenance also require timber.

Due to the lack of construction materials, in certain villages the sale of timber represents a major source of income, whether legal or not. Prices average around 200 to 250 USD/m³. The biggest demand comes from big cities like Osh and Jalal-Abad. In addition to native forest species, a lot of non-native poplar is used for timber. Poplar is a fast-growing species used both for domestic and commercial purposes. For this reason, most people plant poplars in private gardens. Poplar represents a kind of investment to locals. They plant them with the idea that they may later sell them when they are in need. Prices for poplar are around 25 to 75 USD/stem.

Nuts. The pressure on the walnut forest ecosystem is enormous with regard to the nut harvest. People lease the forest, mainly for the nut harvest. They see only the walnuts and generally never acknowledge other possible ways to use the forest. For example, harvesting the timber of walnut or fruit trees is never mentioned. The reason for this is the amazing benefit of the walnuts. For the majority of the people, the collection of nuts is a main source of income, especially in years of good walnut yield. This is also due to the status of the walnut-fruit forests, which since 1945 have been designated a national nature reserve in which the cutting of healthy trees was forbidden. The typical lease contract requires that tenants pay the rent with a percent of the harvest, usually between 30 and 60 percent of the walnuts harvested, or an equivalent cash sum. The actual walnut yield and the amount people deliver as rent to the leshoz are often very different, implying at least sometimes that one of these amounts does not reflect the truth. There are several reasons why the information about the walnut harvest may not be reliable; people do not like to talk about exact amounts of harvest and delivery, and sometimes they collect in other part of the forest as well as the area leased.

Other goods and services from forests. There are many other goods and services provided by the forest for rural residents. It is a place to collect NWFP, to hunt, to fish and especially to rest. The temperature is cooler during summer and, wherever one looks, one catches sight of calm and beautiful landscapes that are worth seeing. This wonderful mountainous scenery constitutes a great potential for tourism which local people want to develop. Villagers have also imbued some sites in forests with special spiritual values.

III.4 Conclusion

Livelihood outcomes

More income

The main reason for the local people's dependence on natural resources is the absence of any other source of income in the countryside. There are almost no industries or service enterprises and, apart from civil servants, nobody receives a salary. Forest use in general doesn't require many investments or specific skills. In many cases, people use the forest without any legal permission, due to the slack control of the local forester.

In the walnut fruit forests, the main forest resource used by local people is the walnuts. In contrast with other forest products, the nuts are always in demand in the market, although the

price may vary. In years with good nut harvests, the walnut collection is the main business of many people, both the local users and outsiders who also have an interest in forest use. A good harvest could bring in enough income to cover the annual expenses of a family. People sometimes also collect other NWFP such as medical herbs or wild fruits if there is a demand in the market.

Other activities such as leasing forest plots for farming or firewood collection do not bring direct income but help people to reduce their cash expenses. For example, officially villagers pay annually for a few cubic meters of firewood but they actually use much more which is not paid for.

Stronger voice

In the first village in this study, the process of CFM project implementation has going on for the last seven years according to plans which have been specified and agreed, and under the aegis of the Kyrgyz-Swiss Forestry Program implemented by Intercooperation Kyrgyzstan.

People involved in this project have been allocated access to forest plots. They also participate in the process of plot allocation and other decision-making through representatives' participation in special commissions. The situation at the time of writing is that the CFM tenants are going to establish a cooperative association (in the form of an NGO) in order to strengthen their power as a group and to get a stronger voice.

In the second village of this study, all forest plots were distributed among the villagers, with the result that forest access is quite fair and villagers do not express a need for them in more active participation or a stronger voice. It is possible that the situation will change in the future because of natural demographic growth or because of potential conflicts between traditional, local forest users and outsiders who go into the forest during the nut harvest period.

Poverty-specific factors such as lack of power reduce the population's capacity to respond to existing opportunities or new circumstances. Those who are insecure with regard to subsistence (food) are among the least empowered groups in society, and their ability to influence policies to reflect their needs is very limited.

Reduced vulnerability

People living in and around the forest area were affected by the collapse of the USSR and the resulting economical crisis and changes in the land ownership. During last 15 years, people have become accustomed to working without state support, using their capacities and resources, however limited, and now the social and economic vulnerability factors no longer have much influence on population wealth.

What is still making a negative impact on the forest-dependent group's livelihood level is the problem with the forest access. High population density in the walnut fruit forests, lack of arable lands, and increased demand for forest products have all led to increased pressure on the forest.

The floods and mudflows that take place almost each year in this mountainous forest areas force people to unite and cooperate with an aim to protect the roads, shelters, arable lands and forest plots used for nut collection; every villager understands the importance of these cooperative projects works and usually actively participates.

Improved food security

Many of the products and services of the forest can be transformed into food or income without the need for a large capital investment; production can be obtained from forests at relatively low cost.

Five main conclusions can be drawn on the relationship between forest degradation and food security which have implications for forest management planning and food security-enhancing interventions.

Forests have an important role in contributing to the food security of primary and secondary forest users. This does not mean that all forests must be managed for food security purposes; there may be some conflicts between economic uses of the forest and other services such as the protection of biodiversity or recreation. However, it should be recognized that forest management objectives implicitly involve transfers of welfare, and policies that result in increased vulnerability of food-insecure populations generate increased pressure on the resource base and are unlikely to be successful. Forest management plans that involve reduced human access to the forest must therefore include alternative means of achieving a sustainable livelihood for forest-dependent populations.

Forest degradation can result in a sustainable increase in food security if the value derived from the degradation is used to generate alternative sustainable food or income flows, and if these flows are accessible to food insecure populations. Use of the forests in this manner may be an explicit or implicit policy decision on the part of governments, as in the case of resettlement schemes or lack of forest management enforcement. However, the full cost implications of forest degradation must be taken into account, particularly costs that are irreversible.

Many of the benefits from forest ecosystem services are realized by members of the society who at present receive these services free of charge. Avoiding forest degradation thus has a value to these groups which could be transferred to forest-dependent users in order to stimulate the adoption of use patterns compatible with the generation of such benefits.

Forestry-poverty linkages

Forest management activities are still in the hands of the state bodies, but the allocated budget has decreased considerably.

State disengagement towards the population created a loss of job opportunities followed by population migration and increased dependence on forest resources (grass, energy wood, aliments, etc.) for rural populations.

This transition period to a market economy has resulted in an increased pressure to the forest resources, resulting in the negative aspects of degradation. These include the following:

- Decreased state capacity for management and control due to lack of financing;
- Increase of illegal forest resource use by employees of state bodies due to their very low salaries;
- Migration from urban to rural areas in the Fergana valley foothills increasing the population density in and close to the forests;
- Field-crop cultivation in the forest by the rural poor for subsistence;
- New private livestock herds with management patterns resulting in local overgrazing of forests, mainly in the former protected zone of the walnut fruit forest;
- Unregulated extraction of forest products, including both timber and non timber forest products;
- Extraction of wild life and loss of biodiversity;
- Low investments into forestry, both from State and private forest users.

Factors which affect the wealth ranking among villagers include:

1. Factors from the time of the USSR and its collapse. (These comprise the most important and influent parameters.):

- The level of wealth of each family during the Soviet period (generally those who were rich then are still the richest today);
 - The level of influence of each person at local level during the Soviet period; and
 - Adaptation to the new social, economic and politic situation;
2. Access to multiple sources of income in addition to the basic revenues from livestock such as permanent salary, public grants, and pensions;
 3. Power (categories of people who misuse their authority (administrative, political, etc.) to get richer);
 4. Willingness to work and the workforce within the family (the poorest villagers are those who have an incapacity (advanced age, illness...) or a passive attitude towards work).

Advantages and disadvantages of Sustainable Livelihood Framework

Advantages

The LF framework provides a way of thinking about the linkages between context, vulnerability, poverty and access to forest resources. It is a good instrument to examine the poverty and the forestry-poverty linkage in a broad sense:

1. To collect and compare the information gathered from the different sources. The official and non-official information is not always reliable, sometimes is not up-to-date and therefore not comparable, but using multiple sources gives better global overview.
2. To evaluate the level of knowledge of actors who are involved in different ways:
 - Not only is lack of access to resources a limiting factor for forest-dependent groups, but so is lack of access to needed information;
 - The people involved in the decision-making process at all levels should have the necessary minimum of multi-disciplinary and multi-sectoral knowledge to be able to understand the complexity of poverty and to propose adequate measures to improve the situation.
3. To evaluate the effects of intra-household relations on national economy development.
4. To evaluate the national poverty reduction policy from the point of view of rural people, asking, for example, to what extent the existing institutional structures and processes are people-oriented and able to respond to the needs, preferences and experiences of poverty that are voiced by the people themselves. In the case of Kyrgyzstan, the national forest policy traditionally was oriented to forest conservation, and in this context people were considered to be a “human factor”. The situation has been changed by considering people as one of the main domains of forest policy, but the effective implementation of this new orientation to policy is still missing.
5. To identify the gap between the official arrangements for forest management and poverty reduction, and the actual situation:
 - The local authorities and local foresters do not have specific knowledge of poverty reduction strategies needed to develop the common objectives and common strategy;
 - The definition of poverty is not specific enough for many forest areas, where the distinction between people’s wealth, currently based on private land and livestock ownership, should also take into consideration direct and indirect benefits from the forest use. Complexity of forest use as a whole makes it difficult to do an accurate assessment without additional information and tools.
6. To involve and train people, to establish the common understanding of the problem and to develop the better long-term poverty reduction strategies based on the forestry-poverty linkages context.

Disadvantages

1. The researchers themselves should have a good knowledge on forestry, sociology, economy and legislation. It is also very important that the researchers have good personal contacts at different levels that guarantee an easy access to the information;
2. The implementation of the LH frameworks is a long process, requires a time, involvement and training of all stakeholders.

Lessons learnt from the methodology and application (strengths and limitations)

The following PRA (participatory rural appraisal) tools were selected to carry out the study: Village Resource Mapping, Time-line – Village history, Seasonal calendar, H-Form and 4 Rs Analysis. The results of the study clearly show that this methodology is quite suitable for the assessing access of the forest-dependent groups to forest resources in Kyrgyzstan.

1. It was easy enough to collect the information and to assess the “Vulnerability and Livelihood assets, Institutions, Livelihood strategies and Livelihood outcomes”.
2. It was rather difficult to assess the “Policy and Processes”: first, because the process of re-definition and elaboration of the legislation is still on the way in Kyrgyzstan as in any country in transition; second, it requires good analytical skills on the part of the researchers to identify the extent to which the existing legislation, institutional structures and processes are responding to people’s demands.
3. Of the five applied PRA tools, only the “4 Rs Analysis” was not easy to apply and use during the field study, because:
 - This method time spent on explaining its content and goals,
 - The level of the local people’s knowledge was insufficient to understand and to formulate their opinions about Rights, Responsibilities, Revenues and Relationships.
 - People are generally cautious and sometimes unwilling to discuss the topics related to “Role” and “Power”.

In the first village examined in this study, where the access to the forest is limited, people discussed their problems, weaknesses and lack of fair access to the forest resources in an open way. In contrast, in the second village, where all forest plots had been distributed among villagers, the “4 Rs Analysis” does not give a clear picture because the majority of the population does not see any need to change the situation, preferring to keep the *status quo*.

In the rural areas studied, “self-government” is the only structure representing the interests of the local population, and it is critically important to help them to become a solid partner in the negotiation process, where together with local foresters and local population common strategies can be developed and implemented for mutual benefit.

Initially, the researchers planned to select two small villages in the south - one in the walnut fruit forest and one in the juniper forest, to highlight the differences in the two different forest ecosystems. However, the political situation in the country made it impossible to carry out the field study as planned.

CASE STUDY IV: TURKEY

Melekber Sülüsoğlu

IV.1 Background

In Turkey, forests cover a total area of 20.7 million ha, approximately 26 percent of the land area. Forest villagers comprise the most important group of the population who depend on forest resources. There are a total of 19,020 forest villages in Turkey, of which 7282 are located within the forest and 11738 in the vicinity of forests. Residents of these villages comprise about 11 percent of the national population and 51 percent of the total village population, according to the 1997 census (Dönmez, 2001).

Compared to the other rural communities in Turkey, the income levels of people living in forest villages are low, and their living conditions are poor. The main sources of income for these villagers are tillage agriculture, animal husbandry, and forestry activities. Forest villages are generally located in remote and mountainous areas in Turkey. These regions have little land suitable for agriculture, and those lands which are used for agriculture are mostly illegally converted from forests. They are fairly low in productivity, not irrigated, and vulnerable to erosion. Forest village households generally own only small areas of land (smaller than 50 decars) and can only produce enough for their own needs (Anonymous 2000).

After tillage, livestock breeding is the second important income activity among forest villagers. Animals are often kept in the forest areas, and traditional grazing areas have become degraded. However, the amount of area available for grazing has been reduced by exclusion of animals from many forest areas in an attempt to protect tree regeneration. Lack of access to grazing is a major issue for forest villagers because animal feed is quite expensive. In some regions, the poorer villagers use tree branches and leaves as fodder, a practice which can also lead to forest degradation.

Forest villagers collect firewood from the forest and pay a tariff. Sometimes people cut firewood illegally. However, in recent years, the incidences of illegal cuttings and forest fires have diminished due to the limited amount of forest land and the increase in awareness.

In most forest villages, the main source of income is the forest. The villagers can earn a wage from working as a labourer in the forest on projects such as restoration and afforestation. The forest administration gives priority to the local villagers and cooperatives for the employment in the forestry activities, as they are aware of the importance of the income from forestry activities to locals' livelihoods. Protection of forests in the villages also protects the villages and their lands from floods and erosion. Government support is also available for private afforestation activities carried out by village authorities.

Locals in the forest villages are aware of the benefits of non-wood products (NWFP), and they have expressed a desire for some training about the potential products that can be collected in their forests.

The existence of wildlife reserves are another benefit of the forest. The village local authorities have important roles for protecting of these reserves and have received some financial support for this in recent years.

All these activities are present in the villages surveyed in this study. This case study intends to determine the relations and linkages between villagers and the forest resources.

IV.2 Selection criteria and description of field sites

Four forest villages, which are poorer than other rural communities in Turkey, were selected for this case study. Two villages were selected from the Antalya region, in the south of the country, and two were selected from Trabzon region, in the north.

Antalya in the south is near the Mediterranean coast. The region has beaches and impressive landscapes, and is very popular among tourists. Local lands are used for growing crops, and recently many of the technologies have modernised. Local people have joined together to resolve various issues. In particular, they are attempting to create new opportunities to reduce poverty. One recent development has been eco-tourism.

People in Antalya are aware of the importance of their forest resources, and they know that the forest will be subject to degradation if it is not managed sustainably. There have been no forest fires for a long time in the two selected villages (Güzle and Ulucak). There has recently been increasing interest in non-wood forest products as well as timber production. The people are also attempting to improve recreational activities.

Trabzon is located in the northern part of Turkey, on the Black Sea. The climate is humid and rainy thorough the year, and there is a high incidence of water erosion. The soil is very fine in texture but unproductive because of the erosion. The villages included in this study are located in remote and mountainous areas and have limited agricultural lands. The agricultural areas they do use are mostly illegally converted from forest, and most have low crop yield capacities due to the steep slope and predominance of water erosion. Farmers cannot use modern techniques or machinery on these small lands. In spite of grazing being prohibited in forests, the traditional grazing land is mainly degraded forest areas. Tree leaves and branches cut from the nearest forest area are used as fodder.

There are few money-making activities in the region. Because of the harshness of their environment for activities such as agriculture or animal husbandry, the forest villagers in Trabzon are very poor. In addition, neither the borders of forest land nor the privately owned lands are clear, as not all land has been surveyed and the boundaries mapped. Conflicts sometime arise between the forest staff and locals, or between neighbouring villages. Because the forests are decreasing in productivity, there has been an increase in seasonal and permanent migration from Kuzuluk village to big cities in the last few decades.

Soil structure

The soil in the Trabzon region is mainly classified as a grey-brown podzolic soil. It does not have good permeability. The climate is warm and rainy all year round, with an average annual precipitation of 822 mm.

In the Antalya region, climate is characterized by warm and rainy winters and hot and dry summers. Annual mean temperature is about 18°C. The lowest temperature is -5°C. Annual precipitation is 1052 mm. The soil is a red Mediterranean soil with good water percolation and air permeability.

Vegetation

The slopes facing the sea in Trabzon bear a rich vegetation. The main forest tree species are: Oriental spruce (*Picea orientalis*), Black sea fir (*Abies nordmanniana*), oriental beech (*Fagus orientalis*), Sweet chestnut (*Castanea sativa*), European common alder (*Alnus glutinosa*), and Oriental hornbeam (*Carpinus betulus*). There is also a very rich flora consisting of shrubs and herbaceous plants under the forest canopy facing the sea.

The Antalya region is covered by maquis, the typical vegetation locally. Scarlet Oak (*Quercus coccifera*), wild olive (*Olea europea*), sandal (*Arbutus andrachne*), laurel (*Laurus nobilis*)

and garig (*frigana*) are common maquis species. The most prevalent forest tree is red pine. Black pine, cedar, oak, Goknar, juniper are other forest trees, along with plane tree, carob and wild pistachio (melengiç).

Demographic structure of the villages under study

The villages are located within boundaries of the forests. The social structure is that fathers are the heads and directors of the family. There has been an increase recently in nuclear families. Social relations within the village are strong, and villagers help each other when in need. The most influential people in the villages are the muhtars (the elected head of the village government) and the members of the village council, a pattern which is typical of traditional Turkish villages.

The migration patterns are different in the various villages. In Güzle, in Antalya, there is a lot of emigration and the young population is rapidly declining. In Ulucak, there is no emigration, although an annual pattern exists in which 25 families move to the city in winter to work and return to the village in the summer. In Trabzon region, migration has started in Kuzuluk village in recent years, while there has been a decrease in migration in Sındıran village.

Physical infrastructure in the study areas

Most roads between the villages and the regional towns are tarred, although there are also a few gravel roads, and roads connecting two villages are generally gravelled. The local people report that the roads need maintenance, but also that there is no problem with transportation.

Every family has a house, usually with two floors. The first floor is allocated for livestock. The houses are constructed with stone, wood and bricks, with red tile roofs. Houses in Kuzuluk and Sındıran villages have tin roofs.

All the villages are served by a drinking water network, and they obtain their water at a low price. All also have electricity, but the system is unreliable and back-up is required. Modern household appliances are becoming common, particularly in Güzle and Kuzuluk villages.

Health services

The health services include education and provision of vaccinations and family planning. Regular check-ups are common during pregnancy, and there are no serious epidemic diseases in these villages.

Education and education services in the villages

The school in Güzle is closed, and the pupils are transported to another school. The school in Ulucak is open. After primary school, students are educated in a regional boarding school. People are happy with the boarding school. There has been no problem in commuting between the school and village.

With regard to the Trabzon region, Kuzuluk village has one primary school, while the school in Sındıran is closed. Students in both villages commute to a boarding school for secondary education after completing their primary schools. However, snow can cause a problem for getting to school in the wintertime.

Education courses opened in the villages during the study, and many villagers are interested in them. Many women requested weaving and handicraft courses with an eye toward some cottage production in order to relieve the household expenses. On the other hand, many men wanted courses to improve their agricultural and husbandry expertise. Literacy courses had been held to eliminate illiteracy.

Obtaining information and situation of information network

All villagers have the opportunity to receive information. Telephone lines have been established. Education programs are followed by local and national channels. Villages have regular contact with official authorities via their muhtars, and the head of the main town of the region meets regularly with muhtars.

There is no problem with communication about forestry projects, and locals are aware of forest plans. Antalya has a relatively large amount of agricultural land, and the services provided by agricultural institutions are satisfactory. Villagers have good communication with the Town Directorate of Agriculture.

Due to their topographic location, the villages in Trabzon practice agriculture in a more traditional manner, with old techniques. Modern techniques and machinery are not used. The agricultural information network is also not well-developed, and locals complain about not getting enough information.

IV.3 Result and analysis based on the sustainable livelihood framework

Livelihood assets

The main sources of income in the villages are agricultural activities, forestry, and animal breeding. There are no handicraft enterprises in these regions, such as weaving or wood engraving. Forest resources are very important in both study areas. Timber, firewood and non-wood forest products are harvested. In addition, villagers work as seasonal forest workers. Cutting, planting, hoeing, and collecting pine cones are some of the jobs they may be hired to carry out. In addition, animal husbandry is practiced in a manner which is dependent on forest resources.

Livelihood assets in Trabzon

Natural capital

Both villages studied in Trabzon, Sındıran and Kuzuluk, are located within the forest and have a large area of forest land. The forests are owned by the state. However, production of forest products has not yet reached the desired level. Villagers also reported in this survey that they use other natural resources, such as water, grazing meadows, and areas for hunting.

There are enough water resources in the region. The climate is humid, and irrigation is not needed, although the low pH of the soils is a big problem.

The arable lands in Trabzon are very small in area, and unproductive. Livestock breeding is carried out using local races of animals, rather than ones bred for high yield. Animal husbandry is practiced on a family scale in the region and has followed much the same pattern for years. Forest resources are said to be important for livestock owners in both Kuzuluk and Sındıran villages. The leaves of the forest trees are used for animal fodder during the winter season. Grass collected from forest is also used for feeding animals, and stock are grazed in forest glades.

There are a lot of wild flowers in the forests and pastures of this region which are valuable for honey production. The chestnut honey from this region is famous, albeit expensive. The pastures are also so beautiful that every year a lot of people come for traditional pasture festivals from both inside and outside of the country. These places are verdant, with innumerable varieties of flowers; the air is filled with butterflies and the chattering of mountain streams. They are surrounded by forest of oak, pine and other species. The indescribable beauty of the plateaus changes with every passing hour of the day, and the local people express this beauty in hundreds of folk songs.

Social capital

Social relationships are good between villagers. They are helpful and friendly. Together, they organize festivals every year. Tradition dictates that they go to another grazing area in summer, and the village committee decides when to depart.

Each family produces only for their own needs; villagers do not have a commercial mentality. In Kuzuluk and Sındiran villages, grazing in meadows and forest is an important way of feeding their livestock. Sheep and cows are pastured in meadows. (There are no goats.) The production of fodder crops is not practiced because it is not traditional. Instead, natural plants and tree leaves are fed to animals, as it is a traditional method in the region. Villagers have expressed their satisfaction for being able to work in the forest.

There are no environmental problems in these villages at the current time. Villagers are respectful of the environment. They voluntarily protect the erosion control areas.

There is no problem with communication. Recently, a few educational courses within potential economic importance for villagers have started. Older people who have returned to the village after retirement have a good effect on the other villagers.

Human capital

There are 130 households in Kuzuluk and 140 households in Sındiran according to the 2005 census. The household numbers have increased in Sındiran because young married people prefer to have their own separate house. However, this is a village in which the population declined greatly in the past. There was a lot of emigration from Sındiran village until recent years, but now emigrants who have retired are starting to come back to the village. The population of Sındiran village is mostly retirees who had migrated to cities earlier. The number of young people is dropping every day.

In Kuzuluk village, the numbers of households and people have not been subjected to so much variation. The villagers predict that if unemployment continues to increase, migration will increase rapidly. At the moment, only a few people have gone for seasonal jobs.

People have a positive attitude towards eco-tourism. Trout farms, hunting activities and picnic areas which have constructed comprise positive examples for villages.

The general level of health is high, and infant mortality is low. The only chronic disease is a low incidence of diarrhoea in Kuzuluk. Every villager is literate, although the level of education attained is low. No villagers from Kuzuluk attend university; only a few children can continue their education after primary school. Generally, relationships between locals and governmental institutions are good.

Physical capital

The district-village road is asphalt while village roads are not very good. The health service in Kuzuluk is insufficient; there is a village health clinic but it is closed. There is no clinic in Sındiran; patients have to travel to the district. However, locals do not find this to be a problem as the district is not far.

The provision of drinking water is a problem in both Sındiran and Kuzuluk. Geographic conditions mean that there is insufficient drinking water in Kuzuluk despite being in a humid region with sufficient water resources. In Sındiran village, the water system is functions well but the water is contaminated. The villagers express a desire in this study for more attention to be paid to disinfection of the water.

The houses in both villages are well-built. Heat is from firewood, and cooking is done using wood and gas (especially in summer season). Transportation is limited: there are only a few private cars. Locals have to use a minibus, which runs to the district only once a day. Every house has television, satellite and telephone. Satellite is a need in this region. Because of the geographic conditions, houses are far from each other. Residents cannot go outside or to visit neighbours easily in wintertime. The television is their window to the world in these times.

Reforestation is not common out in the Trabzon region, although some studies have been going on for ten years in Kuzuluk village. Erosion control works have been carried out near Sındıran at the instigation of the locals. The Ministry of Agriculture can provide villagers with loans along with technical support on veterinary services, seed, animal vaccination and insemination.

The villages studied are not within the boundaries of a national park. However, some national parks are nearby. A fair ground, a town founded by Province Local Management Directorate, and a picnic ground are in the region. In Maçka town, there is Altındere National Park and trout farm.

Financial capital

Nut-growing provides a very small income to villagers in Kuzuluk. No other plant-based produce is sold in this region. Villagers in Kuzuluk and Sındıran grow only corn in the fields, and poultry is sold although villagers keep chickens for their own needs. Only a few people currently practise bee-keeping for money, although as it requires little investment, it could become important, especially in Kuzuluk where many areas are not suitable for agriculture. Villagers stated in the study that the forests represent one of the main sources of income. Pig hunting as a tourism activity has been started around Ulucak and Güzle villages, and other hunting activities have also started to bring in money.

Some villagers receive a pension, and their economic condition is better than other villagers. Family members who have emigrated to big cities often send money to their family who remained in the village.

Livelihood assets in Antalya

Natural capital

Both the villages studied in Antalya, Güzle and Ulucak, have arable land, and the agricultural lands in this area are productive. There are enough water resources in both of these villages. Enough soil is present for fodder production, and locals have started to grow crops which will serve as fodder or extra feed for livestock.

Ulucak and Güzle are in-forest villages; they are located within the boundaries of the forest. They have highly productive forests, some of which are managed by coppice. The topographical conditions are less severe than those of the villages studied in the Trabzon region. There are fewer areas with steep slopes, which means that the erosion is limited. There is no problem of erosion in the agricultural lands.

The type of forest in this area is Mediterranean. Coniferous forests which consist of cedar, fir and black pine dominate in this area. However, half of the forest area in Ulucak is degraded, and reforestation has been taking place in recent years. One result of this project has been that a portion of the productive coppice forest has been transformed into high forest.

Human capital

Ulucak is the most crowded of the villages, with 1000 residents at the time of this study. Emigration has ceased in the recent years in this village. In contrast, emigration has continued in Güzle village, and the population is decreasing. In spite of the improved economic

conditions, young people do not want to stay in the village. Old people say that if a young man has the means, he will go to the city.

The use of birth control has increased over time in the region. The rate of literacy is higher than in Trabzon, and more people have continued their education after high school. There are no epidemic disease, and residents can travel easily to the central clinic. Land surveying and boundary mapping is completed in this region, there are few conflicts between villagers, neighbouring villages, and government. Villagers in Güzle are cooperative and supportive of new projects. In Ulucak, villagers have reported that there are some residents who oppose every project. The forest chief is one of the influential people in these villages, and locals cooperate with him.

Physical capital

The drinking water is healthy, and the existing system provides enough for the villagers' use. There is also an effective irrigation system in Güzle village. They use the drip irrigation system, which allows efficient use of water. Problems with the irrigation system in Ulucak are approaching resolution. The sewage system does not work, and there are some associated environmental problems.

The transport system in both villages is good, although there are some problems with the road infrastructure and design. There are more private cars in Güzle than the other villages.

Every household has a television and telephone. They use wood for heating and cooking. In the summer time, women prefer cooking by gas, as it is cheaper and easier.

Ongoing forestry work in Antalya region is mainly for natural and artificial regeneration and restoration of state forest land. Land surveying and boundary mapping for different owners is completed in Güzle and Ulucak villages.

Financial capital

Agriculture is the most important economic activity in the Antalya region. Farming is a predominant activity in both Güzle and Ulucak villages. Crop and livestock production are often carried out by a household working together.

Grain production is mostly carried out under arid conditions. Farmers in both Güzle and Ulucak villages grow wheat and barley. In Ulucak, the agricultural systems include modern techniques and drip irrigation. This is the only village with cash income from vegetable produce sales. Güzle residents sell only a few products, such as tomatoes and green beans.

The most common livestock animal in Ulucak and Güzle are goats. These animals are preferred because they are suitable for the ecological conditions, do not require additional commercial feed, and can be maintained at a low cost. Sheep are the second most preferred animal. The sheep are grazed in meadows. Cattle are also grazed in meadows and given commercial feed. Grazing is not allowed in forest clearings. Growing fodder plants, mainly trefoil and cow vetch, has started recently and is currently being developed. Livestock are checked regularly by a veterinarian.

People also get income by selling milk, butter and cheese etc. A cooperative system has been developing, and the villagers are currently planning a new project involving 100 dairy cows. This project will be supported by the Social Solidarity Foundation.

Poultry has no economic importance in the Antalyan villages and is produced only for direct household use. It is reported that beekeeping is inexpensive and easy. There has been some recent development of beekeeping in Güzle due to the low associated establishment costs. There are appropriate sources for honey close to the villages.

The Ministry of Agriculture can provide villagers with loans as well as technical support such as veterinary services, seed, animal vaccination and insemination. Some village residents who have retired from BAĞKUR (insurance services for independent working people) subsist on the income they get from the sale of agricultural produces.

Locals interviewed in both Güzle and Ulucak emphasized the importance of forest-based labour. This labour is carried out on the basis of a daily wage and without any insurance. This type of employment is expected to increase in the future.

Eco-tourism activities are important in the Antalya region. The recent years, some hunting activities have started near the villages. Pig hunting as a tourism activity has recently begun around both Ulucak and Güzle villages.

Social capital

In the Antalya villages, farming is carried out using traditional methods and with family members as the workforce. Farmers meet their needs by selling crops, especially wheat, barley and chickpeas. Their fruit and vegetable harvest generally fulfils only household needs. Animal breeding is very common in Antalya, but it does not create a problem for the forests as the farmers do not use forest areas for grazing or fodder. There is also much less of a problem with erosion in this region. Locals like nature and want to use the forest resources for developing eco-tourism. They feel that their villages have good potential for tourism development.

Use of forest resources in the study villages in Antalya and Trabzon

The houses are built from wood obtained from the local forests. The villagers stated in this survey that the primary advantage of being near forests is access to firewood. Heating is entirely dependent on wood, and forest villagers do not favour any other heating method. Gas is used during the summer time for cooking, as the women say that gas is more practical. Non-wood products such as mushrooms and thyme are collected from the forest areas, although not on an economically important scale. Herbs obtained from forests are commonly used for healing for diseases. Locals use the roads made for forest operations to access to the forests.

Trees are sold standing, and merchants and producers also want to keep this method and forgo any possible loss of value during harvesting, transport, and storage.

The financial values obtained from forest resources can be summarized as:

1. Timber and firewood are obtained from forest and priced according to the current market value.
2. Forest Village Cooperatives buy wood at prices under market value and sell it to merchants for a profit.
3. The Ministry of Environment and Forestry transfers funds to village institutions from earnings based on game and tourism.
4. Locals receive income from game-hunting tourism by providing services of guiding and transportation.

Vulnerability context

It is said that forest areas in Sındıran, in Trabzon, have become degraded and should be restored. Erosion is common around this village due to the topography and soil conditions. Steep slopes and intensive snow during the winter can cause the collapse of the protective terraces, and this increases maintenance costs and the difficulty of the work. Insect pests have also caused a great deal of damage in the spruce forests of Trabzon in recent years, and the

proportion of damage has been increasing. Locals harvest ÇIRA (resinous piece of wood) from trees, leaving big deep cut surfaces on the trees. These trees are often later attacked by insects or uprooted by winds.

There has been some illegal cutting for timber and firewood for personal needs around Trabzon, but, since there is no commercial harvesting, this is not considered to be a problem.

The Trabzon region is not under any threat from wild fire, although there have been occasional small fires. However, Antalya is at severe risk of fire, and dry summers increase this risk. Increased awareness in the villages under study has resulted in a decrease in number of the incidents of fire.

It is reported that the richness of wild life and plant species has declined in the forests. Non-wood forest products are not collected sustainably.

Villagers have been having conflicts with the forest managers because the forest and other land boundaries have not been mapped officially in Trabzon. Kuzuluk villagers expect that the grazing areas in the forest will be taken away from them, and so they do not want any resurvey of boundaries there. This village is also in conflict with the surrounding villages about grazing lands.

Agricultural practices in Trabzon villages are traditional and use with old techniques and equipment. Some fields are left fallow in this system. These traditional methods are labour-intensive.

Cooperatives or village unions provide services in agriculture and forest works. All villages have cooperatives, but these are not very efficient. This requires organization. In Ulucak and Güzle villages, in Antalya, villagers are unwilling to act in concert and so do not take much advantage of the potential services of the cooperative.

There is enough water available in the region of the villages, but the irrigation systems, where they exist, are inadequate and yields are low. It is reported in both study areas that the yield from the land has dropped over the past several years. Irresponsible pesticide and fertilizer use is a common problem. But drought is the most important problem encountered in recent years. It has adversely affected both forests and livestock producers. In Sındıran and Kuzuluk, the use of tree leaves as fodder has increased because meadows have not been productive enough to feed their livestock well. Villagers have also had to resort to commercial feed for their livestock, but the high cost of the feed has meant that animals have not been fed sufficiently, reducing the number of animals. Since the villagers in Ulucak and Güzle practice rain-fed agriculture, without irrigation and depending solely on precipitation, yield has also gone down. Water resources have been also depleted.

Animal breeding is carried out using local breeds, although there is some effort to breed animals with hybrids or cultivated races. Milk and meat yield from the local breeds is low.

The fact that loans carry high interest rates is a constraint in agricultural production. Villagers do not want to take out loans because they think that they will not be able to pay them back. Production has declined with high costs and low sale price of agricultural products. Economic worries overwhelm environmental awareness in all villages. At the same time, it is the visitors who picnic and hunt who are taking advantage of the villages' natural resources. Locals state that these visitors cause pollution in the local environment.

Forest work in the Black Sea region is dependent on human labour as the local topography makes it hard to work efficiently. Wood harvested is generally transported by outsiders.

Villagers feel that they lose potential income by not being able to transport the wood themselves.

Emigration out of Kuzuluk and Güzle has increased, and the loss of young people has also adversely affected production. The school has closed due to the small numbers of pupils, and children commute to school. Education in Sındıran has been especially adversely affected in winters because of this commute.

A flood in 1980 caused a lot of destruction in Sındıran. Soil erosion also constantly takes place. The steep topography prevents infrastructural investments in Kuzuluk and Sındıran.

Local residents do not participate to a satisfactory level in planning of forest resources. In addition, villagers have been banned from grazing their animals in Sazalan picnic area, and this has put them in a difficult position. Political influences constrain forestry projects, as politicians made appointments to tackle the projects.

Policies, institutions and processes

The forests in Turkey belong to the state, and they are managed in the name of the State by the General Directorate of Forestry. Use of forest resources is planned by taking community needs into account, and any use requires the permission from the Department of Forest Management. Consent from forestry officials is required to fell trees. Tree felling, maintenance, and collection of pine cones is done on a pay-by-day basis, and people work without any insurance. Any work opportunities in the forest must be given to the residents of the nearest village, although if there is no demand for work there, labourers can be brought in from other areas.

Collection of non-wood forest products is also done by the residents of the nearest village on a tariff basis. People in Ulucak and Güzle harvest carob and wild pistachios. Wild types of these species have been grafted. People do not pay for the mushrooms and thyme they collect in the forest for their own consumption. Appropriate policies for improving non-wood forest products would allow villagers to obtain more income.

Timber and firewood are provided to the villagers at below-market prices, as long as they can show that they reside in the village. Products are distributed from places villagers can easily reach. These arrangements are framed in the forest laws and described as 'forest villager's rights'. It is also stated in the laws that forest protection and works are to be done by the people of the local village through the medium of the Forest Village Cooperative. Any person can join the Cooperative. All villagers have equal rights and freedom, and there is no hierarchical system. State or private institutions have no bearing on these rural people. However, it is known that people with economic wealth can more easily avail of opportunities.

In recent years, with new regulations in the Turkish forestry system, protection of reforestation and restoration areas or game or wildlife areas is achieved through the medium of a payment to villagers. This brings a direct income to the village. Villagers in Ulucak and Güzle are responsible for forest protection. They first hired a guard with insurance, but it proved not to be economical, and so the protection now is being carried out by the village watchman.

ORKOY (General Directorate of Forest and Villagers Relationships) loans are given to poor people with no income, as long as they reside in the village. People co-sign for each other to ensure repayment. There has been no problem to date with repayments.

Grass collection for livestock from forest glades or meadows is an important use of the land. This activity is not controlled by the state, and anyone can make use of it. Areas for collection are officially delineated. However, villagers traditionally do not graze their animals outside their areas and also remain within their own boundaries when collecting grass for winters.

Trabzon villagers collect grass from meadows both within and outside the forests. Villagers decide when to go to the summer pastures. After the grass has completed its growth cycle, people take their livestock and go as a group to the summer pasture. In this way, every person has equal access. The time of return to the village is also decided by the villagers. When the grass is finished, they return, and they bring hay and animal products they prepared during the summer. This tradition is very important for grass development and sustainability. The people use their resources consciously.

Enlargement and improvement of forest areas are main issues in both study areas. Reforestation is underway. It is expected that with an increase in forest areas, opportunities will increase for forest-based work in both Kuzuluk and Sındıran villages, and locals are aware of this. Restoration has been carried out on 4120 da of the state forests. Wild species such as wild pistachio and carob were grafted, and laurel was rejuvenated. The objective of these improvements is to increase the income of the forest villagers by improving the production of non-wood forest products.

There are also some efforts to improve hunting-based tourism and some projects aimed at opening private hunting areas for the village. One idea being planned is to breed partridges for release into the forest as game. The locals support the development game wildlife as hunters are welcomed for the money they bring.

The forests around these villages are currently being protected and improved, as is the policy all over Turkey. Pest management has been one goal, and biological control of a spruce-damaging pest is underway in Trabzon.

Over-cutting and illegal cutting of trees is also being kept under control. Up to 20 or 30 years ago, many houses had wooden roofs that had to be renewed every two or three years. This put quite a heavy burden on the forests. With the help of ORKOY, people have been given a 'roof cover' help, and this had stopped the practice of using wood on the roofs. Other independent 'roof cover' projects are being supported in order to release the pressure on forests.

In addition, access to alternative heating sources is being improved. Solar energy is an option favoured in some of the villages in the Mediterranean region.

A high level of participation from the villagers is the main objective of many of the changes in policies and programmes. The National Forestry Program also aims at elevating awareness of forests. Erosion control and afforestation are being planned with the support from the locals people.

Defining the borders of forests is another issue. Land boundary survey and mapping work has been completed in Antalya. Who owns what portion of forests or lands has been established, and there is no land conflict between the villagers, or between locals and the forest management officials. However, this project of surveying and mapping has not been finished in Trabzon, and there are land-based conflicts between various people. Village boundaries have also not been clearly defined, and this is why there have been some problems between villages about pasture access.

The main policy issues are the implementation over several years of plans for agricultural production and the organization of the villages. This system is not yet well-developed. For example, farmers in Kuzuluk and Sındıran grow crops which are not the ones from which

they will get the most return. Production and area farmed is reported by each farmer to the Town Provincial Directorate of Agriculture in order to get financial support. In addition, production is recorded in an inventory. It is expected that this system will support planning of agricultural production. There is an Agricultural Development Cooperative in Ulucak and Güzle. Ulucak has one Milk Collection Union and one fodder production machine. Other supporting institutions are the Town Provincial Directorate of Agriculture and ORKOY, which has provided a great deal of support for the two study regions.

It is important to develop higher-yielding practices in these areas with relatively few arable lands. There is a good potential for beekeeping, which is currently practiced by a few individuals. Training courses are organized on demand. The training courses offered, and the skills they develop, will help determine what type of resource use will be implemented in each village.

The Forest District Directorate, through its forestry officers, is locally responsible for the use of forests. In addition, the Provincial Directorate of Environment and Forest Afforestation Division Directorate, the Game-Wildlife and National Parks Department and ORKÖY actively work in the villages.

Use of meadows and the uplands is organized by the Village Legal Entity. Forest labourers are contracted by the Forest Village Cooperative or the Village Legal Entity. If there is too much competition for a position within the village, the workers are chosen individually by the forestry officials.

Villagers can get information and advice from the Town Provincial Directorate of Agriculture and ORKOY, while loans for agricultural purposes are administered by ORKÖY, the Agricultural Development Cooperative and Ziraat Bank. The Social Help Fund provides financial and in-kind support to the very poor. The muhtar and members of the village council are responsible for selecting who is eligible for this assistance. The village muhtars meet the local governor in order to communicate local issues and get support to resolve them.

Livelihood strategies

Village people make their living from agriculture, forest use, and jobs outside the village. Kuzuluk and Güzle are villages which only recently have begun to make use of forest resources. Güzle lives by agricultural resources, and forests are an additional income source. Sındıran villagers rely on wages from work outside the village. The villagers in Sındıran try to improve the quality of the forest resources and increase productivity. Villagers state that they would prefer to stay in the village if they could bring in enough to support their families. A variety of strategies have been attempted in a quest to improve the standard of living in the villages.

The Forest Management Department is carrying out restoration and reforestation projects. Plant species which will bring additional income to the people are planted on areas suitable for reforestation. In many places, it is reported that non-wood forest products have more economic benefits than timber production itself. Forestry work is generally carried out with the cooperation and participation of the villagers. The Village Legal Entity bears the responsibility for conservation of the forest; the prospect of additional income is expected provide an incentive to protect the forests. The Village Legal Entity and individual villagers are being encouraged to carry out private afforestation. Species such as wild pistachio and carob are being managed individually in order to increase the productivity in the forests surrounding the villages. The promotion of wildlife game is another policy being undertaken in increase rural people's income, and the development of private hunting areas is being encouraged.

Improvement of agricultural production depends on good planning. There are infrastructure and productivity surveys being carried out in Turkey. The amount of arable lands in use and what is produced on them is being recorded.

Village cooperatives are providing support for animal husbandry, including an effort to increase fodder crop production. Technical support and low-priced or free fodder seeds are provided. People who buy cattle from ORKÖY are required to grow 5 da of fodder crops. It is compulsory to buy cultivated breeds of stock; hybrids between the local races and cultivated breeds are used to have improved yields of milk and meat.

Loans and training courses are also provided to support and improve beekeeping. There is a potential for chestnut honey in Trabzon and thyme honey in Antalya. The development of mobile beekeeping would help increase honey production. ORKÖY has also recently been supporting mushroom growing in Antalya, as there is a good market outlet for mushrooms. Villagers in Ulucak and Güzle will be able to acquire loans to develop mushroom cultivation.

Training courses are organized for encouraging using good seed and modern techniques with appropriate machinery. Financial support has also been provided for purchase of petrol oil. During the last two years, agricultural engineers were sent to the villages by the order of Ministry of Agriculture, and villagers in Ulucak and Güzle have taken advantage of this service.

There are efforts to complete the land and forest boundary surveys and official remapping in Kuzuluk and Sındıran and to resolve land conflicts between parties. This will help in planning the most efficient use of the resources.

The level of skills and cooperation through cooperatives are currently being improved. In Antalya region, roads are being repaired to bring more quality products to farmer's markets. The muhtars are working on organizing transportation in order to gain more income for the villages.

IV.4 Conclusion

Livelihood outcomes

The struggle to improve the standard of living in the villages studied has been successful to date. Use of forest resources has improved through careful planning and restoration. Locals are convinced of the importance of conservation and improvement of the forests. The forest resources in Kuzuluk, Ulucak and Güzle have improved over time, and the number of ongoing projects in the forest has increased. Villages have started to make money from forest, and many, especially people in Kuzuluk and Güzle, have an expectation of high income.

When the reforested areas reach a harvestable age, providing transportation will also bring an income to villagers. Villagers have identified this potential opportunity and wish to improve their cooperatives to be sure to be able to get and fulfil the transportation contracts. It is important to restore infrastructure so that transportation contracts will not go to outsiders.

Private afforestation has expanded enormously in Turkey, and some projects have started around Güzle and Ulucak. Arable lands with low productivity are being afforested, and this is creating jobs. Income obtained from this afforestation by the Village Legal Entity will be used to make the lives in the villages better.

The use of forest wildlife has increased. Pig hunters are visiting to Antalya and Trabzon, and the Forest Management directs a portion of the hunting income to the village budget. In addition, villagers work as guides and provide transport, which benefits them directly. There is a direct correlation between game wildlife and prosperity of the villages. New livelihood

strategies will surface with increasing eco-tourism activities and an increase in game populations in the future.

Increased productivity in the villages has meant that merchants and traders have started to come to the villages. Good road maintenance would facilitate transportation and reduce losses incurred during transport. This will mean an increased opportunity for villagers to bargain for good prices with trading, and locals are aware of this potential opportunity.

The telecommunication and information systems are much better than in the past. Up to 30 years ago, only the muhtar had a telephone, but now every house in the village has one. Most people also have a mobile, or cell, phone. Television and radio are present in every house, and the number education programs have increased on these media. Villagers have satellite dishes, meaning that they can follow local and national programs. There is no obstacle to accessing information about resource use, and this increases the resource productivity.

The development of beekeeping is promising for Ulucak and Kuzuluk. Honey made from chestnut and thyme has a high market value. The high proportion of elderly people in the villages constrains the labour force available, but beekeeping is a good activity for the elderly as it does not take much physical effort.

Animal husbandry activities can be improved with the money villagers earn from forestry work. If there is adequate additional feed, they can use cultivated breeds of livestock, with their higher yields. Productivity will therefore rise. Cultivation of animal feed crops using rain-fed conditions around Güzle and Ulucak will turn unproductive lands into profitable ones.

Cooperatives will bring the villagers together in both regions, creating a strong position for negotiation with traders.

The traditional pasture festivals are a tourist attraction, and providing accommodation for visitors will create a new source of income for the villagers. Handicraft arts can also be sold to tourists. However, in order for this to become a reality, the villages will have to be restored and improved, and infrastructure will have to be maintained at a high level.

Non-wood forest products are not vouchsafed much attention today. However, maturation of the recently grafted important plants will result in a higher income in Antalya. Mushroom and thyme growing also comprise a promising input to the family budget.

Solar energy is another alternative option for reducing costs and is being tried out in the Antalya villages. With use of solar energy, not only will wood consumption decrease, but the energy used will be cheap and easy to obtain.

Forests in Turkey comprise important cultural values for the forest villagers. People feel attached to the green of the forest and express an inability to conceive of living away from it. The annual meadow festivals are enjoyed by locals, returned emigrants, and tourists. Villagers believe that bread that is cooked in a wooden oven, and milk and meat that come from a cow grazed in a meadow, taste better. Men cherish the tradition of hunting during the appropriate seasons.

People with enough money buy a car, tractor or even a house in the city. Tractor ownership is a sign of a relatively good income.

Forestry-poverty linkages

Unemployment is quite high in both regions studied. Income from agricultural production and forest resources is quite low. In general, the Trabzon villages have lower incomes. The main

reason for this is their topographic location. Money sent back to the village by emigrants working in the cities is the main source of income in these villages. People cannot save much; they spend all their earnings on daily subsistence and on their food production activities. Marriages and house-building for young newlyweds are some of the major costs borne by villagers.

There have been investments in Güzle to improve plant production and animal husbandry using money earned from forest labour jobs as well as loans from different institutions.

Local people interviewed in this study emphasised the importance of the forest in their lives. Villagers in Kuzuluk and Sındiran, in Trabzon, could not survive without their forests. Forests are their insurance. For example, forest wood provides the only fuel for heating in all the villages, and villagers do not want any other type of fuel. They feel that it is their right to heat their homes with wood.

Because all the villages studied are forest villagers, forest resources provide many benefits, such as a regular supply of fire wood and timber for making houses. Non-forest products can be purchased for lower prices than in other villages. The forest provides employment, and these forest resources may provide the only income in the village. In any case, they comprise the main source of cash income. The locals view these jobs as being passed down from father to son, even though they work without insurance or health benefits.

Life is difficult in the forest villages. For example, transport may be blocked during the winter. The number of arable lands is limited, and animal production can be hard to develop. Poverty is seen as the destiny of the people who live in these villages, and locals think that they are poor because they live in a forest village. They feel that the support from the state institutions does not reach them and that they are neglected. In fact, however, those villages which make good use of forest resources can have a good income and new investments are being made, leading improvements in both economical and social levels. There are good examples of this in Turkey.

It was determined during the study that villages that plan projects carefully are in a better financial position. An example of the effect of lack of planning can be seen in the case of Sındiran village, where much of the forest was destroyed due to illegal cutting. These areas had to be restored. In the last 15 years, there has been no production from these lands, and the forests surrounding the village did not contain any valuable non-forest products. The deforestation destroyed the ecological balance and increased erosion, and other non-forest products, such as water resources, were depleted, with the consequence that the arable lands became unproductive. Migration to cities increased because of hard living conditions, and those who remained really had a hard time. Persons who emigrated sent some money back to the relatives in the village, but families were separated for a long time. City-dwellers came back to their villages when they retired, but only those who retired from a state institution have a regular income source. Villagers stated in the current study that their irresponsible use of forest resources have led to loss of an income source that might otherwise have been sufficient to maintain the population intact.

Twenty years ago, the Forest Management Department planned to carry out afforestation around Kuzuluk village, but the locals refused it as they believed that the afforestation would be carried out on the infertile areas that they use for grazing. Villagers refused to provide labourers, so Forest Management transferred the afforestation project to neighbouring villages. These villages have work opportunities and income from these afforested areas, although they also do not have any arable lands and cannot produce fodder crops. The neighbouring villagers made investments to instigate beekeeping enterprises, and they bought livestock with the money they made, initiating the indoor production of livestock. In addition, newly developed forests can have a positive effect on nature, making highland festivals a

possibility. Cooperatives developed in these neighbouring villages when the new jobs in forests were created. These cooperatives also support animal production and handicrafts, and some facilitate education and training courses. New vehicles were purchased, facilitating travel to the nearby town centre. Villagers have started to develop in social and economic aspects. Seeing these results in the other villages has led the people of Kuzuluk to negotiate with the Forest Management Department about implementing reforestation in their village. Areas are being protected by the villagers in Kuzuluk, and efforts are being made to improve some forest areas. However, areas are quite young, and not enough work has been funded to date.

People who live in the forest villages in Trabzon and who see poverty as the lot of the forest villagers, have become aware of the fact that forests comprise the only source of income. But it takes time to undo the harm incurred by degradation of the forests in the part. Both Trabzon villages are economically dependent on forests.

The villagers in Antalya have a different view of the forests. The people in Güzle do not have any direct expectation from forests. The main forest resource is seen as the natural beauty, and there are plans to use the village forests as a recreational area. Locals desire to see investments which will develop hunting tourism, and they want to see forest harvesting halted. Modern agricultural practices have developed in this village, although not yet up to the level desired. Forest-based incomes have been the most important driving force of these improvements. Villagers have started to practice agriculture on arid lands once only wheat was grown, and now they produce fresh fruits and vegetables.

Villagers who earn a decent income do not want to work in as wood-cutters because the work is arduous and dangerous, and it brings no social security. Cutting is done by men, but the men of Güzle make more money from agricultural production and are not willing to do this work. The Forest Management Department is forced to employ men from other villages. The women are more interested in work weeding and collecting cones in order to get more income to their families.

Degraded forests in Ulucak, also in Antalya, have been reforested by removing all the old trees and allowing a new generation to spring up. These are young stands, and the work associated with them is weeding and cleaning spaces. The villagers find the wages paid for this type of work low. The men report that the wages were not enough for a family to live on. However, despite the low wages, both men and women work on these jobs. The other option of livelihood is agriculture. Wheat and barley are grown on the dry lands in this village, but yield and therefore income are low because modern techniques are not used. Many villagers are unemployed for much of the year. In the current survey, locals expressed their belief that their life conditions will improve with the development of the restored forest. For this reason, they protect their forest resources.

There is a direct relation between economic level and the forest being used as a provider of wood. Improvement in income levels decreases the pressure on forests, and expectations are diversified. The acceptance among villagers of a perceived fate of poverty due to their being forest villagers has faded away with the realization that their income is dependent on how they use their resources. However, as long as villagers do not become aware of the importance of sustainability of forest resources, the pressure on the forests will continue.

Advantages and disadvantages of Sustainable Livelihood Framework

People in the villages surveyed in this study are aware of natural resources and the importance of not destroying forest resources. The work of FOWECA has contributed to this. It is important to compare the situation in different countries with different challenges. What has

been successful in one country may prove helpful in addressing the issues faced by another. Some techniques may hold the key to improving the management of forest resources.

The existence of international support for studies in the rural regions of Turkey has made a positive impression on the villagers interviewed. In addition, they are pleased to note that their own government has taken interest in their problems. Local authorities have expressed their willingness to participate in planning and sustainable use of natural resources. One benefit of these studies is that the villagers have come to realize the importance of the resources around them. They appreciate how important the water and air are. The ways in which environmental pollution affects and damages these resources have been discussed within the village, and precautions have been taken.

Field studies have also revealed the differences among the villages. Country-wide surveys were also helpful in terms of sharing information. It was especially significant to determine income sources and the problems and limitations affecting these sources. Policies that do not have the support of local people will not be able to be implemented. Villagers generally determine their own strategies of ensure their livelihood. Economic concerns are the main influence on these strategies, leaving environmental awareness and sustainability as lesser influences. This study shows that people are having hard time solving problems on their own.

People want to see the results of a new strategy before they decide to take it up for themselves. In any follow-up studies, it would be best to directly include the experiences of the people. Visual aids are helpful: showing videos recorded in different study villages would increase interest among villagers.

People in the study villages generally do not show an elevated sensitivity toward protecting environment and forests unless they are directly affected by the effects of damage. The best example is the flood in Sındiran. After the disaster, villagers showed an increased interest in erosion control. The amount of forest-based jobs has dropped since the trees surrounding the Ulucak and Sındiran villages have been cut. This lack of work opportunities led to a lower income, and so people now have started to support reforestation. In addition, Kuzuluk villagers have demanded afforestation projects around their village after seeing the successful impact of past afforestation on the income of people in other villages nearby. Financial support and planning into the future for sustainable sources of income would be crucial.

Lessons learnt from the methodology and application (strengths and limitations)

The methods used in the study were effective in obtaining the information desired. The mapping method was especially useful in determining the natural resources of the villages. The seasonal change diagram was not as beneficial in Turkish conditions as might be expected, as there is no major seasonal change. The time line table was very useful in comparing old and new. Villagers were able to clearly see the damage or improvement in resources. The face-to-face meetings made it possible for the people to get to know experts and representatives, and to develop a dialog with them. During house visits, tea was drunk with the women and family life was closely observed. Villagers were given photos of the first visits, and they felt respected.

In any future studies, the use of Venn diagrams could be beneficial in determining relationships of resources with interest groups and resource-interest group closeness. It would also be helpful to present the reports prepared for different countries to local authorities in order to help plan forest resources. It is also necessary and beneficial for any future studies to explain the results to the villagers in an understandable way and to gain their trust.

Following the initial visit to the villages, statistical data was collected and the interviews with the state officials were conducted. It was obvious that the thoughts expressed by some of the

participants about the state projects had nothing to do with the reality. Use of direct questions on the second visit resulted in accurate responses. It will be beneficial to evaluate statistical data beforehand and to be in dialogue with the institutions during the data collection period in the villages. A particular example pertains to the use of the H form, in which people are asked their positive and negative opinions about the subject under study. Participants are also asked to make suggestions for solutions to the problems they identify. In the previous visit, there was the question “how much do you benefit from the forest resources?”. Participants gave points out of 10 showing the degree of their use from forest. People then expressed their all kinds of opinions and suggestions about the subject. Scoring was repeated at the end of the work. Persons who are the nearest to the resource and take the most advantage are not sometimes aware of this. On the second scoring, the more hidden relationships were taken into account, and the ratings went up. In another study, scoring was done twice before mapping and use of the H form. This enabled consideration of the eco-social effects of resources and their use in people’s lives. Stage-wise use of different techniques may increase the completeness and accuracy of the information collected.

The mapping, time line and interviews were carried out in the Trabzon and Antalya studies. A more detailed study of who uses which resource and to what extent, was not carried out. It is important to name the main users who have direct effect on economy of the region. Use of the Venn scheme and H form could make this possible. These two methods were successful in the previous studies with the participation of male population. Interest was comparatively low among the women, and the interaction with the researchers was not as comfortable.

The mapping method encouraged a lot of participation. Villagers who wanted to make their village look at its best tried to show every resource on the map. They mentioned in detail the changes they have seen in their natural resources, including rivers, lakes and forest. After the mapping exercise, the time line was used to order the information chronologically, showing the social changes in the village. Infrastructural development, natural disasters and migration from village to cities were shown with the time line. Economical and social improvements were easily recognised. For example, household appliances have become more varied with easier access to electricity. It also became easier for villagers to access technology with the improvement of the roads, and agriculture has improved. Questions like “what has changed in your lives after the roads were built?”, “how did you benefit from this?”, “what was the effect of access to electricity in your lives?” made it possible to go into the details of the effect of change.

The mapping was also a good exercise for the elderly and illiterate people to participate in the study. People could express their thoughts on the figures on the map. This method sometimes was the only one used with the women, as they did not show much interest in H form, Venn scheme and time line methods. It is useful to use colourful and visual methods in a non-threatening atmosphere with the women as much as possible. Women were shown the pictures of the projects done in other villages. They were attracted by the colourful and different styles of dress among other women. They also showed an eagerness to be opened-minded with their own life style.

The time line attracted the most attention with the men. They were interested in the chronological changes and in comparing the past with today.

Similar studies have been conducted in different regions of Turkey. Generally, mapping and Venn scheme methods have resulted in positive outcome.

The techniques used in this study were shown to be effective in determining the use of forest resources by rural residents, and the relationship between poverty and forest resources. The topic of forestry and poverty was examined from many different angles. However, the data was collected in 3-4 days and two visits to the villages, and longer studies should be carried

out. It would be important in all cases to convey the results of the studies to the villagers. This will encourage trust among the villagers of the institutions and make them more accepting new studies in the future.

People who live in the villages of Trabzon stated that we would not be able to understand their living conditions without experiencing both the difficulties in the winters with closed roads and the beauties of highland festivals. They expressed their opinion that they would not live on these hard conditions if it were not for the beauties of the highlands. People love the place where they live and are inspired to protect it.

The methods used in this study have the capacity to bring villagers together with the researcher. Villagers found the technique easy to understand and apply. Use of visually-oriented aids increases the attraction as it made it possible for villagers to be comfortable without having to write their thoughts and utter their names. Opinions written on Post-it notes were placed openly and discussed freely. Some even took their own ideas back after seeing that some other ideas had more priority, changing their minds and supporting others. This enabled the locals to communicate with each other and to come to consensus.

The current situation could not be determined during the study, but future projections were made. By helping people look at their situations more objectively, they developed a willingness to improve themselves, although they also became aware that improvement would take great effort. These studies resulted in positive outcomes in both regions.

IV.5 References

- Anonymous 2002. Summary of Agricultural Statistics. State Institute of Statistics prime Ministry Republic of Turkey
- Anonymous 1988. Records of Chamber of Forest Engineers
- Anonymous 2000. Records of Agricultural Departments.
- Anonymous, 2003. Antalya, Publication Antalya Trade Chambers
- Anonymous 2004. Records of Korkuteli, Maçka, Şalpazarı Tarsus Education District Management Directorates
- Anonymous 2004. Records of Korkuteli, Maçka, Şalpazarı Meteorological Station
- Anonymous 2004. Records of Department of Cadastral and Possession, Ministry of Environment and Forestry.
- Anonymous 2004. Records of Korkuteli, Maçka, Şalpazarı Agricultural District Management Directorates
- Atalay, İ., 2002. Ecological Region of Turkey, Public by Meta, ISBN 975-8273-41-8, Bornova, İzmir.
- Dönmez, E. 2001. Forest Village Relations and Participatory Forestry. Assistance for the preparation of a national program for Turkey (TCP/TUR/0066A).
- Saltık, H. 1996. Trabzon. Republic of Turkey Ministry of Culture, Directorate of Publications- Ankara.

Further information about the LSP

The Livelihood Support Programme (LSP) works through the following sub-programmes:

Improving people's access to natural resources

Access of the poor to natural assets is essential for sustainable poverty reduction. The livelihoods of rural people with limited or no access to natural resources are vulnerable because they have difficulty in obtaining food, accumulating assets, and recuperating after shocks or misfortunes.

Participation, Policy and Local Governance

Local people, especially the poor, often have weak or indirect influence on policies that affect their livelihoods. Policies developed at the central level are often not responsive to local needs and may not enable access of the rural poor to needed assets and services.

Livelihoods diversification and enterprise development

Diversification can assist households to insulate themselves from environmental and economic shocks, trends and seasonality – in effect, to be less vulnerable. Livelihoods diversification is complex, and strategies can include enterprise development.

Natural resource conflict management

Resource conflicts are often about access to and control over natural assets that are fundamental to the livelihoods of many poor people. Therefore, the shocks caused by these conflicts can increase the vulnerability of the poor.

Institutional learning

The institutional learning sub-programme has been set up to ensure that lessons learned from cross-departmental, cross-sectoral team work, and the application of sustainable livelihoods approaches, are identified, analysed and evaluated for feedback into the programme.

Capacity building

The capacity building sub-programme functions as a service-provider to the overall programme, by building a training programme that responds to the emerging needs and priorities identified through the work of the other sub-programmes.

People-centred approaches in different cultural contexts

A critical review and comparison of different recent development approaches used in different development contexts is being conducted, drawing on experience at the strategic and field levels in different sectors and regions.

Mainstreaming sustainable livelihoods approaches in the field

FAO designs resource management projects worth more than US\$1.5 billion per year. Since smallholder agriculture continues to be the main livelihood source for most of the world's poor, if some of these projects could be improved, the potential impact could be substantial.

Sustainable Livelihoods Referral and Response Facility

A Referral and Response Facility has been established to respond to the increasing number of requests from within FAO for assistance on integrating sustainable livelihood and people-centred approaches into both new and existing programmes and activities.

For further information on the Livelihood Support Programme,
contact the programme coordinator:
Email: LSP@fao.org

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- Baumann P., (July 2002) **Improving Access to Natural Resources for the Rural Poor: A critical analysis of central concepts and emerging trends from a sustainable livelihoods perspective.** FAO, LSP WP 1, Access to Natural Resources Sub-Programme.
- Cotula L., (August 2002) **Improving Access to Natural Resources for the Rural Poor: The experience of FAO and of other key organizations from a sustainable livelihoods perspective.** FAO, LSP WP 2, Access to Natural Resources Sub-Programme.
- Karl M., (August 2002) **Participatory Policy Reform from a Sustainable Livelihoods Perspective: Review of concepts and practical experiences.** FAO, LSP WP 3, Participation, Policy and Local Governance Sub-Programme. Also available in Spanish and French.
- Warren P., (December 2002) **Livelihoods Diversification and Enterprise Development: An initial exploration of Concepts and Issues.** FAO, LSP WP 4, Livelihoods Diversification and Enterprise Development Sub-Programme.
- Cleary D., with contributions from Pari Baumann, Marta Bruno, Ximena Flores and Patrizio Warren (September 2003) **People-Centred Approaches: A brief literature review and comparison of types.** FAO, LSP WP 5, People-Centered Approaches in Different Cultural Contexts Sub-Programme. Also available in Spanish and French.
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- Biggs S. D., and Messerschmidt D., (December 2003) **The Culture of Access to Mountain Natural Resources: Policy, Processes and Practices.** FAO, LSP WP 7, Access to Natural Resources Sub-Programme.
- Evrard O., (Janvier 2004) **La mise en oeuvre de la réforme foncière au Laos : Impacts sociaux et effets sur les conditions de vie en milieu rural** (with summary in English). FAO, LSP WP 8, Access to Natural Resources Sub-Programme.
- Ellis F., Allison E., Overseas Development Group, University of Anglia, UK (January 2004) **Livelihood Diversification and Natural Resource Access.** FAO, LSP WP 9, Access to Natural Resources Sub-Programme, Livelihood Diversification and Enterprise Development Sub-Programme.
- Hodgson S., (March 2004) **Land and Water – the rights interface.** FAO, LSP WP 10, Access to Natural Resources Sub-Programme.
- Mitchell R. and Hanstad T., Rural Development Institute (RDI), USA, (March 2004) **Small homegarden plots and sustainable livelihoods for the poor.** FAO LSP WP 11, Access to Natural Resources Sub-Programme.
- Hanstad T., Nielsen R., Brown J., Rural Development Institute (RDI), USA, (May 2004) **Land and Livelihoods: Making land rights real for India's rural poor.** FAO LSP WP 12, Access to Natural Resources Sub-Programme.
- Fisher R.J., Schmidt K., Steenhof B. and Akenshaev N., (May 2004) **Poverty and forestry : A case study of Kyrgyzstan with reference to other countries in West and Central Asia.** FAO LSP WP 13, Access to Natural Resources Sub-Programme.
- Cotula L., and Toulmin, C. with van Vlaenderen, H., Tall, S.M., Gaye, G., Saunders, J., Ahiadeke, C. and Anarfi, J.K, International Institute for Environment and Development (IIED), UK (July 2004) **Till to tiller: Linkages between international remittances and access to land in West Africa.** FAO LSP WP 14, Access to Natural Resources Sub-Programme.
- Baumann P., Bruno M., Cleary D., Dubois O. and Flores X., with contributions from Warren P., Maffei T. and Johnson J. (March 2004) **Applying people centred development approaches within FAO: some practical lessons.** FAO LSP WP 15, People Centred Approaches in Different Development Contexts Sub-Programme. Also available in Spanish and French.
- Neely C., Sutherland K., and Johnson J. (October 2004) **Do sustainable livelihoods approaches have a positive impact on the rural poor? – A look at twelve case studies.** FAO LSP WP 16, Institutional Learning Sub-Programme.
- Norfolk S. (2004) **Examining access to natural resources and linkages to sustainable livelihoods: A case study of Mozambique.** FAO LSP WP 17, Access to Natural Resources Sub-Programme.
- Unruh J. (2004). **Post-conflict land tenure: using a sustainable livelihoods approach.** FAO LSP WP 18. Access to Natural Resources Sub-Programme.

- Eckman, C. (2005). **Lessons Learned by the WIN Project on Livelihoods Diversification and Enterprise Development: An Overview of WIN LDED-related Activities in Cambodia, Nepal and Zambia.** FAO LSP WP 19. Livelihoods Diversification and Enterprise Development Sub-Programme.
- Warren, P. (2005). **Between the Household and the Market: A livelihoods analysis of SPFS seed multiplication in Southern Guatemala.** FAO LSP WP 20. Livelihoods Diversification and Enterprise Development Sub-Programme.
- Strele M., Holtge K., Fiebeger M., Were J., Schulmeister A., with contributions from Weingartner L., (2006) **Participatory Livelihoods Monitoring . Linking Programmes and Poor People's Interests to Policies Experiences from Cambodia.** FAO LSP WP 21. Participation, Policy and Local Governance Sub-Programme.
- Unruh J. and Turray H. (2006). **Land tenure, food security and investment in postwar Sierra Leone.** FAO LSP WP 22. Access to Natural Resources Sub-Programme.
- Nielsen R., Hanstad T., and Rolfes L. **Rural Development Institute (RDI). (2006). Implementing homestead plot programmes: Experience from India.** FAO LSP WP 23. Access to Natural Resources Sub-Programme.
- Quan, J. Natural Resources Institute University of Greenwich. (2006). **Land access in the 21st century: Issues, trends, linkages and policy options.** FAO LSP WP 24. Access to Natural Resources Sub-Programme.
- Cotula L., Hesse C., Sylla O., Thébaud B., Vogt G., and Vogt K. International Institute for Environment and Development (IIED). (2006.) **Land and water rights in the Sahel: Tenure challenges of improving access to water for agriculture.** FAO LSP WP 25. Access to Natural Resources Sub-Programme.
- Gomes N. (2006). **Access to water, pastoral resource management and pastoralists' livelihoods: Lessons learned from water development in selected areas of Eastern Africa (Kenya, Ethiopia, Somalia).** FAO LSP WP 26. Access to Natural Resources Sub-Programme.
- Tanner C., Baleira S., Norfolk S., Cau B. and Assulai J. (2006). **Making rights a reality: Participation in practice and lessons learned in Mozambique.** FAO LSP WP 27. Access to Natural Resources Sub-Programme.
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- Lindsay J., Wingard J. and Manaljav Z. (2006). **Improving the legal framework for participatory forestry: Issues and options for Mongolia.** FAO LSP WP 30. Access to Natural Resources Sub-Programme.
- Schmidt S. with Altanchimeg C., Tungalagtuya K., Narangerel Y., Ganchimeg D., Erdenechimeg B., Dambayuren S. and Battogoo D. New Zealand Nature Institute - Initiative for People Centered Conservation. (2006). **Depleting natural wealth – perpetuating poverty: Rural livelihoods and access to forest resources in Mongolia.** FAO LSP WP 31. Access to Natural Resources Sub-Programme.
- Schmidt S. with Altanchimeg C., Tungalagtuya K., Narangerel Y., Ganchimeg D., Erdenechimeg B., Dambayuren S. and Battogoo D. New Zealand Nature Institute - Initiative for People Centered Conservation. (2006). **Rural livelihoods and access to forest resources in Mongolia: Methodology and case studies of Tsenkher Soum, Ulaan Uul Soum, Binder Soum, Teshig Soum and Baynlig Soum.** FAO LSP WP 32. Access to Natural Resources Sub-Programme.
- Shimizu T. (2006) **Assessing the access to forest resources for improving livelihoods in West and Central Asia countries.** FAO LSP WP 33. Access to Natural Resources Sub-Programme.
- Baumann P. (2006) **Forest - poverty linkages in West and Central Asia: The outlook from a sustainable livelihoods perspective.** FAO LSP WP 34. Access to Natural Resources Sub-Programme.
- Shimizu T., and Trudel M., with case studies by Asanbaeva A., Kananian M., Naseri Gh. and Sülüşoğlu M. (2006). **Methodology and case studies on linkages between poverty and forestry: Afghanistan, Iran, Kyrgyzstan and Turkey.** FAO LSP WP 35. Access to Natural Resources Sub-Programme.

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