



Why is the Grass Greener on the Other Side?

*-A Case Study of Pasture Use in North-Eastern
Albania*

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Varför är gräset grönare på andra sidan?
– En fallstudie av betesutnyttjande i nordöstra Albanien

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Abstract

Summer pastures are underused while winter pastures are overused in Albania. Summer pastures are usually located a few kilometres from the village, while winter pastures are found very close to it. The grass growth in the villages is very low during the hot, dry summers, why farmers have traditionally moved their animals during this season. They have moved them to winter pastures in the mountains, where the temperature is lower. This habit is believed to have declined since democratization in the early 1990s.

This paper presents a case study in North-Eastern Albania, where pasture use was studied. The aim of the study was to find out, in an economic framework, why pasture use is so uneven, if more intense use of summer pastures can help the overused winter pastures, which are degrading and how this would affect farmers' economy. The focus of this work is pastures, but some attention is also given to forest management and the agricultural system in general.

Pobreg is a village of slightly more than 1000 inhabitants. A "Natural Recourse Development Program" (NRDP) is currently implemented, with the objective of improving the natural resources and decreasing poverty. Sida and the World Bank are co-financing the project.

Field work was carried through in June and July 2008. A multi-perspective approach was undertaken. Information was gathered through interviews, focus group meetings, archival records, documentation and own observation.

Information was gathered about pasture and forest management as well as the agricultural system.

The main finding was that summer pasture use has declined since democratization in 1991, and that the main reason is that it is not feasible to use the rangelands far away from the village with the few heads of animals that farmers hold after the reform.

Five cows (or a corresponding herd of other animals) are needed for the investments needed to use summer pastures to be profitable. Many farmers hold fewer animals than that, so cooperation among farmers is suggested as a way to making summer pasture use possible. This would likely improve the status of both winter and summer pastures, the latter because biodiversity decreases when pastures are not properly grazed or maintained. Also important, animals' growth and yields are believed to increase as they are brought to the mountains during summer.

The main conclusion of the study is that summer pastures should be regarded an important resource and that they should be included in the on-going projects that aim to improve natural resources and decrease poverty. The interviews revealed that the NRDP was seen as very creditable, and they should hence be a trust-worthy third part in a potential cooperation.

Key terms: Albania, Natural resource use, summer pastures, overgrazing, household economy

Sammanfattning

Sommarbeten, belägna någon eller några kilometer från byarna, är underutnyttjade i Albanien medan vinterbeten överutnyttjas med ogräsdominans och erosion som följd. Vinterbeten ligger i allmänhet i direkt anslutning eller mycket nära byarna. Under den varma sommaren växer gräset på vinterbetena väldigt lite, vilket gör att man traditionellt flyttat djuren till sommarbeten i bergen där klimatet är annorlunda. Det verkar dock som om detta har förändrats sedan demokratiseringen i början av 1990-talet. Fenomenet har studerats i en fallstudie i byn Pobreg i nordöstra Albanien.

Pobreg är en by med drygt 1000 invånare. Många är mycket fattiga. Sedan några år tillbaka genomförs "Natural Resource Development Project" (NRDP) i byn. Projektet syftar till att minska fattigdomen och förbättra naturresurserna. Bland andra Sida och Världsbanken finansierar projektet.

Studiens syfte var att utröna varför användandet är så ojämnt, och huruvida ett ökat användande av sommarbeten under sommaren kan minska degraderingen av vinterbeten och vilka ekonomiska konsekvenser som skulle följa på det.

Fältarbete genomfördes i byn Pobreg under juni och juli 2008. En multiperspektivell ansats användes. Information samlades in genom intervjuer, fokusgrupper, arkivdata, dokumentation och egna observationer. Information om skogens, betenas och jordbruksproduktionen organisation samlades in.

Det huvudsakliga resultatet var att nyttjandegraden till viss del beror på den jordbruksreform som genomfördes 1991. Jordbruksmarken delades upp i mycket små enheter (0,2 hektar per person på landsbygden). Pobregs bönder menade att det var omöjligt för dem att utnyttja sommarbetena, som kräver övernattningsmöjligheter för herdarna, med så få djur. Litteraturen pekar på att det även finns en ovilja att leva traditionellt liv. Detta fick dock inget stöd av den empiriska studien.

Studien visade också att en produktion med fem kor (eller motsvarande värde av andra djur som kräver högkvalitativt bete) är nödvändig för att investeringar för att utnyttja sommarbeten ska vara lönsamma. I dagsläget har bönderna färre djur än så, och därför skulle ett samarbete mellan jordbrukare kunna initieras både för att minska överutnyttjandet av vinterbetena och öka utnyttjandet av sommarbeten. Sommarbetena i byn har nämligen stor biologisk mångfald. En annan fördel med sommarbetena är att djurens tillväxt och avkastning med stor sannolikhet gynnas.

Studiens slutsats är därför att sommarbetena bör ses som en resurs och att man bör överväga att inkludera dem i de policies som pågår och som syftar till att förbättra naturresurserna och minska fattigdomen. Intervjuerna visade att NRDP hade stort förtroende hos bönderna, och därför skulle projektet kunna fungera som en tredje part i ett potentiellt samarbete mellan bönder.

Nyckelord: Albanien, Naturresursanvändning, sommarbeten, överbetning, hushållsekonomi

Abbreviations

CBA	Cost Benefit Analysis
FAO	the Food and Agricultural Organization of the UN (www.fao.org)
MFS	Minor Field Study (www.mfs.nu)
NRDP	Natural Resource and Development Project
SNV	the Netherlands Development Organization (www.snvworld.org/)
UN	United Nations
US aid	United States Agency for International Development (http://www.usaid.gov/)
MEFWA	Ministry of Environment, Forests and Water Administration
MAFCP	Minsitry of Agriculture, Food and Consumer Protection

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1 Introduction

1.1 Problem background

Albania's agrarian reform after the fall of communism resulted in radical structural changes in agricultural land. While most other post-communist countries in Europe auctioned land or allowed cooperatives to conduct agricultural production (Swinnen, J), Albania instead distributed the agricultural land to the rural population (Congu and Swinnen 1999, Lerman et al 2002, Swinnen 1999).

The more productive parts of the country had relatively consolidated ownership prior to the communist rule and in these parts land was simply given to the actual users on a per capita basis (Congu and Swinnen 1999, Wheeler and Waite 2003). The arable land in the mountains in the east and in the north is less productive and ownership was less consolidated prior to communism. Here, attempts were made to give the land to the decedents of previous owners (De Waal 2004, Swinnen 1999).

Attempts were made to give all rural families land that was of equivalent value, which resulted in fragmented land. Concerns have been raised in post-communist Albania that the fragmentation of agricultural parcels and farms in Albania has slowed down productivity growth (Lusho and Papa 1998, Sallaku and Shehu, World Bank report 2006, Wheeler and White 2003).

Food shortages made Albania's poor dependant on foreign aid in the late eighties and early nineties. The agrarian reform was naturally prioritized in the privatization of state-owned property (Congu and Swinnen 1999). Forests, pastures and other non-arable land have gained more attention over the past few years. A large fraction is still state-owned although the transfer of this land to local governmental level is on-going.

Pastures and forests have degraded in many parts of Albania, which has led foreign development organizations as well as governmental agencies to take action to improve these lands. The Natural Resource Development Project (NRDP) is implemented by the Ministry of the Environment, Forestry and Water administration, and financed by the Government of Albania (GoA) the World Bank, Global Environmental Facility (GEF) and the Swedish international development agency (Sida), has carried through various projects improving natural resources and their management in 218 communes in Albania. The NRDP has employed many of the poor in the country through the projects financed there.

1.2 Problem

The focus of this thesis is the economic aspects of the problem of *overused winter pastures and underused summer pastures*.

As was pointed out by the Sida and World Bank mission of the summer 2008, winter pastures are in general heavily overused and create long-term problems for sustainability. The high animal pressure results in weed dominance and soil degradation. In turn, this leads to soil erosion. The mission pointed out the need for more accurate cost and benefit estimations to base future policy on (The Mission report, 2008).

The village of Pobreg is one of many sites where winter pastures have degraded and are at risk erosion during winters and springs. Although there are, according to local officials, by all means sufficient pasture surface to cover the needs of the villagers, winter pastures were heavily overused. Summer pastures were described by villagers and local officials as having free capacity. The situation is known to be common to key informants, although no attempts to claim that the study case is representative is made by the author. The mission report (2008) and Shundi (FAO homepage 1) pointed out that winter pastures are overused, while this problem does not seem to exist in summer pastures.



Figure 1. Map over Albania. Albania is situated to the north and east of Greece, south of Serbia and Montenegro and west of Macedonia and Kosovo (not on map). The study area is marked with an arrow. Source: lonely planet homepage 1.

1.3 Objective of Study

The broad aim of this study is to provide a basis for policy recommendations to address the problem of unsustainable use of pastures in Albania. The specific objective is to clarify the reasons overuse of winter pastures and underuse of summer pastures. To achieve this the study will address the following questions:

- What are the reasons to the uneven use of resources?
- How many cows are needed for the traditional mixed pasture system to be profitable?
- Would a policy of moving grazing activities to underused summer pastures from overused winter pastures be recommended?

2. Method

This chapter explains methods used in the field trip when data was gathered, and provides reflections on the choice and performance of them.

2.1.1 Why a Case Study?

Case studies are rare in the literature of agricultural economics. Case studies are commonly criticized for lacking reliability (see for example Tellis 1997) due to subjectivity and the absence of replication. The critique especially arises when results are extrapolated (Kennedy and Luzar 1999). Two methods have been used in this study to ensure reliability. They are the use of multiple sources of information (when possible) and that the draft case study was reviewed by key informants.

The social sciences have three tasks; predicting, explaining and understanding. Kennedy and Luzar (1999) argued that the current strength in agricultural economics is prediction, and that case studies can compliment this strength by providing deeper understanding.

The approach for the case study has been to be multi-perspectival in order to ensure that the whole picture is carefully studied. This includes the use of multiple sources of evidence. There are a number of sources that may be used in a case study. The ones listed by Tellis (1997) are documents, archival records, interviews, direct observation, participant-observation and physical artifacts. Documents, archival records, interviews and direct observation have been used in this study.

A qualitative case study was carried through because the method was argued to fit the project objectives. Quantitative data is scarce and of low quality in Albania, and there it was not possible for the author to collect sufficient amounts of data to perform statistical analysis. Moreover, it was argued that the aim of the study was to understand rather than to perfectly quantify, why a qualitative case study was preferred.

2.1.2 Field Procedures

Field work was conducted during June and July 2008. Focus groups, survey interviews and deep interviews were conducted. Moreover, great attempts were made to read all written material that could be found on the site the help from the translator Fabjola Begaj.

Upon arrival to Kukës, a village to study had to be chosen. The choice of the village was made upon the recommendation of Isuf Omuri, the Netherlands Development Organisation (SNV), Kukës. After discussions with several peers and colleges, Omuri recommended Pobreg. This particular village was found to be appropriate since it was typical for the area and since natural resources was managed both in common and in private rights to use.

The survey questions were also asked in another village, where abandoned agricultural lands serve as pastures (although not classified as such). The results from this village, Tregtan, have not been used in this thesis since the problems the population of Tregtan faced was very different.

The main sources of information were the Forest and Pasture Management plan (FPMP)¹ archival records (official statistics), interviews with villagers and focus group meetings and interviews with local officials.

The management plan is a plan set up by the forest association upon meetings held in the villages. It contains information about the socio-economic conditions of the village, the species and natural resources in its surroundings. It states the aims and objectives for the kind of projects that should be prioritized in the NRDP implementation. This plan was used as source of information and as a background to the interviews. The official statistics that could be found was used to verify the information found in the management plan and to add data that was missing in the plan.

The attempt for the selection of villagers was to get representative informants rather than randomly picked. Randomness was not preferred primarily because the deficiency of statistics of people living in the village; poor people may not even exist in population statistics. No less than four different guides were used in the field work to diminish the risk of a snowball effect. All guides were well aware the value of interviewing different types of villagers and did not know all the interviewees.

A final set of questions were decided upon after two sets of pilot interviews. The pilot interviews showed with all desired clarity that some questions, that were initially chosen, were not applicable to this field. In particular, some of the more abstract questions of risk attitude and time preferences were found to be inappropriate. When faced with imagined investment options with differing expected outcome and risk characteristics, people would prefer the lower risk option. Then, they would add that they would work a little harder and get more money out of it. Moreover, informants did not fully agree with concept of investments. They understood that they would have to pay money initially, and that they did not have sufficient means for that, why the question did not make sense to them.

Discussions with Isuf Omuri and Anila Aliaj, who both have long experience of interviewing the rural population of Kukës led to a final questionnaire. Many of the posed questions were closed but allowed for the respondents to talk freely. Most interviewees were happy to talk about the topics of the closed questions, and their comments and motivations were noted. The purpose of the questionnaire was never to use it for econometric studies but rather to allow the respondents to answer to questions that was simple enough for them to feel confident but led to interesting results and comments.

18 villagers took the interview survey questionnaire. Of these, only six were women. This is unfortunate but might partly be explained by the difficulties of interviewing women – even as a woman. In the report on agricultural progress and development (Dekker, 2008) only 4 interviewees out of 278 were female, something that might shed some light on these difficulties. The guides were all men, and one could argue that the presence of well-educated men, even if the guides kept some distance to the interview setting, influenced the women's willingness to take the questionnaire. No attempts to convince women that did not want to participate were made. Another group that was particularly hard to meet was people engaged in off-farm working activities. These were, naturally, working during the day and the cultural

¹ The formulation of FPMP is a key activity in NRDP. It is a participatory process where a consultant, funded by the NRDP, provides technical assistance and facilitates the villages and user association to demarcate the boundaries and formulate the management of the forests and pastures,

codes complicated making interview during evenings. Only one person working outside the village could be found.

Focus group meetings were arranged both with farmers and with local officials and experts. The focus latter group meetings were carried through for two reasons:

1. To gain opinions to which villagers opinions could be compared with.
2. To gather information on topics the farmers knew little about.

The focus group meetings were initiated with the delivery of a paper on which the main issues to be discussed were listed. The Pobreg focus group contained 6 persons. The second focus group meeting were conducted in Kruma, and contained five persons (see bibliography for more information on informants).

Additional deep interviews were held with villagers, forest engineers, agronomists, World Bank and SNV staff.

The initial aim of the field trip was to investigate social effects of the on-going land reform where user rights to land have been distributed to villages, clans and families. During the interviews, people referred to their pastures as beautiful, good and very good. Having seen the poor pastures and heard about the experienced erosion problems, the author was puzzled. Later, it turned out that the pastures the farmers were talking about were the summer pastures and not the winter pastures where animals had been seen grazing.

When the answers were analyzed it became clear that the most interesting feature in Pobreg was the use of summer and winter pastures. For that reason, most of the empirical material gathered has not been used in this thesis.

3 The Case Study

The aim of this chapter is to identify the economic problem of pasture management and use by describing the case. The case is the use of summer and winter pastures in the Pobreg village. Thereafter, the main findings are presented. The attempt has been to provide a deep and holistic picture of the village. The agro-pastoral system of the village connects agricultural land, pastures and forests closely why all three are given some attention here.

3.1 Study Site Description

The study village, Pobreg, is located in the province of Kukës in Northern Albania, bordering Kosovo. The area is mountainous and has little arable land with low productivity. The coldest month is February, when the average temperature drops to -3.2 degrees Celsius, and the warmest is July with an average temperature of 21.9 degrees Celsius. The rainiest months are October, November and May. The arable land amounts to 21 hectare in total, and 0.02 hectares per capita (Therthore Management Plan).

The total population of Pobreg is 1042 inhabitants, with slightly more men than women. 210 persons are reported to be in working age and conditions. The income per day and capita is 0.23 \$US (see table 1) which is far below the extreme poverty line of \$US 1 per day and capita (UN homepage 1). It is plausible that some of the values produced in the village such as milk and meat are not included in the measure, why the estimate is not perfectly comparable with the UN measure.

Table 1. Income statistics. Own calculations based on the management plan.

Average income statistics (\$US)	
Income per family and year	800
Persons per family	9,4
Income per person and year	85,2
Income per person and day	0,2

According to the management plan² of the village, there are 516 sheep, 363 goats, 434 cattle, 49 pack animals (horses, donkeys and mules) and 1236 poultry. The domestic animals are given some course feed (usually maize) but forests and pastures remain important sources of energy (management plan). Cows, being the highest valued animals (management plan, own observation), are fed with maize throughout the whole year with some 50 kilograms maize over one month (personal communication, villagers).

3.1 An Institutional Perspective of the Village

This chapter aims to put the village and its use of pastures and other natural resources in a historical and contemporary context. Data gathered during the case study are presented along with findings from the literature.

3.1.1 Pre-communism

The land tenure under the Ottoman Empire was characterized by a few large land-owners combined with many small or medium sized land-holdings. Peasants were obliged to help private landlords, religious institutions or the state with agricultural inputs like labor when demand for this was high.

Albania's independence in from the Ottoman Empire in 1912 involved little change of this system. Land ownerships were very unequally distributed and a few families held control over much of the land. 3% of the population owned 27% percent of the land at this time. These landowners were operating on the most productive land, while land was less consolidated in the un-productive northern and eastern parts of the country (Congu and Swinnen 1999, Wheeler and White 2003).

According to one of the older men in Pobreg, all families had cottages in the mountains close to the summer pastures before communism. Half of the family went to live in the mountains with the animals and the other half stayed in the village to grow crops and vegetables (Interview, man, 65, 8 July 2008).

Before the communist shift in 1944 all Pobreg's pastures and 95 percent of its forests were common property. The common property was used by the village population, and the private only by the families that owned it. There was no governmental property of this kind, something that would dramatically change with the communist rule in 1944, which later resulted in that all property was put in the hands of the state.

² The management plan was set up by the village forest association, supported by SNV staff and NRDP trainers in order to plan future natural resource related activities such as management and investments.

3.1.2 Communism

Communism eventually resulted in the reorganization of agricultural production to large collective farms. Only a small-sized plot was allowed for private use. The cooperative farm in Pobreg was in large run by women since a large fraction of the men were engaged in off-farm activities such as the near-by copper factory.

The agrarian reform of 1945 redistributed the land previously owned by merchants, artisans and religious institutions (i.e. the largest landowners) to poor farmers that were landless prior to the reorganization (Lusho and Papa 1998). As time passed, land was transformed to become state-owned. The most productive land was collectivized first, and the least later. In 1976 only 0.5 percent of agricultural land was in private use (Congu and Swinnen 1999). Albanian law defined all land as state-owned with the majority in the cooperative farming sector and the rest in the state sector (Lusho and Papa 1998).

Food shortages and other economical problems during the 1980: s resulted in some liberalization through the “New Economic Mechanism”, through which families were allowed to keep 0.1-0.3 hectares of agricultural land and one cow or ten heads of sheep or goats. The reform was carried through without any real legal basis and did not result in any improved productivity in the collective farms. By 1990-1991 Albania’s population depended on foreign food aid. (Congu and Swinnen 1999). Illegal and legal logging resulted in major deforestation in the commune during the communist time (Terthore Management plan).

Communism included loss of arable and forest land for the Pobreg population. The village lost 200 hectares of arable land due to the redirection lake Fierza, which’ hydro-power stations provide most of Albania with electricity. This land is today formally owned by descendents of previous owners, but can of course not be ploughed or harvested. Near-by copper extraction and refinement activities caused severe environmental degradation and deforestation (See picture 4 on page 19). The main problem is the sulfur dioxide pollution that made a large fraction of the land close to the village unproductive. Liming would be an option but no such plans have been made due to the high costs related to this activity. The state subsidized the Pobreg collective farm for the economic losses these activities generated, but no subsidies have been paid after democratization.

The collective farm in Pobreg used the summer pastures throughout communism. New cottages were installed in which groups of men lived to care for the animals. All animals were kept there for the summer months. At the fall of communism, these cottages and most other previously state-owned properties were destroyed (Ferhat Hallaci).

3.1.3 Post-communism

The food situation was difficult in Albania at the time of privatization, why agrarian reforms were put high on the political agenda. When many other former communist countries chose to redistribute land to pre-communist owners or sell it, the Tirana parliament focused on distributing land to the actual users, i.e. the rural population (Congu and Swinnen 1999, Lerman et al 2002, Swinnen 1999). Albania was the only transitional country outside the Soviet Union that switched from exclusive state ownership to private (Lerman et al 2002), which might have facilitated the “radical” agrarian reform (Congu and Swinnen 1999).

The property rights reform in Albania is not yet fully completed, and the system has caused confusion and conflicts. Land and property conflicts are common and it is estimated that half of all cases in civil courts relate to these (World Bank Tirana report 2006).

There seems to be three reasons to the confusion and disagreement over land. The first is weak agreement on what methods that should be used to achieve the goals of the reform (World Bank Tirana report 2006, Wheeler and White 2003).

The second is the fact that there are different legal definitions for different categories of property. This has resulted in gaps and overlaps in the property right laws (World Bank Tirana report 2006). While the aim for arable land was that it would fall into the hands of its users, the aim for the property rights reform of pastures and forests is:

- Small areas may transfer into private hands
- Forests and pastures located close to villages remain in state ownership or communal ownership, where further decentralization may take place
- Forests and pastures located far away from villages remain in state ownership and enterprises may gain the right to use from the government
- Special protected areas remain in state control (World Bank Tirana report 2006).

By May 2008 60 percent of forests and pastures had been transferred from state to communal control. (Carl von Essen, personal communication, 2008)

The third reason is fragmentation. Land fragmentation is defined as “noncontinuous land parcels that are owned and tilled as a single enterprise” (Lusho and Papa 1998). Land division aimed to give each family plots that were equivalent in quality and type of land (cropland, olive groves, vineyards, orchards and vegetable gardens close to the house). Some families also retained ownership over land they had owned previously. Regards were taken both to distance and conditions such as the slope (Lusho and Papa).

Many have agreed that the fragmentation of agricultural land slows down productivity growth in Albania (Lusho and Papa 1998, Sallaku and Shehu, World Bank report 2006, Wheeler and White 2003). The agricultural land was operated by 420 enterprises with a field average of 36 hectares before the reform. After, it was divided into 1.8 million parcels averaging of 0.25 hectares (Wheeler and White 2003.) Congu and Swinnen (1999) agreed that this is a negative aspect of the reform, but add that the effects were limited given the low technology production and high labor transaction costs. Their conclusion was that “fragmentation may hamper future growth” (Congu and Swinnen 1999).

The main goal of the redistribution of agrarian land was to give it to its actual users. Almost all agricultural land is today owned and operated by small individual family farms (Congu and Swinnen 1999). Ex-owners were meant to be compensated by other means such as coastal or urban land, something that has not been fully implemented (Wheeler and White 2003).

This type of redistribution had legal support. Still, in the mountainous parts where Pobreg is situated it was commonly given to the old owners (De Waal, 2004, Swinnen, 1999). According to De Waal (2004) this was possible because the boundaries were well remembered (the mountainous regions were collectivized much later than the rest of the country), and because ownership over such a valuable resource as land was protected by the traditional law, the Kanun. The Kanun is the traditional law, were marriage rules and land rights are the corner stones. Land ownership is highly valued and borders over land are well

protected (De Waal 2004). Isuf Omuri, SNV Kukës explained the importance of the land rights by the words: “There are two things in life that can never be moved. They are bones in graves, and border stones”.³

Identification of users was done as part of the participatory formulation of the communal forest and pasture management plan (FPMP). The oldest people in the village helped to identify these private owners, and the village borders marking the village’s commons. The identification of users was done by villagers with the help from forest technicians and the Kukës department of forest services. The loss of agricultural land caused by the redirection of Lake Fierza has complicated a situation that would probably have been difficult anyway. There are three bordering villages, of which there were no conflicts with two. There are natural borders to these two villages (the river in one case and the top of a mountain range in the other). The reestablishment of the borders to the third village, where natural borders were missing, included some disputes between the councils of the elderly. The borders were made legal in 2000 (Terthore Management plan).

The work to transfer state owned forests to municipality in Terthore started in 2000. At the time of writing, the ownership right to pastures and forests was being transferred to the municipality. The right to use them belongs to the population of Pobreg.

Pastures are traditionally in private or common use but have rarely been in private entitle in this region (Isuf Omuri). One informant told that the pastures were regarded as “holy”, and that such land should not be sold (Survey interview, 23 June 2008).

Pobreg’s arable land situation is difficult with only 0.02 hectares per capita (only one tenth of the country per rural capita average). The loss of valuable land resources as a result of communist investments has changed the land ownership structure in the village. Having lost 200 of the 221 hectares of arable land, the village relies more on common resources now than previously. There were ninety families in Pobreg prior to communism, of which thirty were small and net suppliers of labor to the sixty larger farms (Ferhat Hallaci). There are no large farms today, according to Hallaci, and specialization in crop *or* livestock production has declined. Instead, farmers are doing their best to support their families with both crops and animal products.

Feminization of agriculture has followed communism primarily because international migration is male dominated (Mileka et al 2007). Salim XX stated that one of the major problems for Pobreg was feminization of agriculture, even though migration is rare. He claimed that the reason was the absence of men in agriculture during communism. They were engaged in off-farm activities at the copper factory and elsewhere and have not returned to farm activities.

3.1.4 Cooperation

If fragmentation and small production sizes are problems for agricultural productivity, consolidation of land to bigger units should be a solution. Cooperative farming may utilize economies of scale, increase competitiveness and facilitate information exchange. Cooperative farming should not be confused with collective farming, where productivity is often decreased by moral hazard problem (Deininger 1995).

³ Border stones are always three. One stone marks the borders and the other two witnesses the border. They represent the person who marked the border with two witnesses.

Land consolidation has been difficult due to administrative aspects. All over Albania, abundant and unused land can be seen. The cost of transferring land is 8400 leke (68.96 Euro 29 August 2008) and all parties have to be present at the time of the transfer (Sallaku and Shehu), which is problematic since there are many absent landlords working in urban areas or foreign countries.

A minority of farmers has started to cooperate to avoid the negative aspects of fragmentation (Lusho and Papa 1998). This usually includes members from the same extended family, and productivity has proven to be higher when cooperating (*ibid*). Pilot projects carried through in 2002-2003 showed that land consolidation (i.e. exchange of parcels) needed a trustworthy coordinator for farmers to encourage them that they would not be cheated (Sallaku and Shehu).

During the focus group meeting in Kruma (5 July 2008) the matter of cooperation was brought up. Participants recalled that cooperation among villagers were not common, although it would be beneficial for the agricultural development. One participant expressed that “individualism is big here”.

Another participant expressed that he had seen cooperation over pastures on a field trip to Italy, and added that it had worked and that everyone seemed to benefit from the cooperation. Another participant said that he had seen cooperation work in Kosovo, and that there was hence no reason that it could not work in Albania. They agreed that more cooperation would probably increase over time, as people understood that cooperation does not necessarily mean that someone benefits on the costs of someone else.

A third participant told about one village, where cooperation had been initiated through a pilot project. The pilot project included cooperation between three brothers and three of their cousins. The group agreed that this would probably be the best way to initiate cooperation, since the rest of the village would then see with their own eyes that no one cheated. This particular pilot project had facilitated market access, since the cost of bringing produce to the market was fairly constant and was now split among six persons.

The survey results from Pobjeg showed that cooperation with everyday tasks is common. The informants were asked if they cooperate with people from other households in their everyday work, and, if so, if this has been made harder or easier by the implementation of the NRDP. 15 persons told that they did cooperate with other households in the management of forests and pastures. One worked only within the own household and two left no answer. Of the 16 persons that answered to the question of whether or not the NRDP has facilitated this cooperation, 15 said it had. All informants claimed that education of children had been made easier through the NRDP, although this is not something that people cooperated with other households on.

No one reported cooperation with banking/ financing or market transfers. It is worth noticing that only three respondents reported to sell anything on the market. The matter of cooperating with banking, financing and market transfers was viewed with suspicion and the translator asked that the question should be removed from the survey questions because “people cannot respect a person asking such stupid things” (Personal Communication, Fabjola Begaj, June 2008). This indicates that this type of cooperation is indeed rare.

Carl Fredrik von Essen (the World Bank, Tirana) expressed that cooperation is not yet popular among rural Albanians. His opinion is that people do not trust a cooperative system because of the bad experiences they had during communism. (Carl Fredrik von Essen, personal communication 14 July 2008).

3.2 Agriculture

3.2.1 Agricultural System and Conditions

The agro-pastoral system combines crop and livestock production. The agricultural production in Pobreg is generally for subsistence farming, where farmers grow what they need regardless of market prices (see the model chapter for details). Of the 18 survey interviews conducted, only three reported that their household sold anything on the market. These three households sold less than 20%. Agriculture is a livestock-crop mixed system where livestock is an important source of energy and also serve as a safety net. Farmers know that animals can be sold in case of an urgent need of cash.

Most small farms do not use the kind of crop rotation we see in the more developed parts of Europe. Commonly farmers plant hay seed in September and harvest in June. The same land is thereafter planted with either corn or wheat. This rotation is used year after year, although agricultural land might be let under fallow or as meadow to recover in the more mountainous parts. The farmers in Pobreg plant hay, corn, alfalfa, wheat and vegetables. Small vineyards and olive groves are kept by the wealthier farmers. Drying fans that were used during communism are not profitable to use for the single farmer.

The average crop production in the area is 4-5 tons wheat per hectare, 4-5 tons corn per hectare and 1.5-2 tons oat per hectare in the district (Sefedin 2008). The interviewees reported smaller harvests (2-3 tons of wheat and corn). The average water content at harvest rarely exceeds 15% and seed is left to dry in the sun.

Soils are red, light and slightly acid. Liming has not been performed since in the 1980s. The communist scale for soil productivity differs from the norm scale used by the FAO. This scale starts with most productive soils at 1 and least at 8. Soils in Kukës range from 5 to 7, with the most productive soils in the valleys bordering lakes and rivers. No attempts to estimate a nutrient response curve has been made since 1985. A recommended nutrient application is 300 kg/ha with 2-3-1 proportions (N-P-K⁴). The largest problem for agricultural production in Pobreg as well as the area is however not nutrient but water scarcity and irrigation systems used under communism are rarely used. Pobreg's irrigational system's pipes could still be used, but the pump was destroyed in 1991 and irrigation is for that reason not performed in the village.

3.2.2 Livestock

Cattle are popular domestic animals and the domestic, nameless breed produces some 1050 kilograms per lactation on average (management plan). Some high producing breeds have been introduced, and in the semi-urban areas Jersey and Austrian mountain cows can be seen. These cows produce at most 3000 kilograms per lactation (livestock specialist), but the average production of foreign breeds in Pobreg is only 1400 kilograms. Cows live eight or

⁴ Nitrogen- Phosphorus- Kalium

nine years before they are put down due to reduced productivity or fertility problems. Cows graze freely in rural and semi-urban areas. Hay and Alfa Alfa are important energy sources during winter. Foreign funding has helped to introduce artificial insemination. Sheep, goat and poultry are common animals. Sheep are of local breed Rube and Bardhore and goats are referred to as just goats.

Livestock is important in the income and most all of the interviewed farmers had at least some animal (see chart 1). All informants had at least one cow. The average numbers of cow among the interviewees were 1.8 cows. Pack animals were also common and all except two had at least one. Cattle and goats were kept in larger herds.

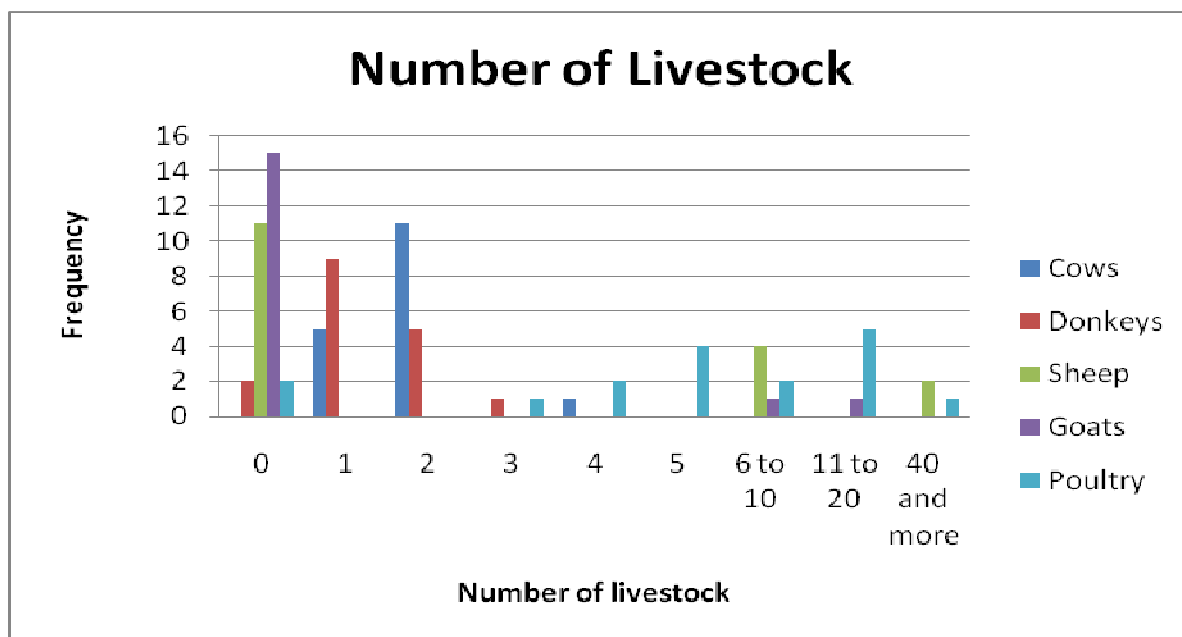


Chart 1. Number of livestock reported by villagers in Pobreg. The total number of respondents were 17.

The survey in the village showed that 18 of 18 (100%) wanted more animals. They seemed surprised at the question as if it was absolutely obvious that they would want more animals. This was not the case in Tregtan, the other village where these questions were asked. Tregtan is richer, and has experienced substantial migration. The constraints to animal production in Pobreg are presented in chart 1. The most common constraint was the budget, which accounted for 50% of the first most important constraints. Only one person (a man of 24 years) mentioned market access as a limit to animal production. Two persons chose pastures as the most limiting factor.

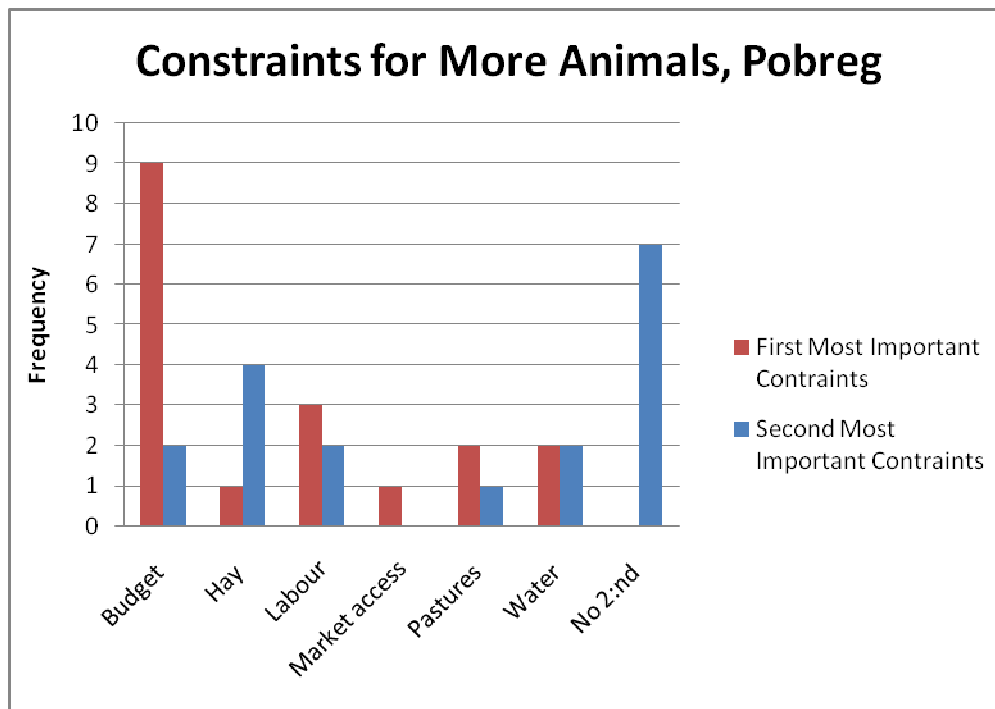


Chart 2. First and second most important constraints to why farmers cannot have more animals. The total numbers of respondents was 18.

3.2.3 Constraints to Agricultural Production

Informants were also asked to choose between a number of inputs and outputs to production (see chart 3). All 18 informants reported that they wanted some of the things they were asked to choose between. Cows were not given as an alternative, because it is widely known that cows are a sign of wealth, and cows were therefore assumed to be dominant. A few informants said that if they could have another cow, they would not need anything else.

Nine of the eighteen respondents reported water as their first choice, three reported pastures and one reported manure/ fertilizer. In other words, 13 of 18 reported strict agricultural inputs as the alternatives that would give them the highest utility. The other five reported sheep (three) and goats (two). At the end of each interview, people were asked if they wanted to ask or add anything. All people that wanted to add something mentioned water as binding constraint. Many of these said that if they only had water, they would need nothing else; with water they could produce of the other things themselves.

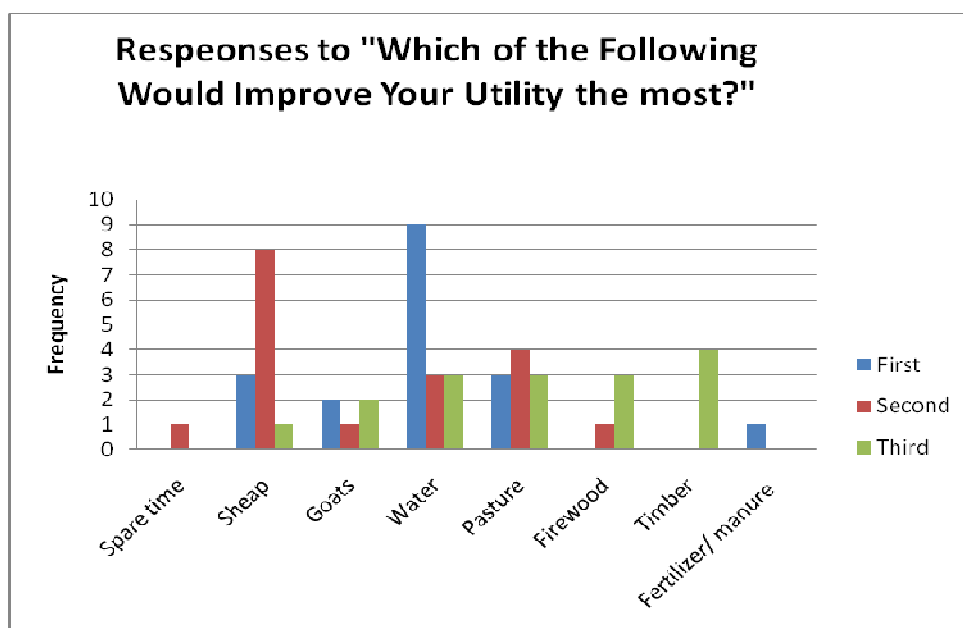


Chart 3. Informants were asked to rank which of a number of production inputs and outputs that would increase utility the most. Half of the respondents choose water as their first choice. 13 of 18 choose an input as the first choice, which indicates that there are (hard) binding constraints in their production. Cows were not included in the alternatives. The total number of informants was 18.

3.3 Forests

Albanian Forests are classified as high forests, firewood forests or brush-wood forests .High forests are used for timber extraction and firewood forests for firewood. Brushwood forests are used for grazing of goats and extraction of sticks to vineyards and such.

Pobreg has high forests situated a couple of hours by foot away from the village. The forests close to the village are defined as brush-wood forests and are not older than 5 years. These forests need protection, but the grazing and oak leave extraction for feed does not harm them.

3.3.1 Timber Products

10 of the 18 informants who answered to the survey questions wanted more timber products (chart 4), and 12 of 18 wanted more fire-wood (chart 5). Lack of infrastructure as well as the distance is the most important reasons to why they did not extract more. One person referred to market access as a problem.

Pobreg's forests are common pool resources, although there are indications that they exhibit open access characteristics. One of the participants in a focus group meeting said that the problem with the forests was that they belong to no one. He was then asked: Do you mean no one or everyone? He confirmed that he meant no one, and the others shook their heads in agreement. Still, there are a number of formal and informal rules hindering the villagers and others from extraction. On the other hand, no informant mentioned rules as a hinder to timber or firewood extraction.

A woman aged 85 (2008-06-23) said that even though infrastructure was badly needed and was stopping her from using more wooden products, as she wished, she saw positive effects of the bad infrastructure. She meant that with better infrastructure, the forests would be cut down immediately and that the forests were protected by the bad infrastructure. A man of 48

interviewed two days later expressed the same opinion and said: “The forest is good only because there is no infra-structure”.

During a focus group meeting in Kukës on July 2 the participants were asked to comment on this statement. They all agreed with the villagers and told that a private company had shown interest in investing in infrastructure for these mountainous forests. The municipality had decided to deny them the investment possibility. One participant pointed out to the others that poverty and underuse is better than total degradation of the forests. They agreed that this would be the result of better infrastructure.

Scarcity was not commonly referred to as a hinder to extracting these resources. During an interview with forest technician Ilmi Gjani this was confirmed; the forests would need to be harvested and replanted. The lack of infrastructure makes the transportation of harvested timber very hard.

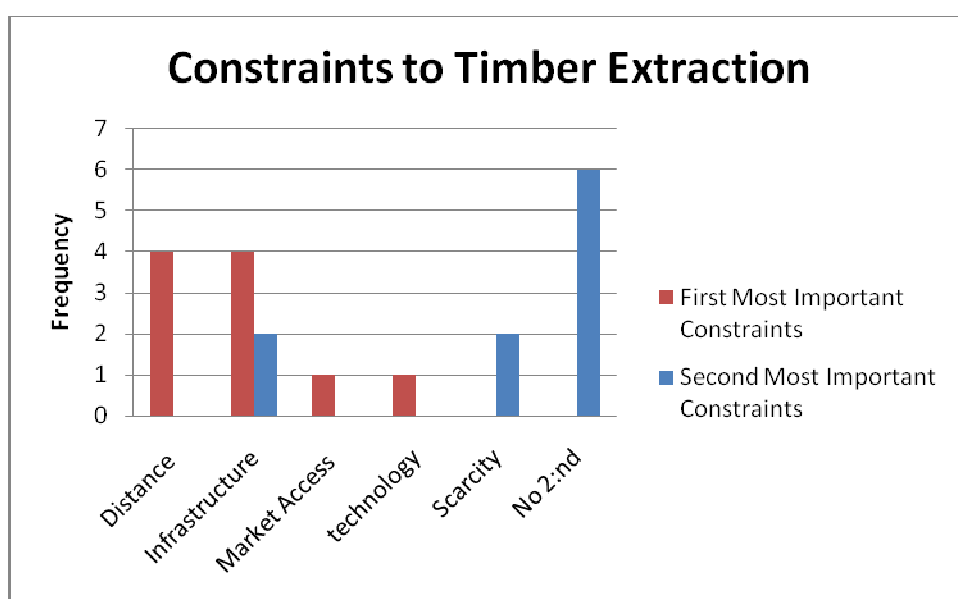


Chart 4. First and second most important constraint to timber extraction. The total number of respondents was 18 of which 10 wanted more timber.

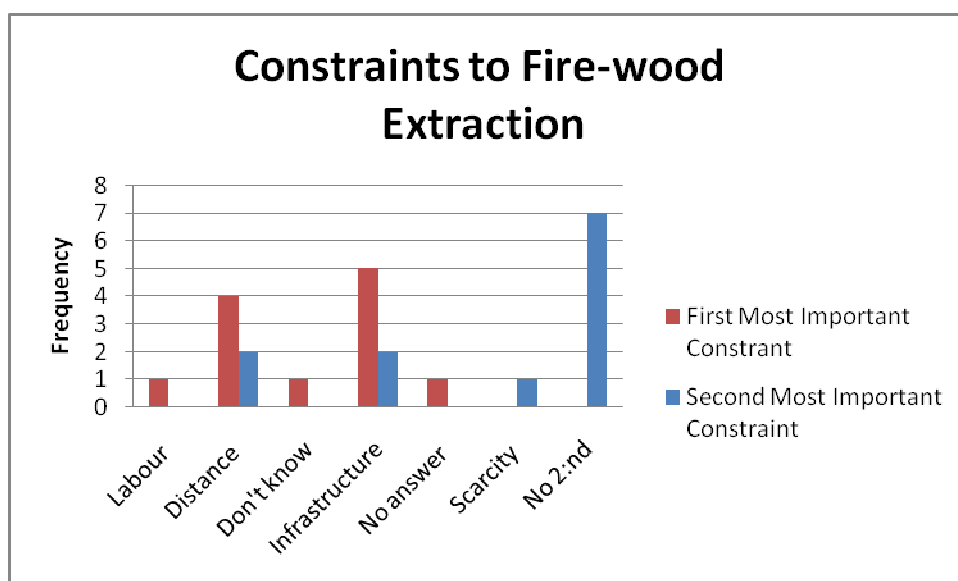


Chart 5. First and second most important constraint to firewood extraction. The total number of respondents was 18 of which 12 wanted more firewood.

3.3.2 Non-timber Products

The two kinds of non-timber forestry products that respondents were asked to relate to were medicinal herbs and berries/ fruits.

Sage is the most commonly harvested medical herb. The price for sage is approximately 1 Euro per kg if they are not cleaned and Euro 1.50 if they are clean. The market is almost stochastic, and farmers have no possibility in choosing when to enter. Villagers are contacted by a middle-man and offered a price for harvesting a certain amount of a certain kind of herb. Villagers do not know before-hand when the person will ask for it. Storing capacities are low and herbs are usually dried on the ground in the garden, sometimes sharing the area where poultry live (own observation). Primarily women and children do this work with the help of donkeys (Isuf Omari).

17 of the 18 respondents wanted more medicinal herbs. The constraints (see chart 6) have been slightly modified for this presentation, and any answers such as “it hasn’t rained” or “the components of the nature” have been presented as natural scarcity. The answer “scarcity/ overuse” was in some cases accompanied by comments that people had taken too much, that investments are not made properly or that everything close to the village is already extracted.

The focus group (July 2) talked about this and meant that the lack of investments, combined with bad timing and way of harvesting makes today’s use highly unsustainable. One “bad” harvesting way is that the herbs are taken with bare hands and so roots often fall off. The bad timing referred to is that herbs are often harvested during the wrong time of the year. One might assume that the reason to this is how the market works.

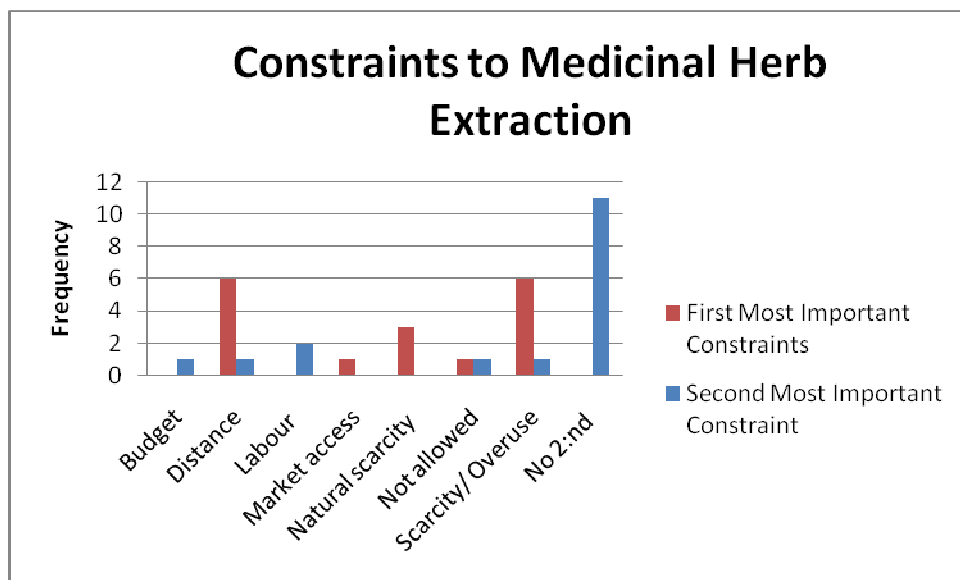


Chart 6. First and second most important constraint to medicinal herb extraction. The total number of respondents was 18 of which 17 wanted more medicinal herbs.

Of the six people who wanted more fruits and berries, four referred to the distance as the primary constraint. Two said natural constraints (little rain) and scarcity/ overuse. One mentioned market access.

3.4 Pastures

3.4.1 Albanian Pastures

Overgrazing has become a major problem for Albanian pastures. Shundi (FAP homepage 1) concludes that the stocking rate is about 20% higher than the carrying capacity if only sheep are considered, 87 % higher if both sheep and goats are included and 310% higher if sheep, goats and cattle are included in the calculations. The stocking rate is not evenly distributed and it seems that winter pastures are overgrazed while summer pastures are undergrazed. (ibid).

The dry matter production on most pastures is less than 600 kg/ hectare on average (Shundi), which is very low. Poor natural pastures in Sweden may produce 1500 kg per hectare (TAURUS homepage 1) and never less than 800 (Eva Spörndly, personal communication 5 August 2008). The winter pastures in Pobreg produce less than 400 kilograms per hectare and year (own estimations based on the management plan).

An interview on June 9, 2008 with professor Tobako, head of the Forestry Department at the Agricultural University and director of Department for Forest Policies, revealed that pastures are seen as a problem at the academy. He strongly emphasized the need for more reforestations, and gave the primary reason that forests had higher bio-diversity. The author talked about how pastures in Sweden are preserved because they have a great variety of species. Tobako responded that Albanian pastures are much too overgrazed to habituate rare species. This was confirmed by Carl Fredrik von Essen (personal communication 13 July 2008).

A major problem in the Albanian traditional herding system are the natural gaps in grass growth including a longer one during the hot, dry summer and a shorter one during winter. The longer summer gap was traditionally solved through the migration of animals to summer pastures. Summer pastures are here defined as mountain pastures located so far away from the village that it is not possible to walk there and back with the animals over one day. The habit of summer pasturing has declined since 1990. Shundi reports that the reasons to this are emigration to urban areas, unwillingness to move with the animals and difficulties in organizing the great number of small owners to coordinate summer pasture herding (Shundi, FAO homepage 1). Kume et al simply concludes that the families having too few heads do not move animals. By 1998, overgrazing was acknowledged as a major problem for some pastures, although summer pastures were improving due to decreased grazing (State of the Environment Report 1997-1998).

3.4.2 Why Grazing Matters

Rotational grazing is when one section is left to rest and hence re-grow while animals are allowed to graze somewhere else. The traditional use of summer and winter pastures can be seen as a rotational grazing system, where some pastures are left to re-grow for several months while the others are grazed.

Pastures should not be overgrazed. Amaral-Philips and Hendricks recommends never overgrazing a pasture, since it takes longer for an overgrazed plot to recover than it does for

one that is optimally grazed (Amaral-Philips and Hendricks). See figure 2 for illustrations of grass length and root systems.



Figure 2. This figure shows how grazing effects the root system of growing grass. The heavier grazed grass is, the smaller the roots are. Source:<http://www.managingwholes.com/overgrazing.htm>

Also undergrazing leads to lower production than optimal grazing does. This is because some species may grow faster and better than others when the land is not grazed, and these are not necessarily desirable plants from the animal growth and production perspective. Too high grass is easily destroyed (Eva Spröndly, personal communication).

3.4.3 Pastures in Pobreg

Both winter and summer pastures were observed in Pobreg at several occasions with forest engineer Fabjola Begaj (see figure 3 to 6 for illustrations of the pastures). She stated that the winter pastures were overgrazed. The winter pastures are, according to her, heavily overused. Being used all year around, they have no chance to recover (Fabjola Begaj, June and July 2008). The winter pastures have traditionally been used for grazing during spring and fall and in rainy summers, they were also used as meadows. The hay yield depended on the rainfall but one or two harvests were common.

Everyone present at the focus group meeting was concerned about the pastures close to the village, primarily because of the erosion problems (see figure 4 and 6 for illustrations). Erosion is primarily a problem in the spring, when storm water floods down the mountain sides. When Ferhat Hallaci, member of the forest association, was asked about these problems he did not link the erosion problems with high animal pressure. Carl Fredrik von Essen, the World Bank Tirana and Fabjola Begaj, stated that erosion is highly correlated with too high animal pressure (4 July 2008 and 30 June, 2008).

The summer pastures have more grass in summer (see figure 3 and 5). The focus group (July 2008) defined them as abundant. The summer pastures were described as very good and one of the present told that they had been proposed by the government to become a protected area because they were in such good shape.





Figure 3 and 4. Summer pastures bordering the forest (left) and winter pastures (right) with the unproductive land due to sulfur dioxide pollution to the right. July 2008. Photos: Private.

Figure 5 and 6. Close-up of vegetation on summer (to the left) and winter (to the right) pastures. Note that these pictures may not be representative. July 2008. Photos: Private

Respondents were asked to tell which land tenure they would prefer for the future management of pastures. Eleven respondents said that they wanted the pastures to be privately used in the future and four that they wanted them to remain in common use. (Private was defined by the interpreter as private *user rights*, not *entitles*.) One woman said that she believed that management would be better if they were private, but that this would result in an unfair distribution of resources. She assumed that she would get less than others, since she had very few animals. “I would take better care of it if it was my own, but then I would have so little” (Survey interview June 24 2008). Three respondents wished to change the use of the pastures to grow crops or plant fruit trees and the others wanted them to remain pastures.

3.5 Agents Influencing Natural Resource Use

There are a number of agents that influence how natural resources are used in the village of Pobreg (see figure 7 for an overview). This section identifies these agents. They are presented in the thesis since villagers claimed that they were important and influenced natural resource management and use.

Albania is a democracy and the parliament legislates. Recently, decentralization in forestry and pasture administration has put much of the actual decision-making at district level. The local government enforces laws through the forest police, who are armed and who’s primary tasks is to protect the forests from illegal logging.

The market for extractable goods such as timber, fire-wood and herbs is regulated by the national law and enforced by the forest police. Villagers have legal right to extract fire-wood for domestic needs, and to extract non-timber products for selling. They have no right to extract timber for market transactions. Traditionally, also the council of elderly have had this role of protecting the natural resources.

The NRDP project is financed by the World Bank, Sida, GEF and GoA. Its goal is to reduce poverty, ensure sustainable use of natural resources and improve common pastures and forests. These three agents set the overall objectives, but villagers are, through the forest association, allowed to express the village’s needs. The forest association in Pobreg is

constituted by a number of men and one woman who, assisted by a consultant financed under NRDP, formulate the FPMP for the development of the natural resources. They get help from state-employed engineers in planning constructions such as water reservoirs and micro-catchments. SNV teaches the NRDP trainers how to deal with for example forest fires or illegal logging. They also conduct surveys to investigate for example market potentials and economic development.

The council of elders is traditionally, and still, responsible for order and rule obedience in the village. The council of the elderly was very important in establishing the village borders in cooperation with neighbouring villages' councils. They also provide social transfers within the village. Last winter, the ten poorest families were given free alfalfa from the rest of the village for their animals to support the winter. Even though the matter of sustainable use of common natural resources traditionally lies within the responsibility of the council of elderly, they do not always intervene. They know that the families performing illegal logging are poor and need the money far more than the forests need protection (Hallaci and his brother, member of the village council).

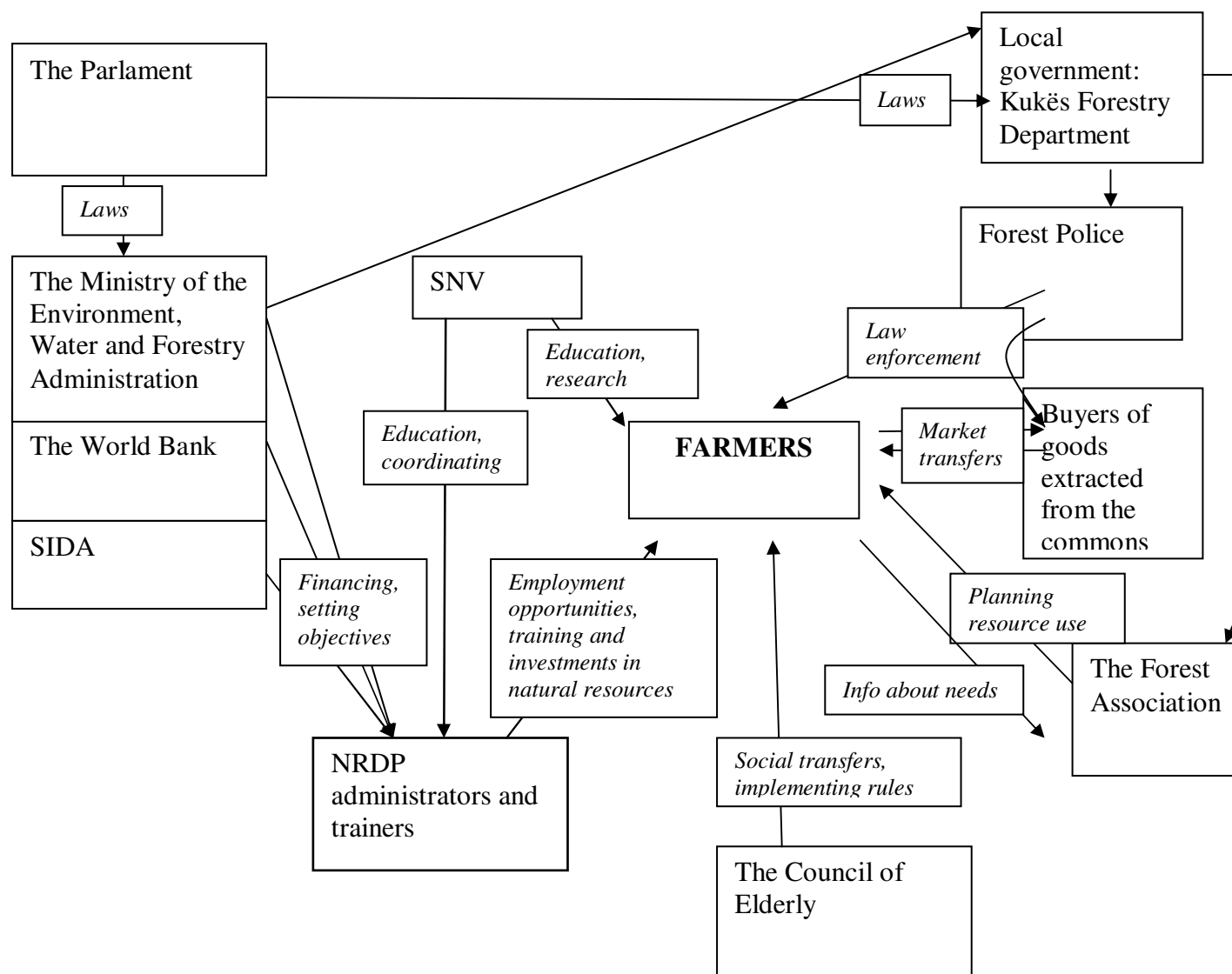


Figure 7. Schematic view over relevant agents for natural resource use.

3.6 Incentives for Pasture Use

The main incentive to graze on winter pastures is that it is easy to combine with other farm activities, since these pastures are located close to the village. Cows will walk back to the house when they need to drink. The main incentive to use the summer pasture is that it involves substantial yield increases, when animals are given the same amount of maize as they are in the village.

According to the interviews, farmers are well aware that the pastures close to the village are overused and that bringing animals to the summer pastures would improve productivity. It is still widely known that most animals do not graze in the mountains. Several informants expressed that they missed the times when the animals grazed in the mountains.

When asked why they do not use them, farmers continuously answered that it is not possible to do so with the few animals they keep today. No informant gave a different reason. Some informants also added that they did not have the hut to live in, and that infrastructure was poor which makes the transportation of feed and milk time-consuming.

The topic was brought up during both focus group meetings. One of the participants in the first focus group said: “Most farmers have only a few animals and it is too far to bring them all the way up to the good grazing. The pastures in the forests are summer pastures, and someone has to move there to look after the animals. With only a few heads the cost is just too high. The distance is large and infrastructure insufficient.” The others agreed and concluded that farmers would benefit if they could find ways to use these resources.

The second focus group resulted in similar answers. The participants claimed that it was primarily the small agricultural units that hindered people. They all agreed that summer pastures would be more used if these units were larger. They all recalled how summer pastures had been more used in their childhood (during and before communism). Moreover, they saw the need of investments for the summer pastures and concluded that one single farmer could not perform such investments by him- or herself. The investments they were talking of were housing for herdsmen, fencing for animals and possibly also improved drinking facilities for the animals. These are all things that have been there in the past but that were destroyed after democratization (Focus group meeting, Kruma, 6 July 2008).

Farmers and local officials were asked how many cows that would be needed to make investments in the summer pastures profitable, or “worth it”. All answers ranged between 8 and 12 cows.

3.7 Outcome

The majority of the animals are not brought to the summer pastures. There are, according to a key informant (widow, 49, 8 of July 2008), three types of households that do use the summer pastures. The first kind is households that still have a cottage in the mountains. They frequently bring others’ animals too.

The other two types allow for someone else to herd the animals. Families that have cottages charge 1000 leke (8.21 Euro August 29) to herd a normal household’s animals (for example one cow and a few sheep or goats). The charge differs a little depending on kinship and the number of heads. The first household type that uses this service is that with relatively slack budgetary constraints. They can afford to pay the charge for their animals to produce more milk and to support the hard winter.

The other kind of household that use the service is very poor, and they let their animals graze in the mountains and pay their shepherd with all the milk produce of their animals for the time they spend in the mountains. The reason to this is that they know that by letting their animals graze well and grow fatter, they are more likely to support the harsh winter and to get in heat. The calves are born during spring in Pobreg, and that these families hence sacrifice the top lactation production as payment.

The whole community has to pay for the overuse of summer pastures. Several farmers reported to sell nothing but to buy hay on the local (and Kosovan) market since the pastures do not serve as meadows any longer.

4 Literature Review

4.1 Property Rights and Natural Resource Use

Four types of property rights are interesting when analysing Pobreg's natural resources. They are state, individual, common and open access property rights. State rights refer to when the state has the right to extraction and performs decision-making over a resource. The state may or may not give some rights (for example the right to extract certain goods) to the local population. Individual or private rights give one individual the right of decision, use and extraction. Common property represents private property for a group – people not belonging to the group are excluded from as use and decision-making. Open-access is when there is no authority over a resource, and access is free to anyone. There are situations where property is *de facto* open access, because the righteous holder of rights has lost control over access (Bromley 1990). These rights are important for analyzing Pobreg, especially since pastures there have characteristics of several property rights.

As in Ostrom's article (1999) forests and pastures are here defined as common pool resources. Common pool resources are characterized by difficulties of excluding others from using it, but with strong competition in the consumption of the resource. They are thus rivalrous in consumption but excludable only at a high cost. They may or may not generate public goods such as biodiversity. Pastures are, like fish and some other natural resources, stock resources. Sustainable resource management implies that there is a continuum of optimal harvesting levels, which depend on how future and present consumption are weighted. If the harvest exceeds growth sufficiently enough, the resource is degraded irreversible or reversible (Ostrom 1999). Pobreg's forests may also exhibit some open access characteristics.

The famous article "The Tragedy of the Commons" (Hardin 1968) has been very influential when analyzing common resources. Hardin's main conclusion is that common resources risk overuse because the individual economic agent receives all positive effects of increasing the use, while negative effects are shared with everyone using it. The resource will degrade unless access is restricted in one way or another, or, to put it in Hardin's own words, "Freedom in a common brings ruin to all". The problem can be limited if access is no longer made open to everyone. Allocation by wealth, privatization, auctioning, lottery or first-come, first served basis are practical ways to solve the problem (Hardin 1968).

One of Hardin's examples is pastures, where sustainable use of resources is granted only as long as the carrying capacity of the resource exceeds the stocking rate. Population growth eventually brings stocking rate above carrying capacity, because each herdsman maximizes his own utility. The result is erosion and weed-dominance on the pastures and rangelands (ibid).

As mentioned above, allocation of resources can rescue the commons and ensure sustainable use (ibid). Empirical evidence has shown that there are ways to ensure that resources are not overused – common property regimes. Feeny et al (1990) provides a good review of this literature. Ostrom (1999) points out a number of attributes under which self-organizing of protecting natural resources is feasible. In short, the resource should not be in a state beyond saving, but in need of protection. It should also be somehow predictable – outcome should be able to trace back to actions and information and knowledge should be available at reasonable costs. The users should trust each other and share a common understanding and have similar economic interests. They should also have at least minimal skills of organization and have

some level of autonomy so that they are not ruled out by authorities. They should depend on the resource and hence value it and their personal discount rate should be sufficiently low.

The tragedy of the anti-commons shortly says that common recourses risk getting underused when economic agents lack possibilities of excluding others (Heller 1998). The initial article on this tragedy described the case of Moscow grocery stores. Kiosks emerged, while the grocery stores were left abandoned. No less than 6 categories had the right to sell the stores, 3 had the right to lease it, 5 had rights to receive revenues from leases, 3 had rights to determine use and yet another category had the right to occupy them. This led to the conclusion that many parties need to agree for one storefront to be used. If they, for some reason, fail to agree or find the cost of agreeing higher than the value, the resource will be left unused. This results in underused resources.

4.2 Utility Maximization

Neoclassical economic theory is based on that agent maximize utility under constraints. Such constraints may be hard or soft, and limit the choices agents can make. Transaction and adjustment costs are assumed to be zero (De Elassi 1983). The fact that true transaction costs exists (Coase 1937; Calabresi 1968) has targeted criticism to pure neo-classical concepts. Coase (1992) wrote that “a large part of what we think of as economic theory is designed to accomplish what high transaction costs would otherwise prevent”. Foss and Foss (2005) stresses that the value that a resource may generate to its owner(s) is constrained by the transaction costs involved in realizing and controlling the value.

Transaction costs have been used to explain the existence of industrial clusters, which have some similarities with the focus of this thesis. Just like is done here, the industrial cluster theory claims that location does matter. Industries organizing in clusters may economize on transaction costs such as costs related to information exchanges (McPann 2002).

4.3 Pasture Use in the Literature

There are some experiences of how agricultural development affects use of summer pastures. Experiences of declined summer pasture (and pasture in general) use exists in different parts of the world. Dahlström (2006) stated that only one to two percent of the pastures used in her study sites in southern and central Sweden between 1620 and 1950 are grazed today. Cooperative pastoral systems have decreased in Europe, and they do not offer the best potentials for agricultural use due to climate and topography (Gueydon and Hoffman 2006).

Some similarities with the Pobreg case were found with German collective alp pastures investigated by Gueydon and Hoffman (2006). Collective alps were used by lowland farmers organized in groups at each alpine pasture. As in Pobreg, the permanent mountain pastures were used mainly for fodder, although they also generated values such as habitat for endemic species and recreational and cultural values. Another similarity was that the alpine pastures were not overused but instead ranged from underused (with problematic growth of bushes) to well grazed.

Also similar with the Pobreg situation is that the right to use these pastures were limited to a certain group of people, the community. A major difference is that the group of people with rights to use the pastures have declined as the fraction of farmers in the total population has.

In Pobreg, the number of people depending on livestock production has rather increased as off-farm activities have become scarcer.

Shepherds played an important role in the German grazing system, and the farmers themselves only herded their animals in one of organization. Rights and shares in the organization varied between organizations. Animals, livestock units, per capita and no individual but only collective shares were the most common. Only four of twenty-five pastures were unprofitable.

Merns (1996) report similar post-communist tendencies as in Pobreg for Kirghizstan. Livestock was kept as a part of a diversified agricultural production, possible combined with off farm activities. This made the population “part-time herders”. The incentive or possibility of bringing animals to the summer pastures is small for such part-time herders, why farmers tend to prefer using pastures closer to the village.

Remote summer pastures are thus underused on the expense of overused spring/autumn pastures. This was regarded as “perhaps the most serious issue facing Kirghizstan’s common pastures at present”. The lack of supplementary fodder was also seen as an important reason to the overuse.

He stipulated the reasons to this as: “The main reason for this underuse of available high quality, high altitude summer pasture land is the shortage of working capital for the purchase of fuel with which to move herding families to the summer pastures, and to provide them with a limited range of support services while they are there” (ibid).

5 Model and Data

The choice of what pastures to use is an economic problem. This chapter aims to model the problem and assign data to it.

5.1 Model

5.1.1 Choice of model

To model the production choices in Pobreg adequately, stylized facts of economy typologies were studied. Figure 8 presents different kinds of farm household models. Holden (2004) points out that while real world villages usually fall within the quadrant, the extreme cases in the corners are rarer. The transaction costs in the figure most often describe costs related to accessing external markets.

		Differentiation	
		Low	High
Trans- action Costs	High	Isolated village No local or External trade	1. Isolated village Local trade only 3.
	Low	Neoclassical economy No local trade	2. Specialized neoclassical economy with trade 4.

Figure 8. Farm household economies. Source: Holden 2004

Figure 9 shows which models that are appropriate in which case. Non-separable models (i.e where consumption choices are not separable from consumption choices) are recommended where transactions costs are sufficiently high for the household to prefer producing what they want to consume regardless of market prices (Holden 2004). High differentiation requires models that allow agents to act differently (CGE models).

		Differentiation	
		Low	High
Trans- action Costs	High	Nonseparable farm household models	Village CGE-models with non- separable farm household models
			Village CGE-models with separable farm household models
Low		Separable farm household models	

Figure 9. Suitable models for different kind of economies. Source: Holden 2004

Households in Pobreg are not specialized in any production, nor do they sell much on the market. They do buy hay on the local or Kosovan markets when the produce is not enough to cover the needs, and their wheat production is rarely sufficient for providing them with flour throughout the whole year. Market access is strictly limited in Pobreg, although non-existing farm output surplus might be an equal important variable to explain why so little is sold on the market. All farms are relatively small in Pobreg, and there are no large farms that specialize in any particular production.

Non-separability strictly means that the market price differs from the shadow value that a good produced in the family brings to the producer. “Household production and consumption decisions are non-separable whenever the household shadow price of at least one production-consumption good is not given exogenously by the market but instead is determined endogenously by the interaction between household demand and supply” (Löfgren 1999).

Since this is true for Pobreg, a non-separable household model has been assumed to best fit the production in Pobreg. It is important to emphasize that a village economy may change over time because of economic development and/ or policy interventions and demographic changes. While Pobreg’s production in large is non-separable since the farmers sell little or nothing, it has separable characteristics because the farmers buy agricultural inputs and outputs on the market.

A shortcoming of the traditional farm household model is that risk attitude is not included. For this reason, empirical results based on the below type of model have often not been significant. Potential risk aversion is not included in this model, due to lack of data in the village and in the country.

The simplest version of the household model is presented in equation (1) to (3). Utility is derived from goods consumed, subject to the production constraint, which says that the same resources are allocated to produce the two goods. The household decision is based only on the utility the goods provide, and takes no account of market prices. Thus, it is non-separable as equation (3) shows.

$$\text{Max } U = U(q_a, q_n) \quad (1)$$

$$\text{s. t. } q_a = f(q_n) \quad (2)$$

$$L = U(q_a, q_n) - \lambda g(q_a, q_n) \quad (3)$$

Where q_a, q_n represent consumption goods

5.1.2 Production Choices and Natural Resources

Figure 10 presents a schematic view over what influences the natural resource (such as pastures) use in Pobreg. Natural resource in (t+1) is affected by random effects that are exogenous to the model (i.e. rainfall) and by the choices made in the previous period. These choices, the choices of agricultural and natural resource management, depend on several things. Exogenous economic institutions and household assets are important determinants.

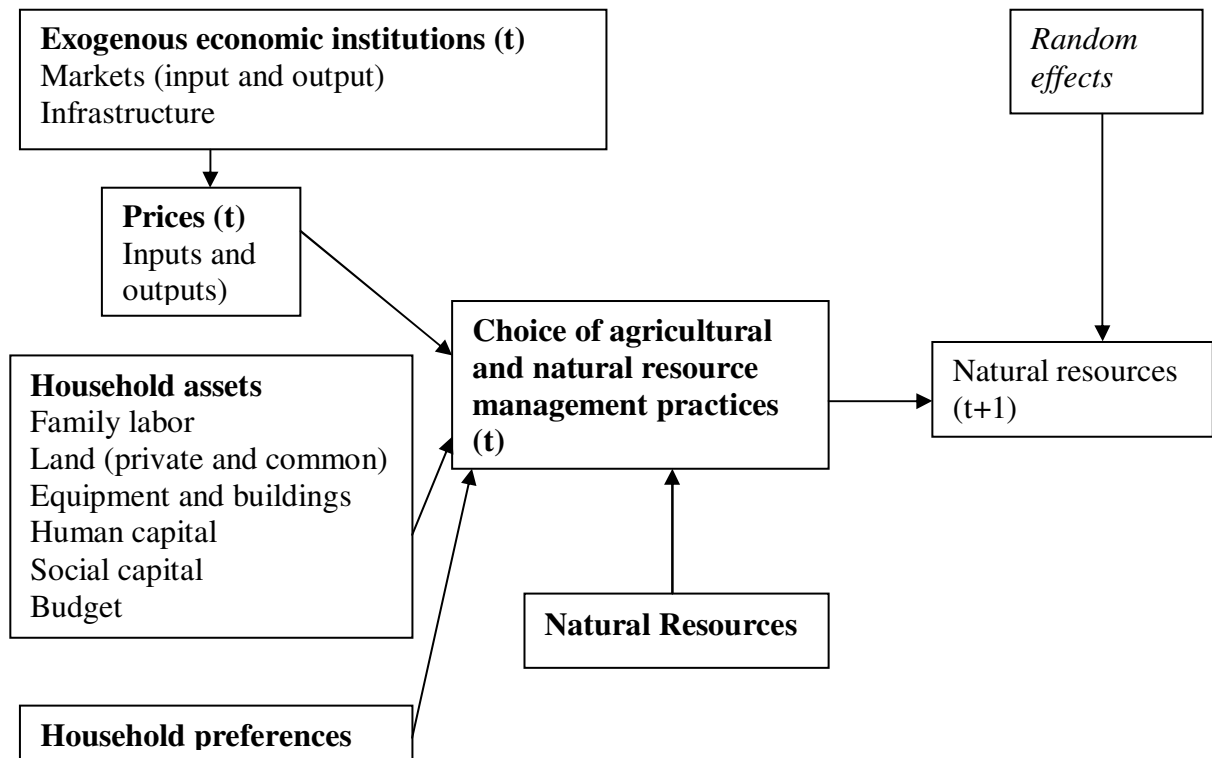


Figure 10. Schematic picture of links between households assets, farming practises and natural resource outcome. Developed from Swinton (2003)

Farmers maximize utility, which is derived from consumption of goods. The household is indifferent between consuming bought and consuming own produced goods.

5.1.3 Model

The link between livestock production and crops is corn. Wheat production is not necessarily conducted, and wheat is never given to animals as fodder. Even though wheat – when grown – contributes to the family’s utility, wheat along with vegetables, grapes and other agricultural output are left out of further modelling to instead focus on livestock production.

Corn is an output from the crop production and an important input to livestock production. Hay (purchased, from the arable land and from the permanent pastures/ meadows) and alfalfa from other arable land are additional sources of energy. An important constraint to production is water (rainfall), affecting grass/ corn and animal growth/ milk produce. A further simplification is that animal kind is not accounted for. Instead, we calculate animals as livestock units based on their weight.

Utility from livestock is maximized through two consumption products, milk and meat as in equation six. Meat and milk products are a function of breed (B), feed (simplified to energy, E) and water (W). Since production estimated are known only for cow milk yields, the below model is simplified to this product only.

$$U = f(Y) \quad (4)$$

$$Y = f(E, W, B) \quad (5)$$

Energy is given to the livestock through the feed and the grazing. The milk yield to be expected is derived from the simple expression in equation 6, given a certain breed and water level (Spröndly .

$$Y = \frac{E - 0.507W^{0.75}}{5} \quad (6)$$

The production function of both meat and milk should include responses to diet and water and be dependant also on breed. The dietary choices are of particular interest to find out the conditions under which summer pastures should be in use. Feed may be constituted of hay, grazing, maize or alfalfa (equation 7).

$$E = d_1 * q_h + d_2 * q_g + d_3 * q_m + d_4 * q_a \quad (7)$$

E = Energy
 q_h = quantity of hay
 q_g = quatity of grazing
 q_m = quantity of maize
 q_a = quantity of alfalfa
 d_i = Energy content for feed i

The consumption and production of alfalfa, hay and maize are limited by land, technology, water and budget. The household's income is allocated to agricultural inputs, outputs and other goods so that utility is maximized.

Grazing activities can be allocated to winter pastures (g_1) and summer pastures (g_2). The total energy derived from the pastures is the sum of the grazing on both pastures (equation 8).

$$q_g = q_{g_1} + q_{g_2} \quad (8)$$

Grazing is constrained for both pastures. The sum of grazing from all livestock in the village cannot exceed the total quantity of grass, which is a function of the land and how it is managed (equation 9 and 10).

$$\sum_n q_{g_1} \leq f(Q_{g_1}) \quad (9)$$

$$\sum_n q_{g_2} \leq f(Q_{g_2}) \quad (10)$$

The economic problem the agents face is to chose grassing activities to maximize utility. A profit maximizing model is assumed to fit this problem, since there are some costs involved in the problem. This problem is not, like previously stated, non-separable from market prices. Farmers buy hay on the market, and taking a loan to invest in housing for summer pastures definitely involves the market.

Arable land production is limited by land and other constraints. It is assumed that farmers give their livestock as much of agricultural output-based feed as they can, why we allow the economic problem to be limited to only summer and winter pastures. Potential substitution between grazing and other feed (such as maize) are not expressed in this model.

The utility function earlier presented has been transformed to a profit function. This is a simplification that is reasonable given that there is no information about what utility the population may derive from activities and goods. (P_y^*) is the shadow value of milk. FC (fixed costs) and variable costs (VC) are different for summer and winter pastures. We assume that farmers maximize profit when they decide what pastures to use. This is probably not fully true, since they normally do not sell milk.

The profit function for winter pastures simply consists of revenues (milk yield multiplied by its value) the labor cost of herding animals, and the cost of degrading pastures by overuse (equation 12). This differs from the profit function for summer pastures, where there are also costs relating to the investment and transaction costs (equation 13).

The shadow value of grazing is assumed to equal the shadow value of hay, which is assumed to be the market price. The cost of grazing on pastures is the negative impact grazing has shared with all other users (n) and labor costs.

$$\pi = TR - TC = Y * n_h * P_y^* - FC - VC \quad (11)$$

$$\pi_{g_1} = TR - TC = Y * n_h * P_y^* - C_{investment} - L - OC - TrC - \frac{C(grazing)}{N} \quad (12)$$

$$\pi_{g_2} = TR - TC = Y * n_h * P_y^* - L - \frac{C(grazing)}{N} \quad (13)$$

Section 5.3 presents estimated results of the profit functions. These results show how many animals that are needed for a family to make the necessary investments for using summer pastures.

5.2 Data

Empirical evidence on production estimates, grazing effects and nutritional values of pastures was scarce at the site, and a number of assumptions have been made to fill the model with data.

4.2.1 Livestock Production Estimates

Dairy cows. There is little information to be found about how cows are affected by restricted diets because such research is considered unethical in the Western countries and is hard to carry through in less developed countries (Sigrid Agenäs, personal communication 30 July 2008).

One article where cows with restricted diets were given more feed was found (FAO homepage 2). The effect of increasing the concentrate feed to dairy cows has been made by the FAO, where it was found that the additional energy in the beginning of the lactation cycle

had a major influence over milking performance throughout the whole lactation period. The upper line in figure 12 represents the milk yields of cows given additional eight kilograms of concentrate in the first quarter of the lactation, the middle the yield of those given an extra four kg throughout the first half of the lactation curve and the third the yield of those given additionally two kilograms of concentrate throughout the whole lactation curve. Actually, by allocating most feed to the early lactation 611 kg of extra milk per cow could be extracted over the full lactation curve. (FAO homepage, 2).

This would indicate that it is important for the whole lactation process that cows are given sufficient energy in the early phases of the lactation curve.

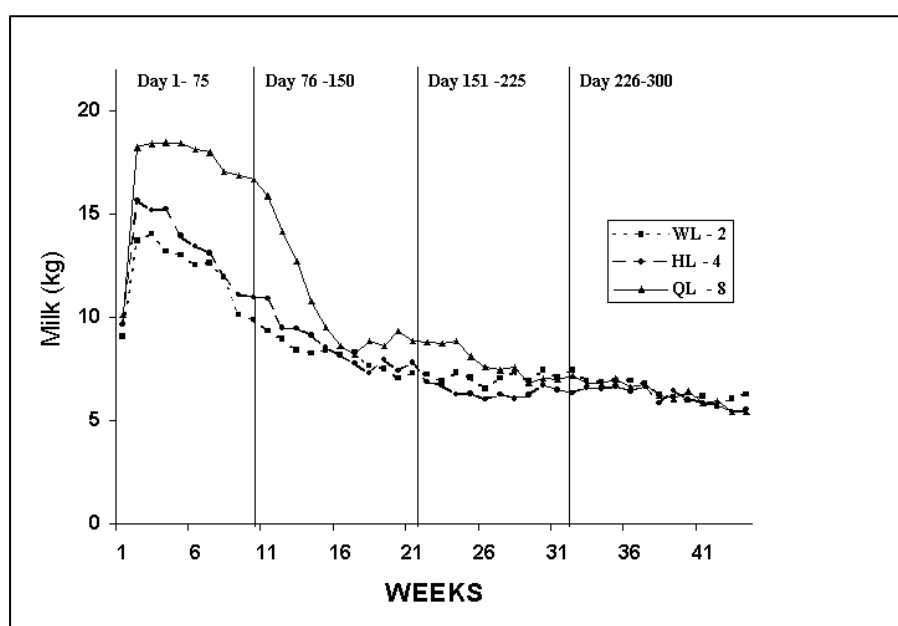


Figure 12. Milk yield response to improved nutrition. Source:
<http://www.fao.org/DOCREP/ARTICLE/AGRIPPA/X9500E09.HTM>

The top yield for cows kept in the village throughout the whole year is 8 kg per day (personal information, villagers and Hallaci), the total milk yield for the lactation curve is 1025 kg (the management plan FPMP??) and the lactation curve is 42 weeks (Naim Pacara). The change at the top of the lactation curve is from 8 to 15 kilograms when cows are brought to the summer pastures. Cows normally fawn in April, and it is assumed that they would be brought after approximately 2 weeks.

Assuming that Pobreg lactation curves exhibit similar curvature as the cows in the FAO article,, the following lactation curves have been estimated.

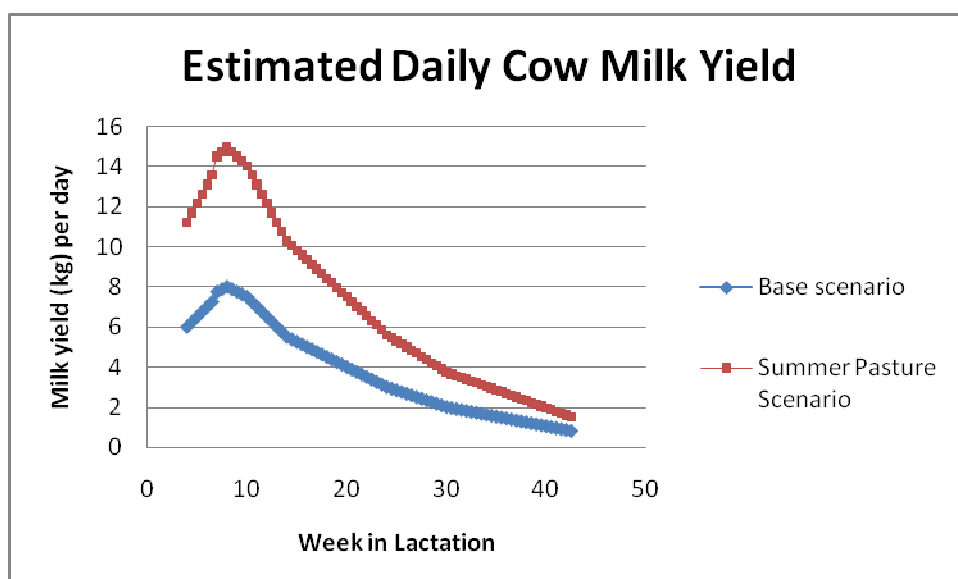


Figure 13. Estimated daily milk yields throughout the lactational curve.

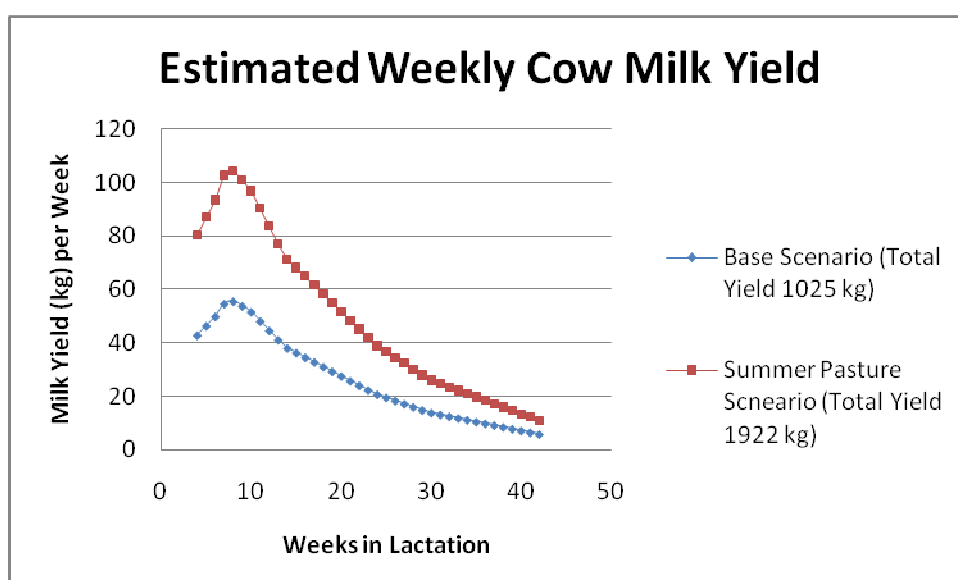


Figure 14. Estimated weekly milk yields throughout the lactational curve.

The producer price for milk was 35 leke (0.29 Euro, 29 August 2008) per kilogram in 2005 (FAO statistics homepage). These estimates should be used with caution, since most households in Pobreg sell nothing of their produce to the market. It might be argued to be an over-estimate, since farmers would never buy milk at the market for this price. On the other hand, the households in Pobreg are very poor and using the price could also be seen as an under-estimate. The true value of getting out of starvation and malnutrition can be argued to be higher.

Another way of calculating the true value of milk is to compare the content with other foods that are *de facto* bought on the market. Even though milk contains a number of other nutrients, it is reasonable to assume that poor people optimize energy and that other macro-nutrients and micronutrients are added to the diet as the budget constraint is relaxed.

The assumed energy content of the consumption milk produced is 640 kilocalories per kilogram (USDA homepage 1) and the value of the flour bought on the market is assumed to

be 3660 kilocalories per kilogram (USDA homepage 2). That means that one additional kilogram of milk can replace approximately 175 grams of flour. These values have been assumed to reflect the nutritional values of Pobreg products. The local price for flour is estimated to 47 leke (0.39 Euro 29 August 2008) per kilogram (statistics provided by von Essen). The shadow value of the energy in one kilogram of milk is hence 8.25 leke (0.06 euro, 29 August 2008).

Dairy sheep and goats. The impact of better pastures should be positive also on sheep and goats, but it should be less because of the following reasons:

1. Sheep and goats are normally at the end of their lactation curve, implicating that the possibility of increase is smaller
2. Sheep and goats are fit for grazing on marginal lands, so that they are able to use poorer (winter) pastures better.

One possible improvement of sheep and goat dairy animals is that they are likely to grow fatter, improving the possibility to get in heat.

Meat cattle. According to the results Naim Pacara (personal communication, August 2008) got from the field research some twenty years ago all meat animals were affected positively by the change to summer pastures. Unfortunately, these results have not been saved and Pacara could not tell exactly what the difference was. Inger Ledin, professor at the department for animal husbandry, Swedish University of Agricultural Science, thinks that growth cannot, at least, decrease (personal communication, 28 July 2008).

5.2.2 Recovery of Winter Pastures

The winter pastures generate 340-380 kilograms of grass yearly and hectare (Therthore management plan), so that the total area of winter pastures generate 60 000 kilograms of hay yearly. This does not, unfortunately, tell us much about what the yield would be if the pastures recovered. The average yield on Albanian pastures is 600 kilograms per hectare and year, and we assume that is the top yield for this pasture also.

Local forest engineer Ilmi Gjana was asked to make assumptions on how the pastures would re-grow if they were left alone for six months. He was asked because of his knowledge of the local habitats as well as long training and experience of field work. He was not able to provide any numbers, but confirmed that reduced pressure on winter pressure during the summer months would greatly help their recovery and decrease erosion. Carl Fredrik Von Essen (personal communication 27 August 2008) estimates that normally overused pastures may need five years to recover. Carl Fredrik von Essen estimates that normally overused pastures in Albania may need five years to recover.

Eva Spörndly, researcher, Swedish University of Agricultural Sciences, looked at the photos brought by the author and concluded that biological tests would be needed to certify what would be needed for the pastures to recover. Her main advice was that animals should be taken away from relatively early in the spring for the pastures to recover. Today, farmers allow their animals to graze there whenever there is something eatable around, and this makes it difficult for the herbs and grasses to grow strong enough to re-grow. Instead, they should be left for about six months.

With no other estimates available, it is assumed that the average Albanian pasture yield (600 kilogram per hectare and year) would be obtained in 5 years if summer pastures were allowed to rest during six months yearly. It is assumed that the re-growth function would be S-shaped.

5.2.4 Costs associated with Using Summer Pastures

The costs of using summer pastures include: transport to and from the pasture, transport of products, cost of hut, and cost of work

It takes one and a half hour to walk to or from the summer pastures on the steep and stony road (own experience). With animals, the time requirement is seven or eight hours (widow, 49, 8 of July 2008). This makes it impossible to herd animals without a place to live in the mountains.

An option to facilitate the use of summer pastures would be to substantially improve infrastructure. This topic has been discussed in the village and in the municipality, and as mentioned earlier it would facilitate timber extraction. Since the commune has chosen not to allow a private company to build a new road because of the risk of illegal logging and environmental degradation, the impact of improved infrastructure is left out of this reasoning.

Pack animals would be needed to transport feed and milk products from the summer pastures to the village. They would have to be brought out of other production, or bought separately, to serve in the summer pastures.

A donkey must be used on the summer pastures to transport produce and corn to and from the village. Donkeys graze on poor lands, and too nutritionally rich feed may harm them. Therefore, they are often allowed to graze after other animals. During the winter months, when there is not much to graze on, they should be given three kilograms of hay daily, possible combined with some mineral concentrates (Pia Söderström, personal communication 30 July 2008). Local livestock specialist Pacara estimates the daily dietary need for the donkeys to be 1 or 2 kilograms of hay (personal communication July 29 2008). The local retail price for hay in Kukës was 6 leke (0.05 Euro 29 August 2008) per kilogram (Statistics MAFCP).

The costs for constructing a mountain hut are estimated to 500-1000 Euro (Ferhat Hallaci, 8 July 2008) and the technical lifetime up to 20 years (Carl Fredrik von Essen 29 July, 2008). The real estate tax for buildings constructed after 1993 is 6 leke per square meter and year (Erjon Luci, Economist, World Bank Tirana, 30 July 2008). The estimated need for maintenance is 1000 leke (8.21 Euro 29 August 2008) (own estimate). Depending on what materials that are used, the roof might need maintenance after ten years. The cost for this is estimated to 30 Euro per square meter (von Essen, personal communication 15 July 2008). It is believed that the roofs the Pobreg farmers build is less expensive, since the cost of the roof would otherwise exceed the total cost of building the cheapest possible house according to Hallaci's estimates. It is estimated that two persons would be required to live in one hut and herd one unit of animals. Further, these two persons would need one pack animal to transport feed and milk products to and from the village.

Carl Fredrik von Essen (personal communication 28 July 2008) told that the minimum wage in Albania is 150 Euro per month. Naim Pacara estimated true the labour costs to be less than 2000 leke (16.42 Euro 29 August 2008) per month, and Hallaci around 1000 leke (8.21 Euro 29 August 2008) per month for this kind of work. These lower estimates are probably more

correct shadow values of what one person is expected to contribute to the family's economy during one month.

There is no grazing fee for using winter or summer pasture. The only cost that is relevant is the cost of decreased pasture quality and yields, which is shared by everyone else using the pastures. This cost is very hard to estimate, in part because it is not known how overgrazing affects these pastures. Moreover, the discount rate with which future generations' pasture use is discounted.

5.3 Results

The profit functions presented shows the economic problem the farmers are facing. The costs are likely to be higher for summer pastures, since investments have to be made. On the other hand are expected milk yields higher. This means that there will be some production point where it is optimal to reallocate grazing activities to the summer pastures during summer.

$$\pi_{g_1} = TR - TC = Y * n_h * P_y^* - C_{investment} - L - OC - TrC - \frac{C(grazing)}{N} \quad (14)$$

$$\pi_{g_2} = TR - TC = Y * n_h * P_y^* - L - \frac{C(grazing)}{N} \quad (15)$$

The results are indeed uncertain, since so little is known about actual costs and benefits. When the energy shadow value for milk is used, the break-even point between summer and winter pastures occurs at five cows (see figure 15), without regards taken to the opportunity costs, which are assumed to be substantial. A family might, for example, prefer to invest in another cow since this increases yield and is an asset. Sigrid Agenäs (personal communication, July 2008) said that her experience is that farmers in poor countries may prefer having several cows with low yields instead of a few with the same yield because the cow herself is a security. Transaction costs were found to be very hard to quantify, and are only captured in the high labor requirement for the mixed summer and winter pasture system. It is assumed that two persons need to be engaged in the grazing activities, partly because of the distance.

This thesis failed to recognize the value of improved pastures, and this is left out of the profit analysis.

Since there we might expect some positive effects on other livestock as well, there will also be some mixed livestock production unit where it is optimal to use summer pastures. This size is un-known.

Production size, cows	5	Shadow value, milk	8,25	Interest rate	0,18
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Costs and Revenues for Milk Cow Production on Mixed Summer and Winter Pastures (Albanian leke) for the first 4 of 20 years

Year	1	2	3	4
Investments	-75000			
Yearly Costs				
Donkey	72	72	72	72
Labor	21000	21000	21000	21000
Maintenance	1000	1000	1000	1000
Real estate taxes	120	120	120	120
Annual payment	14011,50	14011,50	14011,50	14011,50
Opportunity cost of capital and labor	n.a.	n.a.	n.a.	n.a.
Total costs	36203,49859	36203,49859	36203,49859	36203,49859
Yearly Revenues				
Milk Yield	1922	1922	1922	1922
Total value, milk	79282,5	79282,5	79282,5	79282,5
Improved WP	n.a	n.a	n.a	n.a
Total Revenues	79282,5	79282,5	79282,5	79282,5
Profit	43079,00141	43079,00141	43079,00141	43079,00141

Costs and Revenues for Milking Cows Production on Winter Pastures only

Costs				
Labor	6000	6000	6000	6000
Decreased quality of pastures	n.a.	n.a.	n.a.	n.a.
Revenues				
Milk yield	1025	1025	1025	1025
Total value, milk	42281,25	42281,25	42281,25	42281,25
Profit	36281,25	36281,25	36281,25	36281,25

Figure 15. Estimations of total costs and benefits at a production size of five cows. Note that many estimates are missing and that other estimates may have poor accuracy in reality.

6 Analysis

This chapter aims to return to the research questions asked in the introduction of the thesis and analyze these with help from the empirical data as well as the theories presented. The questions were:

- *What are the reasons for the uneven use of pastures?*
- *How many cows are needed for the traditional mixed pasture system to be profitable?*
- *Would a policy of moving grazing activities to underused summer pastures from overused winter pastures be recommended?*

6.1 Reasons to Uneven Use of Pastures

Why is use so uneven? Shouldn't rational farmers reallocate animal production when one resource has free capacity and the other is unsustainable overused? Winter pastures are overused, despite the fact that there is an alternative. Before being able to recommend any remedies, it is crucial to understand the reasons.

5.1.1 Summer Pastures

The interviews with both villagers and local officials revealed that summer pastures have been much more used prior to democratization. It was concluded that the underuse of summer pastures was indeed caused by the structural change towards smaller family farms after democratization.

Villagers reported the reason to why they did not use summer pastures was that they had too few animals. This is supported by Kume et al who discussed sheep and goat production in mountainous Albania in their article. They wrote "The farmers having very few head do not migrate animals." This is partly in line with what Shundi (FAO webpage 1) wrote: "An additional more important reason is the fact that, following the agricultural reform in the early nineteen-nineties, that involved the division and privatization of land in the plains used in the past as winter pastures, the mountain farmers have difficulties in contacting the numerous owners in the lowlands to organize their transhumance."

Farmers never mentioned financing or credit access as a reason to why summer pastures could not be used the way that local officials did. Kristaq Jorgji, USAID told that a single farmer could easily qualify for funding for summer housing and that the offered interest rate would be 18-23 percent. It is not known if farmers are aware of these opportunities. During the focus group with farmers in Hasi, it was made clear that at least the farmers present did not consider applying for funding with USaid. They found that the interest rate was much too high.

Farmers might know that even if they stop overusing winter pastures and instead allocate grazing to the summer pastures, others will not do so and they will not get any benefits from their actions to save the winter pastures. The poorest people would still use the winter pastures all year round.

Moscow kiosks and the tragedy of the anti-commons (see section 4) may have some similarities with Albanian summer pastures. The land tenure regulations are different for different kind of resources and gaps and overlaps exist (World Bank Tirana report). There are

also a great number of agents that have rights to decide, use and exclude others from use (see figure 7). Going back to what has previously been stated about land tenure security in Albania, there are reasons why a rational economic agent may not choose to allocate (scarce) economic means to common resources, leaving them underused. When farmers were asked what they believed would happen with tenure of pastures in the future, they all said that it was impossible to know and that it all comes down to which party that will win the 2009 election. There was, however, no informant who mentioned insecure land tenure as a reason not to use summer pastures.

Transaction costs exist (Coase 1992). When these are constant or relatively constant, small agricultural production units have more difficulties to overcome these.

Merns (1996) found that winter pastures was overused because farmers was part time herders, and could not, given the diversity of their production, migrate to higher altitudes during summer in Kirghizstan. The main reason was that the possibility and incentive for farmers of using the summer pastures was limited by shortages of working capital. This reason is probably valid also for Pobreg.

Other possible explanations, that was not brought up by any informant but that should still not be left out of the analysis, are changes in demographics and preferences. Other authors (Kume et al) has pointed out that migration makes it hard to find shepherds. There was, however, nothing in the case study that indicates that this is why people choose not to use summer pastures.

6.1.3 Winter Pastures

One possible explanation to the overuse of winter pastures would be to claim that it is an example of the tragedy of the commons. This might be true to a certain extent. Farmers claimed that they would use pastures different if the resource was theirs' to use. The focus group meetings resulted in similar understandings of the problem.

The focus group meeting in Kukës, where the commons were claimed to belong to "no one" indicates that there is some tragedy of the commons involved. This could mean that the common property regimes have weakened and that common resources exhibit some open access characteristics. The participants held the change to private rights to use as the most important thing for the forests and pastures to improve. On the other hand, they claimed that poverty was the main reason to overuse, and that the people that used the resources unsustainable were the poorest. They claimed that these villagers were well aware that it was unsustainable, but that their economic situation left them no choice. Hallaci (personal communication June 2008) said that the village and its council often agreed to such use, although it is against the rules, because everyone knew very well that the situation of these families were very difficult.

The tragedy of the commons is based on the notion that people overuse common resources *because their private optimal out-take is larger individually than it would be if farmers acted jointly*. An interview with five men in Hasi district on 28 June 2008 told that there had been severe problems with overuse of resources after they had been made private in right to use. The five men argued that people might be more likely to overuse private resources. This would be because they desperately needed them and when the rules of the community no longer stopped them, they would do so.

The main interpretation of the results from the interviews is that the overuse should not without caution be regarded only as a result of resources being treated as open access. People may have high private discount rates because they are poor, regardless of the land tenure system.

6.2 What Production Size is needed to Use Summer Pastures?

The very rough profit calculations showed that it is optimal to allocate grazing to summer pastures if the household holds five or more cows. However, it is plausible that this estimate does not accurately reflect the situation. What can be said is that there exists *some* production unit level when it is optimal to make investments to use the summer pastures. If this is exactly four or five cows, more, or even less is not the main point of this reasoning. What is important is that the number of livestock does matter, just like the informants claimed. Farmers and local officials were asked to estimate how many cows that would be needed to invest in housing at summer pasture sights. The answers ranged between eight and ten cows. This is higher than what the calculations revealed, which indicates that the calculations are missing something.

Opportunity costs were not included in the model, and it is plausible that transaction costs were not properly captured either. It is quite plausible that farmers experience these costs as quite substantial and therefore need more cows to invest in housing at summer pasture sights.

Risk aversion was not included in the calculations. Attitudes towards risk are probably relevant when considering herding animals in open mountain pastures. Informants claimed that the risk of predators attacking domestic animals was not much higher in the summer pastures. They said that it happened equally often in the lowland of the village. Production at summer pastures should also result in a risk reduction, since the risk that livestock do not proceed in heat is reduced if their dietary requirements are met, which is more likely to happen at summer pastures. But, taking a loan at an interest rate of 18-23 percent does include some risk, especially when farmers only hold a few animals.

6.2 Policy Recommendations

Respondents expressed that the primary reason to why summer pastures are not fully used is that the agricultural production units are too small. If policy aims at making the grazing at winter and summer pastures more even, it should try to solve this problem.

There are two obvious ways to do that; larger individual farms or cooperation between small farms. Farms often become first smaller (due to population growth), and then larger (due to Cochrane's treadmill and Engel's law) as the economy grows. The transformation towards larger farms has not started in Pobreg. Off-farm job opportunities are scarce and migration is much less common than in other parts of the country. A growing economy should over a longer time horizon, result in larger farms with better possibilities of overcoming large transaction and fixed costs, something that would facilitate a more sustainable and profitable natural resource use.

But, at the time being, this is not the case. So, cooperation is argued here to be the main option for policy to target this problem. As discussed previously in the thesis, experiences of cooperation exist in post-communist Albania, although it is quite rare. The focus group

meetings, where cooperation was discussed, showed that cooperation between farmers is regarded as an option although not yet common in the region. They claimed that pilot cooperation projects were beneficial, since the villagers were then allowed to see with their own eyes that cooperation can work. The literature study showed that a trust-worthy third part (coordinator) is important to reduce the fear of being cheated.

The cost for letting shepherds care for one household's animals is about 1000 Albanian leke (8.21 Euro 29 August 2008). This is worth analyzing a little, since it is the exact number that Hallaci said the farmers could expect to gain in an average month (i.e. the shadow value of labor). Since a mountain shepherd may care for as many as 20 milking cows and additionally a herd or sheep and heifers (personal communication, Naim Pacara, August 2008), the cost of letting someone else care for the animals is quite high, compared to labor costs.

One explanation to this pricing might be that the entrance barrier of starting grazing activities on mountain pastures is high. The entrance barrier is constituted by relatively high fixed costs in building the house and possible also by having to move towards more specialized production since labor availability will be limited during harvest seasons.

Another explanation may be that contracting is a relatively constant transaction cost. Shundi found that one reason that summer pastures are underused in Albania is the difficulties of contracting between small lowland farmers and mountain shepherds. This is not fully applicable on the Pobreg case, since the mountain shepherds are villagers. Livestock producers are small and many which may complicate contracting in Pobreg. Spörndly (personal communication, August 2008) emphasizes that the farmers will want to be certain that they get their share of the production when allowing someone else to care for the animals. The shepherd's total cost for memorizing/ noting yields and distributing them among contracting farmers will rise as the number of contractors does.

Regardless of the reasons to the pricing, farmers found that the cost of having someone else to herd the animals was too high. So, can policy solve the problem of underused summer pastures and overused winter pastures at a lower cost than the market can?

The interview result showed that farmers commonly cooperate on managing pastures and forests, and that they did not do so in financing, banking or market issues. An existing cooperation on using summer pasture does exist, which indicates that this is not the initial problem.

The profit calculation showed that production on summer pastures may indeed be profitable, even if milk is only valued to what it would cost to buy the same energy at a low cost at the market. It would be even more so if farmers had access to a market where they could sell their products.

Two persons could easily care for 20 milking cows and additionally sheep, heifers or goats (Naim Pacara, personal communication August 2008). The average cost per cow and month is about 276 leke (2.27 Euro 31 August 2008). Farmers claimed that they would have to pay the mountain shepherds about 1000 leke for one month (personal communications, villagers, July 2008).

If the estimates are correct, it can be concluded that the policy might include substantial welfare gains. However, it is important to remember that in the measure of 276 leke, costs for

controlling and distributing milk is not included. Trust between members of cooperation units is crucial to keep these costs down.

If a lower discount rate is used to finance the project, the average cost of summer pasture production will decrease further. One discount rate that has been used within the NRDP is 12 percent (Carl Fredrik von Essen, personal communication 2008). With this discount rate, the average price per cow would drop to 243 leke per cow and month.

An important reason to why some policy might be needed is the risk of free-riding. If some farmers by free will reallocate grazing activities so that the yield on winter pastures increases, others may (just like in pollution problems with several countries) find it optimal to stay in the village during summer to extract what others left.

There are contemporary policies aiming at improving the winter pastures in Pobreg. Introducing policies that move grazing activities from overused winter pastures to underused summer pastures should be considered an alternative in these policies. This would result in three major social gains. The first is better nutrition through higher milk (and possible other) yields. The second is the potential of recovery of winter pastures. At last, summer pastures hold the potential, if properly maintained, to preserve rare habitats of species. The loss of biodiversity on the Balkan Peninsula has gained attention and protecting these values might turn out to be a sound investment.

The interviews with villagers showed that villagers was in general very pleased with the presence of the NRDP, and it is hence concluded that the NRDP might very well serve as a trust-worthy third part in implementing cooperation over summer pasture herding.

7 Conclusions

Farmers claim that it is not optimal to use summer pastures because they are too far away given the numbers of animals they hold. They experienced costs exceed the experienced benefits at current production unit sizes. Our calculations as well as the interview results indicate that this would not be the case had they more animals.

There is no dairy company in Kukës or Hasi, and the demand for processed dairy products in the supermarkets is largely met by Macedonian and Greek producers. So, the benefits of increasing milk production are likely to be limited to what the household can consume.

Financing is not impossible, but farmers find the interest rate offered by USaid, who is present in the area, too high. It ranges between 18 and 23 percent at present (Kristaq Jorgjo). Inflation rate was at 2.4 percent in 2006 (EU-business homepage 1).

Larger units, higher tenure security and increased market access (for example the introduction of a regional dairy) is argued to have possibilities of changing this situation.

Policy-makers may have additional possibilities of moving grazing activities to summer pastures. Von Essen (8 July 2008) tells about how grazing fees is a part of the communal grazing system in southern Albania. Farmers could be offered a subsidy for grazing their animals on abundant land, or could they be charged for using winter pastures during summer. Construction of summer huts and establishments of cooperation units may be another way of moving grazing to summer pastures during the summer months.

Moving grazing activities to summer pastures during summer results in two main benefits. They are milk yield increases and potentials for winter pastures to recover. An additional benefit that this thesis has not focused on is the value of preserving bio-diversity in Balkan pastures. This thesis failed in quantifying the benefits in terms of improved winter and summer pastures. If milk is rated to its energy shadow value, mixed summer and winter pasture grazing would be more profitable than only winter pasture grazing at as few as five cows according to the estimates presented earlier. Opportunity costs and transaction costs are not properly modelled, why five cows may be an under-estimate. Farmers claimed that it would be beneficial to make investments to use summer pastures if they had more than eight to twelve cows.

The main finding of this thesis is that policy could move grazing activities to underused summer pastures from overused winter pastures. The calculations indicates that average cost per cow and month would be 243-276 leke, and sheep and goats could be cared for at the same time without any additional cost. If benefits of milk yield increase and improved winter pastures are valued higher, it is recommended that this policy is carried through.

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