

## **DISCUSSION PAPER**

### **Leibniz Institute of Agricultural Development in Transition Economies**

#### **The impact of protected areas on local livelihoods in the South Caucasus**

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## **ABSTRACT**

Nature conservation has a long tradition in the South Caucasus, a region with very high biodiversity. Alongside century old nature reserves (NR) in Azerbaijan and Georgia, two new transboundary national parks (NP) have recently been created in Armenia and Georgia. All of these protected areas exert an influence on the local populations, which use land located inside or in proximity to these areas. To investigate the impact of protected areas on the local populations, we conducted a qualitative study close to two neighbouring, historical NRs in Georgia (Lagodekhi) and Azerbaijan (Zaqatala), and close to the two new transboundary NPs in Armenia (Lake Arpi) and in Georgia (Javakheti). We collected the opinions of the local populations, local administrations, and environmental NGOs regarding the impact of protected areas on the livelihoods of the local populations and investigated whether the local populations developed strategies for dealing with these impacts. Results show that the land use restrictions entailed by protected areas cause conflicts of interests between the goals of conservation and those of the local populations on the one hand, and competition between different local groups with regard to scarce resources such as pastures on the other hand. These land use restrictions are due to the land use regulations of the protected areas and concern the use of pastures and forests. All sorts of tourism could provide a possible solution to settle conflicts and to increase incomes.

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JEL: Q56, O13, O53, Z1

Keywords: Transcaucasia, nature conservation, qualitative research, protected areas, rural livelihoods.

## **ZUSAMMENFASSUNG**

### **NATURSCHUTZGEBIETE UND IHRE AUSWIRKUNGEN AUF DIE ERWERBSQUELLEN DER LOKALEN ANRAINERBEVÖLKERUNG IM SÜDKAUKASUS**

Naturschutz hat eine lange Tradition im Südkaukasus, einer Region, die sich durch eine hohe Biodiversität auszeichnet. Neben über hundert Jahre alten Naturschutzgebieten in Aserbaidschan und in Georgien wurden kürzlich zwei neue grenzübergreifende Nationalparks in Armenien und Georgien eingerichtet. Alle diese Schutzgebiete haben Auswirkungen auf die lokale Anrainerbevölkerung, welche Land innerhalb oder in der Nähe dieser Gebiete nutzt. Um die Auswirkungen von zwei benachbarten, historischen Schutzgebieten in Georgien (Lagodekhi) und in Aserbaidschan (Zaqatala) sowie von zwei neuen grenzübergreifenden Nationalparks in Armenien (Lake Arpi) und in Georgien (Javakheti) auf die lokale Bevölkerung zu untersuchen, führten wir eine qualitative Studie durch. Zentrale Fragestellungen der Studie betrafen zum einen die Ansichten der lokalen Bevölkerung, der lokalen Verwaltung und von Umwelt-Nichtregierungsorganisationen hinsichtlich der Auswirkungen von Schutzgebieten auf den Lebensunterhalt der Anrainerbevölkerung und zum anderen mögliche Strategien der Anrainerbevölkerung für den Umgang mit den Auswirkungen der Schutzgebiete. Die Ergebnisse zeigen, dass Landnutzungsbeschränkungen, die durch die Schutzgebiete hervorgerufen werden, einerseits Interessenkonflikte zwischen den Zielen des Naturschutzes und den Zielen der Anrainerbevölkerung hervorrufen können, und andererseits Rivalitäten zwischen verschiedenen lokalen Gruppen in Bezug auf knappe Ressourcen wie Weideland.

Landnutzungsbeschränkungen sind eine Folge der Landnutzungsbestimmungen der Schutzgebiete und betreffen den Zugang zu Weideland und Wäldern. Verschiedene Arten von Tourismus könnten eine mögliche Lösung darstellen, um bestehende Konflikte zu lösen und um die Einkommen der lokalen Bevölkerung zu verbessern.

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JEL: Q56, 013, 053, Z1

Schlüsselwörter: Südkaukasus, Naturschutz, qualitative Forschung, Schutzgebiete, ländlicher Lebensunterhalt.

## **ABBREVIATIONS**

NGO	Non-Governmental Organisation
NP	National park
NR	Nature reserve
WWF	World Wide Fund for Nature

## **1 Introduction**

Protected areas exert an influence on the neighbouring local populations which use land that lies inside or in proximity to these areas. The impacts of protected areas on livelihoods vary with protected area status, management strategies and community involvement in governance (COAD et al., 2008). In a study on forests in Vietnam, MÜLLER and MUNROE (2005) found that restricting particular land uses within an area may increase the demand for land elsewhere, thereby stimulating the need to clear additional forest for agriculture. A higher probability of deforestation can also be linked to high levels of poverty in regions bordering protected areas (MÜLLER and MUNROE, 2005). For protected forest areas in Peru, MIRANDA et al. (2016) found that they reduce deforestation if sustainable extractive activities are allowed, but they are less effective in reducing poverty. Protected areas also may have positive effects on the local populations bordering them or living inside of them. A study conducted in Cambodia shows that protected areas did provide security with regard to land tenure and access to forest resources (CLEMENTS et al., 2014). Another impact of protected areas consists in tenure reforms that affect local populations. A second example from Cambodia shows that tenure reforms conducted with the participation of indigenous local communities can achieve positive outcomes for biodiversity conservation if communities are provided with the rights to customary lands (TRAVERS et al., 2015). On the other hand, the use and repair of ecosystems, which become commodified within the scope of new "green" market economies, could lead – despite its green goals – to "green grabbing". Sometimes the impacts of green grabbing are direct when people are removed from land or prevented from resource use (FAIRHEAD et al., 2012). In summary it can be stated that protected areas could impose economic costs on local communities by restricting their possibilities to use these areas for agriculture and for the exploitation of natural resources. But protected areas could also provide economic benefits by attracting tourists, infrastructure investments and by providing ecosystem services. To put it shortly: the higher the conservation goal the less poverty reduction is possible (FERRARO and HANAUER, 2011).

However, the South Caucasus is a less explored region with regard to the impacts of protected areas on local livelihoods. There is only a small body of literature on this topic except from literature published by governments, consultants and NGOs on the implementation and management of protected areas (e.g. CFN, 2014; MPENR, 2013; SCHUERHOLZ, 2009). Studies on protected areas in the South Caucasus investigate topics such as the assessment of the forest canopy in protected areas (BRAGINA et al., 2015) and the historic comparison of protected areas in different post-Soviet countries (PILĀTS and LAIVIŅŠ, 2013). Apart from these studies, possibilities for ecotourism in protected areas in Georgia are discussed by DEVIDZE (2012). Thus further research is necessary to better understand the effects of newly implemented and century old protected areas on the local population in the South Caucasus.

The South Caucasus is a region with a very high degree of biodiversity. To protect endangered species and unique landscapes, the German government launched the so-called Caucasus Initiative in 2001 (SCHUERHOLZ, 2004: 2), that also facilitated the establishment of two new national parks (NPs) that form a transboundary protected area in Armenia and Georgia. Besides these two NPs, nature reserves (NRs) with a century-long tradition exist in the South Caucasus. To investigate the impact of protected areas on a given local population, we formulated the following research questions:

What are the opinions of local populations, environmental NGOs and local administrations on protected areas in their vicinity?

Which strategies did local farmers, shepherds, NGOs and local administrations pursue to cope with possible impacts of protected areas?

In the complex ethnic setting of the South Caucasus, ethnic groups may have different sources of revenue. What is the impact of protected areas on the various sources of revenue of the different ethnic groups bordering protected areas?

To answer these questions, we carried out a qualitative study with 33 face-to-face interviews which we conducted in villages and settlements in close proximity to two twinned protected areas: the transboundary NPs in Lake Arpi in northwest Armenia and Javakheti in southwest Georgia, and the neighbouring NRs in Lagodekhi in east Georgia and in Zaqatala in northwest Azerbaijan. All four designated research regions are inhabited by ethnic groups that settled in the region for a long time as well as of immigrant populations of different ethnicity.

Results show that interviewees in three of the research regions perceive protected areas as a restricting factor on their livelihoods. The impact of the newly established Lake Arpi NP on local livelihoods is perceived more positively, which might be due to a buffer zone development plan and a bottom-up implementation process. The majority of all interviewees expressed a positive attitude towards the development of different kinds of tourism as a new income generating activity, which could partly compensate for the economic losses entailed by restricted use of land inside the protected areas.

In the next section, we describe the history of protected areas in the South Caucasus and introduce the four research regions. In the third section, method, design and analysis of the study are presented. This is followed by the fourth part, the results section, in which we describe livelihood challenges, the impact of protected areas on the livelihood of local populations and different strategies of local populations as to the impact of protected areas. In the fifth and last section, we discuss the results and put forward proposals for improvement.

## **2 HISTORY OF PROTECTED AREAS IN THE SOUTH CAUCASUS**

### **2.1 Russian and Soviet era**

The first protected area in the South Caucasus, called a zapovednik (strict NR), was established under the former Russian Empire in 1894 (PILĀTS and LAIVIŅŠ, 2013: 119). The eldest national parks in this region were primarily set up as hunting grounds for Russian tsars and Caucasian kings. Their name zapovednik was derived from the Russian term zapovedny mesto meaning closed place (PILĀTS and LAIVIŅŠ, 2013: 114). Protection of various species of game for the benefit of the elite was one of the first motivations for conservation efforts. During the time of the Soviet Union no human activities at all, except scientific research, were allowed in the zapovedniks. Today we can find 43 protected areas in Azerbaijan (MENRA, 2014), 31 protected areas in Armenia (MNPRA, 2014) and in Georgia 36 protected areas (MEPG, 2014). Some of these protected areas are former zapovedniks that continued to exist during the Soviet period (WILLIAMS and WOODSON, 2003).

## 2.2 Description of the Research Countries, the Research Regions and the Protected Areas

### Map locating the research regions and the four protected areas



Source: The maps were created by Max Hofmann, University of Halle, with the use of QGIS and Photoshop. Surfaces of protected areas were taken from the WDPA data set (protectedplanet.net), the borders between countries from the GADM data base (gadm.org) and the topographical maps from OSM (OCM Landscape).

#### 2.2.1 General Information on the Socio-economic Situation in Rural Areas in Armenia, Azerbaijan and Georgia

The collapse of the Soviet Union in 1991 caused a number of changes in the rural areas of Armenia, Azerbaijan and Georgia. A fundamental alteration was the dissolution of the kolkhozes and sovkhoses (large "farm enterprises"), which were the collective farming systems that dominated agriculture in the Soviet Union (LERMAN, 1999). In the period following the independence of the three South Caucasian countries in 1991, farmers obtained small parcels of land, which allowed for subsistence farming (GIOVARELLI and BLEDSOE, 2001). Moreover, a trend towards ruralisation could be observed with urban residents moving to rural areas in order to earn a living from agriculture. The lack of markets for agricultural products after the collapse of the Soviet-era marketing system has been a major challenge to farmers. A part from smaller differences, the socio-economic situation in rural areas is thus comparable in all three countries.

With regard to Armenia, the socio-economic situation in rural areas has changed significantly since the break-up of the Soviet Union at the end of 1991. Since that time state-owned industries began shutting down creating high numbers of unemployed with no source of income. The former industrial workers turned to agriculture, which provided them with some food security and at least partial employment. At present, nearly half of the population of Armenia live in poverty, with two out of ten living in extreme poverty. The country's poorest people are concentrated along the nation's borders, in mountain areas and in earthquake zones, such as Shirak in north eastern Armenia (IFAD, 2014 a), where the research region of Lake Arpi is situated.

In Azerbaijan, more than half of Azerbaijan's poor live in remote and mountainous areas where poverty is predominant. Rural communities generally have access to sufficient food. On the other hand, rural households face considerable constraints associated with their

smallholdings, which are inefficient and lack adequate access to services and equipment. Furthermore, rural households have to cope with rising food prices especially in winter for staple crops such as potatoes (FAO, 2015), with a poor basic infrastructure, including inadequate irrigation and access to roads, unreliable supplies of drinking water, natural gas and electricity, and declining health and education services. As there are few alternative sources of income, they turned to subsistence farming following the break-up of the Soviet Union resulting in decreasing production of cash crops such as cotton and fruit (IFAD, 2014 b).

The socio-economic conditions in the rural areas of Georgia are comparable to those in Armenia. Rural poverty is highest among people living in the remote, mountainous and highland areas of Georgia, where the potential for agriculture is poor and where inhabitants have little or no access to social and financial services. After the break-up of the Soviet Union, processing industries closed down and export markets for Georgia's products collapsed leading to an increase in poverty. Poor farmers cultivate small plots and lack essential agricultural inputs and technology; they have inadequate access to markets and to rural credit institutions. Agriculture accounts for almost half of the rural household incomes. Other income sources are social payments and pensions as well as salaried jobs (IFAD, 2014 c). In former times, migrant labourers primarily went to Russia and supported their families at home with remittances. Due to the war with Russia in 2008 and the following trade embargo, neither migration to Russia nor trade with agricultural products with Russia is possible anymore.

### **2.3 The twinned NPs Lake Arpi, Armenia and Javakheti, Georgia**

#### *2.3.1 General Information*

The Lake Arpi and Javakheti NPs form the youngest twinned pair of NPs within the whole Caucasus region. Both parks were established within the Caucasus Initiative of the German Ministry of Cooperation and Development (BMZ), which aims at biodiversity conservation and promotion of transboundary cooperation in Georgia and Armenia. The Lake Arpi and Javakheti NPs were implemented to conserve wetlands on both sides of the Georgian-Armenian border and to promote sustainable development in the respective buffer zones. The NP project was launched in September 2007, implemented by the WWF, and financed by the KfW (Kreditanstalt für Wiederaufbau, German Development Bank). Boundaries of the Lake Arpi NP were confirmed by the Armenian government in 2009 (SCHUERHOLZ, 2009) while borders of the Georgian Javakheti NP were still not clear in 2012 (KALATAS, 2012).

Both NPs are located on the Javakheti Plateau, which is well known as an important area for migratory birds. Over 140 bird species have been recorded for the area (MPENR, 2013: 4; SCHUERHOLZ, 2009: 19). Among the reptiles recorded in the NP area, Darevsky's viper (*Vipera darevskii*), a live-bearing snake, is an endemic species in the Caucasus that is critically endangered and registered in the red list of the International Union for Conservation of Nature and Natural Resources (IUCN) (IUCN, 2014). The Javakheti Plateau is characterised by a predominantly continental climate with average temperatures ranging from 15°C in the summer to winter temperatures of minus 8°C-10°C (SCHUERHOLZ, 2004: 3). The average annual precipitation is 500-700 mm with peak rainfalls occurring in spring and late fall (MPENR, 2013: 6; SCHUERHOLZ, 2004: 3).

In both study sites, the land that became the transboundary NPs of Lake Arpi and Javakheti was used by local inhabitants to graze livestock. This is still possible with limited numbers of animals (SCHOTT et al., 2012 a, 2012 c).

### 2.3.2 Lake Arpi National Park – Armenia

The treeless region of Lake Arpi, located in the province of Shirak in the northwestern part of Armenia, is characterized by steppes, alpine meadows and wetlands (SCHUERHOLZ, 2009). Elevations of the plateau range from 1500 to 3042 m (SCHUERHOLZ, 2009: 15). Lake Arpi is the second largest lake of Armenia and the second most important water source for the entire country after Lake Sevan. It belongs to the Ramsar Convention on wetlands (UNESCO, 1994). Lake Arpi NP covers an area of 25,357 ha (SCHUERHOLZ, 2009: 8).

In the course of setting up the NP, sixteen of the nineteen communities bordering Lake Arpi NP voluntarily contributed parts of their communal land to the NP in order to make it viable. They contributed land on condition that their traditional lease agreements and user rights for grazing, hay production, and agriculture would be respected and that financial assistance will be provided for the economic development of communities located within the buffer zone (SCHUERHOLZ, 2009: 8).

The most important economic activity in the Lake Arpi region is livestock production. It is characterized by relatively low productivity, overgrazing, and poor pasture control, which leads to visible pasture deterioration in some areas. Communal grazing areas are leased by the communities to livestock owners on a 25-year lease basis (SCHUERHOLZ, 2009: 25). Farmers in Lake Arpi region hold small surfaces of land which they use to cultivate fodder for their animals or for growing wheat. Cash incomes are low due to low selling prices for milk, meat and wheat. They are often complemented by remittances from relatives working abroad, mainly in Russia. With regard to energy supply, all communities have access to electricity most of the time and are served by a central water supply system with potable water, originating mostly from springs inside the Lake Arpi NP (SCHUERHOLZ, 2009).

### 2.3.3 Javakheti National Park – Georgia

Javakheti is located on the Javakheti Plateau in the south western part of Georgia and is situated at elevations from 1500 to 3300 m above sea-level (MPENR, 2013: 5). The Javakheti Plateau is characterized mainly by high mountain meadows and volcanic lakes as well as steppes and wetland areas encompassing 60 mostly small lakes (MPENR, 2013: 5-6). The Javakheti NP covers 16,209 ha (MPENR, 2013: 1).

Similar to neighbouring Lake Arpi, the region of Javakheti has a harsh, mainly continental climate, with temperatures between -10 and +15°C (MPENR, 2013: 6). Contrary to the treeless region of Lake Arpi, however, Javakheti is characterized by small sub-alpine forests with birches (*Betula litwinowii*), aspens (*Populus tremula*), rowans (*Sorbus aucuparia*) and pines (*Pinus kochiana*) (MPENR, 2013).

Samtskhe-Javakheti, which includes the Javakheti Plateau and the lower areas of Samtskhe, is one of the least developed regions in Georgia with a contribution of only 3 % to the gross domestic product (IOM, 2010: 5). Poverty is widespread in the region leading to high rates of migration of the local populations (MPENR, 2013).

The region is settled by different ethnicities such as Armenians, Georgians, Russians (LOHM, 2006) and Greeks (SCHOTT, 2012). On the Javakheti plateau close to Javakheti NP, almost exclusively Armenians live. Migration and resettlement played an important role in Samtskhe-Javakheti (see AYDINGÜN et al., 2006; WHEATLEY, 2009). Economic activities include animal husbandry, growing crops such as potatoes, barley and wheat, and to a lesser extent beekeeping and aquaculture (MC, 2006). Summer pastures and hayfields are traditionally utilized by transhumant livestock owners who come with large herds from the Sagarejo municipality

in south eastern Georgia to graze their animals in Javakheti during the summer. These livestock owners belong to Turkic-speaking groups of Georgian nationality (MPENR, 2013; SCHOTT, 2012). Because of the cold winters, locals only keep small numbers of animals.

## **2.4 The neighbouring Nature Reserves Lagodekhi, Georgia and Zaqatala, Azerbaijan**

### *2.4.1 General Information*

Lagodekhi in Georgia and Zaqatala in Azerbaijan are the oldest adjacent NRs in the South Caucasus. Unlike the Lake Arpi-Javakheti twinned zone, they were independently planned and implemented in different years at the beginning of the 20<sup>th</sup> century. Both NRs, of which two thirds are covered by forests, were strictly closed during the Russian and the Soviet period. After the break-up of the Soviet Union, local inhabitants used both NRs to fell timber, to hunt, to fish, to have parties, to graze livestock on the alpine pastures belonging to the NRs, to produce honey and to collect wild plants and berries (SCHOTT et al., 2012 b, 2012 d).

### *2.4.2. Lagodekhi Nature Reserve – Georgia*

Established in 1912, the NR of Lagodekhi is the oldest NR in the South Caucasus (Devidze, 2012: 79). The idea of creating a NR dates back to the middle of the nineteenth century when the Polish naturalist Mlokosiewicz worked towards realizing his vision of establishing Lagodekhi NR (PILĀTS and LAIVIŅŠ, 2013: 121). It is situated in the alpine region of eastern Georgia (PILĀTS and LAIVIŅŠ, 2013) at altitudes between 400 and 3500 m above sea level (PILĀTS and LAIVIŅŠ, 2013: 112). Today, it covers 24,451 ha (CFN, 2014) and was enlarged by 6000 ha in 2003 (PILĀTS and LAIVIŅŠ, 2013: 126). About 70 % of the NR territory is covered by forests that grow at altitudes from 450 m to 2000-2300 m. Above this altitude, subalpine and alpine meadows are situated (PILĀTS and LAIVIŅŠ, 2013: 113). A rich fauna and nearly two thirds of all Georgian plants species can be found in the region of Lagodekhi (PILĀTS and LAIVIŅŠ, 2013: 113).

As a typical Soviet zapovednik, the NR was closed to people, except for scientific research. But after the break-up of the Soviet Union, deforestation and illegal hunting (ZHOU et al., 2014) took place within the reserve.

Similar to the other research regions, the socio-economic situation in Lagodekhi was affected by the break-up of the Soviet Union. Rural poverty is widespread in Lagodekhi despite its more diversified agriculture compared to Javakheti. The main income sources of local inhabitants living close to Lagodekhi NR come from the cultivation of maize, wheat, peanuts and fruits, and from animal husbandry at the lower altitudes. Livestock is brought to high altitude pastures during the summer. In some cases, farmers do not solely depend on agriculture but derive additional income from non-farming sources. Poverty in Lagodekhi is aggravated by the lack of natural gas supply (SCHOTT et al., 2012 b).

### *2.4.3 Zaqatala State Nature Reserve – Azerbaijan*

The Zaqatala State NR (Zaqatala SNR) was founded in 1929 and covers a total area of 47,349 ha, which was enlarged several times over the last nearly 90 years (MENRA, 2014). In the west, the territory borders Lagodekhi NR in Georgia with a small borderline of about 2.5 km between Zaqatala SNR and Lagodekhi NR. Zaqatala SNR's altitude ranges from 650 m to 3646 m above sea-level (MENRA, 2014). Its area is characterized by numerous deep canyons whose steep slopes are prone to erosion. The territory is rich in forests and hosts more than 1000 species of flora (MENRA, 2014). The fauna is also diverse with 104 species of birds (MENRA, 2014).

The economic activities of the local populations in the neighbourhood of Zaqatala SNR consist mainly of the production of hazelnuts and milk, which are sold at the door or at collection points. Local inhabitants also grow fruits, alfalfa and winter fodder for their animals. Farmers who worked on the former Soviet kolkhozes are allowed to collect chestnuts in a special area in the Zaqatala SNR. Between 15 to 20 % of the chestnut harvest goes to the forest department, the rest stays with the farmers. Additional income sources are provided by pensions, and the earnings of family members working in non-farm sectors such as construction or tour guiding in the summer. Tour guiding indicates that tourism is well established in the Zaqatala region (SCHOTT et al., 2012 d). As in Lagodekhi, there is not a sufficient supply of natural gas in the villages close to the Zaqatala SNR, forcing the local populations to illegally chop firewood (SCHOTT et al., 2012 d).

### **3 METHOD, DESIGN AND ANALYSIS**

#### **3.1 Method**

Qualitative interviews have proven to be an appropriate tool for achieving in-depth analysis of a topic presented during an interview as well as for unveiling new ideas that were not assumed at the outset of the research (BRITTEN, 1995). In the frame of our study, qualitative interviews served as adequate method to provide the kind of profound information that we needed to answer the research questions. Qualitative interviews were expected to explore attitudes, values, motives, and beliefs of interviewees (BRITTEN, 1995; RICHARDSON et al., 1965; SMITH, 1992) as well as of the perceptions and opinions of respondents in regard to complex and sometimes sensitive issues (BARRIBALL and WHILE, 1994), such as the interaction of different stakeholder groups with nature conservation areas. In addition to posing direct questions to the respondent during a face-to-face interview, the interviewer can use non-verbal communication to create an atmosphere of trust by showing consistent nonverbal and verbal behaviour, which is especially important when touching sensitive issues (GORDEN, 1987).

#### **3.2 Design**

We employed academics from Armenia, Georgia and Azerbaijan as interviewers. The interviewers were trained in conducting qualitative interviews during a workshop that we organized in Tbilisi, Georgia, before starting with the field work. Three different groups were chosen to be interviewed: members of local administrations and representatives of NGOs, and farmers and shepherds living in 2 to 10 km distance of the four protected areas of Lake Arpi (Armenia), Javakheti (Georgia), Lagodekhi (Georgia) and Zaqatala (Azerbaijan). The three stakeholder groups were selected due to their specific relationship with the protected areas:

Local administrations are involved in the implementation process of NPs or the management of existing NRs, and are in touch with the local populations.

Environmental NGOs such as the WWF are involved in the implementation of NPs.

Farmers and shepherds experience the impact of neighbouring NPs and NRs on their livelihoods.

Following the workshop, three different questionnaires were designed, one for each group of respondents, and translated into Armenian, Azeri and Georgian. Sampling was done by employing a purposive sampling method: farmers and shepherds were either selected by going from house to house or by recommendation of the already interviewed respondents.

Local administrations and NGOs were chosen according to their involvement in the implementation and management of protected areas. Altogether, we conducted 33 interviews with 10 members of local administrations, 9 NGO members, 12 farmers and 2 shepherds distributed among the four study areas in Armenia, Azerbaijan and Georgia.

### **3.3 Analysis**

Based on the theoretical approaches of Grounded Theory (CORBIN and STRAUSS, 1990) and Qualitative Content Analysis (MAYRING, 2000), an analysis scheme for structuring and interpreting the interview contents was developed. In a first step, each interviewed group in each research region was described in terms of categories that were extrapolated from the interview responses:

Local administrations: Involvement in conservation planning and/or management; selection of conservation area; opinion of local inhabitants; involvement of local inhabitants, conflicts, cooperation with others; local economy.

NGOs: Involvement in conservation area planning and/or management; involvement in selection of conservation area; NGOs work within the research region; involvement of local inhabitants, conflicts; additional information.

Farmers: Land, income, credit, tourism, conservation area, extension.

In a second step, sub-categories were developed out of the material according to the selective coding in Grounded Theory and grouped around the categories specified above. Subsequently, the interview material was coded and the codes were attributed to the sub-categories. In this way, the data of all interviewees could be compared within one category and its related sub-categories. Sub-categories and main categories were then grouped in separate units. To control for the reliability of data, statements from one respondent were compared with statements independently elicited from other respondents, or with sources that describe the socio-economic situation within the four research regions.

We first analysed the interviews with regard to the impact of protected areas on the livelihoods of the neighbouring populations. Secondly, we researched whether farmers and shepherds, NGOs and local administrations developed strategies to deal with these impacts and whether farmers and shepherds developed social creativity. Finally, we investigated whether an ethnic division of labour played a role in association with the impact of nature conservation on the local populations.

## **4 RESULTS**

### **4.1 Livelihood Challenges**

Overall results of our interviews show that the rural populations in the four study areas of Lake Arpi (Armenia), Javakheti (Georgia), Lagodekhi (Georgia) and Zaqatala (Azerbaijan) have to cope with many hardships such as degradation of pastures and forests, pollution of lakes and harsh climatic conditions with long and cold winters. Furthermore, they face a lack of energy supply, unaffordable prices for fuel and fodder for livestock, unclear zoning of protected areas in some cases, lack of jobs and the migration of the young labour force to other countries.

The rural populations in the countries of Armenia, Azerbaijan and Georgia have access to sufficient food despite widespread poverty (IFAD, 2014 a, 2014 b, 2014 c). The majority of

rural households live from subsistence farming and is not able to generate surplus produce to sell because of limited farm sizes. These smallholder households are often situated in remote mountainous areas. The long winters in the Lake Arpi and Javakheti districts and the steep mountain slopes in Lagodekhi and Zaqatala restrict the potential for agricultural production. The absence of proper roads, access to credits, markets for inputs and outputs, agricultural machinery and developed value chains for agricultural products represent further livelihood challenges for the local populations. In Javakheti and Lake Arpi, for instance, farmers complained about decreasing milk prices reporting that "milk became cheaper than mineral water" (SCHOTT et al., 2012 a, 2012 c). These and similar statements indicate market monopolies in the milk sector since farmers sell their milk to one or two milk companies in each of both study areas, which are the only customers for milk in Lake Arpi and Javakheti.

## **4.2 Impact of protected areas on the livelihood of local populations**

### *4.2.1 Restricted Land Use*

One of the major impacts of the four protected areas is restrictions with regard to the use of land or forests inside or close to the four protected areas. Use restrictions were reported by all interviewed farmers and shepherds. These restrictions sometimes result in negative effects (for human-nature interface problems, see TORKAR and MCGREGOR (2012)) such as increased migration and illegitimate use of protected areas (VAN WILGEN and MCGEOCH, 2014). Concern over migration as an effect of restricted use of protected areas was specifically mentioned by an official of Javakheti NP in the course of explaining the purpose of the assistance zone or buffer zone of the NP:

"The assistance zone is the populated zone very close to the NP. We have to help the rural settlements in order to stop people's migration and to let them stay in place and to protect the NP together with us (SCHOTT et al., 2012 a)."

Before the Javakheti NP was established, migration already played an important role in the local economy (IOM, 2010; WHEATLEY, 2009), as indicated by the fact that remittances from migrated, young and male family members comprise the second most important source of income for the local populations in Javakheti after small-scale agriculture (MC, 2006).

Restrictions on land use were reported by the interviewees in the three regions of Lake Arpi, Lagodekhi, and Zaqatala. An interviewee in Zaqatala State NR in Azerbaijan for instance explained:

"The use of these areas is also restricted. So in the past, we used these areas both as a source of income and as pasture for animals, and for example for the collection of wild plants and hunting, at least partially. But now, it is protected. Sometimes you can see we encounter obstacles to utilizing the forests. Almost everywhere access is prohibited (SCHOTT et al., 2012 d)."

It should be noted that Zaqatala State NR was strictly protected as a zapovednik during Soviet times. The use of the protected areas referred to by the interviewee thus probably relates to the first years after the break-up of the Soviet Union in 1991, when new regulations regarding protected areas were not yet in effect.

Anxiety about possible future restrictions related to Javakheti NP was mentioned by one of the farmers in Javakheti:

"I think in the future, it will be impossible to keep this large number of cattle; the herd size will decrease, because there will be some restrictions [...]. At the moment I don't feel something like this happening, but I can imagine this for the future (SCHOTT et al., 2012 a)."

#### 4.2.2 *Problems from unclear boundaries and regulations*

Apart from use restrictions, further problems arise whenever regulations and borders of protected areas are not clear. Even in Lagodekhi NR, which has existed since 1929, an environmental NGO reported: "There are protest actions of dwellers against NR regulations. They do not know what is allowed or not. Locals are not well informed on NR regulations" (SCHOTT et al., 2012 b). For instance, in Lagodekhi NR and Zaqatala State NR there is confusion over what cutting of firewood is allowed and what is illegal. This is a significant problem because local inhabitants close to both Lagodekhi NR and to Zaqatala State NR suffer from a lack of natural gas supply forcing them to cut firewood in the NRs. To supply the local population with firewood, the forest department and the local administration of Zaqatala allows collecting firewood in a special area of the SNR. Nonetheless, quantities do not meet the local firewood requirements. In Lagodekhi, the NR administration sells waste wood and controlled cut wood to the local population but quantities are insufficient and prices for locals often unaffordable (SCHOTT et al., 2012 b, 2012 d).

In Javakheti, a governmental official seemed not to be well informed about the borders of Javakheti NP: "No, I do not know where the border line of the NP is. I do not have a map with me to know where the border of the NP is. Nobody presented the plan officially" (SCHOTT et al., 2012 a). Also, the border between Armenia and Georgia, which goes through the twinned NP of Lake Arpi and Javakheti, seems to be not well defined. A respondent in Lake Arpi region said in this regard:

"Our village owns 120 hectares of land which is now part of the NP in Javakheti. When the border between Armenia and Georgia was established in 2009, these 120 hectares of land went to Georgia. But the people who were previously the owners of this land are still living here. In 2009 and 2010, they had access to their land in Georgia, but since 2011 they no longer have. But they still have the certificate of ownership. They are not allowed to go there to cut grass for the cattle, or anything. [...] Maybe that is because this village was in the plan for the NP of Javakheti. [...] in Soviet times, there was not a strict border, so it was communal land. But after the break-up [of the Soviet Union] people bought the land, and were the owners of it. As a result this territory is now in Georgia. Of course the community didn't agree with this, but it was a governmental decision. This border was not used very often, it was kind of forgotten. Now we are asking the government of Armenia to help us and to give us other land instead of this land, a compensation out of the governmental reserve fund (SCHOTT et al., 2012 c)."

#### 4.2.3 *Organizations encounter restrictions and obstacles in setting up NP/NR*

Not only have local populations had to deal with restrictions created by the protected areas, but also the implementing organisations encountered restrictions and obstacles during the establishment of some protected areas such as Armenia:

"You see, our hair turned grey because of this bureaucracy. Lake Arpi is not our only project; we have to work with the Ministry and so on all the time. And it is not easy to work here; of course it is never easy, but especially in this part of the world. There is no interest on the part of local people. If you do not know the oligarchs, and the different state agencies, you have to be very diplomatic to push your ideas, or otherwise you will fail (SCHOTT et al., 2012 c)."

#### 4.2.4 Solutions for conflicts of interests

A member of the local administration of Zaqatala State NR said that he and his colleagues try to mitigate the problems that the restrictions on forest use have created:

"Despite of the fact that the forests are protected, we can observe them being used without permission. This consists of deforestation mainly by the villagers who are not provided with heating gas. Our department helps the households and pressures the related departments in order to find a solution for the conflicts with villages that are not provided with gas. Furthermore, forest areas are used for grazing. This is regulated in consent with us and the forest department (SCHOTT et al., 2012 d)."

For instance, a farmer in Lagodekhi had a different opinion on nature conservation:

"[...] we are going to buy a forest zone which we do not need at all for agricultural purposes, [we will buy it] just in order to prevent woodcutting, undesirable fishing and hunting. The area we are planning to buy is very unique in terms of biodiversity. A river flows there with potable water where you can find a very unique fish, a variety of trout; and sometimes when I go there; I do not even fish but just look and take photos. You can find pheasant there, too [...]. It is a relatively untouched area so far and now we are trying somehow not to keep dwellers from going in there, but finally when the area is ours, it will be our own kind of protected area (SCHOTT et al., 2012 b)."

This same farmer also demands stricter rules in terms of fines for people who litter protected areas during parties they hold in the NR (SCHOTT et al., 2012 b).

#### 4.2.5 Problems and solutions

To moderate possible negative effects of the Lake Arpi NP on the local populations from the outset, locals were involved in a council on NP implementation which included eight working groups (SCHOTT et al., 2012 c). Two of the interviewees participated in the preliminary meetings of some of these working groups (SCHOTT et al., 2012 c). Additionally, a buffer zone economic development plan (SCHUERHOLZ, 2009) comprising community development projects was created, of which a couple of projects were implemented already in 2012. The involvement of the local population is a result of the efforts of the consultant responsible for the NP-feasibility study and for the buffer zone development plans. Involvement of the local populations living in the buffer zone seemed to be the only way to initiate local support for nature protection (JARAMILLO-LÓPEZ et al., 2015). In the work groups established by the consultant, an integrated land development plan for the buffer zone was discussed and worked out (SCHUERHOLZ, 2014). Despite the land use restrictions interviewees mentioned, the acceptance of Lake Arpi NP seems to be much higher compared to the protected areas in Javakheti, Lagodekhi and Zaqatala. The higher acceptance in Lake Arpi NP is reflected in the voluntary donation of agricultural land by households to the NP administration. Furthermore, the higher acceptance may as well be attributed to the realisation of development projects such as improved water supply.

### 4.3 Research findings

#### 4.3.1 Examples of solutions through individual initiatives

Our interview with one of the farmers in Lake Arpi illustrates a way to solve economic problems on an individual basis. He was eager to reveal to us how he realised his ideas and how he achieved social mobility within a community beset with hardships. Asked about his

agricultural activities, he said that he had problems with the unpredictable climate of the Lake Arpi region and with his low income, an answer that is similar to that of his colleagues in the other villages close to Lake Arpi NP. He stated that:

"I have 10 hectares of arable land. [...] this land is not very profitable. When I cultivate wheat the risk of hail is too high in this part of the country, and the maximum which I could get out of one hectare is two tons of wheat, but this would be very rare, so there is not a great profit from it. [...] and even if the risk of hail wouldn't be high, the benefit is too low [...]" (SCHOTT et al., 2012 c)."

He told us that he had decided to attract tourists to the area to improve his economic base. We asked him to tell us about his observations and initial steps to build up a tourist attraction in the area.

"When I came here for living<sup>2</sup>, I saw that many, many birds are nesting here, also a lot of birds are coming to this place for nesting and I became curious about this. In Armenia we have an NGO called "Bird Lovers" which discovered a new subspecies of cranes that is only living here (SCHOTT et al., 2012 c)."

To attract more birds to draw tourism to the region he seeded the pond with fish for the birds.

"I sold my pig and bought fish<sup>3</sup> and put them in the pond and people told me "Are you crazy? You don't have bread at your home, but fish in your pond!" All my neighbours were looking at me like I was crazy. It was in the 1990s; people said this guy can't find enough food for his family, but he stays near this pond and makes pictures of the birds, he is just crazy. At that time flour for bread was very expensive and difficult to buy, and there was no bread here (SCHOTT et al., 2012 c)."

He reported to us on his first experiences with tourism:

"[...] I calculated with a specialist a price that I can take from tourists for staying here – I prefer not to take a high price but to create some comfortable conditions for them, so next time they will come again. If we only host a single tourist he will bring in his friends. [...] I have been taking in tourists since 1993; at the beginning we didn't take money from the people (SCHOTT et al., 2012 c)."

Asked on the type of tourists he expects to visit this region, he said:

"We don't have cultural tourist attractions here, like castles or something [...] you see the air and nature are very clean here. There are people who are interested in this [...] we have a beautiful natural environment which everybody should see at least once (SCHOTT et al., 2012 c)."

On the possible effect of tourism on the life of his neighbours, he reflects that

"Tourism brings some benefits. People feel better, because they no longer feel that they live on an island<sup>4</sup>, separated from the rest of the world, and so they feel their life will become more interactive. And also that the conditions of their lives will improve. So tourism will bring benefits, not only for me and my family, but also for others (SCHOTT et al., 2012 c)."

Finally, his opinion on official support to establish tourism in Lake Arpi is that he is doing quite well even without official help: "Hmmm, maybe WWF or the government, but as you can see we can also do this kind of work by ourselves" (SCHOTT et al., 2012 c). Similar to the interview above, farmers in Zaqatala stated that they generate additional incomes from jobs as tourist guides (SCHOTT et al., 2012 d). Other farmers from the four research regions reported

that they complement their incomes from agriculture and animal husbandry with employment in the public sector or self-employed work in their own shop or as craftsman (Schott et al., 2012 a, 2012 b). It remains unclear whether they needed additional jobs because the protected areas restricted their agricultural activities or whether they already had additional jobs because incomes from agriculture were generally too small.

#### 4.3.2 *Examples of solutions through group strategies*

In the following, we address the issue of whether the local populations in the four study areas pursue, in addition to the prevailing individual livelihood strategies, any type of group strategy such as social creativity (LUCAS and NERCISSIAN, 2006; TAJFEL, 1978; TAJFEL and TURNER, 1979). In the multi-ethnic setting in the three researched countries Armenia, Azerbaijan and Georgia, different groups with approximately equal social status live in rural regions close to protected areas. Especially in Lake Arpi and in Javakheti, ethnic division of labour (BERNSTEIN and SWIRSKI, 1982) exists between sedentary and transhumant groups of different origins and religious affiliations, which compete for scarce resources such as pastures. In addition to the problems of pasture use, all of the interviewed members of local administrations, NGOs, and farmers in Lake Arpi reported problems with transhumant Yezidi<sup>5</sup> livestock owners. The Yezidi come with their herds in summer to rent pastures in the Lake Arpi region where they then buy livestock from the local inhabitants for low prices and resell the animals or the meat for high prices in the Armenian capital Yerevan. They do not fatten the animals, but either slaughter them on site or resell them directly. According to the interviewees, the Yezidi livestock owners monopolize the meat trade in the region. That they also rent pastures in Lake Arpi region seems not to be an issue for the interviewees. In order to secure more profits for the local population from the livestock value chain and to keep the "middlemen" out, a slaughterhouse is planned to be built. The slaughterhouse will buy animals from local farmers and will keep them in the slaughterhouse to fatten them before slaughtering (SCHOTT et al., 2012 c). It can be assumed that the slaughterhouse managers fatten the animals because the local population lacks the financial means to buy additional fodder. However on closer analysis it seems questionable whether the problem of low prices for livestock will be solved by the new slaughterhouse since the managers of the slaughterhouse might pay low prices to the livestock owners, too, arguing that they have to fatten the animals at their own expense. Furthermore, it should be kept in mind that there are no other customers for livestock and meat in the Lake Arpi region besides the Yezidis.

In the course of our study, we found that transhumant livestock owners earn a higher income compared to the sedentary population, who can only keep small quantities of livestock due to fodder scarcity during the very cold, long lasting winters.

The analysis of the strategies local inhabitants pursue shows that group strategies to deal with the impact of protected areas and with a difficult economic situation can be found among the local inhabitants of Lake Arpi. This is reflected in their initiative to have a slaughterhouse built by WWF and the Center for Agribusiness and Rural Development (CARD, an Armenian foundation). Also, the voluntary land donations of local inhabitants to the newly established NP can be regarded as a group strategy to cope with financial difficulties that might occur due to restricted access to land close to the NP. These land donations took place against the promise of financial assistance for the economic development of communities in the Lake Arpi region (SCHOTT et al., 2012 c; SCHUERHOLZ, 2009).

## 5 DISCUSSION AND RECOMMENDATIONS

### 5.1 Discussion

Rapid changes during the past decades following the break-up of the Soviet Union in 1991 led to radical shifts in the social and economic conditions in the three countries of the South Caucasus (KORNAI, 2006). The most important aspect of this shift has been the transition from command to market economy, which entailed on the one hand the introduction of free market principles and on the other hand the withdrawal of governmental support (PRISHCHEPOV et al., 2012). Another major effect was land reforms that caused fundamental changes in agricultural land use (LERMAN, 2004, 2009). In some post-Soviet countries, land reforms led to the abandonment of agricultural land while in others, such as in the countries of the South Caucasus, large parts of former Soviet kolkhoz land were distributed to the rural population creating high numbers of individual family farms holding small agricultural land surfaces (LERMAN, 2009).

Results show that protected areas can create conflicts of interests between nature conservation on the one hand, and economic and agricultural interests of the neighbouring populations on the other hand (HOUGH, 1988; SHACKELFORD et al., 2015). Furthermore, the studied groups compete in some cases with other groups with respect to access to pastures. The results also support the concept of the ethnic division of labour (BERNSTEIN and SWIRSKI, 1982) which is reflected in the heterogeneity of the populations in the studied regions, and in the complexity of the impact of protected areas on the livelihoods of these populations.

Our studies indicate that the first step in setting up a new conservation area should be to establish an environment of social inclusion. In this regard, the implementation process of Lake Arpi NP could serve as an example with the setup of working groups composed of all stakeholders, which were involved in the implementation of the NP. Without social inclusion, any recommendations about specific modes of conflict resolution and community development are premature. With this in mind, target communities should be studied as heterogeneous entities with all their internal conflicts and contradictions (NERCISSIAN and FREMEREY, 2008), taking into account their respective contexts: i.e. immediate setting, the people, roles, activities, times, places and devices that define the community (VIAN et al., 2006).

In the four research regions, local inhabitants who live close to a NP or NR, suffer from poverty. One of the reasons for poverty can be found in the fact that agriculture often does not allow for livelihoods comparable to those during the Soviet era. During the Soviet period, the state provided farmers with services and security through collective and centrally managed farming systems, the kolkhozes and sovkhoses. At present, many farmers largely live from subsistence agriculture on small plots following the dissolution of the Soviet Union in 1991. Especially in Georgia, the former kolkhoz system reduced trust among the inhabitants of rural communities. Trust can be seen as the basis for any type of cooperation (PAVLASHVILI, 2010). Thus, group strategies in the sense of social creativity (LUCAS and NERCISSIAN, 2006; TAJFEL, 1978; TAJFEL and TURNER, 1979) may not be common in regions where a lack of trust exists.

Our results show that the regulations of the NPs and NRs may increase poverty rates because of restricted access to natural resources such as pastures and firewood, game, fish, wild plants, honey and berries. To overcome poverty, social creativity as a group strategy or individual strategy could be one possible way out of the adverse economic situation in our study areas. Social creativity in a wider sense means converting disadvantages into assets (TAJFEL and TURNER, 1979) and could follow after having established social inclusion and trust. Regarding a possible creative strategy, almost all of the interviewed farmers and shepherds had a positive

view on tourism, which is seen as a profitable field for e.g. Lagodekhi (Georgia). Extension and development of tourism recently have been started in the Lagodekhi region but service facilities for tourists should be improved especially in the mountains where there is not any good shelter in case of sudden weather change (heavy rain for example) (SCHOTT et al., 2012 b).

In Javakheti, Georgia, tourism could be developed in the region with a special focus on winter tourism such as skiing. It would generate additional jobs and an increase in trading (SCHOTT et al., 2012 a). In fact, tourists already do come to some areas of the region. According to the interviewed farmers and shepherds, tourism could be further developed in Zaqatala, Azerbaijan, which offers tourists climbing, hiking, riding bicycles, beautiful forests and impressive monuments. Tourism currently provides an additional source of income for some farmers who work as tour guides, and guides for horse riding and climbing. For further developing tourism, interviewees stated that agro-ecotourism should be established in the villages, new restaurants should be opened, guest houses and more hotels should be built (SCHOTT et al., 2012 d).

With respect to social creativity, the social and economic context in our four research regions could be turned into an asset by emphasizing the particularities of the region and the culture. Ecotourism could be a possible strategy (ROMÃO et al., 2014). The extraordinarily beautiful nature within and close to the four protected areas offers excellent opportunities for ecotourism. Highlighting cultural particularities such as special food and drink may attract tourists and thus become marketable commodities.

In conclusion, results reveal that interviewees in the three study areas Javakheti, Lagodekhi and Zaqatala perceive protected areas as a restricting factor for their livelihoods. In one out of the four regions, in Lake Arpi, the protected area is perceived more positively which is probably due to the buffer zone development plan and the bottom-up implementation process of the NP. The majority of all interviewees have a positive attitude towards the development of tourism as a new kind of income generating activity, which could serve as compensation for the economic losses based on land and forest use restrictions.

## 5.2 Recommendations for improvement

The core question remains how the local economies can improve their living standards in a sustainable manner. How to implement tourist infrastructures in remote areas while at the same time adhering to sustainable development goals? DEVIDZE (2012) has found with regard to tourism development in protected areas in Georgia that a large contribution must come from the state (for publicly organized programmes, see also LESTARI et al. (2015)), more precisely from the Environment and Natural Resources' Department of Protected Areas. The same may hold true for Armenia and Azerbaijan as well. DEVIDZE (2012) suggests to convince political stakeholders of the importance of ecotourism in their countries by pointing out that protected areas constitute a large resource for the successful development of regional tourism, which in turn positively affects not only the region but can contribute as well to the economic growth of the country as a whole. However, political measures alone will not be fruitful if the local populations are not involved in a bottom-up process and if a "group-feeling" (see TAJFEL, 1978) for the social identity of groups), which expresses itself in social ties is absent.

Our results show that two additional "ingredients" are necessary for solving the conflicts of interests and for the development of ecotourism and other economic plans. The first ingredient consists of discussions and workshops with local inhabitants in order to exactly determine their views on a new project and to create an atmosphere of trust and true participation. The local work groups set up by SCHUERHOLZ (2014) in Lake Arpi region before the NP was

implemented may serve as an example for confidence-building measures that form the basis for any further steps such as the introduction of tourism or nature protection. Subsequently, the work groups were enlarged to include all stakeholders that were involved in the establishment of Lake Arpi NP: Local administration, ministries, NGOs and the local populations (SCHOTT et al., 2012 c).

The second ingredient we found to be necessary for conflict resolution and economic development is a local agent who has entrepreneurial skills and who is a competent communicator, such as the farmer in Lake Arpi region who put fish as bird food in his pond and who started to host tourists since 1993. This agent could function as a distributor of new ideas and innovations. More precisely, if social capital in terms of rural neighbourhood networks does not exist, local agents who pursue an individual strategy aiming at social mobility upwards (TAJFEL and TURNER, 1979) are necessary who-as a role model-could motivate a community to start a group strategy resulting in social change (ecotourism).

Institutions and organizations play a pivotal role in creating incentives (GETNET et al., 2014). Thus, we propose that relevant institutions and organizations launch media campaigns via local televisions, social groups in the internet and via text messaging, and engage with international tour operators to attract foreign tourists and to create a viable tourist infrastructure for them. In addition, attracting private investors for the regional tourism industry, and training local inhabitants in tour guiding, setting up local farmer markets, and running guest houses are further possible paths forward. Developing brands of local origin, which emphasize unique features of the products (e.g., honey and cheese) could enhance their marketability and increase the attractiveness of localities (BOROS et al., 2013). Last but not least, the rehabilitation of roads and the building of guest houses should be taken into consideration as well.

## Notes

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- <sup>2</sup> Initially, the project area [Lake Arpi region in northwest Armenia] was settled by ethnic Azeris. Following the 1988 earthquake and rising tensions between the Armenian and Azeri populations, the ethnic Azeris started to leave the area already from 1989 onwards. With the break-up of the Soviet Union in 1991 and the following war with Azerbaijan, Armenians previously living in Georgia around Lake Paravani decided to move back to Armenia and settle in the Lake Arpi Region, where they currently constitute the majority population in the Lake Arpi National Park buffer zone (SCHUERHOLZ, 2009: 20).
- <sup>3</sup> The farmer in the Lake Arpi region bought fish as bird fodder, and watched the birds as they came to his pond for fishing.
- <sup>4</sup> The statement "to live on an island" refers to the treeless high plain of Lake Arpi with an average elevation of 2000 m above sea level, which is covered by snow for approximately seven months a year.
- <sup>5</sup> Yazidis may be referred to as Yazidis, while they refer to themselves as Êzdi or Êzidi (WRITENET, 2008). Yazidi are ethnic Kurds belonging to Yazidism, a syncretistic religion based on ancient Indo-Iranian religions and unblended elements of Zoroastrianism, Manichaeism, Islam and Judaism (KREISER et al., 1974: 67). They live in Georgia, Armenia, Arabic countries, Turkey and in Western Europe. Some other

sources point out that their religious affiliation has led to claims that the Yezidis are not Kurds but belong to a separate ethnic group, which is especially the case for Armenia where their ethnic affiliation is debated (WRITENET, 2008).

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