

# Ethno-ecological contexts of the Skhalta Gorge and the Upper Svaneti (Georgia, the Caucasus)

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## Abstract

The applicability and analytical power of political ecology is improved by study of the 'ethno-ecological context', which is based on the concept of socio-ecological systems (SES). It represents an operating principle of interactions between the ecological and social systems of a specific locality, developing under different historical, political and climatic regimes. We compare two socio-ecological systems in the high mountain regions of Georgia – the Skhalta Gorge and the Upper Svaneti. These are on the southern and northern borders of Georgia. Historically, their socio-ecological systems were similar but today the Skhalta Gorge is rapidly depopulating, whilst in the Upper Svaneti the population is stable. The comparison of the ethno-ecological context and today's state of affairs suggests that (i) "self-regulation" and conserving local culture and traditions, whilst the country undergoes rapid social and political changes, can lead to degradation or even destruction of either the ecological or the social components; (ii) conversely, sustainable development results from active intervention rather than abstaining from it; (iii) tourism appears as a mechanism that restores the ethno-ecological context by providing a source of income - under certain conditions, it supports traditional agriculture.

**Key words:** Political ecology, ethno-ecological context, socio-ecological systems, Georgia, Adjara, Svaneti, Mulakhi community, Skhalta Gorge, sustainability, tourism.

## Résumé

L'ajout de "contexte ethnoécologique" peut améliorer grandement la puissance d'analyse, ainsi que multi-applicabilité de l'écologie politique: le contexte ethnoécologique est basé sur le concept des systèmes socio-écologiques et représente un principe de fonctionnement des interactions entre les systèmes écologiques et sociaux d'une localité spécifique, qui se développe de différentes manières sous un régime différent climatique, politique et naturel et qui provoque le développement durable du système socio-écologique local. Ceci est démontré par les exemples de systèmes socio-écologiques de deux régions de haute montagne de la Géorgie - la gorge Skhalta et la Haute Svanétie. Ces deux régions sont situées à différentes - sud et nord - frontières de la Géorgie. Historiquement, leurs systèmes socio-écologiques étaient similaires; cependant, maintenant la gorge Skhalta est dépeuple rapidement, tandis que dans le Haut Svaneti la démographie est stable. La comparaison du contexte ethno-écologique et l'état actuel des choses suggère que (i) en laissant les systèmes socio-écologiques sans intervention au motif de les mettre sur "l'autorégulation" et la conservation de la culture et les traditions locales (alors que le pays subit les changements rapides, social et politiques) peuvent conduire à une dégradation ou même la destruction de l'une ou l'autre composante - écologique ou la sociale - de ces systèmes; (ii) le développement durable résultant de l'intervention active, mais pas en abstenir; (iii) dans certaines conditions, le tourisme peut être non seulement une source importante de revenus pour la population locale, mais peut aussi soutenir l'agriculture traditionnelle - dans ce cas, le tourisme apparaît comme mécanisme qui restaure le contexte ethnoécologique.

**Mots clés:** écologie politique, contexte ethno-écologique; systèmes socio-écologiques, Adjara; Svanétie, communauté Mulakhi; gorge Skhalta, durabilité; tourisme

## Resumen

La adición del "contexto etno-ecológico" puede mejorar considerablemente el poder analítico, así como multi-applicabilidad de la ecología política: el contexto etno-ecológico se basa en el concepto de los sistemas socio-

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ecológicos y representa un principio de funcionamiento de las interacciones entre los sistemas ecológicos y sociales de una localidad específica, que se desarrolla de manera diferente bajo diferentes climas histórico, político y natural, y induce el desarrollo sostenible del sistema socio-ecológico local. Se demuestra esto en los ejemplos de sistemas socio-ecológicos de dos regiones de alta montaña de Georgia - el cañón de Skhalta en Ayaria y el Distrito de Mestia en Alta Svaneti. Estas dos regiones están separadas unas de otras y se encuentran en diferentes locaciones - sur y norte - fronteras de Georgia. Históricamente, los sistemas socio-ecológicos fueron similares, sin embargo, ahora el cañón Skhalta está despoblando rápidamente, mientras que en Alta Svaneti la demografía es estable. La comparación del contexto etno-ecológico y el estado actual de los asuntos sugiere que (i) los sistemas socio-ecológicos dejados sin intervención bajo el motivo de ponerlos en la "autorregulación" y la conservación de la cultura y las tradiciones locales, mientras el país sufre cambios sociales y políticos rápidos, puede conducir a la degradación o incluso la destrucción de cualquiera de sus componentes –ecológico o social– de estos sistemas; (ii) por el contrario, desarrollo sostenible se resulta de la intervención activa pero no de abstenerse de ella; (iii) bajo ciertas condiciones, el turismo puede ser no sólo una importante fuente de ingresos para los locales, pero también puede apoyar la agricultura tradicional – en este caso el turismo aparece como mecanismo que restaura el contexto etno-ecológico.

**Palabras clave:** ecología política, contexto etno-ecológico; sistemas socio-ecológicos, Ayaria; Svaneti, Mulakhi comunidad; cañón de Skhalta, sostenibilidad; turismo

## 1. Introduction

Political ecology is an important venue for interdisciplinary synthesis linking political economy, essentially a social science, with ecology, essentially a natural science (Greenberg and Park 1994). Political ecology, however, is not unique in its attempt to meld knowledge from social and natural sciences as there are many other interdisciplinary approaches to human-environment relationships. Political ecology is a broad approach, but it can unify and incorporate other narrower ones. One such interdisciplinary theory which directly addresses the synthesis between sociology and ecology is that of the socio-ecological systems (SES) (see for example Redman *et al.* 2004, also below in the Discussion). SES originates from complexity theory but includes typical societal problems such as land use, equity and human wellbeing, and thus can be placed under the umbrella of political ecology (Turner 2014). Here we argue that incorporation of the theory of socio-ecological systems will greatly improve the analytical power as well as the applicability of political ecology (see also Fabinyi *et al.* 2014). One of the most explicit and effective ways to do so is placing a given socio-ecological system in a broader (political, economic, historical, geographical, environmental) context of its emergence, development and current status – a concept which we call the 'ethno-ecological context.' This concept can be considered a derivation of the types of investigations made by cultural ecologists in which a given society, often small in scale and geographically defined, evolves in a multi-linear fashion (Steward 1955), through core technological and economic variables but also influenced by political systems, ideologies, and religious belief.

The 'ethno-ecological context' involves certain rules guiding the interactions among the social and ecological systems of a given locality, which develop differently according to historical, geographical, climatic, political and social settings and (hopefully) result in the sustainable coexistence of a natural ecosystem and its human inhabitants. Any violation of the ethno-ecological context can disturb social and/or ecological components and put an entire socio-ecological system under risk of collapse. In this study, we develop socio-ecological profiles of two systems, showing that the ethno-ecological context has been restored and operates in the case of the Upper Svaneti, Georgia, while in the Upper Adjara (the Skhalta Gorge) it has been lost. The socio-ecological profile describes the existing interactions between the social and ecological components of a given socio-ecological system, but it does not indicate restorative and sustainable pathways. The ethno-ecological context, however, reveals the mechanisms that drive sustainable existence, and the prerequisites for restoring sustainability may be deduced. Importantly, these conditions do not necessarily demand conserving traditional cultures and lifeways, but can include modern interventions and technologies. The introduction of the concept of the ethno-ecological context potentially can enrich the research methods and theory of socio-ecological systems; e.g., determining the ethno-ecological context will establish the historic boundaries of a given socio-ecological system and tracking its changes over time. Political ecologists practice historical causal analysis – e.g., in event ecology (Walters and Vayda 2009) and, especially, using a progressive contextualization methodology (Vayda 1983). The ethno-ecological context melds ecosystems

and humans in a socio-ecological system that can respond to external (political, economical, natural) and internal (social, ethnic, cultural) factors.

In a word, we argue that the ethno-ecological context can be a necessary condition for sustainable development of an SES: analysis shows whether a given socio-ecological system deviates from a sustainable development path and, likewise, how it may be returned to sustainability or pursue alternative ways of development. The Upper Svaneti progressed with specific political interventions, but similar ones failed in the Upper Adjara. Studying the ethno-ecological context is insightful and is the focus of this short article.

## 2. Comparing the socio-ecological systems between two localities

We conducted a survey of local villages in both regions, and collected socio-ecological data using group interviews and semi-structured questionnaires. These data were analyzed statistically and then synthesized on the basis of the ethno-ecological context. Nature is very diverse in Georgia, particularly so in its western part which is often referred to as Colchis (e.g., Kikvidze and Ohsawa 2001). However, the landscapes and ecosystems converge strongly with increasing elevation (Nakhutsrishvili 2012). Both the Upper Adjara and Upper Svaneti are situated in and above the montane forest belt characterized by the dominance of conifer species (spruce, pine, fir). The admixture of broad-leaved species (most prominently beech, less so oaks and chestnuts in the lower parts of this belt) is also notable. The Upper Svaneti also features the mountains as high as 5000m a.s.l. covered with permanent snow above 4000m. The mountains of Adjara are lower (up to 4000 m a.s.l.), yet the forests contain an additional element of diversity such as Tertiary relict species in the forest understory – some of them can spread to high elevations too (cherry laurel, Pontine oak, rhododendrons). The forests of both regions are rich in edible wild fruits (wild apples, pears, cherries and prunes as well as hazelnuts and all sorts of berries). Vertebrate fauna of the two regions are virtually identical and share the same species as the most European mountains (bears, wolves, foxes, jackals, lynxes, badgers, deer, hogs, eagles, falcons, hawks, ravens, etc.). The extensive agriculture developed in the Upper Adjara and Upper Svaneti also shows strong convergence, most probably owing to the similarities in the natural landscapes and environment.

We conducted fieldwork was in August 2015; overall, we interviewed 38 locals in Adjara and Svaneti using semi-structured questionnaires (Figure 1). The respondents were divided into three groups:

- (1) Skhalta, or the Upper Adjara group
- (2) Mulakhi, or the 'Inner Upper Svaneti', and
- (3) the rest of the upper Svaneti villages (Becho, Latali, Ushguli, Kala and Ipari) or the 'Outer Upper Svaneti'.

The strong cultural influence from neighboring Turkey has brought considerable Islamic element to the culture of Adjara highlands, where *Eid al-Adha*<sup>2</sup> is celebrated by local dwellers. However, because it is intertwined with ancient Georgian ethnic traditions, Islam in Adjara highlands is not as pervasive as in other Muslim communities (Sanikidze and Walker 2004). This can be seen from the fact that Adjara highlanders consider pork and wine usual parts of their diet, and keeping pigs and making alcohol is a normal agricultural practice in this region (authors' personal observation). Similarly, Svaneti highlanders are Christians, but the Christian traditions here are transformed and intertwined with many local pre-Christian (Pagan) customs (Kiknadze 1996; Tuite 2004).

The socio-ecological survey showed that the two regions are similar in the ways the ecosystem is used, and how subsistence agriculture is organized (Figure 2). However, the survey also showed striking differences which, in our opinion, are tightly linked to the social activities of local population. In Skhalta, local foodways are disappearing whilst Adjara is famous for its original dairy dishes, which now are offered to the tourists in

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<sup>2</sup> عيد الأضحى , *ʿīd al-adḥā*

other areas of Georgia. The dishes that the locals of Skhalta named are not specific to this locality but are generic across a larger region (Eastern Turkey, Western Georgia). By contrast, the list of the local Svaneti dishes was much richer. As expected, the local holidays and festivals were dissimilar owing to religious differences. There were noticeable differences in the use of forest non-timber resources and preparation of tinctures – the Svaneti locals were considerably more active. The respondents from both regions feared almost the same wild animals that could damage livestock or crops (Figure 2). We found significant differences between the Skhalta Gorge and the Upper Svaneti in the number of livestock per family, with an overall trend towards decreasing livestock ownership, stronger in Adjara (Figures 3 and 4).

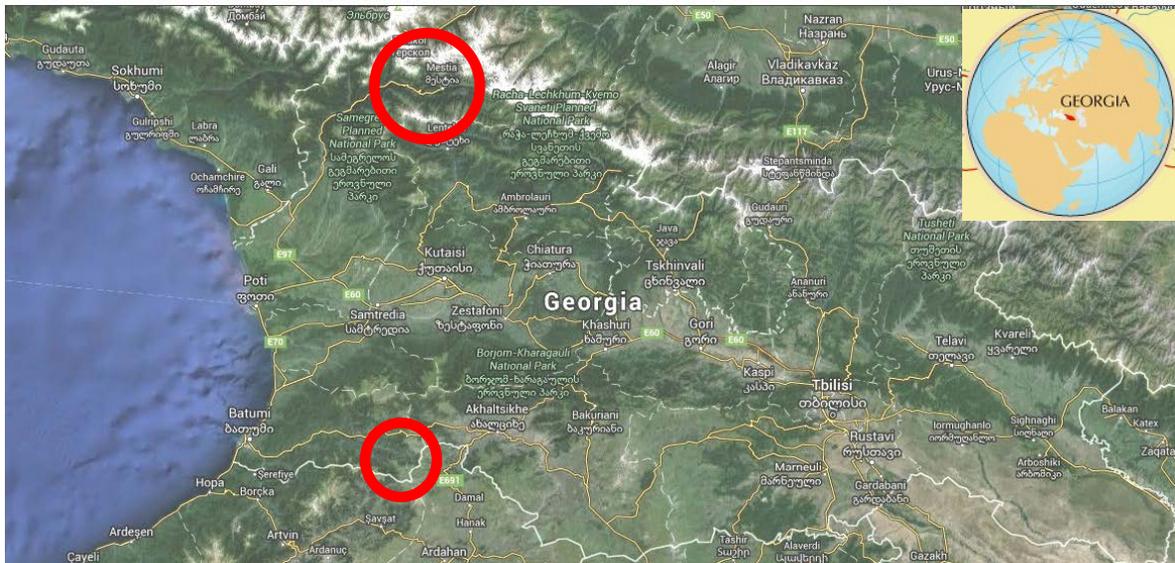


Figure 1: The approximate location of our study areas (red circles) in Georgia; the Upper Svaneti villages of the Mestia district (the upper circle) and the Skhalta Gorge in Adjara (lower circle). Google Maps basemap.

Overall, the ecosystems and resource use are rather similar in the Skhalta Gorge and the Upper Svaneti. The observed and documented differences, therefore, are linked to factors that require active participation of the population. These differences are impossible to understand if the ecosystem or the social system are analyzed separately. Importantly, continuous human occupation existed in the highlands of both Adjara and Svaneti starting from at least the early Middle Ages (Javakhishvili 1979: 43-58). Hence, we shall assume that there were specific rules guiding the use of ecosystem resources and services by the local social systems, which endured. These rules appear to have lapsed in Skhalta, but are still in operation in Svaneti. This becomes more evident when considering the history of the co-existence of ecological and social systems in these regions, especially when looking at the sharp differences under seemingly similar natural conditions: in the Skhalta Gorge we see traditional subsistence economy in decline, the use of wild natural resources strongly diminished, and cultural traditions vanishing (e.g., traditions surrounding local dairy products). In contrast, in Svaneti ecosystem services and cultural and economic traditions are in active use in everyday life. Examining the history of these two regions clarifies how today's striking differences could have emerged.

<b>Community</b>	<b>Upper Adjara</b>	<b>Inner Upper Svaneti</b>	<b>Outer Upper Svaneti</b>
<i>Main crops</i>			
Beans	XXX	XXX	XXX
Corn	XXX		
Potato	XXX	XXX	XXX
<i>Fruit trees</i>			
Apple	XXX	XXX	XXX
Blueberry	XXX	XXX	XXX
Cherry	XXX	XXX	XXX
Cherry plum	XXX	XXX	XXX
Pear	XXX	XXX	XXX
Plum	XXX	XXX	XXX
<i>Domestic animals</i>			
Cat	XXX	XXX	XXX
Chicken	XXX	XXX	XXX
Cow	XXX	XXX	XXX
Dog	XXX	XXX	XXX
Goat		XXX	XXX
Pigs	XXX	XXX	XXX
Sheep		XXX	XXX
Turkey		XXX	XXX
<i>Styles of livestock husbandry</i>			
Summer pastures	X	XXX	X
Winter indoor	XXX	XXX	XXX
Village pasture	XXX	X	XXX
<i>Traditional dishes</i>			
Achma	XXX		
Golo		XXX	XXX
Halva	XXX		
Khatchapuri		XXX	XXX
Kubdari		XXX	XXX
Mertzi		XXX	XXX
Shusha		XXX	XX
Tashmajabi		XXX	XXX
Tchvishtari		XXX	XXX
<i>Local traditional holidays</i>			
Eid al-Adha	XXX		
Pakota	XXX		
Patsbako	XXX		
Tarluni	XXX		
Lamproba		XXX	XXX
Quriaqos and Julietta		XXX	XXX
Liskhvar		XXX	XXX
Lindar		XXX	XXX
Hlish		X	XXX
Parpoldash		XX	X

<i>Berries and medicinal plants gathered in forests</i>			
Achillea		X	XX
Bilberry	X	X	XX
Blueberry	XXX	XXX	XXX
Celandine		X	XX
Chamomile		X	XX
Cherry laurel	XXX		
Coltsfoot		X	XX
Currants	XXX	XXX	XXX
Firewood	XXX	XXX	XXX
Hogweed		X	XX
Raspberry	X		
St John's wort		X	XX
Strawberry	X		
Strawflower		X	XX
Valeriana		X	XX
Wayfarer		X	XX
<i>Home-made tinctures for medicinal purposes</i>			
Achillea		X	XX
Blueberry	1	X	XX
Celandine		X	XX
Chamomile		X	XX
Coltsfoot		X	XX
Hogweed		X	XX
St John's wort		X	XX
Strawflower		X	XX
Valeriana		X	XX
Wayfarer		X	XX
<i>Predators feared by the respondents</i>			
Bear	XXX	XXX	XXX
Jackal	XXX		
Lynx		XXX	XXX
Wild boar		XXX	XXX
Wolf	XXX	XXX	XXX
<i>Lost livestock per household</i>			
Cows	XXX		X
Goats			X
<i>Livestock protection</i>			
Shepherd dog			
Guarding	XXX	XXX	XXX
Bulls		XXX	XXX
Fences			

Figure 2: Ethno-cultural and socio-ecological profiles of highland communities from Adjara and Svaneti. XXX – all or more than 75% of responses were positive; XX – 25 to 75% of responses were positive; X – up to 25% of responses were positive. Source: fieldwork, 2015.

### 3. Historic profiles of the Skhalta Gorge and the Upper Svaneti

The mountains of Adjara and the Upper Svaneti have been populated for many thousands of years (Chartolani 1966; Javakhishvili 1979; Lindpere 2013; Rey *et al.* 2013;). There are Neolithic monuments found in Beshumi, nearby the Skhalta Gorge (Muskhelishvili *et al.* 2014: 14). The archeological artifacts conserved in the Museum of Mestia indicate the existence of agrarian cultures in the Upper Svaneti back in the early Bronze Age (c3000BC, Kikvidze 1976). The first written reports of Svaneti can be found in the works of the Greek historian Strabo, who was born in Amasya in modern Turkey, about 700km from Georgia, in 64 or 63 BC (1924; XI, cap. 19). Evidence reveals that the human population persisted and even thrived in the Adjara mountains and the Upper Svaneti. This was, in part, because both geographic regions were crossed by important ancient trade routes from Persia to the Black Sea (Atanelishvili 1959; Varshanidze 1990). The economic well-being of the Skhalta Gorge and the Upper Svaneti was based on selling their agricultural products and road services to the travelers crossing their country.

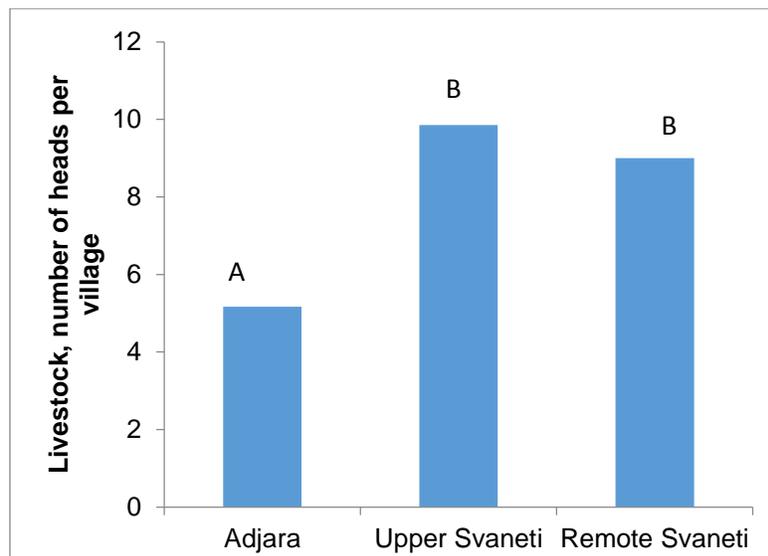


Figure 3: Heads of livestock owned per household; the difference between the regions is statistically significant ( $p = 0.0053$  by the Kruskal-Wallis Test) where the Upper Adjara stands out for the least number of livestock heads per household. The letters above the bars indicate significantly different cases (by Kruskal-Wallis all-pairwise comparisons test at Alpha = 0.05).

In the Classic and early Middle Ages, one of the important trade routes connecting Western Asia (most notably, Persia) with Europe through the Black Sea crossed the Upper Svaneti (Figure 1, indicated by the upper circle). The passes at high elevations were free of snow and safe to travel during summer. The local population profited notably from this trade route and associated military installations: their economy was oriented to civil and military services along the road. Strabo noted especially the strength of Svaneti settlements and their importance to the contemporary world (Strabo 1924).

The well-being of Svaneti communities along the trade route lasted till about the fifth century A.D., which was marked with the end of the Roman Warm Period (Crawley and Lowery 2000; Jones and Mann 2004) and onset of the Little Ice Age (Desprat *et al.* 2003; Röthlisberger 1986). From this time the passes of Svaneti were blocked by ice and snow, and the road ceased to operate (Atanelishvili 1959). The Svaneti route was replaced by another, the Adjara route, which crossed the relatively lower mountains of the Lesser Caucasus through the Upper Adjara and Skhalta Gorge (Figure 1, indicated by the lower circle) and connected Western Asia to the Black Sea. This route was operative till the 19th century when the control over the Black Sea was taken by the Ottoman Empire, and the Western Powers shifted their trade and military routes, to

travel eastwards, southwards to circumvent the Black Sea (Sicker 2001). The Adjara route became important only for regional transportation (Beradze 1981).

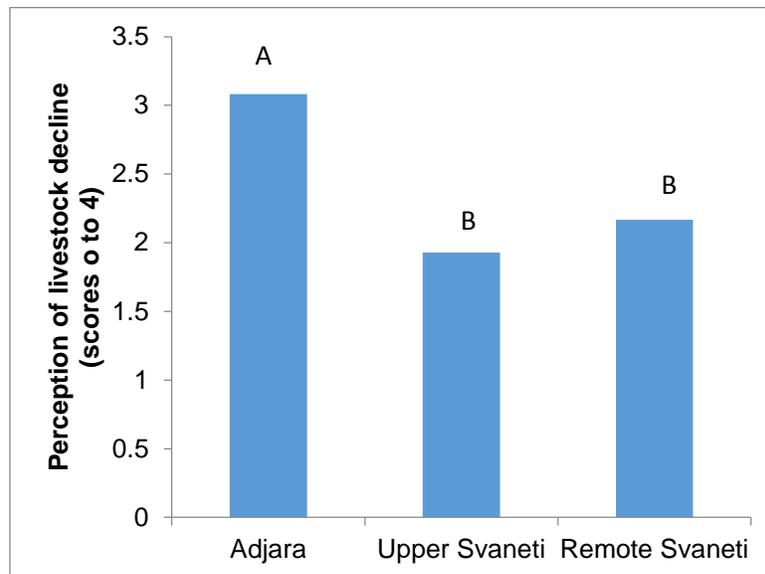


Figure 4: Decline in livestock perceived by the respondents: Adjara stands out with a significantly more strongly perceived decline ( $p = 0.0068$ , the Kruskal-Wallis Test). The letters above the bars indicate significantly different cases (by Kruskal-Wallis all-pairwise comparisons test at  $\alpha = 0.05$ ). The perceived changes in livestock were described with a five-grade scale (no change = 0, declined to certain extent = 1; halved = 2; less than half down to 1/10 = 3; declined 10 or more times = 4).

In the 10<sup>th</sup> -11<sup>th</sup> centuries the Little Ice Age ended and was followed by the Medieval Warm Period, yet the Svaneti transport route was not restored because the temperatures were not as high as before the Little Ice Age (the so called Roman Warm Period, see Cowie 2012) and the old passes were not entirely free of snow. However, the kings of Georgia attempted to use Svaneti as a foothold for expanding the Georgian kingdom northwards. As a result, complexes of Svaneti towers were built to demonstrate technological superiority to the tribes of the North Caucasus and to prevent potential invasions (Figure 5, Vacheishvili and Tevzadze 2014). Therefore, after being a forgotten and remote area over five centuries, Svaneti again became an important crossroads – this time connecting the administrative center of the Georgian kingdom to the North Caucasus (Figure 6). This continued till the 14<sup>th</sup> -15<sup>th</sup> centuries when the climate cooled again and blocked the passes to the North Caucasus (Gasviani 1991). Svaneti returned to a remote backwater. The new warm period started in the 19<sup>th</sup> century and the Upper Svaneti mountains became passable both to the North Caucasus and the Black Sea. However, these routes fell under strong military control from the Russian Empire (the annexation of Georgia, from 1801-1918) and Svaneti remained marginal and poor. The situation was slightly improved as international tourism and alpine sport routes reached the Upper Svaneti during the Soviet Occupation of Georgia (1921-1991). However, the ethno-ecological context has only really been restored in the 21<sup>st</sup> century.



Figure 5: The villages of Ushguli, with their famous ancient defence towers. It is a UNESCO World Heritage Site and the highest continuously inhabited settlement in Europe.

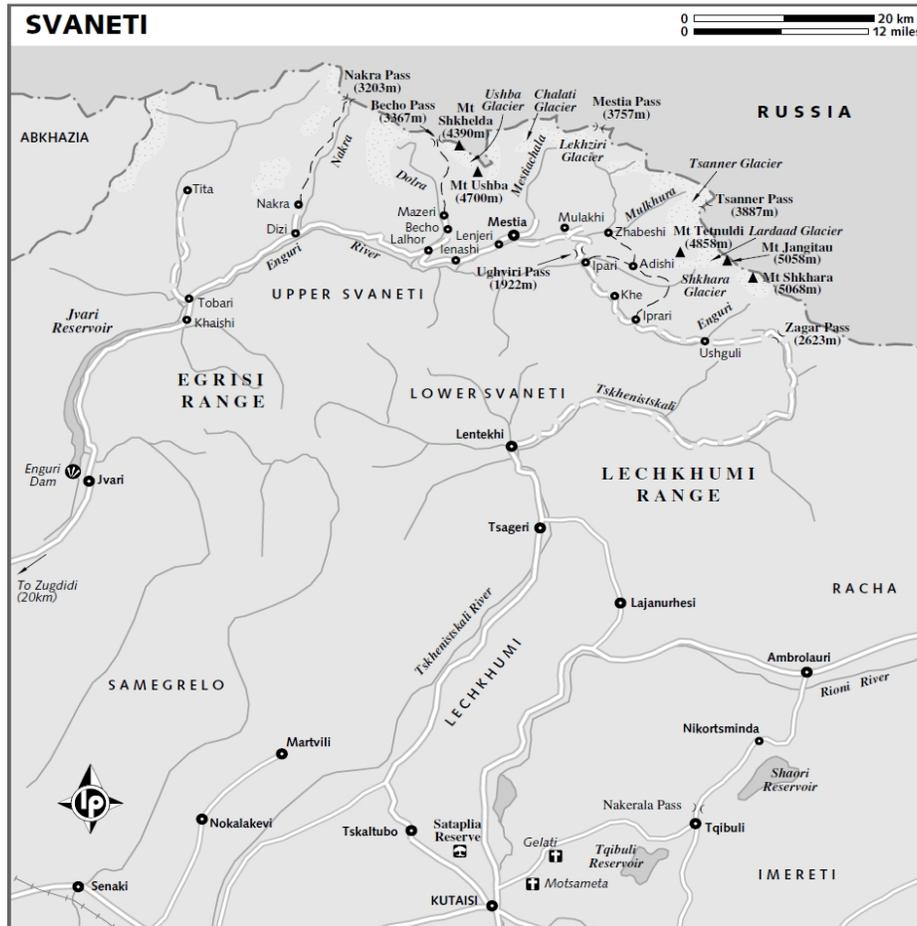


Figure 6: The five paths still operative from the North Caucasus to Svaneti (black triangles): there is a village with towers at the foot of each path. Overall, there were 11 paths controlled by the villages fortified with towers; these are still preserved in the villages. Source: <http://eurasia.travel/georgia/places/mountains/svaneti>.

#### 4. The Skhalta Gorge in the 20<sup>th</sup> and 21<sup>st</sup> centuries

The Skhalta Gorge can be found on today's map next to the border between Georgia and Turkey (Figure 1, the lower circle). Because it was close to Turkey, a NATO member country, the Skhalta Gorge area was locked and isolated during the period of Soviet rule (1921-1991). Accordingly, the locals suffered from and also enjoyed the limitations and benefits of Soviet rule. They have state salaries (through the village bureaucracy) and, at the same time, were busy with cattle husbandry. Interestingly, the local breed of dwarf cows – no taller than 80cm – can still be found in the Gorge (Figure 7) alongside horticulture (potatoes, beans, tomatoes). The villages enjoyed practically free use of trucks and tractors, so that bringing hay to the village for the cattle from the hay meadows 10-20 km away was not a problem.

After the collapse of the Soviet Union, the villagers lost free benefits from the state and switched to the timber business, and logging and operating micro-mills became the main occupation (Cherp and Mnatsakanian 2003). Logging was banned at the beginning of the 21<sup>st</sup> century and the government started a large-scale project – construction of a hydro-electric station (Figure 8) – these changes had strong impacts on local people. In particular, they started to migrate in search of jobs. Today, young children and aged residents remain in the villages, whilst many others go to work in distant locations, mostly in Turkey, especially young males who also can speak Turkish fairly well (see also Henle *et al.* 2008; Niemelä *et al.* 2005). For citizens of Georgia crossing the Turkey border is visa-free, so Skhalta locals reside there seasonally or on a long-term basis, mostly as agricultural workers. There are many houses abandoned or paused part-way through construction (Figure 9).

The villagers have reduced their cattle herds considerably because of fodder problems. Buying hay for winter is expensive (one truck costs c. US\$100, which is very high for this poor region); the construction works of the hydro-electric station occupies the riparian zone, and the villagers of Kvitia lost their winter pastures and hay meadows as a result (Netgazeti 2014). Finally, the locals complained that for the last 2-3 years the harvests of potatoes and beans were very poor. They stopped growing tomatoes 5-6 years ago for the same reasons – the growing season became too dry (the trend of climate becoming drier and warmer in the Western Georgia might be related to global climate change, Bordikoff 2014).

The practice of herding is slowly declining because of diminishing livestock numbers. Herders from other gorges sometimes move the cattle from Skhalta to the summer pastures, yet this depends on specific agreements and the negotiations not always are concluded successfully. With less livestock, the effects of predators are more visible; estimates of lost cattle vary from 30 to 100 per year across the whole Skhalta Gorge. Traditional knowledge of medicinal plants, gathered from the forest, is practically lost, and wild berries are only collected irregularly. After the abolition of the Soviet Era rules and prohibitions guiding forest use, neither the population, nor the local government was able to establish a balanced and sustainable management strategy. Indeed, the timber business once damaged the ecosystem; today, the ban on logging damages the social system, or at least it has led to a migrant remittance economy with absent household members.



Figure 7: Dwarf cows found in the Skhalta Gorge.



Figure 8 (left): The construction works of the hydro-electric station in the Skhalta Gorge.

Figure 9 (right): The Skhalta Gorge landscape with half-finished houses. Traditionally, the households were large in this Islam-dominated area of Georgia and building for large families took a long time.

## 5. The Upper Svaneti in the 20<sup>th</sup> and 21<sup>st</sup> centuries

The Upper Svaneti (Figure 1, upper circle), like the Skhalta region, enjoyed the benefits of bureaucratic subsidies while under Soviet rule, although the scale was less; apart of salaries to administrative workers, teachers, etc., the locals still pursued a mixed livelihood with livestock husbandry and horticulture. Unlike the Upper Adjara and specifically the Skhalta Gorge, the Upper Svaneti was a popular destination for mountain tourism and alpinism in Soviet times (Figure 10). But this produced little economic benefits for the local population because private business was illegal in the Soviet Union, and the locals could only rent their

houses or sell their agricultural products illegally. Nevertheless, some infrastructure was constructed to support tourism and this has assisted regional development (Scott and Noll 2015). After the collapse of the Soviet Union and until the 2000s, Svaneti became one of the poorest regions of Georgia with exceptionally high crime rates; a few criminal groups controlled everyday life in Svaneti (Baramidze 2015; Darchiashvili 2003; Nodia 2005). Owing to the resulting safety problems, tourism practically disappeared, whilst illegal forest logging increased (Red Cross Society of Georgia 2014). In 2003 the government of Georgia issued their decision to redevelop international tourism, and the Upper Svaneti was chosen as one of the sites. Remarkably, the government cracked down on the criminal clans and paved the way for economic development (Kukhianidze 2009; Shelly *et al.* 2007). Ski resorts were planned and built, offering the potential to extend tourism in the Upper Svaneti year-round (Figure 10, Observer 2016). These investments in tourism meant that (i) the population returned to their abandoned villages, and some even converted their houses into family hotels (Cappucci *et al.* 2015; Voll and Mosedale 2015; Young Economist Association 2005); (ii) the traditions of cattle husbandry and the use of non-timber forest resources were restored – cheap and organic local food attract more tourists.



Figure 10: Ski area in the Upper Svaneti, recently constructed.

The ban on logging was enforced, and tourism development helped to reduce the overall pressure on the ecosystem; elements of the traditional social structure were also brought back by the returned population. As local people started to come back and engaged with tourism opportunities, most did not attempt to reinstate commercial cattle husbandry and some households who converted their houses into hotels still do not have any cattle. As a result, pressure on the alpine grasslands did not increase notably as compared to previous years. For example, the community of Mulakhi did not harvest winter hay from former meadows at high elevations, and the population now is satisfied with the hay harvest closer to their settlements.

The locals of the Upper Svaneti, similar to those of the Skhalta Gorge, complained about the losses in horticulture owing to drier summers (which might be related to global warming, Bordokoff 2014). However, these losses are successfully compensated for by gains they obtain from local tourism.

## 6. Discussion: ethno-ecological context and the role of tourism in conserving ecological and social systems

Like cultural ecologist Robert Netting, we have studied relatively isolated villages, high in the mountains, that have depended over long periods on local natural resources –although some Georgian communities were situated on historical trade routes (Netting 1983). We can consider them as local socio-ecological systems (Redman *et al.* 2004). Sequent occupation was punctuated by climatic events and changing economic fortunes and political regimes, suggesting a persistent subsistence economy. Sustainable livelihood systems involved a balanced exchange of benefits, features that are also found in other European silvo-pastoral systems (Didebulidze and Plachter 2012; Kemkes 2015). In this case,

- (1) the social component benefits from the resources extracted from the ecological component;
- (2) this use of resources does not degrade or destroy the local ecology, but, conversely, owing to the anthropogenic mosaic of landscapes and habitat heterogeneity, the ecological component remains healthy and supports high biological diversity (Young *et al.* 2003, 2005).

Still another feature of socio-ecological systems – adaptability – is also evident over time, but we will discuss this later, after analyzing the ethno-ecological context of these socio-ecological systems.

In these cases, the ethno-ecological context is best viewed as the totality of factors having beneficial or detrimental effects on the balance of the sustainable resource use and economic well-being of given socio-ecological systems. External factors identified were natural (e.g., climatic change), political (the actions of the changing state and its intermediaries) and economic (trade roads, cartels, the tourism sector). Therefore, the ethno-ecological context helps to elucidate important factors over the long history of development of the socio-ecological systems in the Skhalta Gorge and the Upper Svaneti. Most probably, trade roads started to operate back in the Medieval Warm Period (Mann *et al.* 2009) or earlier (Liu 2010), when the traditional subsistence economy in these socio-ecological systems was already established. But the trade roads brought travelers, who created a new market for services: there was demand for safe passage, safe shelter and quality food (Lane 2011; Richards and Hall 2000). Evidently, this new market had a beneficial effect on the economy of the local socio-ecological systems as the villagers did not need to extensify agricultural production. At certain times, passing trade and hospitality, combined with food production on a lesser scale, was sufficient to insure livelihood security. Cropping and meat/dairy sales to travelers and later to tourists generated more income than the traditional near-subsistence agricultural system.

The Medieval Warm Period gave way to the Little Ice Age, and the trade roads through the Upper Svaneti ceased to operate (Vacheishvili and Tevzadze 2014); within the same time frame, the East-West trade roads were shifted to circumvent the Black Sea and the Upper Adjara passes lost their significance (Sicker 2001). Travelers declined in number and the local socio-ecological systems adapted by returning to a greater reliance on traditional subsistence agriculture. But this was gradual and without detrimental effects. Adaptability is an inherent feature of socio-ecological systems in general, where local agency can operate (Folke 2006).

The establishment of Soviet rule in the last century was economically beneficial to local people as it effectually subsidised factors of production, provided services an increased general wellbeing, especially in the Skhalta Gorge. However, direct subsidies did not create any new market for local subsistence agriculture, which continued to be the main occupation in the villages. Only means of transportation changed noticeably – the villages were provided with trucks and some other agricultural machinery, yet with a limited effect on agriculture given the mountainous terrain (Tasser and Tappeiner 2002). The "collectivization of agriculture" associated with the establishment of Soviet rule was painful, and was a prolonged process in the mountains (Nanskani 1970). Local socio-ecological systems demonstrated their adaptability once again.

The collapse of the USSR ended Soviet support. We can safely say that the shock caused by the economic losses was too strong for local socio-ecological systems. In the Skhalta Gorge uncontrolled logging was severe and damaging. Criminality occupied the space of the absent state in the Upper Svaneti (Baramidze 2015, Darchiashvili 2003; Nodia 2005).

In early 2000s Georgia started various programs of development, three of which directly affected the local socio-ecological systems in the Skhalta Gorge and the Upper Svaneti. The first was the effort to support tourism in Georgia for the first time (The Bulletin of the Government of Georgia 2004); the second was the energy policy approved by the parliament in 2006 (Kochladze 2013), which envisaged building hydro-electric stations on any stream where it was economically feasible; the third was enacting the *Forest Code of Georgia* (1999), changing control of logging (Zazanashvili *et al.* 2006; Zazanashvili *et al.* 2009). It should be noted that these programs were national, not targeted specifically at the mountain regions of Adjara or Svaneti. The outcomes of their implementation were very different in the Skhalta Gorge and the Upper Svaneti. In the Upper Svaneti the investment in tourism did bring travelers to the local roads and helped develop hospitality. In the Skhalta Gorge this did not happen even though there were investments in tourism – hotel construction in the alpine zone, but poorly connected with the communities who failed to find many jobs with them. At the same time, their agriculture suffered from the loss of pastures and hay meadows owing to hydro-electric construction works. Finally, logging was banned and villagers lost this source of income too. Hence the shift to migrant remittances, mostly in Turkey, which offers attractive job opportunities. Outmigration from high-mountain communities is not unusual when new job opportunities emerge elsewhere (Netting 1983). In consequence, many traditional practices such as gathering edible and medicinal plants are in strong decline in the Upper Adjara, in contrast with the Upper Svaneti. Likewise, the local traditional festivals are already lost in the Upper Adjara, whilst in the Upper Svaneti these events serve as additional tourist attractions both nationally and internationally.

Overall, we see that tourism as a tool for rural development can work well if it creates a new local market for services and agricultural products, as it can be seen in the case of the Upper Svaneti. However, tourism cannot fully replace extensive agriculture in these still-marginal mountainous regions, as the Skhalta Gorge demonstrates.

## 7. Conclusion

We conclude that the circumstances in which the well-being of a socio-ecological system is tightly linked to external political, economic and/or natural factors can be referred to as the ethno-ecological context of a given locality. The use of such a term is appropriate given the bounded nature of the regions and systems under discussion, as they remain relatively marginal and partially isolated, geographically and socially. Understanding change in socio-ecological systems parallels political ecology analysis. In other words, an ethno-ecological context develops over time as the interplay of specific external political, economic and/or natural factors with a local socio-ecological system. The interplay of these factors, which we have only sketched in broad terms - and without reference to individual households and their socio-economic differentiation - influences sustainability, as measured by the presence of a stable economy and healthy ecosystems. The loss of sustainability is equal to the loss of a sound and workable ethno-ecological context. And yet, in the mountains, the ethno-ecological context can be restored by creating (restoring) a market for the products and services offered by local socio-ecological systems.

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