From Vernacular to World Heritage

edited by
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VERNACULAR ARCHITECTURE IN CHAZHASHI SETTLEMENT, UPPER SVANETI, GEORGIA

Gilberto Duarte Carlos
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Mónica Alcindor
Teresa Bermudez
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Introduction and context

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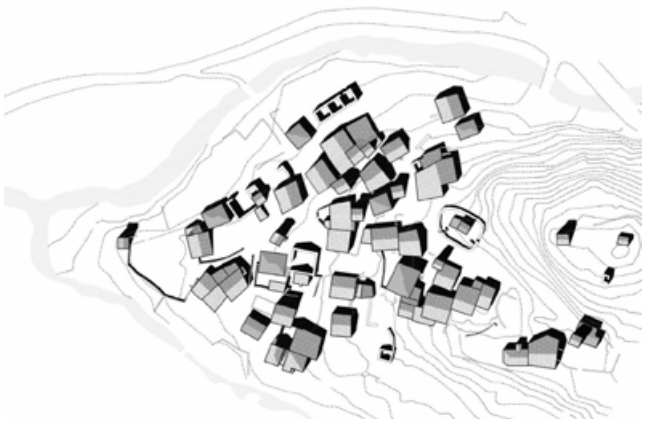
Chvibiani settlement, Upper Svaneti, Georgia
(© M. Correia, 2018)

The Ushguli territory is located in the *Upper Svaneti* region, in Georgia. Its occupation is particularly influenced by the *Enguri* River course. The river *Enguri* is born in the Caucasian mountain chain, formed by the glaciers of the *Shkhara* peak, the Georgian highest point (5068m). From a geographical perspective, the high valley conformed by the *Engury* stream constitutes the fundamental axis for the implantation of the four historical settlements that are part of *Usghuli* area, listed as World Heritage, since 1996 (UNESCO-WHC, 1996).

The settlements appear alongside the river, following the valley slope, occupying the in-between natural platforms that are less vulnerable to violent downpours and snow slides. In the Northeast, the first village of the *Ushguli* community is *Zhibiani*, followed by *Chvibiani*, *Chazhashi,* and finally, *Murkmeli*. Unlike the first three settlements, *Murkmeli* is located in the North margin of the *Enguri* River. The middle settlement, *Chazhashi*, constitutes the World Heritage property, and due to its status, it is regulated by more rigorous regulations. The three other settlements are integrated on its buffer zone. *Chazhashi* also has the territorial characteristic of being located in-between the affluence of the smaller *Qvisiri* River and the *Enguri* river. This water line course junction creates an insular platform, forming a natural defensive barrier that involves the settlement's lower area. The *Chazhashi* village occupies the adjacent East slope, developing its dwellings according to the land level curves around the insular promontory, resembling to a medieval defensive structure surrounded by a water moat (ICOMOS-Georgia, 2000).

The four settlements present very similar configurations and dimensions. The buildings are concentrated into rough elliptic shapes cores, occupying mostly the southwest slope of the hillock and taking advantage of its biggest sun exposure and leaving the remain highest areas for the forest, an important economic resource and a barrier to prevent the habitual avalanches to reach the villages (Mardani, 2014).

The *Ushguli* area represents the highest point of human occupation, before the permanent snowed mountain range that separates the Georgia from the Russian territory. Therefore, the climacteric conditions are harsh and severe, particularly during the winter period, conforming one of the most isolated communities of the region. The resulting lack of cultural transferences produced a very particular social structure, based on family ties and clan dispute. The local habitants, the Svan people, are described as a combative community with warrior habits. The conflicts with invaders and between them-



Plan of the World Heritage site of Chazhashi village, Upper Svaneti, Ushguli community
(© *Ci-ESG, 2020*)

3D interactive model - village aerophotogrametric model
(© *Ci-ESG, 2020*)

selves were intense and regular. This behaviour is clearly reflected by the defensive position of the clusters, their structure and their inherent typologies (Pavan, 2011).

Localisation of Upper Svaneti, Georgia

The historical background

This strategic position is influenced by the site history. Due to its richness in important natural resources, such as copper and gold, Georgia was strongly disputed by some of the major empires of the ancient world (Persia, Greece, Rome, and Byzantium). Another important factor that made this region such a disputed land was its strategic position, namely in terms of commercial routes, as some of the major routes with the orient passed through the Caucasus Mountain to reach the Black Sea (Mikaberidze, 2007; Pataridze, 2017).

But the progressive global climate cooling that took place after de 6th century closed all the possibilities of crossing the Caucasus, leaving the Svaneti region in isolation until global warming opened the Caucasus passages again around the 10th century. However, this warming did not reach the same temperatures of Ancient times, leaving the passages to the Black Sea with a very challenging access (Tevzadze, Vacheishvili, 2014). Therefore, the possibility of communication with the North region of the Caucasus was not without danger.

By this period, the Georgian kingdom was already established in the region. Svaneti was the most advanced border in the country with the North Caucasus. Therefore, between the 10th and the 13th centuries, there was a defensive need of closing this border from their northern neighbours. The defensive clusters are in line with all the major crossing passages of the period, so that all potential means of assault were blocked (Tevzadze, Vacheishvili, 2014).

Chazhashi settlement, Upper Svaneti, Georgia
(© *M. Correia, 2018*)

The hard access to this region, together with the fearless character of its people established the Svaneti region as the ultimate defensive redoubt of the Georgian kingdoms. During the worst conflict periods, it was common that the rulers established their refuge and lay their treasures there. This fact, despite their small dimensions, enhances the historic importance of the *Usghuli* villages and its inherent value within the Georgian culture.

Community and governance

The striking isolation of Svaneti due to a high-altitude implementation, whose access historically was of great complexity, strongly defined its social structure and their governance organisation. In fact, the high valleys of the Caucasus have always served as an admirable dwelling and a safe refuge for those people that desired to live in seclusion.

As a result of poor conditions and little contact, unusual ways of living were established, which made Svaneti a unique place to live. Until the early 20th century, ancient customs were preserved, while the language and the polyphonic songs are being practiced till today. The basis of the society was through self-governed commune, and the individual members were firmly linked together by the bond of strong communal feelings, represented mainly by the unusual towers that have defined the landscape of this settlement.

Actually, these structures represented a corporate group that had specific functions of ritual, economic and political unity. In house societies like the Svaneti's, all types of socio-political manoeuvring were disguised under the kinship cover (Lévi-Strauss, 1981). However, the commune was of much greater importance than the family, and the obligation to perform the duties relating to it was much more binding on the people's conscience.

Chazhashi valley view, Upper Svaneti, Georgia
(© M. Correia, 2018)

Fortified tower, Chazhashi, Upper Svaneti, Georgia
(© M. Correia, 2018)

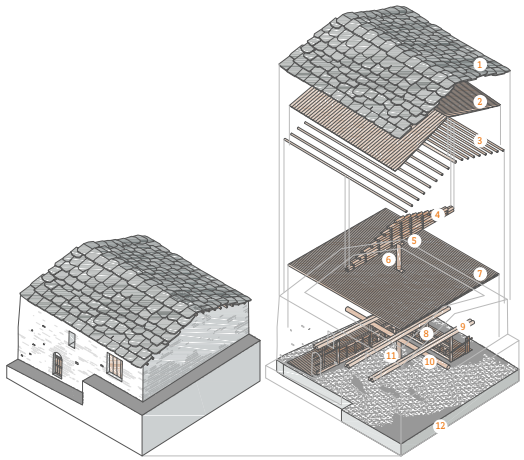
Vernacular buildings and towers, in Chazhashi, Upper Svaneti, Georgia
(© M. Correia, 2018)

Settlement aggregation and dynamics

When observing *Chazhashi* layout, one can state that the aggregation of the built units did not correspond to any traditional urban element. The urban layout did not present an articulated network, neither an evident hierarchic structure. The overlapping between public and private space was constant, therefore conditioning the direct access to the ancient buildings. The development, between the 8th and the 9th centuries, of a feudal system in Georgia, took, in Svaneti, a peculiar character. As usual, the lords appropriated the land, as well as the public and the religious spaces (Tuite, 2002). Therefore, it is very likely that the settlements had their origin in isolate buildings, dwellings and towers, gradually evolving trough an aggregation and densification of an organic system, towards the occupation of the slope land steps, regarding mostly to the defensive criteria and/or trying to face the best sun exposure.

The houses were built in the rockier and infertile land, mostly adjacent to the river, and the farms were on the more productive slopes. To some extent, the shortage of fertile land explains the settlement dispersion, and this diffusion, in its terms, justifies the impossibility of building an enclosing wall, and therefore, the use of fortified towers as the main defensive mechanism (Mardani, 2014).

The buildings are isolated or grouped in smaller clusters, ranging from 2 to 5 units, with surrounding vacant space, exposing most of the building's facades, expected in the case of the inner adjacent walls. Sections of fence walls usually bound most of the clusters into bigger ones, segregating some of the building's residual periphery areas from the circulation network, reinforcing what can be interpreted as a very primitive urban block, without the concept of urban grid. Therefore, the established concept of street, in its typical medieval channel shape, crossing the thick built density and conditioning



Building systems in a house (machubi), Chazhashi, Upper Svaneti, Georgia
1.Schist overlapped tiles; 2.Clamp branches/ceiling boards; 3.Ceiling longitudinal beams; 4.Roof support structure; 5.Joint connection piece; 6.Central post; 7.Wooden platform; 8.Wooden decorated partition; 9.Transversal beams; 10.Longitudinal beam; 11.Central post; 12.Foundation stone slab
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Building systems in a defensive tower, Chazhashi, Upper Svaneti, Georgia
1.Schist overlapped tiles; 2.Clamp branches/ceiling boards; 3.Ceiling transversal beams; 4.Roof support structure; 5.Joint connection piece; 6.Central post; 7.Wooden platform; 8.Platform trapdoor; 9.Transversal beams; 10.Stone slab; 11.Wood formwork; 12.Ridge beam; 13.Stone chanel trapdoor; 14.Removable stairs; 15.Foundation stone slab
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Building systems in a tower house, Chazhashi, Upper Svaneti, Georgia
1.Schist overlapped tiles; 2.Clamp branches/ceiling boards; 3.Ceiling longitudinal beams; 4.Ceiling transversal beams; 5.Ridge beam; 6.Joint connection piece; 7.Transversal beams; 8.Wooden platform; 9.Platform trapdoor; 10.Transversal beams; 11.Longitudinal beam; 12.Central post; 13.Stone stairs; 14.Stone slab; 15.Longitudinal beam; 16.Joint connection piece; 17.Transversal beams; 18.Foundation stone slab
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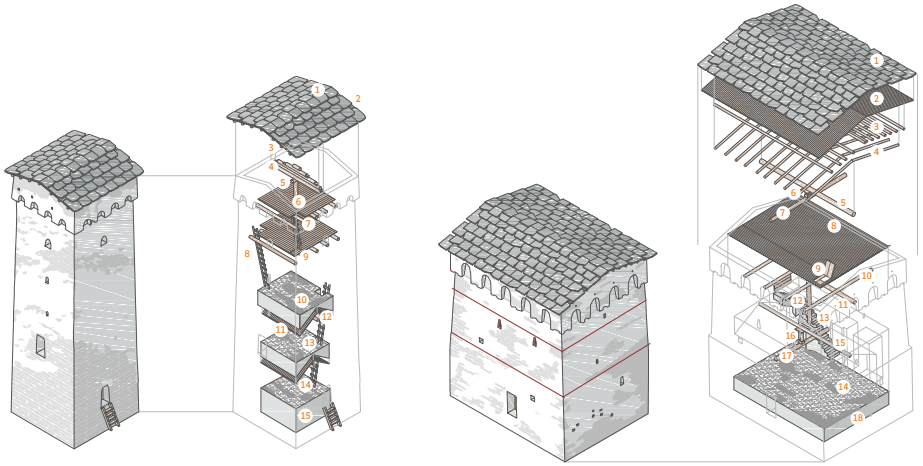
the urban layout, does not exist in this case. The concept of public square is also not present, as there is no defined redoubt for the gathering of the community, articulated with the communication network. The only exceptions are the small temples and its walled enclosures. This also justifies the fact that the buildings do not present a dominating façade or other types of composition hierarchy towards the exterior (ICOMOS-Georgia, 2000).

The 'public space' is rather the consequence of the interception of all the periphery area of the isolated buildings and built clusters, comprising a network of spaces and passages of different sizes and configurations. Another important feature of the circulation paths is its function for water drainage. Subject to heavy rain most of the year, the non-built space usually coincides with the natural ridgelines, tempting to minimise the substantial ground erosion. In some points, one can find transversal logs in the ground between buildings, in order to act as a form of containment. The recent and intensive use of the car originates evident conflicts regarding the circulation spaces. The elevated erosion increases the soil permeability, compromises the land, builds instability and creates areas for water accumulation.

Nevertheless, some distribution itineraries can be clearly identified on the village structure: the two surrounding itineraries that bound the three land platforms of the mount, the connection passages after the three bridges, and the permeable central space that crosses the platforms from the lowest West level to the East part of the settlement, can be identified as the main circulation elements.

Two isolated religious buildings dominate the highest area, located in the East area of the mount, where there is no presence of other dwellings. However, despite this singular feature and their social



importance, their smaller dimension and the prominence of several fortified towers clearly minimise the impact of these churches as village references. These small churches, from the same period than the defensive tower construction, were probably built as family churches, in the context of the feudal appropriation of public and religious space (Tuite, 2002).

Architectural typologies

Despite the different volume aggregation systems, one can clearly identify three key typologies in *Chazhashi*: tower, house and tower-house (ICOMOS-Georgia, 2000).

Tower (*Koshki*):
According to the official sources, the tower (designated in Georgian as *Koshki*) dates back to the period between the 11th and the 13th centuries. The tower spatial organisation reveals the traditional socio-economic structure of these communities, well adapted to a traditional economy based on agriculture and cattle breeding. Formerly, this typology had a defensive use, evident in its architectural features. The tower was also well adapted to the dimension and social structure of local families. Each family built their defensive tower near the house, so these defensive and vigilant mechanisms were autonomous and scattered in the urban layout (Mardani, 2014). This kind of use was reflected in the type of openings located at the top of the tower, which gave the possibility, when needed, of throwing stones and shooting arrows.

Tower house, in Chazhashi, Upper Svaneti, Georgia (© *M. Correia, 2018*)

House (machubi), in Chazhashi, Upper Svaneti, Georgia (© *M. Correia, 2018*)

The tower interior structure and organisation allowed to stock up projectiles at the lower levels and to launch them to the enemy from the higher levels. Towers could be part of an ensemble, composed by small volumes, or built as isolate buildings. While part of an ensemble, they combined housing and defensive use. The defensive role of these hermitic buildings served as refuge for the owner's family against foreigner bandits, as well as against other family clans, with whom it was common to be in dispute (Pavan, 2011).

The tower typology is characterised by a slender shape due to its considerable height and its progressive narrowing. The tower presents several internal levels conformed as chambers or platforms, with removable vertical connections between them. The tower is composed of a squared plan configuration that reduces in size along its vertical development. Its appearance could be more or less slender, as well as more or less robust or refined, depending on the particular case. In most cases, the tower is topped by machicolated parapets crowned with arches; a solution that seems to be of renascence influence (UNESCO-WHC, 2004).

Usually there are only two entrances to the tower, both situated at the lower levels, one on the ground floor and the other one in the first floor. This typology could have between four or five levels composed of different material partitions, which change the constructive system depending on the level height. In the lower levels, the division between levels is done through a multilayer stone slab laid over a pitched wood formwork. Surprisingly, in some documents they are called as 'dummy' vaults, although they are not built with concentring stone rings or primitive arched elements. The upper levels are divided through lighter horizontal wood platforms, supported by transversal beams, recessed in the façade's opposite walls. There is no permanent vertical communication inside the tower between levels. The passages between levels resort to small trapdoors and thin retracting ladders. These elements are always positioned in the angles of the rooms. Obviously, the intention was to isolate completely each level, to increase the resistance capacity during the tower assault.

When towers are connected to houses, the communication between buildings could be made through the upper floor of the house. The presence of windows is almost imperceptible because of its very reduced size, obviously due to defensive reasons and the building structural capacity. The towers present two kinds of openings located along the walls, devoted for air circulation and light, integrated in the machicolated parapets. Later, after the trivialisation of the firearms use, smaller openings were added, namely at the highest levels, to work as shooting holes. The minor size and random position of these elements did not produce significant impact in the tower composition.

Sociocultural features, in Chazhashi, Upper Svaneti, Georgia (© *A. C. Merten, 2018*)

Traditional little church, in Chazhashi, Upper Svaneti, Georgia (© *A. C. Merten, 2018*)

House (*Machubi*):

This typology constitutes the traditional building for family and animal shelter. Developed in two levels, without internal communication, it is usually composed by a single volume, of rough quadrangular plan. Partial buried, it solves the soil high significant differences, assuming two different land platforms according to their double level (ICOMOS-Georgia, 2000).

The ground floor of the house (*machubi*) is composed by a single space with a fireplace without chimney. An oak wood pole, which supported the central double beam of the upper level floor, was located in the geometric centre of the space. The inhabitants and their animals used this level simultaneously in the winter, in order to optimise the temperature. The cattle were separated by a wooden vertical partition, creating a peripheral corridor, surrounding the central space. These partitions of carved oak wood, richly decorated, allowed the animals to introduce their heads in individual frames facing the central space. The partition, no more than 1,50m high, did not touch the ceiling. Therefore, it did not constitute a segregated compartment. In some areas, they presented wood covers to serve as platforms for tools or for food storage. Obviously, the family, which could reach up to 10 elements, slept close or above the animal stalls, to take advantage of the warmth produced by animals. The window openings were scarce, small and high, in order to avoid the snow accumulation.

The upper floor (*darbazi*) was mostly used as residence during the warm periods. It was composed by a single open space without any partition, since the animals were not admitted inside. The floor was made of wood, constituted by a platform of parallels logs. The room was open towards the roof structure, exposing the massive log 'truss', supported by a central oak (or pine) pole. The upper level pole was positioned over the middle double beam; accordingly aligned with the inferior pole. In some cases, the houses integrate an external corridor (*gubandi*) to improve thermal insulation to the house and

to protect the entrance. This corridor connected to the house through an entrance located at the upper level (Pavan, 2011).

Tower-house or fortified dwelling:

The tower-house combines the features of the house and of the tower in the same building. The tower-house is apparently similar to the Svaneti towers, but with variations in its proportions. It has a less slender shape due to its lower height and its greater width, therefore presenting less overlapped levels. There are just a few tower-houses in the *Usghuli* villages.

The tower-house combines defensive and residential uses. The three existing levels were used to different activities. The ground floor of the tower-house (*machubi*) combined both winter residence and animal shelter; while the first floor (*darbazi*) was used for summer residency and storage. Additionally, the third level had a defensive role, and the machicolated openings allowed throwing stones against enemies. The entrances were located on the ground floor, while other openings could be located at each level, but always with a very reduced size, due to defensive reasons. Unlike the *machubi* the tower-house could present internal vertical communication between the lower levels. However, the communication between the last levels was solved through trap doors and removable wooden stairs.

Currently, there are only 4 cases left at the *Chazhashi* village, and the most prominent tower-house accommodates the local museum (ICOMOS-Georgia, 2000). The exceptionality of this typology, the particularity of the current function, and the significant reconstruction intervention during the Soviet occupation compromised the authenticity of the building, not allowing a reasonable interpretation of its original features.

Typological complements

Machicolated parapets crowned with arches

This was one of the most characteristic elements of the Svan defensive buildings. This element allowed for the top horizontal openings to be projected out of the façade wall. Therefore, enabling the stone throwing without excessive exposition, and reducing the vulnerability to the arrows. The fact that machicolated parapets crowned with arches were a defensive technique developed in the renaissance, implied that towers in *Chazhashi* could be associated to different historic periods, in the Middle Age, that resorted to normal openings in the façade and those, of more recent periods, that adopted this war technique innovation.

Stone chambers with gable ailing

One of the most distinctive elements of the towers was the stone chamber of the lower levels. These massive structures resorted to thick stone floors that were assembled above a wood gable ceiling, resembling to a collaborative slab. The resulting space suggested a negative shape of a pitched roof. The sim-

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Defensive tower, Chazhashi, Upper Svaneti, Georgia
(© M. Correia, 2018)

ple geometry, small dimension, wall thickness and the lack of natural light imputed a rather austere atmosphere to this element. The oldest gable ceilings presented a dark colour due to smoke exposition. This element was made of two slated panels, operating as a lost formwork, constituted of long boards with one central beam positioned under the ridgeline. Curiously, sometimes they were described as a 'dummy vault' solution (UNESCO-WHC, 2004).

The *machubi* decorated partitions for cattle

The wooden partition, which formed the animal stalls inside the *machubi* ground floor, constituted a very characteristic element. Built with one or two sides, segregating the central space from the façade walls, it formed a surrounding corridor. Unlike the rest of the stone walls, the inner part of the partitions was decorated with elaborated patterns, based on the repetition of simple geometric forms, symbols or botanic inspiration elements. This contrast accentuates the partition's expression and their importance in the interior atmosphere. They remarked the skill of local wood carving, and the tradition of the Svan artisans with pine, oak and walnut wood, which could be also express in other important elements like the temple doors, some of the doors of the *darbazi* level, and the iconic chair of the head of the family, as depicted by Kalatozov's movie (1930). The partitions were composed by horizontal logs, connected by vertical smaller poles, and infilled with wood panel boards in-between them. The elements were usually framed by the carved motifs. The bigger elements are assembled by fittings, although it was possible to find some cast iron binders too. Along the inner side, facing the holes for the animal heads, another smaller partition existed that served as manger.

Construction systems and elements

Both of the typologies resort to the same construction system as well as the same basic structural principles. Despite the structural adjustment to the buildings different high, or to a specific defensive function, the construction procedures and techniques do not evince significant changes (Pavan, 2011).

The stability of the buildings takes advantage of the mountain rock surfaces of the ground to raise the structures. The concept of building foundations is not entirely applied, following the medieval approach, only adjusting the ground rocks to raise the biggest layers of stone, therefore avoiding creating underground elements.

The external walls constitute a bearing envelope of quadrangular shape. The thick walls, which can reach up to 1,00 m width, are made of limestone and schist masonry. They resort to long blocks of different sizes which became smaller and thinner along the wall height, following the reduction of thickness until the top of the building. The wall pattern is uneven, although it presents some horizontal regularity amongst the same layers.

The presence of mortar was significant, namely in the joints of the higher layers. In some cases, it was also used in the surfaces as a plaster covering. Apparently, the objective was to consolidate the

Vernacular wood work, Chazhashi, Upper Svaneti, Georgia (© *G. Duarte Carlos, 2019*)

Wooden roof suport structure, Chazhashi, Upper Svaneti, Georgia (© *G. Duarte Carlos, 2019*)

most fragile parts of the structures or punctual reinforcement of crack repairing. The mortar presents a yellowish colour and a rough texture, indicating a high percentage of dry sand in its composition. The easy desegregation of many plaster sections also implies the lack of a strong binding element. The original composition of the mortar is not consensual; there are some opinions that infer the use of cow manure, and others that admit the use of lime. As observed along the project missions, all the recent construction interventions resort to industrial cement.

The structures that support the rooftops are extremely interesting. A triangle made of horizontal logs is placed in the middle of the roof, perpendicular to the ridgeline, like a traditional truss. On the top, smaller beams, from smaller logs, were perpendicularly displayed from façade to façade, covering all the building area, creating two roughly symmetric eaves. The rooftop was then covered of thin schist plates. The plates had a quadrangular shape and were overlapped as shingles, from the top to the bottom of the eave.

According to Kalatozov's movie (1930), it is possible to identify the former presence of a layer of beech branches, before the schist display, acting as small hooks. This was one of the solutions found to minimise the problem. Nowadays, the slates are not fixed by any complementary element, and are placed directly on the top of the wooden grid, relying only on their own weight to stand on the same position, or simply by being secured through nails. The observed vulnerability of this system means that the original knowledge is no longer present in the Svaneti building culture.

Strategies for conservation and sustainable management

The Upper Svaneti World Heritage property is protected around the main listed component, Chazhashi village, by a 1km radius. Under the National Law on Cultural Heritage in Georgia, all four

View of Chazhashi from Murkmeli, Upper Svaneti, Georgia (© *M. Correia, 2018*)

vernacular villages *Zhibiani* (also known as *Jibiani*), *Chvibiani*, *Chazhashi*, and *Murkmeli* (also identified as *Murk'meli*) are listed as national monuments. This law only allows appropriate interventions on national monuments, and provides the highest heritage protection in the country. As the four villages are national monuments, there is a 500m safeguard area around each one of them that further increases their protection (UNESCO-WHC, 1996).

The rising of international tourism in the last years, and the demanding for more accommodation at Upper Svaneti, brought a higher pressure to the property, added to the lack of local management capacities and the insufficient conservation skills that were already, for a long time, a risk to the property (UNESCO-WHC, 1996). In recent years, the National Agency for Cultural Heritage Preservation of Georgia developed a more active assessment, monitoring and managing of the property, which has been a real difficult endeavour, especially due to the region's remoteness, winter snow isolation, difficult road access, and economical challenges faced by the country.

The pro-active attitude of the National Agency was just possible through a more continuous and step by step method, which resulted in some improved maintenance, conservation, and restoration interventions in the property. During the last years, the National Agency carried out several national funded interventions in the four villages, and in particular at *Chazhashi* village. The interventions included mostly the reinforcement of foundations, the removal of vegetation from the walls, the arrangement of hidden reinforcements at the roofing levels, the installation and waterproofing of wooden roof structures, the restoration of slate stone roofs, the demolition of instable parts and the restoration of main walls (National Agency, 2020).

Through a more strategic and sustainable approach, the National Agency developed regulatory measures to address the conservation, the restoration, and the rehabilitation of the traditional dwellings in the *Ushguli* community. Additionally, the Ministry of Regional Development and Infrastructure, in collaboration with the National Agency also prepared the "Development Regulation Plans in the Ushguli community", which includes the four villages, and the buffer zone of the World Heritage Upper Svaneti property. In the last years, the National Agency built bridges and entailed a more insightful communication with the local communities and international organisations as the WHC and ICOMOS - an open dialogue that is bringing positive outcomes towards the sustainable safeguard of *Zhibiani*, *Chvibiani*, *Chazhashi*, and *Murkmeli*.

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