Edin JAŠAROVIĆ*, Ema ALIHODŽIĆ JAŠAROVIĆ**

REVEALING THE MONTENEGRIN KATUN AS A PLACE OF REUSABLE COGNITIVE TECHNOLOGIES

Abstract: Thinking about Places and Technologies in Switzerland for example, it is undoubtedly hard to think about anything different than the cow Milka standing on the hilltops of mountain. This idyllic place and technology used will certainly guaranty you the best taste of chocolate in the whole *purple* world. But, on the other side of this story, it is also interesting to think about the same place in Montenegro, with some rather different technologies. Namely, this place is called Montenegrin Katun. Katun is a hillside settlement in Montenegrin mountain area, which serves as a place to keep heard of cattle, goats, horses and other domestic animals away from summer drought. On the other side, this place is also a natural treasury for production and distribution of goods, highly important to sustain the economy of many Montenegrin cities. This self-sustainable and very fragile microeconomic ecosystem consisted of small scattered houses with supporting storage and production department gives a very privileged position to understand the importance of reusable natural sources. Using very old, but rather sophisticated cognitive technologies Montenegrin Katun is one of the few remaining examples of zero waste production cycles that uses a renewable resources of nature. By this, it becomes the most ecology sapient and best architectural model of bioclimatism and seasonal settlement in Montenegro. This small but rather great economy model gives empirical and theoretical evidence that even secluded urban constellations can serve as a good example of adaptive reuse. So the main idea of this paper is to examine their operational model and their socio-economy chain of production so we can better understand cognitive processes and technology of this environment. By doing so, we will reveal the secret formula of this historically attested technology as well as to find a new ways to transfer it into our modern urban environments.

Key words: *production cycles, ecosystem, resource management, Montenegro, katun*

* Corresponding author, Management in Culture, Faculty of Drama Arts, Cetinje, University of Montenegro

** Urban sociology, Faculty of Architecture, University of Montenegro

INTRODUCTION

According to the recent research (2013) conducted in Montenegro there is roughly about 2000 active households which can be widely considered as Katun settlements. Katuns by definitions are temporary small village mountain agglomerations (or a collection of huts, cottages or apartments) where the herders remain with their cattle during the summer drought, usually up to 4–5 months, from the end of May or beginning of June until October.

Categorization or roughly classification of katuns will be heavily dependent in relation to a specific hillside region of Montenegro. But the most recognizable katuns are in Durmitor wider mountain area, katuns in the region of Piva Lake and probably the ones in the village cluster known as Kuch. Beside this it is also worth mentioning the katuns in the region of Plavsko Lake, katuns on the hillside of Bjelasica or Kom mountain area as well as in many other places. However, these settlement could be found wherever historically katuns were the only way of surviving and maintaining the traditional agricultural holding in Montenegro. Knowing that the possibility of relocation of livestock on the mountain is question of survival in this region, katun hillside settlement is not only specific for Montenegro. So it is rightly to note that they are also typical for entire Balkan Peninsula, especially in the rural mountain parts of Serbia, Bosnia, Croatia and Slovenia with some rather different character and use dependent of terrain configuration.

However, Montenegrin katun it is one of the most distinctive culture of life on summer pastures and one of the most iconic artefacts of the Montenegrin social history. Beside other cultural, architectural and natural value katuns are one of the cornerstones of overall Montenegrin identity as well as the place of very distinctive cognitive technology, still in use.

So for the purpose of this discussion, it is interesting to point the fact, that katuns survived very turbulent national past, remaining permanently resistant even to the transitional post-war era in recent Montenegrin history. So the real question is how they even survive to bear witness to the past and how is it possible that they didn't change at all?

The answer to these questions is probably hidden in their very original architectural design, geographical location as well as very sophisticated but rather outdated manufacturing tools for survival. Explaining more deeply how this urban phenomena of intact natural and cultural landscapes remain preserved until now, the answer probably lies in fact, that there wasn't any kind of urbanization process or investment capital in their immediate surroundings.

So even if, the contemporary research about katuns in the region is very rare and not recognizing their distinctive historical significance in shaping the modern cities (B. Juvanec, 2004), it is very important to develop a special scientific interest toward their very persuasive functionality, reliability and sustainability (Rudofsky, 1965).

MONTENEGRIN KATUN AS A COGNITIVE TOOL FOR SURVIVING

Analyzing katun's inner functionality model and maybe revealing that they are still very usable socio-economic chain of production we would confirm the expectations that we are dealing with one of the most exceptional and extremely sophisticated ecosystem still remaining in our nearby environment (Lazarević, 2015). However, we can also discover that this self-sustaining production ecosystem is quite different from the contemporary man-made models, mostly because it is absolutely naturally tailored. Since, their overall construction is oriented, not to be dependent on any kind of artificial influences (Chabbouh — Akšamija, 2015), but naturally originated and renewable sources, it is easy to understand some of the basic principles that shape katuns internal logic and design.

So, even if we think that this type of knowledge it outdated and somehow abandoned is very important to note that it still has its archetypical significance and quality (D. Vuksanović, 2011). So, alongside with these phenomenological consideration, the real questions is how to transfer this knowledge and how to put it into the right direction so we can learn something out of it?

To do so, we should really describe some of the basic contours of this high ground settlement. That means that we could start by describing its physical structures, of which one, typical Montenegrin Katun is consisted.

So, apart from much centralized house area usually close to the nearest hilltop side to be protected from the wind, there are main production department, supporting storage houses, and stables with a fenced area for cattle. This very simplified disposition of living and production department allows very direct interdependency relationship between main daily working protocols. Working in the early hours and using the house just to have a night sleepover, minimize the need for any kind of electric power source, whatsoever. So, in the main cottage house there is a small living area where is usually the fireplace, associated features such as kitchen table and dining area, with noting much to add more, beside staircase leading to the small bedroom on the upper floor. This basic type of the katun house is usually constructed with a very steep roof (from the top to the ground) due to frequent snow drifts on these altitudes.

Other structures near this main living area are the production houses or units serving mostly for preparation and processing the food. This manufacturing area inside is filled with containers for pouring the milk and very rustic tools to curdle the cheese. The ceiling of the production house and its wooden construction is usually used for hanging and draining the meat. Nearby the production house there is usually stables serving for keeping and collecting the animals. Fenced area attached gives the opportunity to gather or to differ the various types of cattle such as: cows, goats, poultry or horses and to keep them in line and order. Supporting storage department are typically scattered around, depending on the product contents which are intended for the market.

Alongside with above-mentioned material infrastructure disposition, it is important to reveal that katun environment also requires a special kind of social stamina and mentality because the people living at these altitudes are constantly

Figure 1. Durmitor's katun

conditioned to stay clear, stable and focused on daily routines and protocols. By doing so, the people in this environment are developing very intuitive but predictive patterns of behavior which allows them to easily read their natural surroundings. Together with this soft cognitive skills, it is interesting to point out that the katuns are also treasury of narratives derived mostly from unexplained nature interpretations, storytelling near fireplace and vivid world of unreal creatures. These narratives are usually interpreted in the past perfect tense so they could facilitate social cohesion among farmers but not to disturb daily protocols.

On the other side of this, rather semantic understanding of katuns it is also important to mention very hard daily farming. Farming jobs are basically consisted of continual materializing process, in the course of which, natural sources of various kind are transforming into their final products.

And this is the crucial moment in which cognitive technology of Montenegrin katuns really comes of great importance. Then the whole universe of cognitive skills, transferred knowledge and proficiency take place. In this moment the whole range of different cognitive technologies come to live, during which: villagers force cattle to pasture, when the animals are milked, when the meat, cheese and honey being transformed into the nutritive goods, when the logging and layering the nearby meadows and grassland is being collectively done, when feeding the animals, cultivation of various crops and collecting honey starts, and when the maintenance jobs around the farm are continuously repeated.

Figure 2: katuns in the village cluster of Kuch (blog.b92.net) (www.mountain-guide.me)

At this point some of the most prominent products of katuns are also being produced such as: katun's milk cream, goat and cow's cheese and milk, steamed, smoked and dried meat, katun's honey, katun's scented teas as well as whole range of katun's gastronomy specialties. In this moment all traditional gastro recipes comes to life. Taking precise measurement and traditional skills set, a variety of different product are made and prepared for the nearby markets.

Analyzing separately these different production cycles, it is a half way towards understanding a cognitive standard of this specific place. Establishing many different ways of storing and then distribution of this pure naturally nutritive goods the cognitive technology of this place delivers a very prized standards of market values.

After all been said, it is interesting to put some of these findings into urban theory perspective. So, bearing in mind that this cognitive technology and place, all together, offer a highly intuitive understanding of its surrounding, there is a plenty things to learn and to copy-paste into our, so to speak technology advanced times and modern urban surrounding.

TRANSFERABILITY OF RESEARCH FINDINGS AND DIFFERENT THEORETICHAL APPROACHES

Recognizing the tendency that contemporary city environment becomes more and more complex everyday (M. Batty, 2008) it is interesting to note that "hard infrastructure" of the cities also grows accordingly. So, for the purpose of this

discussion it would be useful to confront the challenges of the modern city growth with some fundamental knowledge and theory of vernacular architecture. So, as prof. B. Juvanec (2004) suggest: "Vernacular architecture is implementation of theory in practice in the simplest possible way". So he continue with the statement that: "The most complicated solutions have their roots in simplification". In his opinion: "The essence is harmony, active balancing of procedures, work, structure and composition itself, both in space as well as time".

On the other hand, similar suggestion and thoughts about vernacular simplicity principle we could find in Said Mazous (1999) words, claiming that: "The Street stands as of the crucial issues in urban design. The quality of the urban ambience depends greatly on the way in which the streets are conceived". So, Mazous conclude that: "The most of the projects are aware of the above-mentioned issues, and trying to draw on vernacular experiences in the field, tend to undertake the simplistic approach, consisting, most of the time, of minimizing the street width and copying mass organization patterns".

Second very fruitful theoretical approach towards other transferable knowledge out of vernacular architecture could be viewed through its production and management cycles. Therefore, for the benefit of this debate it is interesting to point out Bilge Ozel (et. al, 2014) research findings, suggesting that: "With integrated agriculture systems, collectiveness, and their close relation with nature, vernacular settlements demonstrate numerous self-sufficient amenities. Vernacular settlements are characterized by "built to meet needs" philosophy as an instinctive response to the basic requirements of the people's survival. Vernacular communities have the necessity to live with limited resources; therefore they have the awareness that they should achieve to meet all their basic needs such as production of food and shelter by using minimum energies".

Alongside with this, Ozel, also conclude that: "In the terms of urban design and building cultures vernacular settlements establish an adaptable architecture to the different dimensions of production activities. With the land use strategies, the cleverness of integration to the place, the smart way of utilizing natural renewable energy resources and the reduction of pollution and costs of transportation, vernacular communities, with their way of living, become important cases to analyze for a better understanding and valorization of their self-sustaining principles".

After all this being said, it is obvious that the cognitive heritage of vernacular settlements could provide us with some very sophisticated strategies of natural self-sustainability. Bearing in mind that all of these different findings and theoretical approaches has to be applied to contemporary urban condition in next chapter we will discuss some useful cognitive principles of Montenegrin katun environment.

COMMODIFICATION OF THREE PRINCIPLES

By revealing the Montenegrin katun it is important to note that this environment can point out where are the hidden treasures of knowledge. And not any kind of treasure, but rather the treasure of knowledge which can be used as a toolkit to adaptive reuse in everyday urban city living. By telling so, there is at

least three basic and very fundamental principles about Montenegrin katun environment that need to be scientifically proven and then practically reused in everyday urban surroundings.

The first principle of this environment is the *Simplicity*. Simplicity is secured by the very protocol of this environment and expectation of which many have repetitive and cyclic character. So, as far as katun "hard" infrastructure stay close together, that far, the simplicity principle of this environment make more effect on daily working protocols, communication and transportation of goods within this urban constellation. By simplifying working protocols and routines katun ecosystem stays very stable during seasonal changes, so there are no sudden reactions to the unexpected, accidental or new protocols. In this way "proximity" and "accessibility" factor of the katun environment could make significant changes in it the way we understand the complex city protocols.

The second principle of katun environment is the *Tolerance*. Tolerance principle enable a high level of understanding, mental stability and awareness of katun environment. Mental stability as tolerance factor enables outdoor resistance to its very harsh surroundings. So, tolerance principle, can also be recognized in relation with bioclimatism and biodiversity of this place. Constant change of climate condition and related diversity of flora and fauna notably change the tolerance register of the people living at these altitudes. So transferring this principle into city urban reality could mean better resistance and awareness of sometimes very rough urban irritation and influences.

The third, but very cohesive principle of this environment is the *Technology*. And not just any kind of technology, but rather cognitive technology, since it is used for survival and maintaining its production cycle operational. Considering that the management of natural resources from the around areas and pastures is mainly oriented towards transforming natural goods into the nutritive final products, this type of farming can be easily seen as a most reliable zero waste management protocol and production cycle. Using this principle could give as the answer how to make food production cycle more efficient in everyday city consumption.

By joining those three principles in one holistic methodology gives us a clear insight about the amount of knowledge which could be transferred and adapted into the real and modern city environment. Digging deeply into the urban, social or economy archaeology of this surrounding we would reveal very useful types of knowledge which can be used in contemporary city environments.

CONCLUSIONS

Even if, relating the contemporary city urban experience with the romanticized and idealized katun surrounding could led us toward wrong direction, on the other side, this method could also point out even greater distance between these two urban agglomerations. Seeking for potential crossing lines into the already "spent knowledge direction", maybe we can contribute to some other attributes or principles that make these two urban phenomena in relation. However, regardless of research intention and the different pathways of investigation, it is also interesting

to mention that other authors and researcher find similar overall conclusions. So, taking into account all these three fundamental principle and applying them into the context of real contemporary city environment and situation, we could make next conclusions that;

— *simplifying* our transportation and communication infrastructures, daily protocol and routines we could accomplish more functionality in our everyday city urban live situations,

— Raising our *tolerance* index could increase our ability to change reaction towards different types of urban irritation or outdoor urban stimulations,

— By adapting and developing more reliable zero waste production protocols in cities could led us to rethink our cognitive *technologies* of production,

Even if those three principles is not easy to translate nor to even precisely adapt into our everyday urban city routines, all of these principles could change our experience or at least the way we think about *green approach* in our urban environment.

But the truth to be told, in some parts of our urban lives these changes of experience are already happening, especially if we think of our healthy food consumption. Other principles such as tolerance could be applied more effectively if we think: what are the real reasons of our everyday urban anxiety and turbulences? On the other side, our contemporary model of production mostly relies on cognitive technologies still materializing heavy industry resources.

So, the greatest possible result out of this researches could be pronounced in the field of *intuitive cognitive technology.* Intuition as a natural cognitive technology will not necessary denounce or logically based urban environment and mindset but rather to restore the notion that once was dominant. Considering the fact that the 95% of the entire urbanism in the world could be considered as vernacular, and that the remaining of 5% could be considered as actual architectural design (Oliver, 1987) this bring us to a question how much of it was really build in relation with intuitive cognitive technology.

So the main reason to research Montenegrin katuns and its production metabolism today, is it to probably understand their historical and cognitive significance in relation to the modern needs of the cities.

Then the main benefit out of this intuitive cognitive technology and methods could be viewed as possible restoration point where we can recreate and reuse some of our previous knowledge. In that manner, uniqueness and durability of Montenegrin katuns will draw significant parallels with some of the contemporary problems of the modern cities such as: contamination, pollution, overpopulation, investor urbanism, uncontrolled sprawl, bad waste management etc.

In this way, naturally develop intuition alongside with restored cognitive technology could led us to new urban design and protocols using ancient and hidden knowledge of the Montenegrin countryside.

REFERENCES

[1] Juvanec, Borut. 2004. *Vernacular architecture or the complexity of simplicity.* Fakulteta za arhitekturo, Univerza v Ljubljani.
[2] B. Ozel; L. Dipasquale; S. Mecca. 2014. *Self-sustaining vernacular habitats: the case study of Medina of Chefchaouen.* VerSus 2014: International Conference on Vernacular Heritage, Sustainability and Earthen Architecture UNIVERSITAT POLITÈCNICA DE VALÈNCIA
[3] Chabbouh — Akšamija, Lemja. 2015. *Tradicija između autentičnosti i falsifikata*. Arhitektonski fakultet: Univerzitet u Sarajevu, Sarajevo.
[4] Oliver, Paul. 2007. *Dwellings: The Vernacular House Worldwide.* Phaidon Press.
[5] Rudofsky, Bernard. 1965. *Architecture without Architects: A Short Introduction to Non-Pedigreed Architecture*. University of New Mexico Press. Reprint edition (July 1, 1987)
[6] Google. 2016. "*Valorizing the Montenegrin Katuns through sustainable development of agriculture and tourism — KATUN*". Accessed February 12, 2016. http:/www.katun.me
[7] Batty, Michael. 2008. *Cities as Complex Systems — Scaling, Interactions, Networks, Dynamics and Urban Morphologies:* Centre for Advanced Spatial Analysis, University College London.
[8] Rosário, Macário (ed.) in Managing Urban Mobility Systems. 2011. *Simplifying Complexity in Urban Mobility Systems*". (Default Book Series, Volume), pp. 79–136.
[9] O'Dea, Shane. 1983. *Simplicity and Survival: Vernacular Response in Newfoundland Architecture*. Society for the Study of Architecture in Canada.
[10] Said Mazouz. 1999. *The Derivation and ReUse of Vernacular Urban Space Concepts.* Architectural Science Review Volume 42. Number 1.

Edin JAŠAROVIĆ, Ema Alihodžić JAŠAROVIĆ

OTKRIVANJE CRNOGORSKIH KATUNA KAO MJESTA ZA OBNOVLJIVE KOGNITIVNE TEHNOLOGIJE

Rezime

Razmišljajući o mjestima i tehnologijama u Švajcarskoj na primjer, nesumnjivo je teško razmišljati o nečemu drugačijem od krave Milke koja stoji na brdskim planinama. Ovo idilično mjesto i tehnologija će vam sigurno garantovati najbolji ukus čokolade u čitavom „ljubičastom" svijetu. Ali, s druge strane ove priče, interesantno je razmišljati o istom mjestu u Crnoj Gori, uz nekoliko prilično različitih tehnologija. Naime, ovo mjesto naziva se crnogorski Katun. Katun je naselje na crnogorskom planinskom području, koje služi kao mjesto za držanje stoke (goveda, ovcaa, koza i konja) i drugih domaćih životinja tokom ljeta. Sa druge strane, ovo mjesto je i prirodna riznica za proizvodnju i snabdijevanje proizvodima od velike važnosti za održavanje privrede mnogih crnogorskih gradova. Ovaj samoodrživi i veoma krhki mikroekonomski ekosistem koji se sastoji od malih rasutih smještajnih objekata — koliba, sa mogućnošću skladištenja proizvoda, pruža dobru priliku da se shvate značaj prirodnih resursaa. Koristeći veoma staru, ali prefinjenu kognitivnu tehnologiju, crnogorski katun je jedan od rijetkih preostalih primjera ciklusa proizvodnje nultog otpada koji koristi obnovljive prirodne resurse. Ovim postaje najbolji ekološki sapient i najbolji arhitektonski model bioklimatizma i sezonskog naselja u Crnoj Gori. Ovaj mali, ali sjajni ekonomski model daje empirijske i teorijske dokaze da čak i osamljena urbana sazvježđa

mogu poslužiti kao dobar primjer adaptivne ponovne upotrebe. Dakle, glavna ideja ovog rada je ispitati njihov operativni model i njihov društveno-ekonomski lanac proizvodnje kako bismo bolje razumjeli kognitivne procese i tehnologiju ovog okruženja. Time ćemo otkriti tajnu formulu ove istorijski potvrđene tehnologije, kao i pronaći nove načine prenošenja u naše moderno urbano okruženje.

Ključne riječi: *proizvodni ciklusi, ekosistem, upravljanje resursima, Crna Gora, katun*

Topics: *Adaptive reuse*