What are the *katuns*?

The *katuns* are the seasonal mountain settlements (a group of cabins locally called the *glada or stan*), where the households spend the summer with their livestock. They usually stay there for 4-5 months, from the end of May/beginning of June to October. More than 2000 households still use the mountain pastures today, bringing their livestock (cattle, sheep, goats and horses) to the *katuns*.

Why the *katuns*?

Through the history the *katuns* represented the core of the traditional agriculture of the dominant majority of Montenegrin population. Due to the very limited area of land that can be used for crops, animal husbandry has traditionally been the main agricultural sector, while the summer high temperatures and drought forced the producers to search for the mountain pastures. Only they could provide a feed for livestock during summer months, as well as creating surpluses for the market and reserves for the winter.

Possibility of summer livestock grazing in the mountains was the condition of survival in this region, thus created social and cultural heritage decisively carved our historical self. In that sense, *katuns* and recognizable culture of living there are the one of the most characteristic heritages of Montenegrin social history, as well as the one of the foundations of its general identity.
The “KATUN” is realized by:

University of Montenegro:
- Biotechnical Faculty
- Historical Institute of Montenegro
- Faculty of Tourism and Hotel Management

National commercial entities:
- HM Durmitor, Žabljak
- The Old House, Podgorica

International RTD entities:
- University of Ljubljana - Biotechnical faculty (Slo)
- Swedish Univ. of Agricultural Sciences - Dept. of Forest Mycology and Plant Pathology (S)
- CNR, Institute for Technologies Applied to Cultural Heritage (I)
- University of Basilicata (I)

The main idea of the project is to create a knowledge base for a multipurpose use of the Montenegrin mountain resources, by combining the traditional agriculture with boosting tourism activities and protecting the cultural heritage of katuns.

The main objective of KATUN is to provide knowledge bases for sustainability of the mountain agriculture and to enhance its competitiveness and boost the agro-tourism at the katuns.

The detailed objectives of KATUN project are:

- Transfer of knowledge and innovations to the agriculture and agro-tourism enabling them to be more competitive,
- Generate entrepreneurship in the mountainous livestock production;
- Achieve a new level of sustainable cultural heritage protection and its incorporation in modern agricultural and tourism tendencies;
- Demonstrate interdisciplinary and multidisciplinary research approach by intensive collaborations of the Montenegrin research entities with industry and international partners

The project includes:

Two areas with recognizable types of katuns, diverse landscapes, rich biodiversity, agricultural resources, different types of traditional dairy products and significant cultural-historical heritage.

Starting from the katuns’ richness and importance in historical and cultural heritage, the project will be a perfect case study for holistic approach to sustainable development of Montenegrin mountain areas.

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The KATUN team consists of 27 researchers from 7 scientific-research institutions, 3 external experts from Montenegro, as well as the companies’ representatives. For the realization of the project tasks, 3 young researchers will be engaged. Project activities are realized through the six work packages, with WP leaders and substitutes responsible for their realization:

**WP1: Fostering the traditional production technologies and marketing of the products**  
Prof. Dr Božidarka Marković (BTF), M.Sc Dušica Radonjić (BTF)

**WP2. Social dimension of the katuns – reinforcing their regional image**  
Dr Ivan Laković (HIM), Dr Ilija Moric (FTHM)  

**WP3. Diversification of economic activities– strengthening of agro-turizm**  
Dr Sanja Peković (FTHM), Dr Olga Pelcer Vujačić (HIM)

**WP 4. Strengthening the research capacities**  
Dr Milić Ćurović (BTF), Dr Slavko Mirecki (BTF)

**WP5: Maximize the sustainable impact and visibility**  
Mr Tatjana Koprivica (HIM), Dr Jelena Lazarević (BTF)

**RP6: Management**  
Prof. Dr Milan Marković (BTF), Dr Jelena Lazarević (BTF)

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The project activities

- Analysing of the current status of the production activities at katuns, with identification of the main weaknesses and opportunities;
- Knowledge transfer to the farmers and companies with aim to improve production practices and technologies and increase production;
- Investigation of quality of traditional dairy products (Kučki cheese, Durmitor skorup, and law-fat cheese Prljo) for the purpose of protection their designation of origin (PDO);
- Implementation of new technologies of livestock rearing and creation of new dairy products (different types of cheese);
- Support producers to establish producers associations, as well as for diversification of economic activities at katuns;
- Study of forest and biodiversity, valorization of the non-wood forest products (wild edible mushroom, berries, medical and aromatic herbs) and arising awareness of rural society;
- Inventory of the katuns on the Mountains of Kuči, their characterization and cadastre, historical-social background and to estimate their cultural-historical value;
- Development of different tourism activities at the katuns.
**Inventory and investigation of agricultural resources and activities at katuns**

**Carrying out of the survey on the main resources** – the questionnaire was prepared and agreed during May 2015. The main aim of the Questionnaire was to collect data about all aspects of agricultural / livestock production and on the other economic activities of households that use katuns.

During June, July and beginning of August 2015, the project team had intensively worked on the general survey and deep interviews with selected producers. The survey was completed on 57 households at Kući mountain area and 42 households in Durmitor region. In addition, deep interviews with 16 producers who showed entrepreneurial skills and interest to expand their business were held in August, with the involvement of the Prof. Dr Emil Erjavec and Prof Dr Luka Juvančič, from Biotechnical Faculty, University of Ljubljana.

**Investigation of the quality of soil and forage from meadows and pasture** covered determination of the floristic composition and nutrition value of forage from natural pastures and meadows and soil composition from at least 6 locations (content of macro and micro elements).

The soil and forage samples (7 from each of the project area) were taken and investigation of floristic composition was done. The laboratory analyses of soil and forage were completed at the Biotechnical Faculty.

**Characterisation of autochthonous livestock breeds** was started through estimation of population size, risk status and trends of autochthonous breeds reared in the region of Kući mountain (local breeds - Ljaba and Bardoka sheep and Domestic goat breed), and Durmitor area (local sheep breed – Jezero-Pivska pramenka), as well as through activities on morphological and genetic characterisation of autochthonous breeds which will be focused on sheep breeds.

**Empowerment of the High nature value (HNV) farming at the katuns**

With the objective to transfer knowledge in the livestock production, trainings for farmers were organized in October 2015 in both project regions. The main topics were: How to improve animal nutrition (cattle and sheep) during pasture season; What are the main tools and possibilities in livestock selection; Challenges in animal reproduction during the pasture season; Improvement of pasture quality (floristic composition, quality, fertilization, cultivation); Adjustment of livestock density and pressure on pasture resources - prevention of overgrazing; The appropriate management practice. Trainings were held by Prof. Dr Božidarka Marković, Prof. Dr Milan Marković, Prof. Dr Radisav Dubljević and Dušica Radonjić M.Sc., all from BTF.
Quality control of traditional dairy production on katuns

With the aim to investigate quality and hygienic parameters of raw milk and traditional dairy products for preparing elaborate on protection of designation of origin of the dairy products, the following activities were done in the first six months of the project realization:

• 12 households from Kuči area and 20 from Durmitor were visited and original technology for Kuči cheese and Skorup were recorded,
• 25 samples of raw milk from Kuči area and 30 samples from Durmitor were collected and chemical and cytological analyses were done in Dairy Laboratory – Podgorica,
• 24 samples of Kuči cheese and 40 samples of Skorup were collected and chemical analyzes were done at Dairy Laboratory – Podgorica,
• 7 samples of Kuči cheese and 10 samples of Skorup were subject to microbiological analysis (Specialist Veterinary Laboratory – Podgorica)

Olga Jokanović, livestock production spec. Sci was engaged as a young researcher for the KATUN project. She is a winner of the University of Montenegro Award for 2013, Diploma of the Capital city of Podgorica for 2012, as well as Atlas group scholarship for 2013. She has finished her postgraduate special academic studies with thesis Traditional dairy products and their protection. During the summer of 2015, she spent more than 20 working days conducting the inquiries with farmers at katuns and collecting the data on original technologies of Kučki cheese and Skorup production.

Forests and biodiversity

Forest health conditions were evaluated at Kuči mountains in Pinus heldreichii forests. Localities in southern and central part of research area were visited. Plant material for morphological and genetic characterisation of P. heldreichii symbionts and pathogens were collected from selected localities. Besides, during the terrain visits and work the most valuable non-wood forest products at Kuči mountains were identified.

Databases about spatial distribution of forests plants and fungi are developed in collaboration with engaged expert for creation of GIS database.

Dr Rimvys Vasaitis and Dr Audrius Menkis, professors from Department of Forest Mycology and Plant Pathology-Swedish University of Agricultural Sciences, visited Montenegro and Laboratory for forestry researches at Biotechnical faculty, between 18 and 21 October 2015. They provided practical field and laboratory training about forest pathogens and symbiotic fungi. During the field trip they visited forest area in Kuči Mountains but also other forest areas on mountains near Adriatic Sea.

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Social dimension of the katuns – reinforcing their regional image

In order to inventory material cultural-historical heritage, there are more than 100 localities with katuns in the area of Kuči Mountains visited in this period. The researches are finished in the areas of Crna Planina, Širokar, Jezera, Rikavac, Akula, Koštica and Southern Žijevo, as well as in the parts of Central Žijevo and the Maglič. Among them, less than 20% are still inhabited, with usually one to two families living there.

There were determined the exact locations for some 1200 basic habitation objects – gladas, as well as pertaining auxiliary objects. The road infrastructure to mentioned katuns vary from asphalt roads through macadam ones of unequal quality to mountain paths of diverse levels of walkability. The estimation that the number of katuns at Kuči Mountains goes beyond the one from the preliminary researches is confirmed. It further testifies on the importance and richness of their cultural-historical heritage.

Comprehensive researches are conducted in all the covered katuns, acquiring data that significantly enrich existing knowledge on mountain settlements’ heritage. The typology of the objects is accomplished, as well as the determination of relations between architectonic-constructional solutions and related epochs of time. The research on traditional katun’s life culture, i.e. food, clothes, ornaments, tools etc, was also started.

The most important results in this period are the determination of the locations, internal organization, architectonic types and constructional solutions of the numerous previously unknown and forgotten katuns. Simultaneously, a step toward establishment of the relevant producers’ associations, as the precondition for their better visibility and more clear recognisability in communication with governmental institutions was also made.

The team members have organized and conducted necessary archival research along with the field work, and established a good cooperation with local population. With support of the engaged expert, a platform for GIS database on inventory of material cultural heritage from this area was formed.
WP3. Diversification of economic activities– strengthening of sustainable agro-turizm

The activities of WP3 are dedicated to the identification of new opportunities related to tourism development through agriculture improvement and innovative approach to creation of rural tourism experience. It analysed complementarity effect between agriculture and tourism as a mean for katun’s economic improvement.

Our initial activities were aimed at identifying the most appropriate tourist products/experiences, able to be commercialised in short term with significant economic effects for local community. In this sense, during summer 2015, we conducted research activities in relevant katuns and rural areas to provide necessary data for further marketing decisions. According to the results achieved in the first phase, we already identified potentials for agro-tourism products attractive for visitors. Research started with identification of the most attractive resources suitable for tourism commercialisation in short period. Due to their complementary character and low potential for individual valorisation, tourist routes that link katuns with existing and potential attractions and activities were identified. Those routes will have an important role as channels for distribution of tourists throughout the area, providing more suitable conditions for new business and offers’ creation.

These activities were performed by the research institutions, local community together with our industrial partners (HMD and TOH). In the next phases of the project, we will follow the results of research and development in the project field, introduce the employees and public with the concepts, and techniques, and provide the technical support.

Prof. dr Pietro Picuno from the School for agriculture, forestry, food and environment, University of Basilicata, visited the Montenegro between October 15th and 20th.

Within the workshops “Entrepreneurship and the development of small business in agro-tourism”, held by Sanja Peković, PhD and Ilija Morić, PhD (FTHM) for farmers at Kuči and Durmitor, prof. Picuno presented the development of agro-tourism in the Basilicata (Italy). He also gave the lecture at the Faculty of Tourism and Hotel Management in Kotor, on the theme of farms’ valorization in the light of development of innovative aspects of rural tourism.
For the realization of the project activities, relevant IT and photo equipment was distributed to the partners from University of Montenegro. Currently, there’s ongoing a purchase of the lab equipment for feed analysis, meant for Laboratory for livestock production at BTF, as well as the one for cheese production, dedicated to the HM Durmitor and The Old House Doo companies.

Dear colleagues and friends, we wish you pleasant forthcoming holidays and successful 2016!

KATUN project team

For more information on KATUN project visit our web site www.katun.me.