Convention on Biological Diversity

Linking Biological and Cultural Diversity
UNESCO-SCBD Programme

United Nations Educational, Scientific and Cultural Organization

UNIVERSITÀ DEGLI STUDI FIRENZE
GESAAF
LABORATORIO PER IL PAESAGGIO E I BENI CULTURALI

MINISTERO DELLE POLITICHE AGRICOLE ALIMENTARI E FORESTALI

RETE RURALE NAZIONALE 2007 - 2013
Gruppo di Lavoro Paesaggio

REGIONE TOSCANA

1st European Conference for the Implementation of the UNESCO-SCBD Joint Programme on Biological and Cultural Diversity

Linking Biological and Cultural Diversity in Europe

8-11 April 2014,
Istituto degli Innocenti and Palazzo Budini, Piazza Santissima Annunziata, Florence, Italy

ABSTRACT BOOK

MINISTERO DELL'AMBIENTE E DELLA TUTELA DEL TERRITORIO E DEL MARE

MiBACT Ministero dei beni e delle attività culturali e del turismo

IUFRO

Ministry of the Environment of the Slovak Republic

GIAHS
Globally Important Agricultural Heritage Systems

Organizers:

- Interdepartmental Research unit on conservation and management of landscape and cultural heritage, University of Florence, Florence (Italy)
- UNESCO, Liaison Office, United Nations, New York (USA)
- Secretariat of the Convention on Biological Diversity (sCBD), Montreal (Canada)
- IUFRO – RG 9.00.01

Sponsors:

- Department of Agriculture and Forestry, Regional Government of Tuscany
- Ministry of Agriculture Food and Forestry Policies (Italy)

Patronages:

- Ministry of Cultural Heritage and Tourism (Italy)
- Ministry of the Environment (Italy)
- Ministry of the Environment of the Slovak Republic
- FAO, Globally Important Agricultural Heritage Systems (GIAHS)
- International Union of Forest Research Organizations (IUFRO)

Scientific Committee:

Prof. Mauro Agnoletti (chair), University of Florence, Italy

Prof. Margherita Azzari, University of Florence, Italy

Dr. Matthias Bürgi, Swiss Federal Research Institute WSL, Birmensdorf

Dr. Pavlina Misikova, Ministry of the Environment of the Slovak Republic

Prof. Diego Moreno, University of Genova, Italy

Prof. Lars Östlund, Swedish University of Agricultural Sciences, Umeå, Sweden

Dr. John Parrotta, USDA Forest Service, Washington DC, USA

Dr. Ana Persic, UNESCO

Prof. Pier Luigi Petrillo, Unitelma, Università La Sapienza, Rome, Italy

Dr. John Scott, Convention on Biological Diversity

Concept Note

Recognizing the inextricable link between biological and cultural diversity, the United Nations Educational Scientific and Cultural Organization (UNESCO) and the Secretariat of the Convention on Biological Diversity (SCBD) joined forces to raise awareness of the importance of the interactions between biological and cultural diversity for global sustainability. With the CBD acting as global focal point for biodiversity and UNESCO acting as global focal point for cultural diversity, the two institutions launched in 2010 the Joint Programme on the Links between Biological and Cultural Diversity (JP-BiCuD) to strengthen the linkages between biological and cultural diversity initiatives, and enhance the synergies between interlinked provisions of conventions and programmes dealing with biological and cultural diversity at relevant scales.
In 2014, in the context of JP-BiCuD, a series of regional workshops and conferences will be organized in Europe and North America, Asia and the Pacific, Arab region, Africa and Latin America and the Caribbean. The first conference will take place in Florence, Italy, to address the links between biological and cultural diversity from the European perspective.

The scientific and policy dimensions of JP-BiCuD are of utmost importance in the European context where cultural, environmental and rural policies are devoted to the conservation of biodiversity and cultural heritage, but rarely focused on the interactions between nature and culture. Yet, throughout European history, the outcomes of such interactions, including through traditional farming and forestry practices, have been critical for creating resilient landscape patterns, diversifying biological and cultural resources and shaping cultural identity of different European regions.
Several international scientific organizations and the United Nations have designated landscape as one of the primary concerns of upcoming sustainability policies. The quality of European landscapes and the associated quality of life is determined by the tight interplay between their economic, social and cultural aspects, through time and space and is often grounded in specific landscapes features. The preservation of such features contributes towards higher quality of life for local populations through material and immaterial means. These features improve people's lives and contribute to local economy while fulfilling their recreational, emotional and spiritual needs, and their sense of identity. Conservation of complex landscape patterns that reflect the identity of different regions, their historical management practices and related biological and cultural diversity need to be ensured through integrated planning and management strategies also as a way of adapting to change. It is also important to develop integrated strategies that will engage public, owners and local administrations for the recovery, preservation and maintenance of the linkages between cultural and biological diversity reconnecting rural to urban areas and contributing to the wellbeing of the entire population.
More research focusing on the links between cultural and biological diversity at the landscape level is also needed. This is an important task as these links, have been rarely formalized from a scientific perspective, therefore knowledge about them has often been ignored or lost. This has led not only to a separation between nature and culture in

policies, but also between science and humanities in the study and management of natural and cultural values, affecting the conservation of cultural heritage as well as the natural heritage.

Key Topics

- Interactions between cultural and biological diversity and identification of linkages between cultural and biological diversity in the European context
- Historical development of biodiversity patterns associated with "natural" and "cultural" landscapes, including the interacting actors, factors and processes
- Traditional agricultural and forest management practices related to bio-cultural diversity
- Development of methods and approaches for the assessment of the links between biological and cultural diversity and the resulting "bio-cultural" diversity
- Development of integrated management strategies at landscape level
- Implementation of international, regional and national agreements dealing with cultural and biological diversity

Expected Outcomes

- Identification of policy areas relevant for mainstreaming the links between biological and cultural diversity in Europe
- Formulation of a joint position and strategy for linking biological and cultural diversity in the region
- Identification of relevant actors in the region and their role in implementation of the joint strategy

Programme at Glance

Tuesday 8 April

08.30-09.30 Registration (Istituto degli Innocenti)
09.30-13.00 Opening Session (Istituto degli Innocenti)
13.00-14.30 Lunch (Istituto degli Innocenti)
14.30-18.00 Parallel Session 1 – Methods and management strategies (Istituto degli Innocenti)
14.30-18.00 Parallel Session 2 – Historical patterns of natural and cultural landscapes (Palazzo Budini)
19.00-20.00 Welcome Cocktail (Istituto degli Innocenti)

Wednesday 9 April

09.30-13.00 Parallel Session 3 – Methods and management strategies (Istituto degli Innocenti)
09.30-13.00 Parallel Session 4 – Management strategies, agreements ad projects (Palazzo Budini)
13.00-14.30 Lunch (Istituto degli Innocenti)
14.30-18.00 Parallel Session 5 – Traditional practices (Istituto degli Innocenti)
14.30-18.00 Parallel Session 6 – Historical patterns of natural and cultural landscapes (Palazzo Budini)
20.00-23.00 Buffet Dinner (Palazzo Budini)

Thursday 10 April

09.30-13.00 Parallel Session 7 – Linkages between cultural and biological diversity (Istituto degli Innocenti)
09.30-13.00 Parallel Session 8 – Linkages between cultural and biological diversity (Palazzo Budini)
13.00-14.30 Lunch (Istituto degli Innocenti)
14.30-16.00 Expert Meeting Session 1 – Introduction and background (Istituto degli Innocenti)
16.30-18.30 Expert Meeting Session 2 – Links between Biological and Cultural Diversity in the European Context (Istituto degli Innocenti)
19.00-23.00 Gala Dinner (Palazzo Budini)

Friday 11 April

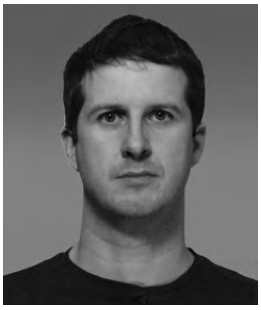
08.30-13.00	Field Trip to Lamole biocultural landscape
08.30-09.00	Expert Meeting Report from the working group discussions (Palazzo Budini)
09.00-11.00	Expert Meeting Session 3 – Relevant Policy Areas and Existing Legal Instruments in Europe (Palazzo Budini)
11.30-12.00	Expert Meeting Report from the breakout groups (Palazzo Budini)
12.00-13.30	Expert Meeting Session 4 – Way Forward: Mainstreaming the links between biological and cultural diversity on regional, national and local levels (Palazzo Budini)
13.30-15.00	Lunch (Istituto degli Innocenti)
15.00-16.00	Expert Meeting Session 5 – Reccomendations (Istituto degli Innocenti)
16.30-17.45	Closing Plenary (Istituto degli Innocenti)

Scientific Meeting

List of Abstracts

Oral Presentations

Author: Goran Andlar, Branka Anicic, Ines Hrdalo



Email: gandlar@agr.hr

Affiliation: Department of Ornamental Plants, Landscape Architecture and Garden Art, University of Zagreb, Zagreb, Croatia.

Biography: His scientific and professional interest is focused on identification, typology, history, evaluation and revitalisation of cultural landscapes with particular emphasis is on the Mediterranean cultural landscapes and their history and traditional land uses. He got his PhD on subject Outstanding cultural landscapes of the littoral Croatia. He regularly assists in the education collaborating in a few courses including Design of Rural Landscapes.

Title: Register of rural landscapes of the littoral Croatia – contribution to Mediteranean bio-cultural diversity research

Keywords: littoral Croatia, Mediterranean cultural landscape, cultural landscape evaluation, landscape history, outstanding cultural landscapes

Abstract: The phenomenon of the Mediterranean rural landscape is only recently being revealed in the context of Croatia. Certain researches indicate exceptional landscape complexity as a result of long lasting human adaptations to various natural and socioeconomic conditions. However, in the national level the subject of rural landscape is inadequately represented, interpreted and managed (as a result of the gap between nature protection and cultural heritage protection approaches) with absence of landscape registers. In the aforementioned context, the first integral regional landscape study Outstanding cultural landscape of the littoral Croatia was conducted. The cultural landscape was researched from the aspect of traditional land use applying the concepts of landscape character, landscape biography and using interdisciplinary landscape evaluation framework. Main outcomes were: rural landscape history research, classification and regionalisation of rural landscapes, cultural landscapes evaluation framework and the register of 62 outstanding cultural landscapes. The landscape approach enabled bridging the natural/cultural heritage dichotomy in rural heritage interpretation and thus set integral framework for further research. In addition, the WebGIS platform for monitoring and collecting data is being developed with the final aim of making the Atlas of the littoral Croatia rural landscapes. This paper will present the key results of described research and argue its contribution to Mediterranean bio-cultural diversity research.

Author: Daniel Babai (1), Katalin Tóth (2), Orsolya Valkó (2), Péter Török (2), Ágnes Albert (2), András Kelemen (3), Balázs Deák (3), Tamás Miglécz (2), Béla Tóthmérész (2), Zsolt Molnár (4)

Email: babai.daniel@gmail.com

Affiliation: (1) Centre for the Humanities, Hungarian Academy of Sciences, Budapest, Hungary; (2) Department of Ecology, University of Debrecen, Debrecen, Hungary; (3) MTA-DE Biodiversity and Ecosystem Services Research Group, Debrecen, Hungary; (4) Centre for Ecology, Hungarian Academy of Sciences, Vácrátót, Hungary.

Biography: Daniel Babai is a Hungarian botanist and cultural anthropologist. He has investigated traditional ecological knowledge since 2006 in the Eastern Carpathians (Romania). His research focuses on traditional knowledge of plant species, local habitat names and definitions, vegetation dynamics and traditional management of meadows. His research is used for improving European and Romanian agricultural subsidy systems.

Title: Use of hayseeds on species-rich hay meadows in a Csángó community in Gyimes (Eastern Carpathians, Romania)

Keywords: HNV grasslands, biodiversity, extensive land use, Csángó culture, Eastern Carpathians

Abstract: To conserve species-rich, semi-natural grasslands is a serious challenge in Europe. We carried out our research in Gyimes (Eastern Carpathians) where such grasslands cover a significant part of the area. The local (Csángó) community maintains the grasslands by a well-developed, but low-input farming system. We studied how these grasslands are traditionally managed, especially the practice of hayseed-overseeding both from ethnological and ecological aspects. The Csángó grassland-management system has several special elements (e.g. parcel-rotation, manuring). According to local farmers, overseeding with hayseeds is used regularly but primarily on manured meadows. We hypothesize that this practice increases the diversity of these meadows (species number of manured and non-manured meadows does not differ significantly). Our preliminary studies show, that the average number of viable seeds is more than 12000 in half a litre of hayseed, and they belong to an average number of 30 plant species. We argue that overseeding with hayseeds deserves more attention in European cultural landscapes.

Author: Giuseppe Baiamonte (1), Giuseppe Bazan (2), Francesco M. Raimondo (2)

Email: baiamonteg@arcadia.edu

Affiliation: (1) Arcadia University - The College of Global Studies, Glenside, USA; (2) SAF Dept. - SEBICEF Dept., Palermo University, Palermo, Italy.

Biography: Giuseppe Baiamonte is Adjunct Professor of Mediterranean Ecosystems at Arcadia University – The College of Global Studies. His research interests focus on the ecology and conservation of Mediterranean vegetal communities, on landscape ecology theoretical models and applications and on the use of Geographical Information Systems in environmental mapping, analysis and management. He is also an environmental risk assessment and monitoring consultant.

Title: Agricultural landscapes and biodiversity conservation: Sicily (Italy) as a case study.

Keywords: landscape ecology, biodiversity, conservation, G.I.S., agriculture.

Abstract: Traditional agricultural landscapes are the product of the history and culture of the populations that inhabit them. These systems are containers of ancient varieties of cultivated species and, at the same time, house natural and semi-natural ecosystems' biodiversity. Ethno-varieties are the result of millenary farmers' selection practices and should be considered part of the intangible cultural heritage of a society. Moreover, these biological entities are strongly connected to the environment they are part of. Sicilian traditional agro-ecosystems, due to the history of the territory and the resulting social and economic context, are configured in a heterogeneous mosaic that includes significant elements of naturalness sprawl interspersed in cultivated areas. These phytocoenoses contribute significantly to the ecological connectivity of agricultural landscapes, due to their biological characteristics and spatial distribution. Several of these formations are in fact acknowledged as habitats of Community interest, when present in Sites of Community Importance and Special Areas of Conservation designated under the Habitats Directive (92/43/EEC). Conservation of agronomic systems preserves these precious elements and their contribution to diffuse naturalness, complementing the "Natura 2000" network on a coarser scale. As a case study we analyzed the characteristics of the cultural and natural landscape of the Madonie territory (Sicily), acknowledged as one of the most relevant biodiversity hotspots in the Mediterranean area. Landscape analysis, performed using G.I.S. techniques, demonstrated a significant correlation between land mosaic structure and biodiversity. Land mosaic fragmentation and parcelization, generally perceived by ecologists as detrimental to biological diversity, in this context is associated with increased biodiversity.

Author: Giuseppe Barbera, Sebastiano Cullotta

Email: giuseppe.barbera@unipa.it

Affiliation: Dipartimento di Scienze Agrarie e Forestali, University of Palermo, Palermo, Italy.

Biography: Giuseppe Barbera is full professor of Arboreal Cultivation at the University of Palermo. His research activity mainly concerns traditional agricultural systems and landscapes of Mediterranean area. He is member of the National Observatory of Rural Landscape (Ministry for Agricultural, Food and Forestry Policies) and of the Benetton Foundation Studies and Researches. He is the coordinator of the National Research Project (PRIN) 2011 "The traditional agricultural landscapes in Italy: definition of a multidisciplinary and multiscale interpretative model finalized to planning and management".

Title: The Halaesa landscape (III B.C.): the origin of the traditional polycultural Mediterranean landscape

Keywords: Landscape history, landscape pattern, agro-silvo-pastoral systems, cultural heritage, Sicily.

Abstract: The entire Mediterranean basin is characterized by landscape patterns whose compositions result from countless, long and complex cultural and historical processes. This paper traces the historic and "agri-cultural" processes that have characterized these agricultural systems and landscapes in order to better define: the concept of a traditional rural Mediterranean landscape (TML); the importance of the complex-forms of polycultural (*coltura promiscua*) systems and landscapes; their most important structural characters, configuration and bio-diversity at the landscape level, because of its environmental complexity and cultural heritage. The characteristics of the Mediterranean polycultural landscape are identified beginning with a historic description of the territory of Sicily (central Mediterranean): the analysed *Halaesa* landscape (Greek colony founded in 403 BC) as one of the first historical detailed description of a complex TML. The analysis of these landscapes reveal a rich spatial configuration and patchiness of the land mosaic, made up of relatively small patches and corridors, with a great species and interspecies diversity as a consequence of the cyclical disturbances introduced by rotational grazing, cutting and coppice regimes, fire management, as well as of cultivation and other human land use practices. The results show a polycultural agro-silvo-pastoral system and landscape which guarantees biological complexity and richness, environmental and cultural functions. The presence of historical features, of traditional crops and land-uses, and the conservation of the rural architecture and other material and non-material cultural heritage are particularly important aspects considered by international organization toward their valorisation and conservation.

Author: Teresa Batista (1), José Mascarenhas (2), Paula Mendes (3)

Email: tbatista@cimac.pt

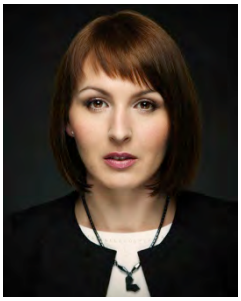
Affiliation: (1) CIMAC, ICAAM – University of Évora, Évora, Portugal; (2) CIDEHUS, University of Évora, Évora, Portugal; (3) University of Évora, Évora, Portugal.

Biography: Graduated in Animal Engineering; Master in Biological Resources Management; PHD Student on Environmental Sciences – Geographical modelling of landscape. University of Évora, Portugal. Since 1997 - Invited Teacher in the University of Évora, Department of Landscape, Environment and Management, teaching Remote Sensing, GIS and Environment, GIS and Heritage, Landscape Ecology and Environmental Impact Assessment. Since 1998 - Team Leader of the Environment and Development Unit in Intermunicipal Community of Central Alentejo (CIMAC), Portugal, directing GIS implementation for 14 Municipalities, and coordinating several national, international and cross border cooperation projects in GIS, Territory and Environment. National leader in the implementation of the first cross border Spatial Data Infrastructure (www.ideotalex.eu) between Portugal and Spain. Project Manager of Évora County Digital Project, Best Practice Label of European E-Government Awards in 2007.

Title: Guidelines for the integration of biological and cultural values in a Landscape Interpretation Center: application in southern Portugal.

Keywords: Old cadastral Networks, Montados, Cultural landscapes, Southern Portugal

Abstract: The city of Évora (the Lusitanian *Ebora*) is the most important town in Alentejo province (Southern Portugal) and is surrounded by a quite rich cultural and biological landscape involving archeological sites of several epochs, old field networks and farms, as well as specific multifunctional cultural landscapes and high value agro forestry pastoral systems, the *montados*. Based on previous studies and land surveys, in which where identified the best preserved sectors and marks around Évora concerning the old cadastral systems, ecological corridors networks and the most important *montados* areas for preservation, it is presented the main guidelines for the development of an interpretation center for the cultural and biological values in the Évora region. The methodology applies GIS spatial analysis and integrative multilevel approaches and gives the guidelines for the integration of the different cultural and biological values of landscape in an integrative approach of the territory. As results it is presented the conceptual model and the results obtained for the Évora Region. This study is been held in the indicators working group of the project OTALEX C co-financed by the UE, POCTEP program and FEDER.



Author: Katarína Baťová, František Petrovič

Email: katarina.batova@ukf.sk

Affiliation: Department of Ecology and Environmental Sciences, Faculty of Natural Sciences, Constantine the Philosopher University in Nitra, Nitra, Slovakia.

Biography: RNDr. Katarina Baťova, PhD. Born in Krupina, 1984. Scientific researcher at Constantine the Philosopher University in Nitra, Faculty of Natural Sciences, Department of Ecology and Environmental Sciences. Studies: 1999–2003 The eight-year grammar school, Krupina; 2003–2009 Faculty of Natural Sciences, Department of Ecology and Environmental in Nitra; 2009–2013 PhD. Study Faculty of Natural Sciences, Department of Ecology and Environmental in Nitra. Specialism: the landscape structure, the changes and development of landscape structure, the settlement structure, the environmental education.

Title: The landscape structure of the countryside settlement in the restricted area of Krupina

Keywords: countryside, landscape, classification criteria, mosaics.

Abstract: The secondary landscape structure brings a wide range of options of interpretation so in the relation to the vertical, resp. topical as well as horizontal landscape features. The aim is to assess developments and changes of secondary landscape structure of the countryside settlement in the restricted area of Krupina with regard to the processes of changes for definite period of time between 1987 and 2013. To the partial procedures that led us to the achievement of the given aim belongs the development of landscape-ecological characteristics of the primary, secondary and tertiary landscape structure of the area defined. The bas was the LANDEP methodology, on that base it is assessed the secondary landscape structure on the level of groups of landscape elements and ways of using the country. In the next stage we concentrate on the countryside settlement, evaluate the countryside settlement on the base of chosen classification criteria like number of houses in the countryside settlement, position in the relief, direct distance from the town centre, agricultural importance and the division of countryside in accordance with their position and relation to the heart of the city. We created mosaics of the landscape structure. In accordance to the combination of basic landscape elements of the landscape structure we set them up into four types. Regionalisation was processed in the same way in two time levels. We defined two regions in this area (wood, agricultural). The result is the evaluation of the development and changes of the handled area, proposals for maintaining the countryside and trend of development of the countryside.

Author: Maxim Bobrovskiy

Email: maxim.bobrovsky@gmail.com

Affiliation: Institute of Physico-Chemical and Biological Problems in Soil Science, Russian Academy of Sciences RAS, Russia.

Biography: Maxim Bobrovskiy PhD., leading researcher in Inst. of Physico-Chemical and Biological Problems in Soil Science of Russian Academy of Sciences, associated professor of Department of Ecology in Pushchino State University. Fields of interest: historical ecology, traditional land-use history, vegetation and soil sciences, forest ecology.

Title: Abandoned agricultural lands as a means of studying the historical development of biodiversity patterns in the center of European Russia

Keywords: forest history, traditional land-use, biological diversity, vegetation succession, forest plant dispersion

Abstract: About 400,000 km2 of agricultural lands were abandoned in Russia in 1980-1990. Spontaneous reforestation has begun since then and it lasts for 20-30 years. This time is equal to the duration of “rest phase” in the traditional land-use as slash-and-burn and shifting cultivation. It defined a purpose of our investigation to study vegetation in areas with various land-use histories in 25-30 years after the land abandonment aiming to estimate input of the traditional land-use systems into the biodiversity patterns. An object of our investigation was the abandoned arable lands and pastures surrounded by the old-growth broad-leaved forest located in the Reserve “Kaluzhskie Zaseki” (Kaluga region). Our results show a composition of the forest vegetation recovers rather quickly at the abandoned tillage without fires. For 30 years the forest herbs settled at a distance of 120 m, the range of settlement of the most herbs is 50-70 m. On pastures without grass burnings complex communities with forest species and rich meadow-edge flora have been formed. Light-demand trees as Quercus robur, Malus sylvestris, Pyrus communis are successfully renewed there. If the succession is interrupted by grass burnings the maximal number of vegetation communities with the highest plant diversity has been formed. However, the development of forest species is considerably delayed. A type of lands, the presence and frequency of grass burnings and a composition of surrounding forests determine ways and rates of the transformation of “cultural” to “natural” plants diversity.

Author: Jan J. Boersema

Email: boersema@cml.leidenuniv.nl

Affiliation: Institute of Environmental Sciences, Leiden University, Leiden, Netherlands.

Biography: Prof. dr. Jan J. Boersema, Biologist; PhD in Theology. Professor in Principles of Environmental Sciences, Leiden University; Author of The Torah and the Stoics on Mankind and Nature (Brill, Leiden, 2001) and The Changing Faces of Easter Island (Cambridge: CUP, 2014). Editor in chief of a textbook Principles of Environmental Sciences (Springer Publishers, 2009) and Editor in Chief of the Journal of Integrated Environmental Sciences www.tandf.co.uk/journals/titles/15693430.asp

Title: Could rewilding of Europe be seen as Progress?

Keywords: civilisation, progress, wilderness, rewilding

Abstract: In the course of Western history, and especially in the nineteenth century, we see that bringing 'wasteland' under cultivation, taming wild waters and pushing back dangerous wild life is seen as extending modernity and civilisation. (Worster 1977, Purseglove 1989, Isenberg 2000, Blackbourn 2006, Adas 2006). This motif was recognizable in Europe and its (former) colonies most notably in North America. In my paper I will draw on Johann Gottfried Tulla's project of shortening the river Rhine, reclaiming projects in the UK, the near extinction of the European wolf and the Bison-hunt on the American plains, to illustrate how these projects were driven by this motif. Wilderness seems irreconcilable with a decent civilized human life. Nowhere is that better expressed than in an advertisement for Newhouse traps (ca. 1860) sold in a variety of models. The role of these traps is described as: "going before the ax and the plow, forms the prow with which iron-clad civilization is pushing back barbaric solitude, causing the bear and beaver to give way to the wheat field, the library and the piano." (cited in: Benfey 2013). A proper knowledge and understanding of our past is key to present conservation efforts and future plans aiming at rewilding Europe.

Adas, Michael. 2006. Dominance by Design: Technological Imperatives and America's Civilizing Mission. Cambridge: Harvard University Press. Benfey, Christopher. 2013. The Lost Wolves of New England. New York Review of Books, January 22. Blackbourn, David. 2006. The Conquest of Nature. Water, Landscape and the Making of Modern Germany. London: Jonathan Cape. Isenberg, Andrew C. 2000. The Destruction of the Bison. An Environmental History, 1750-1920. Cambridge: Cambridge University Press. Purseglove, Jeremy 1989. Taming the Flood. A History and Natural History of Rivers and Wetlands. Oxford: Oxford University Press. Worster, Donald 1977 Nature's Economy. The Roots of Ecology. San Francisco: Sierra Club.

Author: Barbara Bożętka

Email: geobb@univ.gda.pl

Affiliation: Gdańsk University, Gdańsk, Poland.

Biography: Barbara Bożętka - a researcher and an academic teacher. Graduated from the Adam Mickiewicz University in Poznań, Poland (Geography); PhD in landscape studies. Her main professional interests focus on the issues of landscape evolution and organization; persistence and change of a landscape; landscape conservation. An author of several works on continuity (and discontinuity) of rural landscapes, meanings of the landscape and aesthetic formulae, aesthetic deterioration in places, human-nature interactions. Highly values field works and direct contact with an object of inquiry.

Title: Connections between natural and cultural diversity in the landscape of the Vistula Gorge and Nałęczów Plateau, eastern Poland

Keywords: landscape, values, structure, heritage, Poland

Abstract: The area embracing the western part of the Lublin Upland represents a rare example of co-existence of extraordinary natural and cultural values. The landscape originally formed by the Vistula River and loess relief processes has been intensively influenced by a human impact for centuries. Additionally, it encapsulates a town of Kazimierz Dolny with its limestone and wooden architecture, of exceptional beauty. To recognize the character of connections between natural and cultural in the landscape, and factors governing a unique content and configuration of the landscape has become a main objective of the work. The author analyses relations between a man-made impact, physical structure and biological diversity, focusing on a contemporary stage of landscape evolution. A combined method of research has been applied, using a broad-scale landscape analysis, a method of landscape transect and the synthesis of results derived from relevant scientific literature. The results reveal special character of interrelations between cultural and natural spheres of the landscape. A distinctive landscape pattern showing high diversity has evolved as the reaction to traditional land-use and natural values. On the one hand, the river has maintained its inherent features, on the other, land cultivation formed a traditional agricultural landscape and induced a set of important biological assets. In consequence, advanced diversity is reflected in species richness, especially of birds. Nowadays the landscape features a high degree of naturality within the river passage, a high dynamics of gully erosion (with one of the highest rate of ravine density in Europe, reaching 11km/km2), and a tendency to afforestation mixed with a growth of settlement areas. Two notions involved in the research have been stressed: landscape dynamics and a tendency of a landscape to integrate particular elements. Additionally, a sense of uniqueness and threats to the traditional landscape, which still possesses great values, play an important role in the study.

Author: Matthias Bürgi (1), Anna Humbel (1), Li Li (2), Thanasis Kizos (3)

Email: matthias.buergi@wsl.ch

Affiliation: (1) Research Unit Landscape Dynamics, Swiss Federal Research Institute WSL, Birmensdorf, Switzerland; (2) Wildlife Ecology and Management, Albert-Ludwigs-Universität Freiburg, Freiburg, Germany; (3) Department of Geography, University of the Aegean, Mytilene, Greece.

Biography: Matthias Bürgi studied environmental sciences at the ETH Zürich. He worked as a postdoctoral fellow at the Harvard Forest and at the University of Madison, WI. Today, he is the head of the Research Unit Landscape Dynamics at the Swiss Federal Research Institute WSL at Birmensdorf, Switzerland. In his research he is combining approaches from landscape ecology, historical ecology, and environmental history to study the interrelationship of natural and historic driving forces of landscape changes.

Title: Land use intensity is the missing link between actors and biodiversity – conceptual considerations and empirical examples

Keywords: land use change, intensity, landscape dynamics, biodiversity, disturbance

Abstract: Landscapes worldwide have been shaped in an ongoing dialectic relationship between human activities and the specific environmental characteristics of a given place. The resulting cultural landscapes and anthropogenic ecosystem are habitats for plant and animal species which occur due to (or despite) this place-specific dynamics.
As land use practices evolve over time, so does the related biodiversity. However, several factors blur the link between the two and it is often impossible to establish simple cause-effect relationships. Time-lag effects, be it extinction debt or immigration credit, but also lacking knowledge on species requirements (life-history traits) and the specific changes in land use make it hard to predict potential outcomes of changes in land use practices.
We propose land use intensity as an important concept to study links between biodiversity and cultural diversity, of which land use practices are an important component. Based on discussing the main approaches used to assess land use intensity, we propose a novel structure which takes the temporal dynamics into account. We illustrate the strengths and limitations of our approach at three empirical examples from China, Greece and Switzerland.

Author: Marina Maura Calandrelli

Email: maura.calandrelii@ibaf.cnr.it

Affiliation: National Research Council CNR, Naples, Italy.

Biography: Marina Maura Calandrelli has a degree in Geology and she received a Ph.D. in Earth Sciences at the University of Naples Federico II. Technologist at CNR - Institute of Agro-environmental and Forest, UOS of Naples, where she is Head of the Laboratory Information Systems territorial. Her research has been concerned with the field of science for the sustainable management of natural resources. She has published several papers on the application of parametric models for environmental analysis and planning for the sustainable development of the coastal strip.

Title: Agricultural and forest management related to bio-cultural diversity

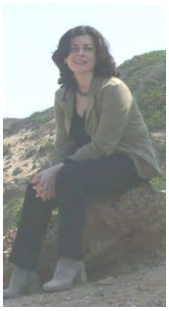
Keywords: cultural landscape, olive, trees, terrace, preservation

Abstract: The olive tree is a fundamental element of the vegetation of the Mediterranean habitat which also characterizes the natural and anthropogenic landscape. Thanks to its easy adaption to both water and nutrition low availability conditions, to its ecological value for the preservation of strongly declivous soils as well as to its considerable landscape value, the olive tree is an important element of cultural landscapes. The geographic localization of the olive trees gives this agricultural production some very peculiar economic and social characteristics: firstly, as a result of a perfect adaptation to the Mediterranean environment the character of large extensions of monoculture in areas marked by Alpine orography with an uneven topography which influences the possibility to intensify the hill or mountain olive production in the above mentioned regions. That's also why the olive has often implied geomorphology changes of the territory, which have not only allowed the preservation of the delicate water balance of the hillsides but have also constituted a historical and cultural heritage element of the Mediterranean populations. An example for all is given by the landscape with olive groves of the Amalfi Coast, which proposes the terracing as the slopes accomodation technique best suited to the fragmentation and acclive nature of the hills.

Author: Francesca Camilli (1), Sandro Pieroni (2)

Email: f.camilli@ibimet.cnr.it

Affiliation: (1) IBIMET-CNR Institute of Biometeorology, National Research Council, Italy; (2) Unione dei Comuni della Garfagnana, Lucca, Italy



Biography: Degree in Biological sciences at the University of Florence (1993). Since 2001 she works as a researcher and project manager at IBIMET-CNR in projects regarding rural development, the exploitation of material and immaterial resources of rural lands, the sustainability of textile supply chain, the multifunctional resources of Mediterranean flora. PhD in commodities sciences at the University of Bari (2012); thesis on "Multifunctionality of vegetal species: potentialities to enhance the value of the terroir".

Title: The Garfagnana Model: exploitation of agricultural and cultural biodiversity for sustainable local development

Keywords: Biodiversity, agriculture, environment, culture, sustainable development

Abstract: Rural areas often provide productions representing the local natural and cultural identity. Local animals and plants are the result of the natural environment characteristics, but also of the traditions provided by agricultural techniques. Thus, they have an immeasurable value both for the genetic inheritance and local culture. In Garfagnana, Tuscany, environmental and anthropological resources have been developing a strong equilibrium: the population has been safeguarding local nature for centuries, making environment becoming an unique container of different genetic material providing important resources for variability conservation. In Garfagnana biodiversity is not only related to the genetic variability but also to the cultural richness of local knowledge. The "agricoltori custodi" strongly motivated "guardian farmers", supported by local institutions, are committed in growing and recovering vegetal and animal biodiversity identified and stored in the germplasm bank. The exploitation and recovery of the "white garfagnina sheep" breed is part of this project and provides evidence of the Garfagnana model for local development. Beside meat and milk production, also wool is considered as central for local development as it can be an additional income for networks of local farmers and artisans and a good example of integration between local environment and culture.

Author: Aurora Cavallo (1), Catherine Dezio (2), Davide Marino (1)

Email: auroracavallo@libero.it

Affiliation: (1) DiBT, University of Molise, Italy; (2) University La Sapienza, Rome, Italy.

Biography: PhD in Agricultural Policy, she is a Research Fellow at Università del Molise. Her research interests include issues related to the management of the landscape transformations and to the role of agricultural activities in metropolitan areas. Since 2008 she collaborates with the Consorzio Universitario per la Ricerca Socioeconomica e sull'Ambiente (CURSA) and has been Adjunct Professor of Landscape Architecture from 2007 to 2012 at Università La Sapienza di Roma.

Title: Resilient rural landscapes in the face of changes: the coevolutive approach to understand the links between communities and environmental characters

Keywords: coevolutive approach, rural landscapes, resilience, Unesco Vineyard Landscapes.

Abstract: The paper focuses on a conceptual framework through analyse the relationship that link communities to their places and determine the capacity for resilience of those landscapes in the face of changes. The coevolutionary approach has been recognized as a key framework for understanding change in complex social ecological systems (Norgaard, 1994, 1997, Naveh, 1998, Georgescu Roegen, 2003) and as a foundational concept for ecological economics (Gowdy, 1994, Costanza et al., 1997). The coevolutive approach describes as a dynamic relationship between environmental systems and social systems. Coevolution is different than mere co-dynamic change, is that at least one — social or environmental — system is evolving or changing through variation, selection and inheritance. This leads to the necessity of identifying the set of anthropic – or cultural - and natural – biological - relationships that influence change within these relationships, determining their destiny or, in other words, whether these landscapes are conserved or lost. The need to protect local resources, and conserve the functions that come from natural capital, determines processes that can be guaranteed in a more efficient and sustainable way by local communities. The paper discusses the conceptual hypothesis on a case study of the Unesco Vineyard Landscapes, based on the Italian current applications of Valdobbiadene. The research concludes with a view of adaptive management, aimed to the preservation of landscape values, while respecting the natural dynamics of the landscape evolution.

Author: Javier Ceballos

Email: ceballos@iaf.org

Affiliation: International Association for Falconry and Conservation of Birds of Prey IAF, Spain.

Biography: Falconer currently active. Geologist, Master in Environmental Management, PhD Extraordinary Award by his doctoral thesis about Falconry in Spain. Falconry Delegate of the Ministry of Culture of Spain for UNESCO. Consultant (public and private entities) at local, national, and international level. Author (three books, TV documentaries, dozens of articles...), Lecturer and visitant teacher at university. Avium's Director, specialized company in ornithology & falconry. For 22 years Coordinator in 42 editions of ADAJA´s Summer Camp, environmental education program developed in Spain.

Title: Falconry's Heritage; pioneer in both the sustainable use of natural resources and the conservation of biodiversity

Keywords: Biodiversity, conservation culture, falconry, game, hawking, heritage, hunting, international, International Association for Falconry and Conservation of Birds of Prey, IAF, landscape, ornithology, raptors, sustainability, sustainable use of natural resources, tradition, UNESCO Implementation of international, regional and national agreements dealing with cultural and biological diversity.

Abstract: Falconry constitutes the most international of all Intangible Cultural Heritage in UNESCO's history. In this traditional hunting art, man keeps and trains raptors to hunt wild prey in the natural environment. For over four thousand years, the falconer has been integrated in nature. This changes his status from spectator into participant. Thus he knows the wild, allowing him to "think like a bird, think like quarry" and think like a human. We find examples of this alliance in art, ancient manuscripts, literature or poetry, in the cultures of different countries and in their religions. Over four museums are solely dedicated to the Art & Culture of falconry. Academic disciplines as significant as ornithology, veterinary medicine, the psychology of learning, ethology; all have their roots in medieval treatises written by falconers. The conservation of birds of prey began as a result of falconry. Moreover, falconry techniques are applied successfully in recovery, management and breeding of raptors. The requirement to go to the field daily to train and hunt with the bird of prey, remains in the modern urban man an almost forgotten link with Nature. International, national and local regulations regarding raptor conservation are addressed by the IAF which has a global role (member countries >60) and which is associated with IUCN, UNESCO and CBD and the Bern Convention amongst other international organizations and conventions.

Author: Roberta Cevasco

Email: robcev@gmail.com

Affiliation: DIGSPES, University Eastern Piedmont, Italy.

Biography: Adjunct professor at "Università del Piemonte Orientale", my main research themes include Historical ecology and Geography of rural landscapes and local productions for the management and enhancement of rural - environmental heritage. I collaborate with LASA (University of Genoa) and CAST (University of Eastern Piedmont, Alessandria) developing a historical approach to geographical problems.

Title: Biodiversification processes: the cultural systems of Turkey oak in the Northern Apennines (16th- 20th c. A.D.)

Keywords: Biodiversification processes; cultural landscapes of Quercus cerris; multiple production systems; indicator species; local practices and geographical knowledge

Abstract: Relationship between agricultures and their environments have a complex history influencing matter and energy flows, structure and composition of animal and plant communities. Memory of these processes of biodiversification endures in the historical biodiversity of a site (at a site level or individual landscape level).
Aim of this note is to discuss how identify, on a multiple source basis, the different patterns of biodiversity that in historical times were associated with the different cultural systems producing individual landscapes of *Quercus cerris L.* in the northern Apennines (NW Italy). A wide variety of field botanical information will be taken into account, in conjunction with oral histories, documents, maps and pollen diagrams.
An important starting point is the fact that in North-West Italy (and France) Turkey oak present distribution seems to reflect not climatic conditions but actions of introduction and/or activation in historical times (biodiversity hotspot for the species is considered the region of Balkans). We will try to explain why the flora accompanying the oaks populations in different production systems is largely a flora of pastures, hay meadows and light open woodlands, identifying specific indicator plants.
Special cultural landscapes produced by the Turkey oak local systems could be classed and managed as a rural heritage of historical-geographical interest (Agnoletti 2010): the result of biodiversification processes, activated by specific systems of practices and local geographical knowledge.

Author: Alessandro Chiarucci

Email: alessandro.chiarucci@unisi.it

Affiliation: BIOCONNET (BIOdiversity and CONservation NETwork), Department of Life Sciences, University of Siena, Siena, Italy.

Biography: Associate professor at the University of Siena, Italy, and working on topics as Methods for measuring biodiversity; Spatial patterns of species diversity; Partitioning of species diversity across spatial or ecological scales; Relations between vegetation and environmental factors. He is involved in several international cooperation and he is presently one of the Chief Editors of the Journal of Vegetation Science and Applied Vegetation Science.

Title: Nature and man as drivers of high plant diversity in a cultural landscape

Keywords:

Abstract: The landscape of the province of Siena, as most of the peninsular Italy, has been directly or indirectly managed by humans from millennia. This process resulted in a complex mosaic of natural, semi-natural and artificial patches which affect plant life, in terms of species distribution, vegetation structure and species diversity. The most recent process in this area, i.e. that ongoing after the second world war, is the reduction of the human impacts in many hilly sites and their intensification in most plain sites.
By an extensive sampling of plant species occurrences in 604 plots located in the Province of Siena, the patterns of species richness and composition of the natural and semi-natural plant communities were identified. A total of 1041 plant species were identified, with 95 of them being policy species (protected in some measure) and 48 alien species. Then, the whole investigated territory was classified according to land use codes (CORINE, EUNIS). A total of 19033 plant occurrences within the sampled plots and 118703 plant occurrences in the subplots permitted to investigate the partitioning of diversity across spatial scales and landscape components. The relation between land use and plant species diversity was investigated using univariate and multivariate statistics.
The results of this study permitted to output the importance of the different present and past land use in determining the present day plant species diversity. The present landscape complexity, and its past history, emerged as a major drivers of plant species diversity and suggested that the ongoing landscape simplification can be a risk for its long term maintenance.

Author: Jana Chmieleski

Email: jchmieleski@hnee.de

Affiliation: Eberswalde University for Sustainable Development, Eberswalde, Germany.

Biography: Current position: Eberswalde University for Sustainable Development, Guest Professorship Landscape Science. Education: 1997 Geographie (diploma), Humboldt-University Berlin; 2006 PhD Soil Science, Humboldt-University Berlin. Positions: 1998-2000 GFZ German Reaserch Centre for Geociences Potsdam, Dep. Hydrology, Risk analysis of flood events; 2000-05 Humboldt-University, Faculty of Agriculture, researcher, lecturer; 2005-07 Federal Institute for Geosciences and Natural Resources, Dep. Geochemistry, risk analysis of deposition of pollutants in industrial areas; 2008 University of Potsdam, Institute of Geoecology, Lecturer; since 2009 Eberswalde University for Sustainable Development, Guest Professorship Landscape Science. Current projects: landscape and habitat monitoring in the valley of Lower Oder (Germany, Poland), ecology of flood plains, ecology of mires and wetland in northern Germany.

Title: Dry grasslands of the Northern Oder Valley: Recent ecological state and biodiversity

Keywords: Oder valley, dry grasslands, biodiversity

Abstract: The Northern part of the Oder valley (National Park, transnational protection area of Germany and Poland) have been modified by man since centuries but even so remained in near-natural state that allows semi-(natural) stream dynamics. While the Oder's riparian zone is marked by the stream itself, by its bayous, reed beds, periodically flooded wet meadows and by its natural riparian forest the mineral morainic plateaus are marked by semi-natural forests and dry grasslands. These grasslands are the result of the utilisation for haying and as pastures and are of very large importance for biodiversity. Many rare plant and animal species are to be found, such as pontic and Mediterranean plant species. The sites are protected under the FFH-Directive with priority (habitat code: 6120, 6210, 6240). Increasingly, the utilisation is declined. Abandoned sites are fast colonized by brushes and trees, the rare plant species disappear as well the adapted animal species. Efforts are undertaken to maintain utilisation, such as cattle and sheep grazing, mowing, cutting trees.
Field investigations are carried out on transects and additional sites covering a gradient exposition and soil types in order to survey vegetation (cover, structure, species composition), soil, fauna: (grasshoppers, butterflies) and landscape (land use changes; biotope mosaic). First results of that survey will be presented.

Author: Sara Di Lonardo, Giacomo Tagliaferri

Email: s.dilonardo@ibimet.cnr.it

Affiliation: Institute of Biometeorology - National Research Council (IBIMET-CNR), Italy.

Biography: Degree in Environmental Biology and PhD in Biosistematics and Plant Ecology with a thesis on poplar toxicity and tolerance to heavy metals and metalloid. Actually, she is IBIMET-CNR Junior Researcher and Teaching Assistant in biological laboratory courses at University of Florence. Her research interest is focused on plant ecophysiology, investigating parameters correlated with resistance to biotic and abiotic factors, in field and in vitro experiments. She also has recently worked on biodiversity in protected areas.

Title: Chestnut management practice as tool for natural and cultural landscaping

Keywords: Castanea sativa Mill., plant ecophysiology, soil measurements, eco-cultural niche, silvicultural practices, people perception of forest

Abstract: Chestnut (Castanea sativa Mill.) is one of the most economically multipurpose species of the Mediterranean region, important not only for the production of fruit and timber, but also for its contribution to landscape and environment and its socio-economic and cultural value as eco-cultural niche. For these reasons, chestnut management is today discussed since certain practices could affect soil properties and also be associated with losses of biological and cultural diversity, included provision of socio-cultural and environmental services. The objective of this work is to evaluate management options in chestnut coppices and of how much they could represent a choice from both plant ecophysiology and cultural point of views. Soil and plant ecophysiology measurements were performed in Tuscan Apennine areas before and after two cutting methods. Data showed that pollarded tree physiology was similar to pruning tree one's when it was wet but it was statistically different in the summer seasons affecting also soil characteristics. These results demonstrated the importance of these measures in describing and indicating tree functional status. Moreover, the silvicultural practices modified not only the ecosystem attributes and the canopy cover characteristics but they also transformed the forest perception, an important factor to consider if expecting to engage local people in making a contribution for active landscaping.

Author: Pablo Dominguez

Email: eco.anthropologies@gmail.com

Affiliation: Departament d'Antropologia Cultural i Història d'Amèrica i Àfrica, Universitat de Barcelona, Barcelona, Spain. / Centre for Biocultural Diversity, School of Anthropology and Conservation, University of Kent, Canterbury, UK.

Biography: Pablo Dominguez is an Environmental Anthropologist (2001 BSc Environmental Biology UA-Madrid and 2010 PhD Social Anthropology EHESS-Paris/UA-Barcelona). From 2012 to 2014 he was a research fellow at the Center for Bio-Cultural Diversity (CBCD: www.kent.ac.uk/sac/staff-profiles/profiles/social-anthropology/research-staff/dominguez_pablo.html) at Kent University, UK, and since February 2014 he is a research fellow and associate lecturer at the Cultural Anthropology Department of Barcelona University. His work mainly focuses on community based management of natural resources in Mediterranean societies and ecosystems, agro-pastoralism and processes of socio-ecological patrimonialization.

Title: The decline of the commons and of the bio-cultural diversity associated to them. A comparative study of two Mediterranean mountain ICCA's.

Keywords: Biocultural diversity, ICCAs, Agropastoralism, Morocco, Spain

Abstract: Numerous authors from various disciplines have underlined the importance of Indigenous Peoples' and Community Conserved Territories and Areas (ICCAs) in order to assure the different livelihoods of particular local populations whilst conserving biodiversity. Nevertheless these systems and the bio-cultural diversity associated to them are being currently undermined at a local and global scale. Detailed ethnographic studies of the socio-ecological drivers of these processes of change are scarce, especially within the Mediterranean basin.

With the present work I aim to throw light on the general problem of the decline of such systems from a comparative ethno-eco-historical analysis of the Zat Valley *agdals* in the High Atlas of Marrakech (Morocco) and the Aigües Tortes *comuns* in the Catalan Pyrenees (Spain). As our results suggest, there is a complementary set of causes explaining degradation. Beyond the broad and unspecific explanations relating ICCAs disappearance to the erosion of tradition under the unavoidable progress of globalization and modernity, we conclude that there is a specific communication gap in the science-policy interface that encourages the undermining of Mediterranean ICCAs.

Author: Rebekka Dossche

Email: rebekka.dossche@ugent.be

Affiliation: University of Genoa, Italy. / Ghent University, Belgium.

Biography: Rebekka Dossche is a PhD-student at the department of Historical Geography of the University of Genoa, Italy. She performs her PhD in joint collaboration with the Landscape Research Unit of the Ghent University (Department of Geography) and the Social Sciences Unit of the Institute for Agricultural and Fisheries Research (ILVO), both in Belgium. She worked for several years in Belgium in both institutes, and, starting with her PhD in Italy (January 2013) on the impact of land abandonment on landscapes of remote mountain landscapes, managed to continue collaborating with her existing network in the context of a joint PhD. Her specialties are landscape changes, remote mountain areas, land abandonment, landscape identity.

Title: A Comparative Temporal and Spatial Examination of Apiculture in the Northwest Italian Apennines

Keywords: beekeeping, rural practices, regressive analysis, oral sources

Abstract: The historical rural landscapes of the Val Borbera (S.E. Piedmont) and the Val di Vara (S.E. Liguria) were characterised by intensive agro-silvo-pastoral systems, within which beekeeping was a common feature. This paper explores the comparative bio-cultural history of beekeeping and the production of honey and wax in these case study areas of the northwest Italian Apennines during the last 200 years. In 1798-99, an enquiry into the quality, production and territorial needs of the Republic of Liguria included a question on the various facets of beekeeping. In the 1930s, the first enquiry into beekeeping on a national level was co-ordinated by the fascist confederation of agriculture. In 2013, we conducted a number of oral history interviews with beekeepers in the case study areas on past and current practices. Through contextualising of these written and oral sources on a landscape scale through historical cartography (1828) and aerial photography (1936 & 2010), this paper discusses the temporal and spatial evolution of beekeeping and its produce from the late eighteenth century to the modern day. By doing so, the value of beekeeping as an important part of the bio-cultural heritage and diversity of the northwest Italian Apennines is examined.

Author: Goran Đurđević, Marijana Matijević

Email: goran.djurdjevich@gmail.com

Affiliation: independent researchers, Croatia.

Biography: Goran Djurdjevich (Đurđević) born and raised in Pozega (Croatia). He finished BA and MA study of history and archaeology at University of Zadar (Croatia). He is double winner of the Rector's Award for the academic year 2008/2009 and the academic year 2011/2012. He was also a finalist in the Top Scholarship, the most prestigious scholarships, in Croatia in 2009 and 2011 year. Author of several scientific papers and several book reviews. Participant in several international conferences at home and abroad (Croatia, Slovenia, Italy, Germany, Macedonia, etc.).

Title: Natural or cultural: religious landscape in medieval Slavonia

Keywords: cultural landscape, nature, medieval Slavonia, religion, Croatian history

Abstract: This paper analyse the creation of religious landscape in medieval Slavonia. territory of Slavonia is bordered by three large rivers (Sava, Drava and Danube) and term “medieval” in Slavonia is connected with time of 9th to 16th century. Medieval monks (such as Benedictines, Cistercians, Franciscans, Dominicans etc.) in Slavonia are seen as the creators of the landscape and the factors as a long process of transformation of the environment. Authors try to understand natural conditions (climatic conditions, rivers, plains, mountains, wetlands, wildlife) for sacred places in medieval Slavonia, and they try to discuss about creation of landscape by monks and priest who destroyed some Pagan sacred places. Also, authors analyse miracles in medieval Slavonia and connection with environment. In conclusion, authors explain monastic control of natural and environment resources. Also, authors conclude that cultural landscape have more influence than natural.

Author: David Edwards (1), Timothy M Collins (2), Reiko Goto Collins (2)

Email: tim@collinsandgoto.com

Affiliation: (1) Centre for Ecosystems, Society and Biosecurity, Forest Research, Roslin, Scotland, UK; (2) Collins & Goto Studio, Glasgow, Scotland, UK.

Biography: David Edwards is a Senior Social Scientist at Forest Research, the research agency of the UK Forestry Commission. He has 20 years' experience of interdisciplinary land-use research in Europe, Africa and South Asia. His current research seeks to ensure that social and cultural values are incorporated better into forest landscape decision-making, by engaging critically with the language, frameworks and tools of ecosystem services analysis.

Title: Does the Conservation Status of a Caledonian Forest also Indicate Cultural Ecosystem Value?

Keywords: art, community, culture, ecosystems, humanities, interdisciplinary, landscape, social-science

Abstract: The Black Wood of Rannoch is the most significant remnant of ancient Caledonian pine forest in the southern highlands of Scotland. Its bio-cultural values remain embedded in history and in the potential experiential richness of its ecosystem complexity. The forest is presumed to be a product of hundreds of years of use and management. The forms of the dominant trees were shaped during the political upheaval of the 18th Century. In 1973 the Forestry Commission used conservation science to protect the forest from its own policies; scientific conservation now constrains public awareness and access.

This paper reports on a recent artist-led interdisciplinary approach, which sought to interrogate cultural experience (and lack there-of) and consider values that integrate with the biological resource. Working with partners representing diverse interests, the material and aesthetic condition of the forest and its historic management were critically reviewed. Site visits workshops and residencies opened up ideas about cultural value, and considered ethical challenges, while imagining new access to a sensitive ecosystem. Conflicting parties found common ground on protection of the Black Wood. The social and cultural domain was understood as a safe place to reconsider meaning and value; to forge rural/urban relationships and reveal local/national value.

Author: Birgit Elands

Email: birgit.elands@wur.nl

Affiliation: Forest and Nature Conservation Policy Group, Wageningen University, Wageningen, Netherlands.

Biography: Dr.ir. Birgit H. Elands is assistant professor in the Forest and Nature Conservation Policy Group at Wageningen University. Her research covers different aspects of human nature interaction: recreational behavior and experiences, meanings of nature, biocultural diversity, public participation and involvement in nature conservation. She is currently involved in GREEN SURGE, a research project funded by the European Commission Seventh Framework Programme (FP7), focusing on planning and management of biocultural diversity in urban green infrastructure.

Title: Biocultural diversity in Europe: connecting people to nature in an urban context

Keywords: biocultural diversity urban Europe values practices governance

Abstract: Biocultural diversity has originally been associated with traditional ways in which indigenous people in tropical countries interact with the natural environment. But it does not have to be restricted to these situations. Biocultural diversity may also be an interesting concept in understanding how people in industrialised and globalised societies deal with nature. In this context its relevance concerns not only the combined conservation of nature and cultural heritage, but also its dynamic role of culture in developing new assemblages of biocultural diversity. At the Forest and Nature Conservation Policy group of Wageningen University, researchers have been investigating the relevance of biocultural diversity in non-traditional settings and are developing a more dynamic and urban interpretation of biocultural diversity. Initially, studies focused on the biocultural interactions amongst Xhosa people influenced by the former apartheid policies (Cocks, 2006). Recently, also studies in the Netherlands were initiated. In this context, the concept 'biocultural creativity' has been introduced, which focusses on the creation, rather than the conservation, of biological diversity (Elands & Van Koppen, 2012). Other studies focus on the role of biocultural diversity in forest landscape restoration programmes. And the concept also features in a recently started FP-7 European research project 'Green Surge'. This research aims at understanding the way urban people interact with and value urban green spaces and how this can be integrated in green infrastructure planning that contributes to sustainable urban development and green economy. This paper elaborates the concept biocultural diversity in a European setting, which is highly modernised and urbanised. It will focus on biocultural diversity as (i) an integrated value-practice system and as (ii) a framework for policy makers and nature managers' to assess and appreciate the present existence and new emergence of perspectives and ideas for the sustainable use of urban green spaces and their associated biodiversity.

Author: Silvia Fineschi

Email: silvia.fineschi@ipp.cnr.it

Affiliation: Institute for Plant Protection, National Research Council, Florence, Italy.

Biography: Present position: Senior researcher, CNR, Institute for Plant Protection (Istituto per la Protezione delle Piante), Florence, Italy. Major Research Areas: Conservation of forest genetic resources and biodiversity; neutral and adaptive genetic diversity in forest species; development and application of molecular markers for assessing genetic variation in forest tree populations; phylogeography; phylogenetic relationships; dynamics of post-glacial recolonisation; conservation of genetic resources in endemic, rare, and relic species; analysis and conservation of adaptive diversity; hybridisation in woody angiosperms; Mediterranean ecosystems and biodiversity; evolution of terpenoid emission in plants.

Title: Domestication and exploitation of plant species following human migrations

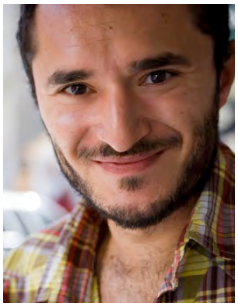
Keywords: Domestication, agriculture, cultural landscape

Abstract: Human migrations that characterise the history of Mediterranean civilizations are strictly linked with plant domestication and plant movement and transfer. Plant domestication was preceded by selective criteria in crop cultivation and harvesting; in this way, ancient farmers selected (partly unconsciously) genes of domestication, developed a mutual dependency between plants and humans, and became plant breeders. Plant domestication did not involve only crops (grains, roots, tubers, fruits, vegetables) but also woody and medicinal species, and contributed to plant colonisation of newly available environments. Domestication is an evolutionary process that leads to morphological ad physiological changes, which distinguish domesticated taxa from their wild ancestors. For these reasons, plant domestication is a good example of plant-humans coevolution and represents a valuable model for evolutionary studies. Further, it can be considered a real innovation in human history that transformed the primitive human groups of hunter-gathers into sedentary agricultural societies, giving rise to current human cultures. During the last decades, the increase in human migrations brings not only economic and cultural exchanges, offering new challenges for multiculturalism, but also potential for a novel and more ethic exploitation of natural resources. On the other hand, plant transfer may also imply the dramatic spread of pests caused by introduction of invasive species.

Author: Fabrizio Frascaroli

Email: fabrizio.frascaroli@ieu.uzh.ch

Affiliation: Institute of Evolutionary Biology and Environmental Studies, University of Zurich, Zurich, Switzerland.



Biography: Fabrizio Frascaroli studied anthropology at the University of Iceland and ecology at the University of Zurich. He has extensively worked on the link between spiritual values and conservation, and on the biocultural importance of sacred sites in Italy. Fabrizio currently serves as vice-president of the Religion and Conservation Biology Working Group of the Society for Conservation Biology (SCB), and is co-editor of the Sacred Sites Research Newsletter (SSIREN).

Title: Conserving biocultural diversity at sacred sites: a European perspective

Keywords: Sacred natural sites, Conservation management, Intangible values, Traditional ecological knowledge, Central Italy

Abstract: There is growing recognition that sacred natural sites around the world tend to be hotspots of biocultural diversity and play a central role in its conservation. Not only ancient customs and traditional knowledge, but also important ecological values are often found in connection with these revered places. Here, I review a large pool of sacred sites in Central Italy to exemplify how a relation with biocultural diversity is particularly prominent also in the relatively secular and modernized contexts of western Europe. For this purpose, I highlight the great heterogeneity of rituals, traditions and cultural manifestations that is encountered at those sites and demonstrate, through floristic analyses on a representative sample, that they significantly contribute to biodiversity patterns at both the habitat and landscape scales. I argue that these sites can offer an ideal ground for better understanding the interrelation between biological and cultural diversity and advancing their conservation also in European settings, but greater awareness is needed from planners and policy-makers. Adapting and applying to the realities of Europe international guidelines for the management of sacred natural sites, such as those produced by IUCN, would be a first desirable step.

Author: Jean Gault (1), Seddik Saèdi (2)

Email: jean.gault@agriculture.gouv.fr

Affiliation: (1) Ministère francais de l'agriculture, conseil gènèral de l'alimentation, de l'agriculture et des espaces, France; (2) Département Amélioration et Conservation des Ressources Génétiques, Division Scientifique, INRA, Morocco.

Biography: Agronomist, ingénieur général des ponts, des eaux et des forêts, civil servant, F agriculture ministry, member of a hign level advisory body: conseil général de l'alimentation de l'agriculture et des espaces ruraux http://agriculture.gouv.fr/le-conseil-general. Former consultant to FAO, Natural Resources department: developing a programme in Moroccan High Atlas mountains for dynamic conservation of biodiversity, traditional agricultural knowledge, food production, rural development: “Global Ingenious Agricultural Heritage System”; managing the franco-swiss project “Sustainable Agricultural Rural Development in Mountain Regions”.

Title: Ingenious agricultural heritage in cold oases connected to collective grazing areas (Haut Atlas, Maroc)

Keywords: cold oases, agdal, khettara, agricultural heritage, Amazigh identity

Abstract: In the High Atlas mountains of Morocco, cold oases connected to rangelands and collective grazing areas have been made possible in extreme climate conditions by the Amazigh people, who remained during centuries isolated and have maintained their agri-cultural, social, artisanal and linguistic heritage. They are today a constitutive part of Moroccan identity. During centuries, to manage natural resources, they have developed ingenious systems which are still in place today; they preserve agricultural biodiversity in order to ensure food self sufficience: indeed, wheat, barley, corn, alfalfa, apricots, almonds’ varieties are exceptional, as well as one bee species, and aromatic and medicinal plant varieties, and associated biodiversity (fishes (salmonids), mammals, reptiles). The rational use of rangelands for grazing is well experienced; some fertile parts (agdals) are submitted to precise rules (including seasonal rest, and grazing pressure limitation). Water management underlies an authentical culture: technical (century old conducts: khettaras), and legal (customary right and institutions). Thanks to IFAD support (through OXFAM Italia) to FAO programme GIAHS, the authors describe an “ingenious agricultural heritage system” in Imilchil & Amellago: biodiversity & associated biodiversity, water & soil resources, cultural heritage, icome generation for women, and tourism potentialities. Measures are proposed to dynamically conserve this culture and this connected biodiversity, in the present context of economical, cultural, technical globalisation.

Author: Manuel González de Molina Navarro

Email: mgonnav@upo.es

Affiliation: Agro-ecosystems History Laboratory, Universidad Pablo de Olavide, Sevilla, Spain.

Biography: PhD in History. Professor in Modern History at Universidad Pablo de Olavide (Seville-Spain), Department of Geography, History and Philosophy. He teaches courses on Environmental History, Agrarian and Social History. He leads a master on Agroecology and Rural Development. His research concerns the Agrarian History from agro-ecological point of view. He has studied the rural world in Spain during 19th and 20th centuries and has published eight books and more than sixteen articles on national and international journals. His has been General Director of Organic Agriculture in Regional Government of Andalusia (2004-2007) and Regional Representative for Spain and Portugal at European Society for Environmental Society (ESEH). He is currently vice-president of Spanish Society of Organic Agriculture (SEAE) and also vice-president of Spanish Society of Agricultural History. He coordinates the Agro-ecosystem History Laboratory, specialized on Agrarian Metabolism and Socio-ecological Transition in Environmental History.

Title: Long Term Socio-ecological Transition of Olive Grove Landscapes. Case studies from Southern Spain (c. XVIII-XX)

Keywords: Olive grove, cultural landscape, crop functionality, agrarian metabolism, landscape ecology

Abstract: Olive tree is one of the more characteristics crops in the history of the Mediterranean basin. Even today more than 90% of the total olive grove land grows in this region. Spain and chiefly the South of Spain is the major producer worldwide. Andalusia concentrates more than 15% of the total olive land. Nevertheless, this expansion dates back just two centuries. The spreading of the olive trees has represented the expansion of the olive land but also a process of socio-ecological transformation in which the number of trees per hectare, the inputs or the functionality of these trees have dramatically changed along history. In this paper we analyze the olive landscapes in two local case studies representatives of different agro-climatic realities and olive managements in the South of Spain through the last three centuries. The resulting cultural landscapes inform us about the changes in crop ecology and functionality. From being a low input agro-ecosystem devoted to provide a wide range of products for subsistence has moved to be an intensive crop focused on mercantile olive oil production. The environmental items of this process such as biodiversity, energy and nutrient flows or erosion will be addressed in this paper.

Author: Sevgi Gormus (1), Dicle Oğuz (2), Serhat Cengiz (2)

Email: sevgigormus@gmail.com

Affiliation: (1) Landscape Architecture Department, Faculty of Forestry, Bartın University, Bartın, Turkey; (2) Department of Landscape Architecture, Faculty of Agriculture, Ankara University, Ankara, Turkey.

Biography: Sevgi Gormus is currently working as a assist professor at the Department of Landscape Architecture, Faculty of Forestry, Bartin University. Her main fields of interest are: Landscape planning and management protected areas. She has completed her PhD on the use phenomenon of Landscape Character analysis in 2012. She completed her research within "Landscape Characterization of Protected Areas: Kastamonu-Bartın Küre Mountain National Park", supported by The Scientific and Technological Research Council of Turkey (TÜBİTAK).

Title: A methodology for reducing of conservation conflicts: landscape character analysis

Keywords: Landscape Character Analysis, Conservation Conflicts, Bartin-Kastamonu Küre Mountains National Park, Kapisuyu Basin, Turkey

Abstract: In recent years, conservation conflicts is rapidly growing in national parks. One of the main reasons of conservation conflicts is that the goals of policy and legislation mechanism related to resumption of biodiversity and enhancement of economic benefit are conflicting. National park administrations' fixation on natural components and incapability of the evaluation of social components in management plans is the second element that cause increase in these conflicts. In order to assess the natural components as well as the social components and pacificate conflicting demands in both planning and legislation mechanism and applications of national park administration, appropriate tools and techniques are needed to be determined. One of the techniques/procedures that ensures assessment of natural and social components in conjunction at landscape level is landscape character analysis. Landscape character analysis is a method that can be used effectively in the solution of conservation conflicts. This study describes the role and impact of landscape character analysis on management and solution of conservation conflicts at landscape and rural level in Kapisuyu Basin, which is a part of Bartin-Kastamonu Küre Mountains National Park that is positioned at western Black Sea Region of Turkey. By means of landscape character analysis, natural and social components of macro and micro conflicts in Kapisuyu Basin at landscape level were defined, and conceptual models were developed to resolve conflicts.

Author: Goran Gugić

Email: manager@pp-lonjsko-polje.hr

Affiliation: Lonjsko Polje Nature Park Public Service, Krapje, Croatia.

Biography: Goran Gugić graduated from the Forestry Faculty of Ludwig-Maximilians University in Munich. He moved to Croatia despite of the war, and has headed Lonjsko Polje Nature Park as director since 1998. He is a member of WCPA, chairman of the Croatian UNESCO MAB Committee, and was a member of the Standing Committee of the Ramsar Convention. He received the EuroNatur Award 2011 for his achievements in protecting European natural heritage.

Title: The twelve principles of managing dynamic natural, cultural and historical landscapes – advanced conservation approaches in Lonjsko Polje Nature Park

Keywords: landscape management, sustainability, conservation science, traditional ecological knowledge, riparian forests

Abstract: With its authentic organisation and traditional system of land use, Lonjsko Polje Nature Park (Croatia) constitutes a unique example of an organically evolved landscape with a preserved medieval system of the common pasturing typical of the whole of Central Europe's lowlands until the second half of the 19th century, still generated, in addition, by the local community. It is an outstanding example of an area in which human beings have in the most complete manner adjusted their way of living to the floods and today the only existing area that authentically represents the "wet border" of the former Military Frontier (Militärgrenze) against the Ottoman empire. Important natural values is its lowland riparian forests, the largest intact complex of this type of forest in the entire Western Palearctic as well as its high biodiversity generated by traditional land use. As an outstanding example of the continuous acquisition of knowledge LPNP manifests all aspects of the challenge of managing sustainability under conditions of change and unpredictability in a protected area that contains the natural features of a dynamic ecosystem as well as the cultural features of a living landscape. The experience gathered leads to the identification of twelve principles of conservation management.

Author: Gertrud Haidvogl (1,2), Didier Pont (2)

Email: gertrud.haidvogl@boku.ac.at

Affiliation: (1) Institute of Hydrobiology and Aquatic Ecosystem Management, University of Natural Resources and Life Sciences Vienna, Austria; (2) Hydrosystems and Bioprocesses Research Unit (HBAN), IRSTEA, Anthony, France.

Biography: Gertrud Haidvogl is an environmental historian and senior scientist at the Institute of Hydrobiology and Aquatic Ecosystem Management, University of Natural Resources and Life Sciences Vienna. Her research deals with the long-term historical development of fish communities in Austrian and European rivers and the role and societal modifications of floodplains.

Title: Historical change of aquatic biodiversity within European rivers: a constant interaction between cultural influences and natural factors

Keywords: river ecosystems, historical fish diversity, Salzach catchment, human-nature interaction

Abstract: This presentation is co-authored by Didier Pont, Hydrosystems and Bioprocesses Research Unit (HBAN), IRSTEA, Anthony, France. As open ecosystems, rivers reflect interactions between natural processes and human activities acting at different scales from local to the catchment; humans and nature co-evolve in such riverscapes. River biodiversity, in particular that of fish communities, is as much shaped by climate change and anthropogenically influenced environmental factors (river management) as by cultural influences. The latter include direct manipulations of species via fisheries management and unintended modifications of the fish fauna. When accomplished in an interdisciplinary framework, studies focusing on the historical evolution of aquatic biodiversity are crucial for developing future management and conservation strategies (e.g. river restoration in the context of the Water Framework Directive). This contribution presents the change of aquatic biodiversity in the Austrian alpine Salzach and its tributaries since the late 19th century. Fish are used as indicators to demonstrate the interactions between cultural uses for food production and recreation (fish farming, introduction of non-native species), to outline the consequences of river management for energy production (wood logging and hydroelectricity) and to examine the potential effect of climate change. Finally, the cultural status of the present fish fauna is discussed in relation to its history within the catchment (native vs. introduced).

Author: Józef Hernik

Email: rmhernik@cyf-kr.edu.pl

Affiliation: University of Agriculture in Kraków, Kraków, Poland.

Biography: My main fields of interests and studies are cultural landscapes, land use and environmental development. I was the project coordinator of four international research projects in the field cultural landscapes. I am the author of more than 100 scientific publications. I have been involved in scientific cooperation in the field of development and protection of cultural landscapes and land use with universities and research institutes in Europe, USA and Asia.

Title: The Integration of Modern and Traditional Agriculture and Forest Management Practices in the Cultural Landscapes of Małapolska, Southern Poland

Keywords: cultural landscapes, land use, Poland

Abstract: In Małapolska, there are significant areas of valuable cultural landscapes that embody centuries of traditional land use. However, Polish agriculture and forestry management practices require deep, structural changes, as the economic and social changes that began in the 1980s led to an inexorable decline in both the rural economy and land ownership in order to increase agricultural and forestry production. The inevitable consequence being that traditional land use is discarded, which also coincides with a breakdown of local community spirit and social cohesion. Research has demonstrated that the consequences of changing the trend in the traditional usage of the lands are undesirable landscape changes. These areas have been referred to as the sensitive cultural landscape zones of rural areas (SCLZRA) (Hernik, 2011). Furthermore, the isolation of such areas may become a base of a one form of holistic landscape protection. This paper will outline the methodology for identifying vulnerable areas of the cultural landscape whilst demonstrating that SCLZRA can be useful as an early warning tool against undesirable changes of the landscape, and protecting the open cultural landscape of rural areas.

Author: Oana Ivan

Email: oanaoana@hotmail.com

Affiliation: F. I. Rainer Anthropology Institute of the Romanian Academy, Romania.

Biography: As an anthropologist (PhD at University of Kent), I am particularly interested in environmental issues within the Eastern European context. I am currently doing post-doctoral research (Romanian Academy's Anthropological Institute) in the Danube flood plains, looking at local adaptations and strategies. In parallel, I am a consultant for the World Bank, presently working on a sustainable development project for the Danube Delta UNESCO site.

Title: From UNESCO Headquarters, down to Eastern European Wetlands: a call for a new, bottom-up, integrated strategy in the Danube Delta

Keywords: top-down policy-making, Danube Delta biocultural diversity loss, co-participative integrated management

Abstract: The Danube Delta is a Biosphere Reserve and UNESCO site (Man and the Biosphere Programme) since 1991. In addition, following Romania's accession to the European Union in 2007, the Danube Delta Biosphere Reserve Authority has been imposing through rigid top-down approach, new laws and regulations aimed at the conservation of biodiversity.

In this paper, I draw on extended participant observation, semi-structured and in-depth interviews to discuss how inside this Biosphere Reserve, biocultural diversity is at risk on daily basis, at different levels: Sturgeon (almost extinct) and other species of fish are poached by guards, creating conflict within the local communities that had experienced sustainable development in the past; The wetland eco-system is dramatically transformed by the regional authorities' lack of law enforcement and integrated management strategies, while the valuable traditional knowledge of the delta communities is being ignored; Local cultural practices created over the centuries are disappearing due to biodiversity loss and habitat degradation.

As conclusion, this research suggests that biocultural diversity and sustainable development of the groups living inside the Danube Delta can be reached through co-participation of different actors (local-regional-European) in designing and implementing the integrated management strategies.

Author: Pixie Jacobs, Jürgen Furchtlehner, Anja Seliger

Email: pixie.jacobs@boku.ac.at

Affiliation: Institute of Landscape Architecture, Department of Spatial Landscape and Infrastructure Sciences, University of Natural Resources and Life Sciences, Vienna, Austria.

Biography: Pixie Jacobs, Research Assistant, Landscape architect, graduated from the University of Natural Resources and Life Sciences, BOKU, Vienna and holding a teaching certificate from University College for Agrarian and Environmental Teacher Education, Vienna. Currently she is project manager for the research project CultTour at BOKU Vienna and member of Science COST Urban Agriculture Europe.

Title: Autochthone features of open spaces in South East Europe

Keywords: Landscape architecture, open space, cultural heritage, sustainability, autochthone landscape features

Abstract: Open spaces archive and collect traces of human actions from several periods: human interventions characterize and zone these spaces. The varieties of open spaces create complex landscape patterns and entail cultural and biological diversity. Careful preservation of open spaces in accordance with its history as well as its regional characteristics fosters the conservation of cultural and biological diversity. The paper will discuss these landscape architectural aspects of diversity shown through different types of open spaces in South East Europe - focusing on autochthone features and cultural heritage values investigated within the EU-Project CultTour. In the frame of this project an international team of landscape architects and tourism experts explored pilot sites in Greece, Bulgaria, Romania and Italy. The future integration of the cultural resource “open space” in a contemporary spatial context and their sustainable re-use are elaborated. Based on the pilot sites surveys, further open spaces in the regions are investigated and will be linked to a network of cultural and biological diversity reflected through open spaces. Recommendations for regional, national and international planning strategies in order to safeguard open spaces as cultural heritage are given. Open space as cultural and biological diversity source highlights the value and enhances the manifold manifestation of regional identities.

Author: Jadran Kale

Email: jkale@unizd.hr

Affiliation: Department of Ethnology and Cultural Anthropology, University of Zadar, Zadar, Croatia

Biography: Jadran Kale, Assistant Professor at the Department of Ethnology and Cultural Anthropology, University of Zadar, Croatia Born in 1965, author of elaborations of the first drystone walls and barrel-vaulted buildings included in the Registry of Cultural Goods in Croatia, initiator of civil registry of drystone walls and structures at "Suhozid.hr" domain. Works also as a curator concerned with intangible cultural heritage.

Title: Landscape and historical context for agrogenetic diversity of Lun olive trees at the Pag Island, Croatia

Keywords: agrogenetic diversity, biocultural registry, historical landscape, commons

Abstract: Lun area at the island of Pag is a Mediterranean hotspot of agrogenetic diversity. This small semi-peninsular isolate (25 km2) is covered with some 80000 olive trees with highly diverse genetic heritage and old plants, up to 1600 years-old trees. In agropastoral economy landscape was structured with remarkable drystone walling, also individually adapted to respective trees. Cultural landscape was registered in 1975, and a narrower biological reserve at Dudićke krune (2,4 km2) in 1963. Its 1500 wild olive trees were a starting point for cultural landscape ethnography because it is situated in Dudićka kunfina – pasture unit undivided into drystone walls of individual possessions because it was managed as sheep-herders' commons. At the edge of Dudići hamlet Dudićev osik is situated, unusual multicellular sheepfolds builded as landscape device for pasture management. In a wider Lun cultural landscape further typology of drystone-walls is reconstructed, and a connection with agrogenetic heritage proposed. Cultural inventory of Lun's agropastoral landscape is integral part of its biocultural complex. EU-driven policy with cultivators' subsidies, national legislation, conservation practice, genetic research and intellectual collective rights of local community, aggressive tourism economy from neighbouring Novalja in search for easily accessible attractions, as well as initiatives for inclusion of cultural landscape at the World Heritage List represents new circumstances – some as tools, some as obstacles – for adaptive and interested local community.

Author: Tony Knight

Email: anthro.knight@gmail.com

Affiliation: University of Kent, Canterbury, UK.

Biography: Following a successful career in international business consulting, Tony chose to retrain as an environmental anthropologist. Now a PhD candidate at the University of Kent, he is currently conducting ethnographic fieldwork in the French Pyrenees. Tony's research focuses on the relationships that exist between humans and 'wild' nature, specifically at the interstices of modern pastoralism and a contested landscape being rewilded by large, charismatic predators.

Title: Rewilding the French Pyrenean landscape: Can cultural and biological diversity successfully coexist?

Keywords: Rewilding large predators, Pyrenean pastoralism, Human-animal conflicts, Cultural continuity, Biodiversity protection policy

Abstract: Transhumant pastoralism has moulded the Pyrenean landscape for thousands of years. Ancient forests have ceded their dominance to verdant pastures that, today, symbolise the mountains; 'wild' life has ceded its historical presence to domesticated livestock. Now, however, the Pyrenean Mountains are undergoing a process of rewilding: charismatic large predators have returned. A contested (re)introduction programme has reinforced the brown bear population, and natural agency has encouraged grey wolves to remake the Pyrenees their home. This process is not without contention. Conservationists and environmentalists argue that Pyrenean pastoralism has historically coexisted with large predators, and should simply (re)adapt its methods and practices to revalorise and reinvigorate a broader return to a once-present, but suppressed, level of biological and cultural diversity. On the other hand, far from imagining a more resilient natural and cultural landscape, pastoralists view these changes as a threat to biodiversity, and worse, to their livelihood and identity. Drawing on my multi-species ethnographic fieldwork, I explore these complex and conflicting interspecific relationships. My research suggests a fundamental disconnect between global, international, and local environmental policy, exacerbated by a lack of consideration for the differing perceptions the interacting human and nonhuman actors have of 'culture', 'nature', and 'wild nature'.

Author: Jana Krčmářová

Email: jana.krcmarova@yahoo.com

Affiliation: Department of Anthropology, Faculty of Humanities, Charles University in Prague, Prague, Czech Republic.

Biography: Jana Krčmářová is a Ph.D. candidate on department of Common Anthropology of Faculty of Humanities, Charles University in Prague. The dissertation describes the interwoven changes of cultural landscape, agricultural policy and rural life during the modernisation. On general level the focus is on the actors and processes engaged in cultural memory building and interpreting, on the detailed level on one forgotten traditional technique – agroforestry.

Title: Traditional agriculture as cultural heritage. Forgotten agroforestry practices recorded in textual part of 19th century tax records

Keywords: historical agroforestry techniques, traditional agriculture, Czech Republic, central European agroforestry

Abstract: Agroforestry - integration of trees with agricultural crops and/or livestock is a traditional land use/management practice in Europe. Trees as part of agriculture are still commonly used in Baltic, Scandinavian and Mediterranean region but in general these systems are on European level in decline due to their economic disadvantage in the intensive single-commodity-oriented agriculture and forestry. With them vanish also the techniques of a complex long-term non-mechanized, non-chemized usage of semi-forested landscape, thus a cultural loss occurs. Meanwhile such extensive practices are thought to possibly help to mitigate the environmental problems caused or exacerbated by commercial agricultural and forestry production. In particular trees planted throughout the agricultural ecosystems enhance besides the productive potential also habitat and species biodiversity and the regulation functions of essential ecological processes and life support systems. In previous research it was found that while nowadays the tradition of agroforestry in the Czech Republic is nearly completely lost due to political, economic and demographic changes, in 1850s the agroforestry was a common practice. With the help of previous Czech lands-wide historical analysis the cadasters with the greatest abundance of agroforestry were identified and the historical textual tax records of management techniques used in agroforestry were analysed.

Author: Joan Marull (1), Enric Tello (2), Carme Font (3), Nofre Fullana (4), Elena Domene (1)

Email: Joan.Marull@uab.cat

Affiliation: (1) Barcelona Institute of Regional and Metropolitan Studies, Autonomous University of Barcelona, Bellaterra, Spain; (2) Department of Economic History and Institutions, University of Barcelona, Barcelona, Spain; (3) Department of Mathematics, Autonomous University of Barcelona, Bellaterra, Spain; (4) Department of Geography, University of the Balearic Islands, Palma, Spain.

Biography: Director of the Department of Sustainability and Satellite Studies of the Barcelona Institute of Regional and Metropolitan Studies (Autonomous University of Barcelona) His research focuses on the study of urban metabolism, ecological economics and territorial efficiency, as well as the application of satellite technology in the analysis of environmental effects of land use and climate change. He is author of more than fifty scientific papers and has participated in the writing of eight books on ecological genetics, environmental management and landscape ecology.

Title: Exploring the 'intermediate disturbance hypothesis': Could cultural landscapes increase environmental resilience?

Keywords:

Abstract: Previous studies in the Mediterranean reveal that the simultaneous loss of energy / land-use efficiency from the mid-19th century to present can be tracked by changes in the landscape functional structure. These studies also show the importance of cultural landscapes in maintaining the ecological quality of non-built-up land. Hence human exploitation of environment could be understood as 'disturbance ecology': in order to maintain agro-ecosystems, society needs to spend certain amounts of energy. The impact on biodiversity of this landscape 'disturbance ecology' may be either positive or negative depending on its intensity and territorial complexity (organized information). Owing to the ecological hypothesis regarding the role of 'intermediate disturbance' in agro-ecosystems, Mediterranean cultural landscapes should increase environmental resilience. The present paper propose a mathematical model, and compares statistically the changes in the social metabolism, the landscape functional structure and biodiversity in Mallorca (Spain) from an historical perspective (1850-2012), as a first attempt to establish a link between the societal uses of land and energy together with their impact on landscape patterns. Our work concludes that conservation of landscapes with a long history of human use needs to take into account the role of humans in shaping ecological features and biodiversity.

Author: Nicolas Maughan

Email: nicolas.maughan@gmail.com

Affiliation: Aix-Marseilles University, Marseilles, France.

Biography: Nicolas Maughan is conducting research in environmental sciences and environmental history at the University of Aix-Marseilles (AMU) in the city of Marseilles. His research interests include urban environmental history, water pollution history, history of urban rivers and wetlands, history of water management and hydraulic technology (drainage, irrigation, water supply, sanitary facilities, flood protection and dredging) and the history of damming and transformation of rivers. He especially explores Europe and the Mediterranean world in the nineteenth and twentieth centuries.

Title: Ecological continuity under The European Water Framework Directive: stream biodiversity against cultural legacy of watermills?

Keywords: river, watermill, WFD, ecological continuity, historical legacy

Abstract: In order to achieve the “good ecological status” in surface waters by 2015, the European Union member states must, under the Water Framework Directive (WFD, 2000), limit hydromorphological pressures and restore hydraulic and ecological continuity of their hydrosystems. As a consequences policy makers and river managers must remove the most part of the existing artificial infrastructures such as steps, dams or dikes but also all technical equipment of watermills, which represent a significant historical and cultural heritage. This obligation causes oppositions both from residents and from local historical societies in countries like France where watermills are still numerous in some areas. In this context, after briefly presenting an overview of the state of the present-day ecological continuity of European rivers, we will see possible benefits but especially real negative consequences of the removal of watermills, as well as the extent in terms of historical legacy loss, locally and nationally. Then, we will show why an adaptation of the WFD is required to save a part of this heritage. Indeed, these hydraulic infrastructures, sometimes centuries old, and their influence on aquatic ecosystems, related to human activities, contributed to the establishment of original local socio-ecological systems in many river valleys in which various aspects of the biological, landscape and cultural diversity are inseparable nowadays.

Author: Zsolt Molnár

Email: molnar.zsolt@okologia.mta.hu

Affiliation: MTA Centre for Ecological Research, Vácrátót, Hungary.

Biography: Zsolt Molnár is a botanist and ethnoecologist studying traditional ecological knowledge since 2000. He mostly works in Hungary, but also in Central-Asia (Mongolia, Orenburg and Kazakhstan). His main focus is TEK related to habitats, vegetation and landscapes, traditional herding, biodiversity and its dynamics, and the use of this knowledge in nature conservation and environmental education. He is the planned Hungarian nominee for the IPBES indigenous knowledge task force.

Title: Studying traditional ecological knowledge in Eastern-Europe: steppe habitat diversity and herding practice diversity as an example

Keywords: agri-environmental schemes, developed and transitional societies, nature conservation, traditional herding

Abstract: Discussing bio-cultural diversity some key questions arise, e.g. realistic and romantic aspects of historical management practices, definition of "traditional" and practical values of bio-cultural diversity. To answer those questions and recognize traditional ecological knowledge is becoming increasingly difficult in a developed and industrialized Europe. However, margilized regions of Eastern-Europe are still rich in cultural and biological diversity. We studied traditional ecological knowledge (TEK) and vegetation of steppes in Hungary, Romania, Russia, Kazakhstan and Mongolia.
We found deep knowledge of the flora (more than 160 folk taxa / landscape) and pasture habitats (more than 40 folk habitats) and especially deep understanding of ecology and the spatio-temporal heterogeneity of grass availability. Herders not only adapt to their fluctuating environment, there is a wealth of traditional techniques how pastures can be maintained sustainably (e.g seasonal/daily patterns of grazing, manuring, burning). The result is a well-managed pasture rich in species and habitats. We also found that European Union regulations often hinder traditional ways of life (e.g. by banning hand-milking).
We argue, that TEK connected to herding is vital for the proper management of habitats. Agri-environmental schemes have to help the survival and proper use of these traditional practices and the connected TEK and bio-cultural heritage.

Author: Cristina Montiel-Molina (1), Luis Galiana-Martìn (2)

Email: crismont@ghis.ucm.es

Affiliation: (1) University Complutense of Madrid, Madrid, Spain; (2) Autonomous University of Madrid, Madrid, Spain.

Biography: Prof. Cristina Montiel-Molina. Full Professor of Geography. Head of the Department of Regional and Physical Geography at the Complutense University of Madrid (Spain). Head of the Scientific Research Group on Forest Geography, Policy and Socioeconomics. Started her teaching career in 1989 at the University of Alicante and moved to the Complutense University of Madrid in 1996. Fields of experience and expertise: Regional Geography; Mediterranean forest history; landscape and territorial dynamics; forest ownership and land tenure; linking forest policy to land use planning; spatial policies and legal framework assessment; promoting dialogue, participation and collaboration among public institutions and private stakeholders.

Title: Historical fire regimes and rural landscape dynamics in Sistema Central Mountain Ranges (Spain)

Keywords: Vegetation dynamics, historical wildfires, land use, rural landscape

Abstract: Fire is a natural and cultural element that represents one of the main disturbance factors involved in the evolution of rural landscapes. Fire culture and fire hazard have contributed throughout history to build the so called 'fire landscapes' in Mediterranean regions. This paper aims at analysing the historical interactions between fire regimes and rural landscape configuration. To do that, methods and techniques of Historical Geography and Landscape Geographical Analysis have been used, together with Geographic Information Systems. Archival sources have been used to reconstruct historical fire regimes, and field work to assess the influence of fire compared to other factors (i.e. land uses) in evolution of biodiversity and rural landscape dynamics. The landscape-oriented approach is developed by studying the evolution of woodlands' land cover until their present configuration, in connection with fires and fire use, in a series of local-scale case studies. The selection of those case-studies was carried out based on criteria of representativeness and diversity: clearly distinct geoecological areas marked by contrasted fire regimes and with different socioeconomic dynamics were selected. As a result of the research, the links between changes in landscape configuration and the evolution of fire regimes in different forest ecosystems of the Sistema Central Mountain Ranges (Spain) are analysed.

Author: Jessica Neumann (1), Geoff Griffiths (1), Graham Holloway (2)

Email: j.l.neumann@pgr.reading.ac.uk

Affiliation: (1) Department of Geography and Environmental Sciences, University of Reading, Reading, UK; (2) Department of Biological Sciences, University of Reading, Reading, UK.

Biography: I am a postgraduate student at the University of Reading (UK) studying in the field of applied landscape ecology. Specifically, I am researching how historic and contemporary land-use affects species populations in wooded-agricultural landscapes and what this means for future conservation. Alongside my research, I am a self-employed GIS consultant and a keen skier and mountain biker.

Title: The effect of historic and contemporary land-use decisions on carabid beetles in the lowland agricultural matrix of southern Britain

Keywords: Carabid beetles, contemporary, functional trait, historic, land-use change

Abstract: The post WWII period saw an unprecedented rate of landscape modification in lowland Britain. Today, fragments of native woodland and isolated patches of semi-natural habitats exist within a larger agricultural matrix, resulting in declining biodiversity; a trend mirrored across Europe. Understanding how species respond to land-use change improves our ability to maintain biodiversity in the face of on-going landscape modification.

We investigated how carabids respond to contemporary and historic land-use using Canonical Correspondence Analysis. In 2011, carabids were sampled from native woodland in 36 2x2km study landscapes and grouped by functional traits. Land-use representing the whole matrix in each landscape was quantified in a GIS using Landcover Map 2007 and historic Dudley Stamp Maps (1933-1949).

Between 1933 and 2007 agricultural landcover increased by 37%, heathland and semi-natural grasslands declined by 41% and 5% of native woodland was converted to conifer plantations. Slow-dispersing woodland carabids showed significant positive associations with historic woodland cover but not contemporary woodland, indicative of a lag effect. In the contemporary analysis, carabids responded negatively to conifers and arable land. Many specialist species were only present where landscapes retained higher proportions of remnant heathland and grasslands. Species populations don't respond uniformly to land-use change therefore considering functional trait diversity is key. Relying solely on contemporary features may be misleading and future species loss could occur even if present landscapes are maintained. Conservation efforts should focus on retaining semi-natural features and improving connectivity for species with low dispersal power or specific habitat requirements in intensively-modified agricultural-woodland systems.

Author: Daniel Niles

Email: dniles@chikyu.ac.jp

Affiliation: Research Institute for Humanity and Nature, Japan.

Biography: Daniel Niles is a human-environmental geographer (Ph.D. Clark University 2007) interested in what people mean, and the landscapes they envision, when they talk about 'sustainable agriculture'. Early fieldwork took place largely in southern Mexico but has gradually shifted to Asia since serving as visiting researcher at the National Museum of Ethnology (Osaka, Japan) and assistant professor at the Research Institute for Humanity and Nature, in Kyoto, Japan.

Title: Biocultural perspectives on Japanese landscape histories and futures

Keywords:

Abstract: This paper describes something of the cultural landscape experience of Japan, a territory that has long been inhabited and modified by humans. Aside from being one of the origins of rice agriculture, on which so much of the global population now depends, Japan is one of the very early sources of pottery and basketry. The interaction between culture, biodiversity and landscape is so intense that now approximately half of the endangered species of Japan, which is a biodiversity hot spot, are found in humanized landscapes. In these places human inaction, not action, is the chief threat to species survival. In short, Japan presents a very explicit example of the extent to which humans modify the environments in which they live for positive cultural and ecological effect, and thus the need for a biocultural view of landscape change. This paper is proposed in the name of a number of Japanese researchers at the Research Institute for Humanity and Nature in the interest of furthering the concept of biocultural diversity, and with interest in proposing an additional workshop on this topic in East Asia.

Author: Lars Östlund

Email: Lars.Ostlund@svek.slu.se

Affiliation: Department of Forest Ecology and Management, Swedish University of Agricultural Sciences, Umeå, Sweden.

Biography: Lars Östlund is professor in forest ecology at the Swedish University of Agricultural Sciences in Sweden. His research is focused on historical ecology and forest history in boreal Europe and western US. The work involves research on natural forest structure, biodiversity, pre-industrial forest use and cultural traces in old coniferous forests and has resulted in publications in historical, ecological and archaeological journals.

Title: Using northern natural forests to understand historical cultural landscapes

Keywords:

Abstract: In the northernmost parts of Europe (Finland, Sweden and Norway) very large areas are set aside as forest reserves and national parks. These areas are primarily protected to preserve natural ecosystems and biodiversity; alpine areas, subalpine deciduous forests and old-growth boreal forest. Many areas are still roadless and have very minor human impact today. However, these areas have been used, and to some extent shaped by, native Sami people for millennia and therefore can be considered to be cultural landscapes of the past. Over the last one thousand years these the low intensive land use has shifted from hunting/fishing/gathering to reindeer pastoralism and many traces of various activities are still visible in forests. In this presentation I will describe and analyze how multidisciplinary studies, including ecology, archaeology and history, can reveal the nature of these cultural landscapes and how natural qualities interact with the cultural legacy of ancient traditions and forms of land-use. I will also present at model for dual conservation and restoration of northern landscapes with high values.

Author: Luigi Ponti (1), Andrew Paul Gutierrez (2), Miguel A. Altieri (3)

Email: luigi.ponti@enea.it

Affiliation: (1) Laboratorio Gestione Sostenibile degli Agro-ecosistemi, Unità Tecnica AGRI, Centro Ricerche ENEA Casaccia, Roma, Italy; (2) Center for the Analysis of Sustainable Agricultural Systems, Kensington, CA, USA; (3) College of Natural Resources, University of California, Berkeley, CA, USA.

Biography: Luigi Ponti is Staff Scientist at ENEA, Rome (http://utagri.enea.it) where he started as a Marie Curie Fellow under an International Reintegration Grant from the EU to study global change biology following his postdoctoral tenure at the University of California, Berkeley. A member of the Scientific Committee member of the Globally Important Agricultural Heritage Systems (GIAHS, www.fao.org/giahs/) FAO Initiative, he also collaborates with the nonprofit scientific consortium CASAS Global (www.casasglobal.org).

Title: Preserving the Mediterranean diet through holistic strategies for the conservation of traditional farming systems

Keywords: traditional Mediterranean farming systems, agricultural heritage systems, agroecosystem analysis, global change, resilience to climate change

Abstract: The Mediterranean diet was inscribed in 2010 on the UNESCO Cultural Heritage of Humanity (http://www.unesco.org/culture/ich/en/RL/00884) as encompassing more than just food. These diets are embedded in bio-cultural landscapes that are at risk from global markets, industrial agriculture, invasive species and climate change, and yet currently little research aimed at conserving Mediterranean agricultural heritage systems is being conducted. A focus on preserving traditional Mediterranean agricultural systems provides unique opportunities to link UNESCO-SCBD's Joint Programme on Biological and Cultural Diversity and FAO's Globally Important Agricultural Heritage Systems initiative (GIAHS, http://www.fao.org/giahs/) with the goal of developing strategies and policy to preserve this heritage, and food production systems for future generations. An important step in this direction is the development of holistic ecosystem-level assessments of the stability and resilience of traditional Mediterranean farming systems to evolving global change, including climate change and shifting economic patterns and associated landscape transformations. A holistic approach would help ensure ecologically sustainable development, conserve cultural identities, improve farming community livelihood, preserve agro-biodiversity, and continue to provide vital ecosystem services for humanity.

Author: Ian D. Rotherham

Email: I.D.Rotherham@shu.ac.uk

Affiliation: Sheffield Hallam University, Sheffield, UK.

Biography: Ian Rotherham is Professor of Environmental Geography, and Reader in Tourism & Environmental Change at Sheffield Hallam University in England. He has over 30 years in university research, local government, voluntary, and private sectors with current research and past development of studies on core themes of ecology, sustainable development, quality of life, education, and empowerment. In particular, I have developed ideas of the importance of an historic context in understanding the key drivers and barriers in landscape ecology, and especially the concept of cultural severance.

Title: Eco-Cultural Landscapes & Biodiversity - an emerging paradigm

Keywords: biodiversity, eco-cultural landscapes, cultural severance, traditional and customary management

Abstract: Long-term studies across Europe have clarified the eco-cultural nature of landscapes and their biodiversity. This raises issues of the nature of 'Nature' for example, and of how perceptions of 'natural' landscapes may be misleading. Indeed, the lack of understanding of how ecological systems and their biodiversity relate to the cultural nature of landscapes is hugely problematic. Abandonment of traditional and customary uses and utilisation of landscapes is mistakenly seen as re-naturing or re-wilding, and in some way inherently a beneficial change. The reality is different and much of the biodiversity relates to long-term, predictable, sustainable, traditional uses. The ending of such traditions is happening in a sudden and dramatic way, and massive declines of biodiversity result.

The relationships between traditional and customary management of natural resources are considered with long-term observational studies to highlight the connection between management and ecology. An historic time-line is considered to argue that many of the key wildlife habitats and their ecologies have descended from analogues in the primeval European environment. Furthermore, it is these unique communities, which have been maintained in traditional landscapes. Whilst the environment has been transformed by human activity, it is in these eco-cultural landscapes that our most significant wildlife has been allowed to persist or to thrive. The ending of traditional management, termed '*cultural severance*', is probably the most serious threat for nature conservation in the twenty-first century. The changes currently happening also have major implications for rural human communities and their economies.

Author: Emma Salizzoni

Email: emma.salizzoni@polito.it

Affiliation: Dipartimento Interateneo di Scienze, Progetto e Politiche del Territorio (DIST), Politecnico di Torino, Turin, Italy.

Biography: Emma Salizzoni graduated from Polytechnic of Turin (Faculty of Architecture) in 2005. She holds a PhD in Landscape Planning (University of Florence). Since 2007, she has been collaborating with the European Documentation Centre on Nature Park Planning (CED PPN, Polytechnic of Turin). Her main fields of research are nature conservation policies (protected area planning and management) and landscape policies, in their relationship, with a particular focus on Euro-Mediterranean coastal areas.

Title: Protected Landscapes as major actors for the conservation of biological and cultural diversity along the Euro-Mediterranean coastal areas

Keywords: Protected Landscapes, Euro-Mediterranean coastal areas, integrated management strategies

Abstract: The Euro-Mediterranean coastal area is an “artificial” landscape par excellence, having been moulded by thousand-year-old anthropic activities. Here biodiversity values are largely determined by human actions, so that biological and cultural diversity are inextricably linked. A landscape approach to planning and management of these areas is therefore necessary to conserve and enhance both natural and cultural values. This statement, that could seem quite obvious, has been only recently recognized by the main international policies for Euro-Mediterranean coastal areas (e.g. the Mediterranean Action Plan), where landscape – conceived as a bridge between nature and culture – has until recently played a minor role compared to naturalistic and socio-economic aspects. An example of landscape oriented strategies aimed at conserving both nature and culture diversity is represented by some Protected Landscape policies (i.e. protected areas classified by the International Union for Conservation of Nature as category V) situated along the coast of Spain, France and Italy. This paper presents the management experiences developed inside these areas. Here, the main management objective – namely biodiversity conservation – is pursued through complex strategies that take account of local socio-economic and cultural dynamics. These protected areas play as major actors for the development of integrated management strategies for the Euro-Mediterranean coastal landscapes.

Author: Antonio Santoro, Valentina Marinai, Mauro Agnoletti

Email: antonio.santoro@unifi.it

Affiliation: Laboratory for Landscape and Cultural Heritage, Department of Agricultural Food and Forestry Systems (GESAAF), University of Florence, Florence, Italy.

Biography: Antonio Santoro is a temporary research fellow at the Laboratory for Landscape and Cultural Heritage (Department of Agricultural Food and Forestry Systems - GESAAF) of the University of Florence. He has obtained his Ph.D. in2013 in Sciences and Technologies for Forest and Environmental Management at the University of Viterbo. He has participated in two research projects of the Ministry for Agricultural, Food and Forest Policies, including the one for the creation of the National Catalogue of the Historical Rural Landscapes and in two landscape restoration projects for the Fondo Ambiente Italiano FAI (National Trust for Italy). He has held some seminars at the Faculties of Agriculture and of Architecture of the University of Florence and he has published some articles on the subjects of landscape.

Title: Historical landscapes and biocultural diversity: the case of Italy

Keywords: historical landscape, cultural landscape, landscape patterns

Abstract: The research on the Italian historical rural landscapes, promoted by the Ministry for Agricultural Food and Forestry Policies, has selected 122 areas across the country, characterized by land uses linked to traditional agricultural practices with a long historical persistence. It is the first investigation of this kind conducted in Italy and has brought to the enhancement of the law establishing the national register of historical landscapes. These areas show a high level of biocultural diversity, especially the ones with complex fragmented mosaics, rarely considered in the assessment of the biodiversity.
The analysis of these landscapes, carried out with the high-detailed photo-interpretation of about 167.000 hectares, has provided data on the landscape structure of each area, on the quality of land uses and the degree of integrity, providing an assessment of biocultural diversity at landscape level. This contribution presents the results of this analysis, comparing the surveyed landscapes according to their geographical distribution, identifying the links between integrity and the structural characteristics of the mosaic, such as mean patch size, number of land uses and edge density. The main causes of vulnerability and of decrease of biocultural diversity are mainly related to the abandonment and to the industrialization of agriculture. The first one is often encouraged by an incorrect interpretation of biodiversity conservation carried out by the protected areas system, often giving little attention to the historical value and to the biocultural diversity.

Author: Antje Schmidt-Wiegand

Email: antje.bruening@tu-berlin.de

Affiliation: Department for Landscape architecture and Environmental Planning, Berlin University of Technology, Berlin, Germany.

Biography: Dipl.-Ing. Antje Schmidt-Wiegand studied landscape architecture at Berlin University of Technology and University of Copenhagen, with specialization in landscape architecture and historic garden conservation. After graduation in 2009 she worked as scientific assistant at the Bavarian Palace Department, Bureau of Gardens, which from 2011 was followed by her current position at TU Berlin as project manager for the EU co-funded project "CultTour" (www.culttour.eu). Her interests are the theory and history of the profession, historic gardens research and conservation theory and practice in Europe, and landscape architecture that takes account for the historic imprint of sites.

Title: Biological meets cultural diversity - Ethnic garden traditions in South East Europe

Keywords: Garden and open space heritage sites in South East Europe, garden culture traditions, intangible cultural heritage, CultTour Project, South East Europe Transnational Cooperation Programme of the Council of Europe

Abstract: The garden understood as a place of interlinked biological and cultural diversity, is a place where ethnic groups and cultural communities sustain their overcome garden plant inventory and horticultural knowledge. The cultivation of traditional plants often is linked to specific horticultural techniques based on local environmental conditions. The identification of some of these plants and techniques in the garden cultures in South East Europe was focus of one study conducted within the CultTour-Project in 2012-2013. The paper will present and discuss the most significant findings achieved by holding one-by-one and round table interviews in the project's pilot site regions in Bulgaria, Greece, Romania and Italy. The work in an international team, assembled of landscape architects and tourism experts, was based on predefined guideline interview-sheets and rounded off by photographic documentation and literature review. Regionally important garden traditions and landscape concepts were identified, to which the Gurbac (a wooden water wheel) vegetable production in Bulgaria, the close relation of Transylvanian-Saxons to their gardens in Romania and the understanding of stone-based cultural landscape of Apulia Region in Italy belong. Results will contribute to sustain the garden cultural and biological diversity of researched European regions through spreading knowledge on plants and traditions. Acknowledgements: CultTour is co-funded by the European Union under the South East Europe Transnational Cooperation Programme. References: CultTour (2012) Cultural (garden) heritage as a focal point for sustainable tourism, www.culttour.eu; SEE Programme (2007-2013) South East Europe Transnational Cooperation Programme.

Author: Bianca Maria Seardo

Email: bianca.seardo@polito.it

Affiliation: DIST, Politecnico di Torino, Turin, Italy.

Biography: PhD in Territorial Planning and Local Development. Principal research activity concerns landscape planning, with particular attention to landscape multifunctionality and cultural-ecosystem services issues. Currently research deals with rural development and public awareness towards agricultural biodiversity in the context of implementation of Rural Development Programmes.

Title: Convention on Biological Diversity and European Landscape Convention: an alliance for bio-cultural diversity?

Keywords: biological diversity, cultural diversity, landscape, people's perception

Abstract: While the Convention on Biological Diversity (CBD, 1992) addresses species and ecosystems' diversity safeguard, the European Landscape Convention (ELC, 2000) stresses the importance of preserving, managing and creating high-quality landscapes encompassing both natural and man-made ones, in accordance to cultural values connected to people' perceptions of landscapes. This recent pan-European policy may be a strong support for a wider application of the CBD towards the integration of cultural values within sectorial biological-conservations policies...but: is this already happening? As a matter of fact, although almost all of the European Member States have ratified both the CBD and the ELC, it is not obvious at all that respective sectorial policies proceed in an integrated way. The paper will focus on the potential interactions between the CBD and the ELC in sustaining biological- through cultural diversity; then a brief overview, will show the state-of-the-art of the implementation of both Conventions in the European Member States, emphasizing the already existing integrations and the deficiencies. Finally, a decalogue of recommendations towards a better integration of such policies at a national level will be given, focusing on the potentials of managing biological diversity while enhancing cultural diversity and people's awareness towards such a link.

Author: Maria Adele Signorini (1), Bruno Foggi (1), Laura Cassi (2), Luca Ongaro (3), Federica Frondizi (4)

Email: mariaadele.signorini@unifi.it

Affiliation: (1) Dept. BIO, University of Florence, Florence, Italy; (2) Dept. SAGAS, University of Florence, Florence, Italy; (3) IAO - Istituto Agronomico per l'Oltremare, Florence, Italy; (4) freelance forester, Italy.

Biography: Assistant professor in applied botany, she has been teaching botanical subjects at the faculty of Agriculture, University of Florence. Her researches mainly deal with plant systematic, floristic and vegetation, history of botany, ethnobotany, botany applied to cultural heritage (especially plant identification in artworks) and other subjects of applied botany. She is author of over 80 scientific publications and of some books.

Title: Plant toponyms as a tool in investigating possible links between cultural and biological diversity. The case of Tuscany

Keywords: Tuscany, Italy, forest vegetation, toponyms, landscape changes

Abstract: Tuscan toponyms and their relations with forest vegetation were investigated, also with the aim of testing whether toponyms can be used as a source of information on vegetation changes. Main forest species growing in Tuscany were selected and referred to expressly defined *topo-species* (corresponding either to botanical species or to groups of species), according to their vernacular names. Tuscan toponyms were related to *topo-species* thanks to an expressly developed computer program. Over 2400 toponyms related with forest *topo-species* were identified, 1048 of which meaning plant communities (e.g.: 'Castagneto', 'Suvereto'). Each toponym was located by GIS software. Distribution maps of toponyms were generated and compared with actual Tuscan forest vegetation. Correlation between the 1048 communities-related toponyms and actual different wood types proved to be quite high (r: 0.83). *Topo-species* associated with the highest number of communities-related toponyms resulted to be the most common species in Tuscany: deciduous oaks, chestnut, beech. When comparing plants-linked toponyms with forest vegetation map of Tuscany, 877 toponyms (36.5%) fell within forest areas. Only 249 cases (10.3%) showed a perfect correspondence between *topo-species* and current vegetation; some of these inconsistencies can be interpreted in the light of landscape changes.

Author: Joško Sindik

Email: josko.sindik@inantro.hr

Affiliation: Institute for Anthropological Research, Zagreb, Croatia.

Biography: Joško Sindik, PhD is senior scientific associate in Humanities and scientific associate in Social Sciences. Main expert profile is: psychologist (MS) with PhD in kinesiology (sport psychology), at the University of Zagreb. Collaborating in interdisciplinary anthropological projects, he is including psychological and kinesiological constructs in cross-cultural research, using the knowledge in research methodology and multivariate analyses as a tool.

Title: Classical multivariate statistical methods in the assessment changes in biological, cultural and bio-cultural diversity

Keywords: assessment, change, factor analysis, structure

Abstract: The index of biocultural diversity (IBCD) serve as a benchmark for changes in biocultural diversity, using small number of indicators. Number of languages, religions and ethnic groups are consisted in formula for the cultural diversity, while bird and mammal species are representing biodiversity. In this article, author is proposing two classical multivariate statistical methods which use similar input as IBCD in tracking changes in bio-cultural diversity. First, canonical correlation analysis can be performed separately in the 'space' of biodiversity variables, as well as at cultural diversity sets of variables: higher value of canonical correlation will reflect higher level of biodiversity. When the researcher compares the changes in canonical structures and values of canonical correlations in two time periods, he/she can detect the direction and structure of changes in biodiversity. Second, performing factor analyses on the same two types of data (cultural and biological) in two time periods can reflect the specific structure in certain sets of data (cultural or biological). Except the obvious insight in changes in factor structure for each set of variables in second time period, factor analysis of differences offers direct insight in the trend of changing biodiversity.

Author: Martina Slámová, Peter Jančura, Zlatica Prídavková

Email: mslamova@hotmail.com

Affiliation: Technical University in Zvolen, Zvolen, Slovakia.

Biography: I have a PhD. degree in Ecology. I am an assistant professor of the Department of Landscape Planning and Design (Technical University in Zvolen). I teach courses focusing on landscape planning and design. I am engaged in the research about techniques of landscape visualization. Currently I am a leader of the cultural and educational project about historical structures and cultural landscapes in Slovakia.

Title: Traditional agricultural practices, land cover diversity and biodiversity in the Southern Podpoľanie region

Keywords: traditional agricultural plots, historical irrigation channels, biotopes, land cover diversity, landscape value

Abstract: Studied area is adjacent to the protected landscape area "Poľana", where "Man and the Biosphere Programme" is implemented under the auspices of UNESCO organisation. Region was colonized during 17th century by pastorals and later by peasants. Relatively late colonization process was due to harsh climatic, soil and terrain conditions, not very suitable for agriculture. Region was sparsely populated. Later, after deforestation, specific form of scattered settlements developed and together with small agricultural plots has persisted till today in landscape. Region has never undergone land consolidation reforms. Traditionally, a beef cattle is bred. Cereals, potatoes and cabbage are planted on little fertile sandy-loam cambisoils. Summer seasons are usually dry and it was the reason for irrigation channel system development. We identified traditional agricultural plots, historical irrigation channels and biotopes in the field (2013). We evaluated diversity and heterogeneity of land cover and we assessed significance of present biotopes. Data are evaluated in transects (from valley bottoms to watersheds). Traditional agricultural plots with irrigation channels have positively affected land cover diversity and biodiversity. We suggest preservation of valuable land cover together with traditional agricultural practices which are managed by local inhabitants, regarding principles rising from the European Landscape Convention.

Author: Mike Smith, Chloe Bellamy, Peter Crow

Email: Mike.Smith@forestry.gsi.gov.uk

Affiliation: Forest Research, Edinburgh, Scotland, UK.

Biography: Mike Smith is a Landscape ecologist with interest in Forest Landscape Restoration and the development of Green Infrastructure with a particular focus on Urban environments. Biocultural diversity has an important role to play with both areas of research having anthropogenic histories. He is currently working on the EU 7th framework project GREENSURGE which seeks to understand the importance of Urban Green Infrastructure and Bicultural diversity He has been involved in Forest Landscape Restoration projects in the Scotland, China and India.

Title: A GIS based methodology for assessing the relationship between bio and cultural diversity using remote and ground based assessments

Keywords:

Abstract: A GIS based method for assessing the relationship between historical human activity and current biodiversity is being trialled in the Great Trossachs Forest. This highly remote area of Scotland is now largely undisturbed by people, helping to preserve evidence of its rich cultural history and the activities of past inhabitants dating back to the 12th century. The approach uses a Lidar-based, fine resolution Digital Terrain Model to identify, categorise and map previously unrecorded archaeological features beneath existing vegetation. This technique will be validated and improved using ground truth data from survey sites, before the diversity of these feature types is mapped across the study area using a GIS. The relationship between this indicator of cultural diversity and one of biodiversity, developed from a detailed, fine resolution National Vegetation Survey map, will then be assessed across space. This assessment can be easily repeated over any area for which these data available, providing a comparable and inexpensive approach to studying 'bio-cultural' diversity in different landscapes.

Author: Jana Spulerová, Marta Dobrovodska

Email: jana.spulerova@savba.sk

Affiliation: Institute of Landscape Ecology, Slovak Academy of Sciences, Bratislava, Slovakia.

Biography: Jana Spulerová is scientist, landscape ecologist at the Institute of Landscape Ecology of the Slovak Academy of Sciences, with main involvement in the field of vegetation ecology, landscape ecology, conservation and management of agricultural landscape. The background of her research activities is focused on traditional agricultural landscapes, agro environmental policy, ecosystem services and biodiversity.

Title: Diversity of traditional mountain agricultural landscape on the example from Slovakia

Keywords: traditional agricultural landscape, biodiversity, cultural and historical value

Abstract: Traditional agricultural landscape (TAL) in Slovakia reflects the history and long-time mutual relation between generations of farmers and landscape resulting in occurrence of specific agricultural features. Our contribution deals with the TAL of mountain landscape with small-scale arable fields, grasslands and unproductive parts of plots – balks (terraces, walls, heaps etc.) on steep slopes on the example of Liptovská Teplička pilot area. Due to heterogeneous natural conditions on one side and specific cultural-historic conditions on the other side there have been created agricultural landscape of high landscape diversity and biodiversity as well. It represents mosaics of the unique islands of species-rich plant and animal communities, originated by continuous succession over centuries and dependent on traditional cultivation. We have studied connections between development of cultural-historic conditions (settlement, land law, social and political environment, way of agricultural cultivation) and biodiversity of individual historical landscape elements (plots of arable land, grassland, balks). The distribution of TAL sites was identified by comparison of current and historical maps depicting the state of land use in the three time horizons. Biodiversity assessment was centred on evaluation of species richness, habitat diversity and vulnerability of species based on vegetation and zoological surveys and existing ecological conditions. The cultural and historical value was determined by the extent of preservation of traditional cultivation techniques and original and terracing with preserved forms of anthropogenic relief (FAR).

Author: Kalliopi Stara (1), Rigas Tsiakiris (2)

Email: kallio21@hotmail.com

Affiliation: (1) Department of Biological Applications and Technology, University of Ioannina, Ioannina, Greece; (2) Forestry Service of Ioannina, Ioannina, Greece.

Biography: Dr. Kalliopi Stara is currently a postdoctoral researcher at Biological Applications and Technologies Department of the University of Ioannina / Greece. Her research is focused on the study of Sacred Natural Areas in the frame of the interdisciplinary project "Conservation through Religion: the Sacred Groves of Epirus" ("SAGE", 2012-2015), which aims to study SNA biocultural value in the context of effective conservation.

Title: Religion and the management of the commons. The sacred forests of Epirus.

Keywords: Sacred Natural Sites, Sacred forests, Northern Pindos National Park, Greece Mediterranean mountains

Abstract: Sacred natural sites, and especially woods and groves, constitute almost certainly the world's oldest conservation systems. The reasons for their foundation and maintenance are related very often with concrete ways of managing local resources and ecosystems, through religious rules. In Zagori and Konitsa in Northern Pindos National Park/ NW Greece sacred forests exist in most of the villages we have studied during the last 13 years. These are characterized by a huge variety on vegetation types and geological characteristics. These along with cultural elements such as identities of the communities who had established them, the time and the purpose of their establishing, the different rituals implemented for their transformation from profane to sacred, associated taboos and their particular history create their unique character. Allowed uses in sacred forests differ and are depended to the purpose of their establishment. More often grazing, collection of plants, mushrooms and dead branches, as well as hunting are allowed, while taboos are mainly connected with the trees themselves that generally have to be unattached. Their present conservation status is depended on their particular history: these used as protective wood belts above villages are very well preserved, while others, dedicated to serve community needs have sometimes even cut to provide wood for community works. These mature forests display nowadays a newly emerged locally value for biodiversity conservation and they can serve as locally adapted exemplar of successful historical conservation systems.

Author: Beyza Şat Güngör

Email: beyza.gungor@ozyegin.edu.tr

Affiliation: Faculty of Architecture and Design, Ozyegin University, Istanbul, Turkey.

Biography: Speciality: Landscape ecology, Landscape Planning, vegetation analysis, Landscape design.
Education: Ph.D. in Landscape Ecology, Istanbul University, Institute of Science 2009; M.Sc. in nature education, Istanbul University, Institute of Science 2002; B.Sc. in Landscape Architecture, Istanbul University, Forestry Faculty, Landscape Architecture Department 1999. Employment: Worked as a landscape architect in SINPAŞ Construction Company 1999-2000; worked as a research and teaching assistant in Istanbul University landscape architecture department 2000-2009; worked as an assistant professor in Istanbul Aydın University Engineering and Architecture Faculty, 2010-2011; worked as an assistant professor in Trakya University Engineering and Architecture Faculty, 2011-2013; worked as an assistant professor in Ozyegin University, Architecture and Design Faculty, 2013.

Title: The Endemic culture of Turkmen People Integrated with Ida Mountain in Kazdagi National Park

Keywords: Endemic culture, Turkmen, Kazdagi National Park, Biological diversity, Cultural diversity

Abstract: Kazdagi National Park which has known as Mount Ida in Troas also holds a historic endemic culture of Turkmen. Kazdagi National Park established in 1993 for the primary reserve purpose of the rare and endemic plant species. Especially the alpine zone of the mountain includes most of the endemic plants that have been distributed in the national park. Approximately 800 taxa determined in the national park and the 32 of them including varieties are endemic and 78 of them are endangered (EN), according to the red list. The national park emphasizes biological diversity. On the other hand, these plant species diversity can survived and reached todays by the Turkmen's traditional life style in peace and integrated with nature. We conducted a field study to research the changes of cover abundances of the endemic plant species on the alpine zone which is under heavy use by the locals for the sacred beliefs. Contrary to what is believed, locals' harvesting styles of plant species were contributing to the abundances of those plants by timing (after plant goes to seed) and by helping the distribution of the seeds surround. The study includes the example of a traditional life style which joints culture and nature.

Author: Markéta Šantrůčková, Martin Weber

Email: santruckova@vukoz.cz

Affiliation: Silva Tarouca Research Institute for Landscape and Ornamental Gardening, Publ. Res. Inst., Czech Republic.

Biography: Markéta Šantrůčková is employed in the Silva Tarouca Research Institute for Landscape and Ornamental Gardening. She is focused on the historical cultural landscape, landscape development and designed areas. She studied master programme of geography and history at the Charles University in Prague (Faculty of Science and Faculty of Letter) and the Ph.D. programme of physical geography and geoecology at the Faculty of Science of the Charles University in Prague.

Title: Designed landscapes: areas of outstanding cultural and natural value

Keywords: designed landscapes, management, Czech Republic, culture, nature

Abstract: Designed landscapes or big landscape parks integrated gardens, agricultural and woody landscape and created an environment for human well-being. Several these areas were created in the Czech lands during the 19th century by rich noblemen and they covered one or more cadastral units. The designed landscapes were intentionally managed to be beautiful, sustainable, and productive and they had and in many cases still have outstanding cultural and natural values. Political changes in the second half of the 20th century caused deep changes in the ownership of the landscape and management. Designed landscapes were totally or partially disintegrated, economical profit came first disregarding the sustainability. Nevertheless, designed landscapes still were areas with serious cultural and natural value and many of them became protected areas with more sustainable management than a common landscape. Today, same driving forces like in other European countries influence the landscape in the Czech Republic: landscape abandonment in marginalized areas and intensification in core areas. Designed landscapes are in the both types. The paper will present new management approaches and problems for preserving both cultural and natural values of designed landscapes.

Author: Mateja Šmid Hribar, Mimi Urbanc

Email: mateja.smid@zrc-sazu.si

Affiliation: Anton Melik Geographical Institute, Scientific Research Centre, Slovenian Academy of Sciences and Arts, Ljubljana, Slovenia.

Biography: Researcher at Anton Melik Geographical Institute at Scientific Research Centre of Slovenian Academy of Science and Arts. Her background is in Sociology of culture and Philosophy. In 2008 she got M.Sc. on Conservation of Natural Heritage. She has been coordinator of Slovenian Digital encyclopaedia of heritage – DEDI. Currently she is working on Ph.D. on cultural landscapes. Her research interests are focused on human-nature interactions and the importance of ecosystem services in the landscape management based on participatory process.

Title: The Nexus Between Landscape Structures and Traditional Practices for Cultural Landscape Management

Keywords: landscape structure, traditional practices, diversity, cultural landscape, Slovenia

Abstract: Biological diversity is normally increased by landscape diversity consisted of heterogeneous landscape structures (e.g. mosaic landscape). The latter is largely dependent on human activities such as traditional knowledge and practices related to land use which could be recognized as a contribution to cultural diversity. Losing traditional practices may result in impoverishing of landscape and furthermore biological diversity. We present cases illustrating connections between certain landscape structures and traditional practices typical for the cultural landscape of Ljubljana marshland in Slovenia (appropriate mow supports preserving endangered plant and animal species, horse breeding influences the existence of pastures and culinary specialties, hedges were introduced to overcome the lack of building material etc.). Research was carried out on the selected pilot areas during 2012–2013 using study visits and interviews among locals. The aims of identifying these connections were to foster synergies between management of cultural landscape, local knowledge and modern way of living. We argue that almost forgotten knowledge, traditional practices and their effects with use adapted to modern conditions would significantly contribute to the effective management of the cultural landscape and increase landscape- and bio-diversity.

Author: Vittorio Tigrino (1), Giulia Beltrametti (2), Claudia Parola (3), Anna Maria Stagno (3), Camilla Traldi (3)

Email: tigrino@unipmn.it

Affiliation: (1) Dept. of Humanistic Studies, University of Eastern Piedmont, Italy; (2) Laboratorio di Storia delle Alpi, University of Italian Switzerland, Lugano, Switzerland; (3) Laboratorio di Archeologia e Storia Ambientale, University of Genoa, Italy.

Biography: Vittorio Tigrino is assistant professor in Modern History. He's in the scientific committee of 'Quaderni Storici'. His researches concern political and territorial history in modern Italy, history of the common resources and environmental history. With Claudia Parola, Anna M. Stagno, Giulia Beltrametti and Camilla Traldi he works in an interdisciplinary project on the history of the state forests in Liguria.

Title: Ligurian forests: sustainable management of a common good between heritage and biodiversity

Keywords: state forests, common-lands, social history, rural archaeology, historical ecology

Abstract: The paper aims to present a project focused on the history of Ligurian State Forests, carried out by a multidisciplinary team from the University of Genoa and the University of Eastern Piedmont (politic and social historians, geographers, historical ecologists, archaeologists). The project starts from a recent measure approved by the Regional Council of Liguria, for the assignation to private management (but preserving public property) of seven of the twelve regional state forests, promoting their productive aspects and not simply their conservative management. Reconstructing the long term history (from the Middle Ages to present) of these forests, the project aims to show the role of the interaction between different social groups (local communities and institutions) in their agro-silvy-pastoral management, and the consequences on their present aspect, that includes biodiversity and landscape values. A particular focus will be devoted to analyze the relationship between forms of ownership and woodland management systems, and the process (late 19th-1950s) of the acquisition of these forests to the state lands (“demanio”). Most of them have been, for a long time, characterized by a regime of collective property, that did not excluded the assignment to private users through contracts with constraints improvements. The perspective is that a strong focus on local phenomena, will allow to reconstruct the role of different management systems, as well as their abandonment, in the discontinuous history of these "landscapes" and their biodiversity. This reconstruction could offer elements for the planning of current managements, that should be sustainable both in economic and environmental terms (above all from the point of view of the prevention of hydrogeological instability and promotion of plant and animal biodiversity).

Author: Pille Tomson, Kalev Sepp, Robert GH Bunce

Email: pille.tomson@emu.ee

Affiliation: Estonian University of Life Sciences, Estonia.

Biography: Pille Tomson (1960) is an Estonian ecologist. She currently holds a position as a reseacher at the Estonian University of Life Sciences. Her research field is environmental history and impacts of historical land use on contemporary nature. Her previous positions include nature conservation expert, director of the Karula National Park, and lecturer in landscape management and history. She has graduated with a BA in ecology and botany from the University of Tartu, and an MSc in environmental protection from the Estonian University of Life Sciences.

Title: Historical development of slash and burn forest patterns in South Estonia

Keywords: land use, slash and burn, historical maps, boreal forests

Abstract: Slash and burn cultivation in Neolithic Europe is well-know, as is the contemporary practice in tropical countries. In northern Europe – Sweden, Finland, Russia, Estonia – slash and burn cultivation declined in the period from mid-19th century to the first decades of 20th century. Historical maps drawn in the second half of 19th century are valuable sources for the reconstruction of the historical land use situation and studying the changes in land use patterns. The maps show areas called buschland. Historians have described buschlands as a special land category allocated for regular slash and burn cultivation. The case study was carried out in Karula National Park in south-east Estonia. The aim of the study was to identify the areas used for slash and burn cultivation and study changes in these lands since the end of slash and burn cultivation. The analysis of historical maps shows that at the beginning of the 20th century 70% of buschlands were transformed into arable lands, 19% forested and 9% were mapped as meadows. To date, 79% of them have become covered by forest. Comparisons with contemporary forest databases show that these forests represent mostly mesotrophic boreal forest. Typical locations for these forests are the tops and slopes of hills.

Author: Martina Tredici, Francesca Emanueli, Mauro Agnoletti

Email: martina.tredici@unifi.it

Affiliation: Laboratory for Landscape and Cultural Heritage, Department of Agricultural Food and Forestry Systems (GESAAF), University of Florence, Florence, Italy.

Biography: Martina Tredici is a graduate student of Ph.D. course in Sciences and Technologies for Forest and Environmental Management at the University of Viterbo. She has participated in the research project of the Ministry for Agricultural, Food and Forest Policies for the creation of the National Catalogue of the Historical Rural Landscapes. She is currently working on a landscape restoration project of a terraced landscape for the Fondo Ambiente Italiano FAI (National Trust for Italy) in Liguria.

Title: The restoration of biocultural diversity in historical rural landscapes: the case of the wood of Saint Antonio (Majella Park, Abruzzo) and Punta Mesco (Cinque Terre park, Liguria)

Keywords: landscape restoration, biocultural diversity, historical rural landscape, multitemporal analysis

Abstract: The deterioration of the Italian historical rural landscape, due to the abandonment of farming and forestry, as well as to the industrialization of agriculture, has stimulated not only new policies, but also project projects for the restoration of historical landscapes. This paper present two case studies: Sant'Antonio forest in Abruzzo and Punta Mesco promontory in Liguria. In both areas the abandonment and the system of restrictions related to the management of protected areas accelerated the degradation of biocultural diversity related to the historical landscape. In fact, both areas are included in a Park and in Sites of Community Interest of the Nature 2000 network. The trends affecting the two areas are the slow alteration of the tree structure due to the interruption of the traditional use of grazing and pollarding trees in the Sant'Antonio forest and the abandonment of dry-stone terraces with olive orchards and vineyards in Punta Mesco. As a result forestation and renaturalization processes took place, supported by the park management plans, which forbid the restoration and management of the historical landscape. The methodology applied in these projects is based on multitemporal analysis (HICEA) and aims to restore the cultural identity and the biocultural diversity, removing part of the secondary forest as well as recovering the traditional practices. These projects triggered an intense debate on landscape and nature conservation strategies at regional and national level. In the case of Punta Mesco the project is already in place, in the Sant'Antonio Wood there is still an ongoing debate between the park and the local communities.

Author: Grace Twiston-Davies, Jonathan Mitchley, Simon Mortimer

Email: grace.twiston-davies@hotmail.com

Affiliation: University of Reading, Reading, UK.

Biography: I have just completed my PhD at the University of Reading, UK, where I have been studying the landscape-scale grassland restoration at the Stonehenge World Heritage Site. My research interests include the ecology, conservation and restoration of plants, insects and landscapes. I have studied at the University of Plymouth and Imperial College London and worked with the National Trust and the International Association for Landscape Ecology UK Chapter.

Title: Restoring the Stonehenge Landscape: landscape scale species-rich grassland recreation at a UNESCO World Heritage Site

Keywords: Landscape, Restoration, Stonehenge, Grassland, Lepidoptera

Abstract: Landscape scale restoration and recreation of species-rich grassland has been carried out at the Stonehenge UNESCO World Heritage Site, Wiltshire, UK since the year 2000. This aims to protect and enhance the archaeological, cultural and nature conservation value of the landscape and reconnect the isolated fragments of ancient chalk grassland across the site. Butterflies were surveyed across the landscape as indicators of biodiversity and landscape connectivity to evaluate the success of the grassland recreation. The contribution of the new grassland to landscape connectivity at the site and the wider landscape scales were investigated by mapping butterfly distributions, conducting least-cost distance analyses (ArcMap 10) and measuring grassland habitat network values (Fragstats 4.2). Butterfly species associated with grasslands have colonised the grassland recreation e.g. Meadow brown (*Maniola jurtina*) and Marbled white (*Melenargia galathea*) and landscape connectivity has increased. However, specialist species with low dispersal abilities e.g. Adonis blue (*Lysandra bellargus*) and Small blue (*Cupido minimus*) are potentially isolated to chalk grassland fragments, requiring targeted management to increase connectivity for these species in the future. This provides an example of how landscape scale habitat restoration and recreation that aims to protect and enhance cultural and ecological values of the landscape is an effective, long term approach to enhance biodiversity and restore landscape connectivity.

Author: Victoria Wyllie de Echeverria

Email: victoria.wylliedeecheverria@ouce.ox.ac.uk

Affiliation: University of Oxford, Oxford, UK.

Biography: Victoria Wyllie de Echeverria received both a B.Sc. and a M.Sc. at the University of Victoria, Canada, in plant ecology and taxonomy and ethnobotany, before moving to the University of Oxford to complete a Ph.D. She is now examining how climate change is being perceived by Indigenous people, and how these changes are affecting cultural and biological diversity in the coastal environment of north-western North America.

Title: Linking interactions between cultural and biological diversity on the Pacific Coast of North America in the face of climatic change

Keywords: Pacific Northwest of North America, Indigenous People, Cultural Diversity, Biological Diversity, Pacific crabapple (*Malus fusca*)

Abstract: This abstract presents my Ph.D. research proposal investigating the magnitude of historical environmental shifts in the coastal estuarine ecosystem in several Indigenous communities on the northern coast of British Columbia and Alaska. Research will focus on examining influences of environmental change on populations of native Pacific crabapple (*Malus fusca*), and seeing how these changes cascade through the biological and cultural ecosystems. Using this important indicator keystone species, this research will address three main questions: (1) what are the linkages between cultural and biological diversity in this region; (2) how do these two forms of diversity alter and co-adapt in relation to each other as the climate changes; and (3) how will these changes affect both local people and the landscape into the future. Using a mixed-methods interdisciplinary approach, I will record and analyze Indigenous Knowledge on ecosystem services, resource use, species distribution patterns and historical adaptation techniques through conducting interviews. I will also review historical time series ecological datasets (i.e. aerial photos and weather station data) to document how the landscape has changed over time. Viewing these questions through multidisciplinary and multicultural lenses will allow for a more comprehensive understanding of coastal zone changes at the landscape scale. The ultimate goal of this project is understand how environmental change is affecting local peoples, and, by creating predictive models of local environmental change, provide critical information on ways they can or cannot apply strategies from the past to adapt to probable future coastal environmental changes.

Scientific Meeting

List of Abstracts

Poster Session

Author: Alessandro Andreotti (1), Maura Andreoni (1), Ricardo Jorge Lopes (2)

Email: alessandro.andreotti@isprambiente.it

Affiliation: Institute for Environmental Protection and Research ISPRA, Italy; (2) Center on Biodiversity and Genetic Resources CIBIO, University of Porto, Porto, Portugal.

Biography: Educated at the University of Genoa, Italy, since 1996 I have worked at the National Institute for Wildlife (INFS), now Institute for Environmental Protection and Research (ISPRA). I have devoted large part of my professional activities to improve the status of the most threatened birds, both drafting single species action plans and addressing specific threats.

Title: Mutual interactions between wild species and humans: the emblematic case of the Purple Swamp-hen Porphyrio porphyrio in the ancient world

Keywords: Human-animal interactions, historical inquiry, Purple Swamp-hen, ancient Mediterranean.

Abstract: Since antiquity, human communities have been influenced both by environmental contexts and the biodiversity of the places in which they were living. Wild species, as lions, owls, goats, entered into many cultures, contributing to the shaping of myths, believes, aesthetic understandings and common imaginations. In turn, humans affected such species, for instance by domesticating or persecuting them and altering their natural range of occurrence.
In our work we focused our attention on the Purple Swamp-hen, a colorful rail living in the freshwater marshes along the Mediterranean coasts. This waterbird shows sedentary habits and therefore we should expect a high level of genetic diversity among its isolated populations living in north Africa, Sardinia and the Iberian Peninsula. However, a recent research has revealed a substantial genetic mixing, that can suggest that humans influenced the species distribution in ancient times. To validate this hypothesis, we carried out a historical study, consulting classic authors and researching iconographic representations across the Mediterranean, from the ancient Egypt to the beginning of the Middle Age. Our findings revealed that the Purple Swamp-hen was popular especially in the Roman and Byzantine periods and was even traded, kept and bred in captivity, supporting the hypothesis of ancient translocations.

Author: María de la Luz Ayala, Edith R. Huerta Jiménez

Email: mlayala@cucea.udg.mx

Affiliation: Universidad de Guadalajara, Mexico.

Title: Native and introduced flora and fauna in colonial Mexico. The San Miguel de Sahuaripa Geographical Description, 1776.

Keywords: Native and introduced biota, bio-cultural diversity, indigenous and traditional agricultural communities, traditional knowledge, colonial Mexico.

Abstract: A century and a half after the colonization of San Miguel Sahuaripa, we find in this indigenous community, located in northwestern Mexico, a variety of plants and animals from very diverse backgrounds. In the second half of the 18th Century, the native biota and the plants and animals introduced by the Europeans were both part of the cultural landscape. The Description of San Miguel Sahuaripa (1776) lists and describes the plants and animals in the community as well as the different uses given to them: fruit trees (dominated by those introduced by the Europeans); wild trees, mostly native wood species used primarily as timber and medicine; "smaller" plants whose branches, leaves and roots had medicinal properties as well as herbs and medicinal and poisonous roots; and seeds and crop plants, both native and introduced varieties. There is also news of domestic animals and birds "very useful" (mainly introduced by the Europeans) and wild (native and usually described as harmful). Finally poisonous reptiles and vermin are listed. The analysis of the Description allow us to contribute both to the history of the exchange of plants, animals and other organisms and to the study of the relationship between biological and cultural diversity.

Author: Fabrizia Fagnani (1), Alessio Bartolini (2), Alberto Malvolti (3)

Email: f.fagnani@provincia.pistoia.it

Affiliation: (1) Settore Biodiversità ed Aree Protette della Provincia di Pistoia, Italy (2) Centro di Ricerca, Documentazione e Promozione del Padule di Fucecchio, Italy (3) Fondazione Montanelli-Bassi, Italy.

Biography: Fabrizia Fagnani received his *Laurea* degree in Forestry from the Università degli Studi di Firenze, Italy, in 1992, and his Ph.D. in Entomology from Università degli Studi di Firenze in 1997. From 1999 she worked in the Province of Pistoia. Since 2006 is the Responsible Of Sector Biodiversity and Protected Areas of the Province of Pistoia, the managing body of the Natural Reserve of Padule di Fucecchio

Title: Biodiversity and traditional activities in the Fucecchio Marshes: a plan to recover marsh grass and hemp growing

Keywords: feasibility study, marsh grasses, hemp.

Abstract: The Padule di Fucecchio (North Tuscany) is the largest inland marsh in Italy. Traditional activities like farming, fishing, hunting and the working of marshland grasses long influenced the management of water and vegetation. Those activities stopped (or lost their typical character) in the second half of the last century.

A comparative analysis has been carried out of both the past management of the marsh basin, mostly aimed at growing and harvesting marsh grasses, and the current management of the nature reserve, established by the Provincia di Pistoia in 1996.

Such analysis - involving a consideration of how different patterns of management affect wild species, habitats and landscape - has provided the basis for investigating and establishing the feasibility of restoring better conditions for marsh grasses over a limited part of the protected area.

The information has been gathered through interviews to local elderly people, books, articles and the direct experience of the authors, who are currently involved in the management of the protected area.

This project is aimed at encouraging a revival of the traditional working of marsh grasses (i.e. sedge, reeds etc.) and hemp for the manufacture of objects of every-day-use, as a source of income and tourist attraction.

Author: Christopher Foster, Graham J. Holloway

Email: c.w.foster@reading.ac.uk

Affiliation: School of Biological Sciences, University of Reading, UK.

Biography: Christopher Foster is a Teaching Associate and research student in the School of Biological Sciences at the University of Reading. He has a BSc in Meteorology and an MSc in Wildlife Management and Conservation. Within a broad interest in natural history, his particular research focus is expanding the remit of landscape ecology to encompass less well studied groups of invertebrates. He is also a keen biological recorder, trainee bird ringer and aspiring nature writer.

Title: Assessing the utility of patches of flowering Apiaceae as sampling tools for biodiversity within culturally modified landscapes

Keywords: Sampling methodology, spatial patterns, insect conservation, biocultural value.

Abstract: Most research towards management of biodiversity at large spatial scales concerns vertebrates, invertebrates with a high cultural (butterflies) or economic (pollinators) value, or others which may be assessed using tested, inexpensive sampling techniques (ground beetles). The extent to which biodiversity has been influenced by the composition and structure of highly modified, predominately agricultural landscapes may therefore not be fully understood, despite the growing body of research in this field. Within such landscapes in lowland England, the Apiaceae are a widespread and often prolifically abundant family of flowering plants, representing a rich nectar resource which potentially supports a diverse invertebrate fauna. We trialed the use of patches of flowering Apiaceae growing alongside public roads and footpaths as accessible, affordably used, ready made 'traps' for taxonomic groups rarely considered in other recent landscape research efforts. We assess the quality of the data obtained, and therefore the potential power of this method in identifying spatial patterns in biodiversity; explore the likelihood that a landscape effect exists at all on the transient invertebrate communities which utilise Apiaceae; and discuss the extent to which culturally valuable landscape elements – in this case highly visible patches of common wildflowers – may also contribute to biodiversity conservation and research.

Author: Juraj Hresko, František Petrovic, Viera Vanková, Katarína Batová, Regina Misovičová, Peter Petlus

Email: jhresko@ukf.sk

Affiliation: Department of Ecology and Environmental Sciences, Faculty of Natural Sciences, Constantine the Philosopher University in Nitra, Nitra, Slovakia.

Biography: Prof. RNDr. Juraj Hreško, PhD., is the head of the Department of Ecology and Environmental Sciences, Constantine the Philosopher University in Nitra. My scientific work started at the Geographical Institute and Institute of Landscape Ecology of the Slovak Academy of Sciences. My current interests deal with landscape archetypes methods processing and research on the morphodynamic impacts to the development of alpine lakes in the High Tatra's region. Previous experiences: Innsbruck University, Geographical Institute of the Polish Academy of Sciences in Krakow, AGH University of Science and Technology in Krakow, University of Colorado Boulder.

Title: Mountain Landscape Archetypes of the Western Carpathians – Slovakia

Keywords: Mountain Landscape Archetypes, the Western Carpathian, Slovakia

Abstract: The Western Carpathians represent the highest part of the Carpathian arc with highland and alpine type of landscape, which is characterized by scenically arranged mountain ridges separated by the intramountain tectonically predisposed structural basins and fluvial-modeled valleys. Formation of mountain areas archetypes was primarily determined by properties of relief and geological structure. Gradual settlement of the mountain arc of the Carpathians in the area of Slovakia was significantly influenced by the German and the Wallachian colonization. The German colonization took place from 12. to 18. century and had a significant impact on the development of handicraft, mining, processing of metal ores and viticulture and urbanization. The Wallachian colonization dominated in 14. and 15. century and was known by the activities of mountain farming with a predominance of shepherding, what had a great impact on deforestation of the landscape and expansion of mountain pastures and meadows. During the research of the development of the secondary landscape structure of mountain areas of Slovakia, we identified specific textures with various patterns of landscape mosaic with a certain degree of orderliness or regularity of landscape elements at different hierarchical levels. We consider such physiognomically distinguishable parts of the landscape to be "landscape archetypes". Archetype is therefore an area which was forming under conditions with strong application of geological structure, geomorphological forms and morphodynamic processes. In this paper we want to clarify and interpret the development of some representative archetypes of the mountain area of the Western Carpathians via selected examples, and to point out one of the new ways of the landscape research.

Author: Reka Kelemen

Email: rkelemen@utk.edu

Affiliation: University of Tennessee, USA

Biography: Reka Kelemen has received her Master of Science degree from the Graduate School of Genome Science and Technology at the University of Tennessee, United States, and is continuing her studies as a PhD student at the Vienna Graduate School of Population Genetics. Her research interest has been applying computational and statistical tools to datasets in biology, in particular, in genetics and immunology. In her recent collaboration she applies such tools to large datasets in the social sciences.

Title: Are cultural values linked to genetics?

Keywords: human genomics, world's values survey, cultural values, genetic maps, cultural maps.

Abstract: Our study aims at a broader understanding of interconnections between socio-cultural and biological diversity in the human populations of Europe based on two major datasets. The European subset of Population Reference Sample (POPRES) serves as our source of biological observations while the social and cultural implications of our study stem from the World Values Survey (WVS) database. Inglehart and Welzel drew the cultural map of the world in which it is apparent that in spite of their geographical proximity, there is a striking divergence among the value-sets of European countries compared to other regions of the world. A recent large-scale genetic study involving 3000 individuals from 36 European countries revealed that despite having lower genomic diversity than other regions, Europe's geographic outline is reflected in its genetic map with an astounding precision, thus making it possible to combine biological and social sciences. Here we report a synthesis of the above datasets applying statistical methods such as principal component analysis and spatial clustering to identify cultural values whose clustering patterns coincide with those of known genetic markers. Therefore, our interdisciplinary study serves to bridge research of cultural and biological diversities of human populations in Europe and to start a discussion on the roles of genetics, geography and history in the formation of cultural values. References: Nelson M.R. et al. The Population Reference Sample (POPRES): a resource for population, disease, and pharmacological genetics research. in: American Journal of Human Genetics 83(3) pp. 347–358. WORLD VALUES SURVEY 1995 OFFICIAL DATA FILE v.3. World Values Survey Association (www.worldvaluessurvey.org) Aggregate File Producer: ASEP/JDS, Madrid Inglehart, Ronald; Welzel, Christian [2010]: Changing Mass Priorities: The Link Between Modernization and Democracy. in: Perspectives on Politics 8(2) pp. 551-567 (Map on page 554) Novembre J. et al. [2008]: Genes Mirror Geography within Europe; in: Nature 456 pp. 98-101.

Author: Gaetano Ladisa (1), Generosa Calabrese (1), Laura Pettiti (2), Nicoletta Tartaglini (2), Enrico Vito Perrino (1), Giancarlo Mimiola (1)

Email: ladisa@iamb.it

Affiliation: (1) CIHEAM-Mediterranean Agronomic Institute of Bari, Bari, Italy; (2) Dipartimento Difesa della Natura, Ministero dell'Ambiente e della Tutela del Territorio e del Mare, Roma, Italy.

Biography: Graduated in Forest Science in 1995, he obtained a Research Doctorate in Idronomy from the University of Padova. He collaborated with the University of Bari in the field of research project concerning soil degradation in the Mediterranean Regions. Professionally specialized in soil degradation and its mitigation with forestation actions, desertification risk assessment using indicators. As a consultant of the Mediterranean Agronomic Institute he followed the National Forest Plan in Malta and some cooperation projects on sustainable management of natural resources and water scarcity. He has participated to the LIFE+ Nature & Biodiversity Cent.Oli.Med. Currently he is working on MedSpring project (EU 7 Framework Programme).

Title: Participatory approaches in conservation and enhancement of biodiversity in Mediterranean landscape of Ancient Olive Groves: from perception to governance

Keywords: Ancient Olive Orchards, governance, landscape, protected areas, participatory approaches.

Abstract: The sustainable management of the traditional Mediterranean Ancient Olive Orchards (AOOs) landscape requires to support the need for protection and conservation of biodiversity together with the valorisation of territory through its productive, social and cultural aspects. The involvement of local communities represents a not-negotiable component in such a valorisation process. When extensively and traditionally cultivated, AOOs are characterised by distinctive landscape elements and valuable biodiversity level; thus they can be regarded as High Nature Value Farmlands (HNVF). AOOs are mainly thought as productive areas; this explains the lack of knowledge about the ecosystem services they provide. Intensive agricultural practices, uprooting of trees for ornamental purposes are some of the threats these AOOs and their landscapes are exposed to. In the frame of LIFE+ "Cent.Oli.Med." (LIFE 07 NAT/IT/000450), a participative process was developed leading from the identification of stakeholders involved in the management of AOOs - taking into account their perception of main values and threats - to the identification of management criteria for the sustainable governance of AOOs. Through the involvement of competent Ministries of different Mediterranean Countries a shared definition of AOOs as HNVF was developed, and strategies for their enhancement and preservation at EU-Med scale were identified.

Author: Jyrki Lehtinen, Marjatta Sihvonen, Janne Kumpulainen

Email: jyrleh@utu.fi

Affiliation: University of Turku, Turku, Finland.

Biography: Jyrki Lehtinen was born in Somero, Finland, in 1962 and received his M. Sc. degree in human geography at the University of Helsinki in 1994. Since then he has worked in projects concerning especially landscape history, historical GIS and historical maps a source corpus of landscape history. He is a doctoral student in the department of landscape studies at the University Turku in the University consortium of Pori in Pori, Finland, and lives in Turku, Finland.

Title: Linking the conservation of meadow and forest species in Rekijoki Natura reserve, Southwest Finland

Keywords: traditional rural biotopes, biodiversity, GIS, *Parnassius mnemosyne*, *Pteromys volans*.

Abstract: For centuries, grazing has shaped the landscape and species in Rekijoki river valley in the southern boreal vegetation zone. Continuum of meadow habitats that reaches the second millennium is unique in Finland, where the area of natural meadows started to decline in the 19th century as clearing of the fields progressed. However, in the rough terrain of Rekijoki, cultivation was not possible. Therefore, a mosaic landscape with grazed meadows and forest patches remained, maintaining notable species diversity. 1209 hectares of Rekijoki belong to Natura 2000 programme, agreement with the landowners as one conservation instrument. Habitats are, however, threatened by clear-cuts and plantation. This paper focuses on a GIS-based method based on field data and open data aerial photographs to improve the conservation of forest species *Pteromys volans*, and *Parnassius mnemosyne*, a meadow species, both included in the Habitats Directive amendment IV (a). Despite their different habitat requirements, the two species have survived in the mosaic landscape of Rekijoki. The method produces both micro level information for site-specific conservation planning and macro level information for maintaining favorable habitat structure in the area. Furthermore, the results can be used to motivate landowners to practice management that benefits both species.

Author: Antoine Libert Amico

Email: antoinelibert@hotmail.com

Affiliation: Universidad Autónoma Metropolitana-Xochimilco, Mexico City, Mexico.

Biography: Masters of Science in Rural Development, currently pursuing his PhD in climate change adaptation strategies southeastern Mexico, at the UAM-Xochimilco (Mexico City). Antoine is the Project Coordinator of the Climate Change Adaptation Programme of the young climate change think-tank IDESMAC (Institute for Sustainable Development in Mesoamerica, A.C.), which seeks to strengthen coffee producers' resilience to climate change through capacity development and training.

Title: How European decision-making configures sustainable landscape management in bio-cultural diversity hotspots in Mexico

Keywords: Climate change, bio-cultural diversity, landscape management, carbon-neutral coffee.

Abstract: This paper discusses sustainable landscape management processes in the "El Triunfo" Biosphere Reserve, where innovative processes to reduce emissions from deforestation and forest degradation have led to an international partnership between coffee producers in southeastern Mexico and social and ecologically responsible consumers in Europe. There is ample scientific evidence that climate change affects biodiversity. In light of increasing deforestation and the concomitant loss of biodiversity, ecological non-governmental organizations in Mexico have called for the recognition of the environmental services that coffee farms offer to biodiversity. Shade-grown coffee farms not only provide ecological niches for diverse species of flora and fauna, but also express traditional agricultural and forest management practices related to bio-cultural diversity in this famous coffee-producing region. Biosphere Reserves are considered "learning sites" by the UNESCO Biodiversity Initiative. This paper presents the results of work carried out in the "El Triunfo" Biosphere Reserve in the state of Chiapas, Mexico, where the author has been developing methods to assess and facilitate the links between biological and cultural diversity. The sustainable landscape management strategies currently implemented seek to strengthen social and ecological resilience to climate change, in seeking new markets for fair-trade coffee, which will in turn finance the environmental protection mechanisms put into practice by participating coffee-producing cooperatives. Fair-trade coffee is not only a tool in biodiversity and cultural diversity conservation. Innovative certification processes that recognize women's role in the laborious tasks of coffee production constitute innovative strategies to strengthen the social and financial resilience of coffee-producing cooperatives.

Author: Franz Mauelshagen

Email: franz.mauelshagen@kwi-nrw.de

Affiliation: Kulturwissenschaftliches Institut Essen, Germany.

Title: The Eco-History of Cultural Diversity: A Deep-Time Perspective

Keywords: Cultural, biological, biocultural diversity, ecodynamics, Anthropocene, (great) transformations, social-ecological systems, global environmental history, resilience, social complexity.

Abstract: Many scientists agree that the loss of biodiversity is paralleled by a loss of cultural diversity among human populations today. This parallelism is hardly accidental as the decline in, both, cultural and biological diversity is very likely, and quite obviously, due to the same processes of globalization connected with the expansion of capitalist economies and western lifestyles processes historically rooted in European colonialism and the Industrial Revolution. Diversity is a systems-level property particularly relevant to the assessment of the resilience of social-ecological systems (SES). Clearly, diversity is an element of a system's flexibility. However, the precise role of cultural diversity for the resilience of SES has been little explored, and one strategy to explore it more deeply is from the perspective applied in this paper, i.e. that of global environmental history. In a deep-time perspective, cultural diversity has resulted from adaptations to various and/or changing environments in a long-term process of human ecological niche construction. The present loss of cultural and biological diversity marks an evolutionary turning point in the history of human niche construction. We need to understand when, where, and why it occurred and what its implications are for the resilience of the "global niche" constructed by modern societies in the Anthropocene.

Author: Naama Meishar

Email: naama.meishar@mail.huji.ac.il

Affiliation: Technion - Israel Institute of Technology, Israel.

Title: Obstacles to Urban Biodiversity: the Exclusion of Sephardi Jews' Preferred Species from Open Public and Private Domains in Tel Aviv

Keywords: ethnic segregation, biodiversity, anti-diversity legislation, Tel Aviv, conservation.

Abstract: Apartment buildings in the city of Tel Aviv are located in the centers of lots. Thus, the exposed apartment building's yard is always adjacent to both neighboring yards and open public spaces. Theoretically, this nearness has potential for an urban biodiversity of native and introduced species – both ornamental and utility ones. The paper presents a cultural study of these surrounding courts in two defined areas in the north and south of the city. It was conducted via a mapping of plant species, interpretation of courts' designs, in-depth interviews with resident-gardeners, interpretation of the courts' cultural public representations and interpretation of protected species' lists. A definable species difference was evident amidst courts in these two areas that corresponded with ethnic and class divisions; while the north is inhabited by a majority of upper-middle and upper-class European Jews, the South is inhabited primarily by middle-lower class Sephardi (Mizrahi) Jews of Arab and Asian origin. In the northern yards one finds almost exclusively Introduced ornamental species whereas in the south there was a mix of native, introduced, ornamental and utility species. The paper shows how socio-ethnic segregation, urban green culture's exhibitions, historical garden research and preservation policies thwart the maximization of urban biodiversity.

Author: Kenji Nonaka (1), Itsuko Kawada (1), Noriko Kaneko (1), Yukiko Shiraishi (1), Tadashi Ishii (1), Yumi Tamura (1), Yasuyuki Iwahori (1), Hirotugu Suga (2), Kenichi Hashimoto (3), Yoshio Nakamura (4)

Email: 2nk4dkb@kza.biglobe.ne.jp

Affiliation: (1) Round Table Committee of Koga Park – RTCKP; (2) AI Landscape Co. Ltd.; (3) Nine steps corporation; (4) Tokyo Institute of Technology.

Biography: Representative author of the Volunteers of Community and Supporters for Koga Park (Ibaraki, Japan, 2003 UNESCO Melina Mercouri prize), which was constructed in 1975 and gradually extended until 2000's. Member of Koga Park Round Table Committee, which manages civil voluntary activities' groups in the park (Park Sparkling Club, Do Field Rolling Club, Woody Life Club, et al.) since beginning of 21C.

Title: Citizen participatory management on conservation and creation of biological diversity environment in periphery of urban area

Keywords: citizen participation, environmental management, management committee, park master, Koga park.

Abstract: The authors intend to disseminate detail of the relation between environmental diversity of a park in periphery of urban area, citizens' participation activities, and its management system by poster presentation. The presentation takes a case of Koga Park, which received the Melina Mercouri Prize in 2003 for its activities and for conservation of its regional landscape and cultures.

In 1990s, the natural environment of the park was drastically changed and revived by construction works for its extension and restoration of marshland, which had been vanished for agricultural reclamation works. Then recovered regional environment was observed, such as flying migratory birds and thickly wooded areas in the park.

But from the view of wide sense of ecology ideas, it is necessary to consider interrelation between human daily activities and natural environment for the conservation of regional and cultural landscape. Control of disorderly overgrowth of hydrophytes and miscellaneous trees, which had been managed by local activities, is example of this subject.

Corresponding to this situation, park masters were allocated by local government and "Round Table Committee (Entaku-Kaigi)" was formulated as participatory management organization. These organizations were engaged in coordination and management of park and biological diversity are maintained in local living environment.

Author: Carlos Rosa-Jiménez

Email: cjrosa@uma.es

Affiliation: HTT Institute. University of Málaga, Málaga, Spain.

Biography: Carlos Rosa-Jiménez is assistant professor of Regional and Urban Planning in Malaga University's School of Architecture. He has lectured in international doctoral courses and participated in numerous projects of regional and national research in the line of tourism, including the Special Protection Plan of Ronda's Historic Town.

Title: Agrarian Landscapes of Water: protecting the territorial water architecture as cultural and environmental axis in Guadalhorce Valley (Málaga, Spain)

Keywords: Agrarian landscape, water architecture, landscape transformation, cultural landscape, Guadalhorce Valley

Abstract: Guadalhorce Valley (Málaga, Costa del Sol) is an historical landscape with itself memory and identity. During centuries, the water has been the main protagonist, associated to the human constructions that have left footprints for his exploitation or control. Guadalhorce river is the main cultural and environmental axis that structures this territory. Their water supply canals were built in the 12th century during the Muslim period; all owing the irrigation of agriculture crops as singular as sugar plantations. At present, the regional planning only includes the protection of landscape but, however, does not present alternatives of management. With no guidelines that do attractive his conservation, new agricultural productive models and illegal occupations are replacing traditional agriculture crops and destroying the water architecture. This paper explains the territorial bases of its construction, the physical elements of its design and the future guidelines for its recovering through a new touristic planning based in the culture of water as symbolic icon. Nowadays, the contemporary tourism turns into a kaleidoscope-tourism (Donaire, 1998) where it is possible to build-up a new tourism with the cultural heritage and the real landscape of water architecture.

Author: Roberto Scotti, Abdullah Halim

Email: scotti@uniss.it

Affiliation: Nuoro Forestry School, University of Sassari, Sassari, Italy.

Biography: Currently coordinator of the "Nuoro forestry school" and, since year 2000, associate professor, Department of Agriculture, Sassari University. Teaches forest management and inventories courses. Previously research assistant with the forest management Department of Firenze University, where he graduated and got his PhD. Research interests extend trough the development and testing of the holistic approach to forestry in Sardinia, out to the design and evaluation of techniques and digital technologies supporting forest planning and management.

Title: Nuoro goat breeders local knowledge: the cultural heritage of an approach to natural resources exploitation based on biological diversity

Keywords: Goat breeders, Qualitative research, Interview, Photo-elicitation, Knowledge construction as a social process.

Abstract: Goat breeders around Nuoro used to be relatively numerous to the point that, till the first half of the twentieth century, goats have been chased by forest guards as the most dangerous enemy. Nowadays they have almost disappeared. The few left are still a living legacy of an approach to natural resources exploitation that, dating back to the beginning of domestication, has developed relying basically on natural regeneration of shrubs and trees, shaping (and sometimes spoiling) many forest margin environments around the world. Is the world losing an other precious part of heritage? If so, how much of it has already been, at least locally, dispersed? Working in an international and disciplinary diverse team, we stared to study how to answer these questions and hopefully contribute to counteractions. Qualitative research is a meaningful method in working to restore local knowledge for the conservation of agro-forestry ecosystems. The proposed study illustrates the implementation of the main qualitative research methods (interviews with photo-elicitation tools and observations) for discovering, resolving value and recovering goat breeders' local knowledge in Sardinia (Italy) while understanding the complexity of ecosystem conservation. The value of photography as a tool for eliciting breeders knowledge is not yet recognized as intellectual pursuit nor in forestry nor in animal husbandry sciences. This work has opened the road, demonstrating the thickness and consistence of what the world heritage is loosing as goat breeder's knowledge development and transmission processes becomes more and more un-fit.

Author: Cynthia Vagnetti

Email: cynthiavagnetti@gmail.com / cvagnett@marygrove.edu

Affiliation: Ph.D. Former Visiting Professor at Nuoro School of Forestry, University of Sassari, Sassari, Italy. / Marygrove College, Detroit, USA.

Title: Ethics of care in Sardinia's Agroforesty livestock management: Digital technology approaches for understanding biocultural diversity in narratives and images

Keywords: Sardinia, biocultural diversity, narrative inquiry.

Abstract: Gorenflo et al. (2012) provides a starting point for focused interdisciplinary approaches exploring the relationship between biological and linguistic-cultural diversity. The interdisciplinary threads that bind the project under discussion: (1) is a balanced appreciation for participant (emic) and researcher (etic) perspectives (Aung Si, 2011), and (2) the understanding that local knowledge is embodied as practical skills used to manage livelihoods and soil/land management systems (Richards, 1985; Ingold, 2001). In an ethnographic study I deployed visual research methods as a primary mode of inquiry in systematic, empirical investigations of cultural practices by Sardinian cattle breeders. I choose a phenomenological perspective to understand agriculture as a situated action which makes affordances to study knowledge dynamics from the actors' point of view (Crane, 2011), and build on the notion of culture as narrative. The instruments utilized in this project, a digital documentary video toolkit, enlarges an emic perspective of situated practices, and surprisingly, an ethics of care in animal husbandry was discovered. Driesson maintains ethics are not to be understood as an "add-on" to material reality, but as constitutive to understanding, in which the symbolic and the material are integrated (2010) These results indicate that in any revision of the human-animal-relationship "bio-cultural" diversity must be preserved.

Author: Viera Vanková, Peter Petluš, Juraj Hresko

Email: vvankova@ukf.sk

Affiliation: Department of Ecology and Environmental Sciences, Faculty of Natural Sciences Constantine the Philosopher University in Nitra, Nitra, Slovakia.

Biography: Viera Vanková had finished doctoral thesis in 2003 at the Department of Landscape Planning and Ground Design, Faculty of Horticulture and Landscape Engineering of the Slovak University of Agriculture in Nitra. Viera is working as a lecturer at the Department of Ecology and Environmental Sciences of the Constantine the Philosopher University in Nitra since 2001 and is dealing with the issues of optimization of agricultural land use.

Title: Representative forms of traditional agricultural land use of Slovakia

Keywords: agricultural land, traditional forms of land use, diversity, Slovakia

Abstract: Slovakia is an inland country. It lies on the touch of Carpathians and Pannonia. It is characteristic by diversity of relief - from extensive plains till noticeably broken relief. The diversity of land use forms is caused by the diversity of natural conditions. Agricultural land takes more than a half of the total area of Slovakia. It has a significant agricultural potential. Agricultural land in Slovakia is formed from an ancient past and is connected with the oldest forms of settlements. From the historical point of view the most frequent forms were the narrow striped (block) disposals of the estates, what was caused by the hereditary law and by stepwise division of the land. Till lately, big part of the area was taken by meadows and pastures that provided the breeding of sheep and cattle. These forms of land use ensured the food self-sufficiency of the population and at the same time the high diversity and the sustainability of the landscape management. This state remained till the mid - 20 ct. Introduction of new methods, blending of estates and intensification of agricultural produce from the mid 20 ct. led to stepwise extinction of traditional forms of land use. Moreover recent commerce, not cultivation of soil, overgrowth of meadows and pastures degrades the uniquely preserved traditional forms. Outcomes are erosion processes, biological invasions and general change of character of the agricultural landscape. Nevertheless, there are still some regions of Slovakia, where the traditional forms of land use were preserved. Those are the memory and an inseparable part of cultural landscape of Slovakia, vanishing artefacts of environment with historic, cultural, ecological and environmental value. Therefore it is important to provide the tools of its protection. Ahead of this, thorough knowledge must be prefigured. The aim is to introduce the representative forms of traditional land use of agricultural land of Slovakia that were preserved till nowadays.

Author: K. Freerk Wiersum

Email: freerk.wiersum@wur.nl

Affiliation: Forest and Nature Conservation Policy group, Wageningen University, Wageningen, Netherlands.

Biography: Dr. K. Freerk Wiersum is associate professor with the Forest and Nature Conservation Policy group, Wageningen University, the Netherlands. His field of expertise is community-based forest management and conservation with attention to indigenous management values and practices, and governance of forested mosaic lands in Africa and Asia. During the last decade he has cooperated with South African researchers in biocultural studies amongst the amaXhosa in the Eastern Cape. These experiences were transferred to studies in Europe.

Title: Development of ecological corridor or biocultural heritage conservation: the example of the Renkumse Poort in the Netherlands

Keywords: framing biological diversity conservation, linking nature areas versus linking people to nature areas, biocultural heritage areas as historical complexes, incorporation of new values in biocultural heritage conservation.

Abstract: In the Netherlands, the establishment of a national ecological infrastructure to combat loss of biodiversity resulting from the scattering and isolation of nature areas forms one of the pillars of the national conservation policy. A well-publishized example is a programme to reconnect the nature areas located on the central sandy Veluwe massive with the riverine valleys along the river Rhine. In the project Renkumse Poort an industrial estate was demolished to be replaced by an ecological corridor. This project was hailed as an example of 'red' making place for 'green'. Notwithstanding this framing, in practice the project involved the strengthening of the area as a biocultural heritage site. The area contains many historical landscape elements (former peasant agricultural elements, historical estates, an extended brook system for powering former water mills) and cultural artifacts (archeological sites, historic buildings, arboreta and parks, estate ornaments). This cultural diversity has recently been further augmented by the creation of a statue garden cum workshop at an old water mill site, an exhibition hall in former farm house and a biological greenery in a former estate nursery. Also the former industrial estate is commemorated by the conservation of some old artifacts and establishment of new ones. The embedding of the ecological corridor in this multi-layered biocultural heritage complex greatly assisted in giving the area a strong identity. It also helped to extend stakeholder participation in the management and conservation of the area from the owners of the land in the ecological corridor to different volunteer groups who assist with the maintenance of specific cultural and ecological components of this heritage complex.

Expert Meeting

List of Experts

Name: Mauro Agnoletti

Email: mauro.agnoletti@unifi.it

Affiliation: Laboratory for Landscape and Cultural Heritage, Dept. GESAAF, University of Florence, Italy.

Biography: Associate Professor, Faculty of Agriculture, University of Florence. He is the Director of the Laboratory for Landscape and Cultural Heritage. Coordinator of the landscape unit at the Italian Ministry of Agriculture, Food and Forestry Policies, developing the landscape strategies for the Italian rural policies and the national observatory of rural landscape. Scientific expert of the European Landscape Convention, the FAO GIAHS project, ICOMOS and the UNESCO–CBD JP on the linkages between cultural and biological diversity. He is the Coordinator of the Research Group "Forest History and traditional knowledge", of the International Union of Forest Research Organization (IUFRO), co-Editor of the journal "Global Environment", editor of the Springer Verlag book series on environmental history. He has been vice president of the European Society for Environmental History and currently board member of the International Consortium of Environmental History Associations. He has coordinated the preparation of guidelines for Social and Cultural values for the Ministerial Conference on the Protection of Forest in Europe. www.landscapeunifi.it

Name: Tim Badman

Email: tim.badman@iucn.org

Affiliation: International Union for Conservation of Nature IUCN.

Biography: Tim Badman is Head of the World Heritage Programme at IUCN. He joined IUCN in August 2007, and was previously based in Dorset County Council (UK) as Environment Policy Manager. Between 2000-2006 he was the team leader of the Dorset and East Devon Coast World Heritage Site. Tim has been a member of IUCN's World Commission for Protected Areas since 2002 and has served on IUCN's World Heritage Panel since 2003, carrying out a range of World Heritage evaluation missions and working as part of the IUCN delegation to the annual UNESCO World Heritage Committee. He is the focal point for IUCN's work on earth science within the World Heritage Convention and an adviser to UNESCO`s Global Geoparks Network. Tim trained as a geologist and countryside manager in Southampton and Manchester (UK).

Name: Peter Bridgewater

Email: peter@global-garden.net

Affiliation: UK Joint Nature Conservation Committee, UK.

Biography: Professor Peter Bridgewater, PhD D.Res.Mgmt (hc) FLS, currently holds the posts of Chair, UK Joint Nature Conservation Committee, Visiting Professor, Beijing Forestry University and Visiting Professor, United Nations University, Tokyo. He previously held the post of Secretary General, Ramsar Convention. (2003-2007) Gland, Switzerland; Secretary, UNESCO Man and the Biosphere Programme and Director, Division of Ecological Sciences (1999-2003) and Chief Executive, Australian Nature Conservation Agency (1990-1999). He Delivered the First Linnaean Lecture for the CBD in 2007 and was awarded the degree of Doctor of Resource Management (honoris causa) by the University of New England (Australia) in 1997 and, jointly with the Chair of the Uluru - Kata Tjuta National Park Board of Management, the UNESCO Picasso Gold Medal in 1995, for excellence in managing a World Heritage cultural landscape. His current research interests include: the interface between environmental science and policy; mechanisms for International Environmental Governance; linkages between cultural and biological diversity; novel ecosystems, their genesis and role in the biosphere. He has published over 220 papers and book chapters dealing with Biodiversity and Sustainable Development.

Name: Matthias Bürgi

Email: matthias.buergi@wsl.ch

Affiliation: Research Unit Landscape Dynamics, Swiss Federal Research Institute WSL, Birmensdorf, Switzerland.

Biography: Matthias Bürgi studied environmental sciences at the ETH Zürich. He worked as a postdoctoral fellow at the Harvard Forest and at the University of Madison, WI. Today, he is the head of the Research Unit Landscape Dynamics at the Swiss Federal Research Institute WSL at Birmensdorf, Switzerland. In his research he is combining approaches from landscape ecology, historical ecology, and environmental history to study the interrelationship of natural and historic driving forces of landscape changes.

Name: Guillén Calvo

Email: gicv.pro@gmail.com

Affiliation: Diversidad y Desarrollo, Morocco-Spain.

Biography: Director, Diversidad y Desarrollo (D&D), Morocco-Spain.

Name: Emily Caruso

Email: emily@global-diversity.org

Affiliation: Global Diversity Foundation & International Society of Ethnobiology, UK.

Biography: Emily Caruso is the Regional Programmes Director of the Global Diversity Foundation. Emily completed her PhD in anthropology at the University of Kent (UK) in 2012. She carried out her research - funded by the UK Economic and Social Research Council (ESRC) - among the Ashaninka, an indigenous Amazonian people living in Eastern Peru. She has a particular interest in the practices and politics of formal conservation interventions, community-based conservation, and the mutual, affective relationships that exist between people and places. Since 2002, she has worked with various international NGOs supporting indigenous and forest peoples' rights, and since 2007, she has accompanied Ashaninka federations in their daily operations and broader political struggles. Emily is a native English speaker, and fluent in Italian, French and Spanish.

Name: Mery Ciacci

Email: mery.ciacci@eui.eu

Affiliation: European University Institute, Florence, Italy.

Biography: Mery Ciacci holds an LLM degree from the European University Institute (Florence) and a Law Degree cum laude from the University of Siena. She currently works as consultant for the Italian Ministry of Environment, while completing a PhD

program at the EUI. She also collaborates in teaching and research activities with the Interdepartmental Center on Regulation, Environmental Protection and Sustainable Development (REPROS), University of Siena. She worked in projects concerning cultural diversity with the UNESCO Regional Office in Europe (BRESCE) and the implementation of the UN Decade on Education to Sustainable Development for the Italian National Commission for UNESCO. She took part in cooperation and research projects on Indigenous Rights, protection of Traditional Knowledge and biodiversity in Africa and the US. Her main research interests focus on the protection of cultural diversity, cultural heritage and the environment, sustainable development, right to food and food sovereignty.

Name: Antonella Cordone

Email: a.cordone@ifad.org

Affiliation: International Fund for Agricultural Development IFAD, Italy.

Biography: Antonella Cordone works at IFAD since 1999. She is the Technical Advisor and Coordinator for Indigenous and Tribal Issues, working in the Policy and Technical Advisory Division in the Programme Management Department. Ms Cordone holds a Masters in International Cooperation and Planning for Development, and a Masters in Modern Languages and Literature, both from the University of Rome La Sapienza. In her work at IFAD she has coordinated the preparation of IFAD Policy on Engagement with Indigenous Peoples and leads its implementation in IFAD's operations. She manages the IFAD Indigenous Peoples' Assistance Facility, a dedicated facility financing projects designed and implemented by indigenous peoples. In February 2011, Ms Cordone lead the establishment of an Indigenous Peoples Forum at IFAD, a platform of dialogue between indigenous peoples representatives and IFAD, and whose first global meeting was held in February 2013.

Name: Maguelonne Dejeant-Pons

Email: Maguelonne.DEJEANT-PONS@coe.int

Affiliation: Council of Europe.

Biography: Maguelonne Dejeant-Pons is Executive Secretary of the European Landscape Convention, of the Council of Europe Steering Committee on Culture, Heritage and Landscape, and Editor of the 'Futuropa: for a new vision of landscape and territory' Council of Europe Magazine. Doctor of Law, she has published several articles and books dealing with the territorial development, the protection of coastal and marine zones (La Méditerranée en droit international de l'environnement), biological and landscape diversity and the human right to the environment (Human Rights and the Environment).

Name: Marta Dobrovodska

Email: marta.dobrovodska@savba.sk

Affiliation: Institute of Landscape Ecology SAS, Slovakia.

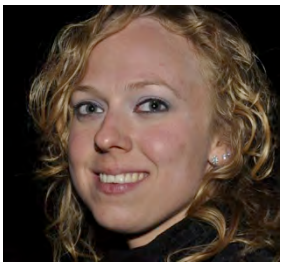
Biography: PhD in Ecology. Senior researcher with wide experience in interdisciplinary research of traditional agricultural landscapes, their driving forces and landscape-ecological conditions with emphasis on biodiversity and its indicators as well as sociological research among rural stakeholders. Responsible for the coordination of Slovak researcher team within international projects. Involved into preparation of the Rural Development Programme of the Slovak republic 2014–2020.

Name: Masahito Enomoto

Email: Masahito.enomoto@fao.org

Affiliation: FAO-GIAHS, Rome, Italy.

Biography: Coordinator of the Globally Important Agricultural Heritage Systems (GIAHS)



Name: Veronika Filkó

Email: filko.veronika@sznm.hu

Affiliation: Hungarian Open Air Museum, Szentendre, Hungary.

Biography: Rapporteur, Intangible Cultural Heritage Department, Hungarian Open Air Museum, Szentendre, Hungary. PhD student in International Relations, Corvinus University, Budapest. MA in History, Ethnography and Folklore Studies, ELTE, Budapest. Research topics: implementation process of the UNESCO Convention for the Safeguarding of the ICH; coat of arms on medieval stove tiles; elaboration of the display of the Kalotaszeg house and yard in the planned Transylvania regional unit of the Hungarian Open Air Museum. Holds memberships of the Hungarian Society for Heraldry and Genealogy and the Hungarian Ethnographic Society, in which works as a Secretary of the Section for Ethnic Minorities since 2012.

Name: Antonio Frattarelli

Email: a.frattarelli@mpaaf.gov.it

Affiliation: Ministry of Agricultural, Food and Forestry Policies, Rome, Italy.

Biography: Bsa, University of Naples, Msa, Imperial College, University of London. Officer, Ministry of Agriculture Food and Forestry Policies, Department of European Polices and Rural Development, Agriculture and Environment Office. Issuing and management of the Italian national legislative framework of Cross-Compliance and with the design and the realization of agro-environmental measures of the Rural Development**.**

Name: Dirk Gotzmann

Email: dirk.gotzmann@civilscape.eu

Affiliation: CIVILSCAPE

Biography: Education: University of Münster, Germany: Landscape ecology and Geography. Work experience: Director and CEO of OEKOM (1988-2009), private enterprise focused on consultance on nature conservation, green economy, planning and tourism. Since 2010 Director of CIVILSCAPE (European network of civil society organizations for landscape). He is expert in several national and international organisations. Board member of the North Sea Food Association a joint effort of regions around the North Sea to set up a European Cultural Route which promotes sustainable development focused on cultural and biological diversity.

Name: Inge Gotzmann

Email: inge.gotzmann@bhu.de

Affiliation: German forum for cultural landscapes, Bund Heimat und Umwelt, Germany.

Biography: Education: University of Cologne, Germany (2002), PhD in Biology; Dissertation: Cultural Landscape and Vegetation changes in the Southern Namib Desert, South-Africa. Work experience: Lecturer (since 2001) at University of Cologne, Lecturer for Botany and Biology Didactic; Federal Director (since 2002) of Bund Heimat und Umwelt (BHU) - Bundesverband für Kultur, Natur und Heimat e.V. (German umbrella organisation of civil society organisations for culture and nature); Actual main focusses: awareness rising for landscape and cultural heritage, landscape assessment and planning, Renewable Energies, Participation processes, landuse und sustainability. President (since 2011) of CIVILSCAPE.

Name: Henrik Jansson

Email: henrik.jansson@metsa.fi

Affiliation: Metsähallitus Forestry Land and Protected Areas, Finland.

Name: Elisabeth Johann

Email: elisabet.johann@aon.at

Affiliation: IFURO Research Group Forest and Woodland History, Austria.

Biography: Born in Vienna, studies at the universities of Vienna, Freiburg and Munich (law, history, economics, and forest science). Graduation in forest science, dissertation in forest history. Deputy Coordinator of IUFRO research group Forest History and Traditional Knowledge, Leader of the Group of Experts "Forest History" of the Austrian Forest Association, President of the Society of Forest Pedagogics in Austria; development or the curriculum of a certified post grade training course on Forest and Culture.

Name: Parviz Koohafkan

Email: p.koohafkan@cgiar.org

Affiliation: Bioversity International, Italy.

Biography: Dr. Parviz Koohafkan is Senior Advisor in FAO and Honorary Senior Research Fellow in Bioversity International. He is the Founder and President of the World Agricultural Heritage Foundation and the pioneer of the UN Partnership Initiative on "Conservation and Adaptive Management of Globally Important Agricultural Heritage Systems (GIAHS)". Dr. Koohafkan, started his career in Iran as assistant professor in ecology and then as a professor of Forest Ecology in Ecole National du Génie Rural des Eaux et Forêts in Montpellier, France. He then held several senior positions in FAO including the positions of Director of Land and Water Division, Director of the Climate Change and Bio-energy Division, and the Director, Rural Development Division in the Sustainable Development

Department of FAO. Dr Koohafkan has an engineering degree in Agronomy and Natural Resources Management from University of Teheran, Iran, a Master degree in Applied Ecology and a Ph.D. degree in Terrestrial Ecology from the University of Sciences and Techniques of Montpellier, France. Dr. Koohafkan is the author of several books and publications on biodiversity, agro-ecology, natural resources management, climate change and sustainable development. His most recent works are: the book entitled Food and Wisdom published by FAO and Bioversity International, the "State of the World Land and Water Resources for Food and Agriculture, Managing systems at Risk" published by FAO, and a book entitled "Enduring Farms: Climate Change, Smallholders and Traditional Farming Communities" co-authored by Professor Miguel Altieri from University of Berkeley California. Several other books and publications, scientific articles, policy reviews and advocacy work are available on the internet under "Parviz Koohafkan".

Name: Pietro Laureano

Email: ipogea@ipogea.org

Affiliation: Director, IPOGEA, Italy.

Biography: Pietro Laureano, an architect and urban planner, is the UNESCO expert for arid regions, water management, Islamic civilization and endangered ecosystems. He lived for eight years in the Sahara desert (Algeria) and for ten years in the caves of Sassi of Matera (Italy) where he has led the recovery of this troglodyte city and founded IPOGEA (www.ipogea.org) that coordinates EU projects in 10 countries all over the Mediterranean and research and landscape restoration works carried out by means of traditional techniques and their innovative use. He has worked on the UNESCO plan for Petra (Jordan), he has restored monument and hydraulic systems in Lalibela, Ethiopia, and realised projects in Algeria, Yemen and Morocco. He is a member of the scientific committee of several international bodies (FAO, UNCCD) and of the working group of the new UNESCO Landscape Convention. He has created the Traditional Knowledge World Bank (www.tkwb.org) and he is the president of the International Traditional Knowledge Institute (ITKI) promoted by UNESCO in Florence to pursue this initiative. He has published several books including The water Atlas - Traditional knowledge to combat desertification (UNESCO) which has been translated into many languages.

Name: Davide Liberati

Email: d.liberati@mpaaf.gov.it

Affiliation: Ministry of Agricultural, Food and Forestry Policies, Rome, Italy.

Biography: Public Officer at the Agriculture and Environment Office, within the Rural Development Directorate, the office has jurisdiction in the context of agro-environmental payment, climate change, the Treaty RGV / FAO on biodiversity, and implementation of the Nitrates Directive in Italy. Member of the Supervisory Committees of RDPs; Member of the Regional Commissions "Trento" and "Bolzano" for the sixth General Census of Agriculture; Member of the Evaluation Commission of the "Special Projects" Decree 29091 of 10.12.2009; Member of the Nitrates Committee and of the Experts Group on Cross Compliance at the European Commission in Bruxelles.

Name: Mónica Luengo Añón

Email: monica@atpaisaje.com

Affiliation: ICOMOS, Spain.

Biography: Art Historian and Landscape Architect; President of the International Scientific Committee of Cultural Landscapes ICOMOS-IFLA; Director of the Master Course on Cultural and Natural Heritage: innovation, research and development, Andalucía International University. She has also organised seminars, exhibitions and has lectured on cultural landscapes: management and conservation, World Heritage cultural landscapes, rural landscapes. She has also published books and articles on these same issues. Founding and principal of Arquitectura y Técnicas del Paisaje, S.L. (1990), dedicated to management and conservation plans for cultural landscapes, parks and urban spaces, public and private historic gardens, etc.

Name: Pernilla Malmer

Email: pernilla.malmer@stockholmresilience.su.se

Affiliation: Stockholm Resilience Centre, Stockholm, Sweden.

Biography: Pernilla Malmer, Senior Advisor, Social-ecological landscapes and knowledge systems; Stockholm Resilience Centre at Stockholm University. Pernilla is agronomist by training and has over time been working with a diversity of indigenous, smallholder farmers and environmental organizations all over the world. Her experience from policy relates to agriculture, biodiversity, livelihoods and rights, from local in Sweden to global fora such as CBD, IAASTD and IT PGRFA. The Resilience and Development Programme – SwedBio - at Stockholm Resilience Centre where Pernilla since 2011 holds a position as Senior Advisor, is a knowledge interface connecting science policy and practice, facilitating dialogues across scales and perspectives. Further, Pernilla is actively nurturing the bio-cultural heritage in practice as gardener, seed-saver, mushroom-picker, shepherd and farm-worker in Hälsingland, Sweden.

Name: Gary Martin

Email: gary@global-diversity.org

Affiliation: Global Diversity Foundation &International Society of Ethnobiology, UK.

Biography: Dr. Gary Martin, the Director of the Global Diversity Foundation, has been involved in plant conservation and ethnobotanical work for over thirty years. His applied research and training initiatives have taken him to more than forty-five countries. After studying botany as an undergraduate at Michigan State University, he received his MA and PhD in anthropology from the University of California at Berkeley. Since 2011, he has directed the Global Environments Summer Academy and is the creator of the incipient Global Environments Network.

Name: Roberto Mercurio

Email: rmercurio@inwind.it

Affiliation: Italian Society of Forest Restoration, Italy.

Biography: Former Full Professor of Forest Management and Silviculture at Reggio Calabria Mediterranean University (Italy). President of the Italian Society of Forest Restoration.

Name: Christine Merkel

Email: merkel@unesco.de

Affiliation: UNESCO, Germany.

Biography: Christine M. Merkel, Köln/Cologne, Germany, Historian, Psychologist, expert in international relations in arts and culture. Head, Division of Culture, Memory of the World, German Commission for UNESCO; Executive Co-ordinator, Federal Coalition for Cultural Diversity; Chair, Steering Committee for Culture, Council of Europe (2010-2012). Areas of focus: Capacity building of civil society leaders and young experts through world-wide knowledge networks (U40). Seasoned designer of strategic multi-stakeholder policy dialogues (CONNEXXIONS 2012-2017). Among her recent publications are contributions to a legal commentary on the 2005 UNESCO Convention, Springer publishing 2012. Since 2011, one of 30 UNESCO technical experts to advise local and national governments on cultural policies aligned with the UNESCO Convention on the Protection and Promotion of the Diversity of cultural expressions.

Name: Pavlína Mišíková

Email: pavlina.misikova@enviro.gov.sk

Affiliation: Ministry of Environment, Slovakia.

Biography: Pavlína Mišíková is working in the field of natural and cultural heritage at the international and national levels. Since 2005 when she joined Ministry of Environment of Slovakia, she has been appointed in charge of the implementation of the European Landscape Convention and later with the Framework Convention on the Protection and Sustainable Development of the Carpathians as the Focal Point for Slovakia. She is a member of Council of Europe Steering Committee for Culture, Heritage and Landscape (Strasburg). Secondment to UNESCO Liaison Office (New York) in 2012 has brought her to assist UNESCO and the Secretariat of CBD in advancing the implementation of the Joint UNESCO-SCBD Programme on the Links between Biological and Cultural Diversity in the global context.

Name: Diego Teodorico Moreno

Email: diego.moreno@unige.it

Affiliation: University of Genoa, Genoa, Italy.

Biography: Full Professor in Geography, University of Genoa (Italy). Former Professor of History of Agriculture. Now teaches Historical Geography and Sources and Methods of Local history. He served in the scientific board of several journals in the field of the history and archaeology of the settlement and environmental resources: "Archeologia Medievale" from (1974 to 1980) "Archeologia Postmedievale" since its foundation, "Quaderni Storici" since 1980, "Environmental History "(until 2000), "Anthropozoologica" (since its foundation). Is co-responsible with Professor Carlo Montanari of the Laboratory of Archaeology and Environmental History (L.A.S.A.) DAFIST-DISTAV- University of Genoa.

Name: Eleonora Musco

Email: Eleonora.Musco@eurac.edu

Affiliation: UNEP Vienna Interim Secretariat of the Carpathian Convention ISCC, Austria.

Biography: Ms. Eleonora Musco is consultant for the European Academy of Bolzano (EURAC Research) at the UNEP Vienna Interim Secretariat of the Carpathian Convention (ISCC). Born on 19 January 1987 in Spoleto/Italy, Ms. Eleonora Musco graduated in International Relations at Luiss University in Rome. After working for UNESCO in Paris and for the Italian Ministry of Foreign Affairs in Vienna, and before starting to support UNEP Vienna-ISCC, Ms. Eleonora Musco worked as a consultant for the Italian Ministry of Environment in support to the Italian Presidency of the Alpine Convention.

Name: Lars Östlund

Email: Lars.Ostlund@slu.se

Affiliation: Department of Forest Ecology and Management, Swedish University of Agricultural Sciences, Umeå, Sweden.

Biography: Lars Östlund is professor in forest ecology at the Swedish University of Agricultural Sciences in Sweden. His research is focused on historical ecology and forest history in boreal Europe and western US. The work involves research on natural forest structure, biodiversity, pre-industrial forest use and cultural traces in old coniferous forests and has resulted in publications in historical, ecological and archaeological journals.

Name: Bas Pedroli

Email: bas.pedroli@wur.nl

Affiliation: UNISCAPE.

Biography: Senior researcher at Alterra Wageningen UR and associate professor at Wageningen University (Land Use Planning Group), holding a PhD in landscape ecology. Strongly involved in research and education related to the implementation of the European Landscape Convention and to land use management. Director of UNISCAPE (Association of European Universities for the European Landscape Convention www.uniscape.eu). Project Leader of the FP7 Large Collaborative Project VOLANTE (www.volante-project.eu).

Name: Ana Persic

Email: a.persic@unesco.org

Affiliation: UNESCO Liaison Office, New York, USA.

Biography: Bachelors Degree in Biology and Masters Degree in Ecology at the University of Padua (Italy), PhD in Ecotoxicology at the University of Paris – South (France). She has won the "Aldo Gini Foundation" (2002) award for the research project “Accumulation of organochlorine compounds in aquatic food web of the Camargue Biosphere Reserve”. She has worked for the Versailles University in France (2004) where she gave practical courses in Biological Sciences, at The Boeck Publishing House (France-Belgium) as a free-lance scientific translator, at the UNESCO Ecological and Earth Sciences in France (2005), at the BIO Intelligence Service Consultancy Company in France (2006). More recently she has worked at UNESCO Natural Sciences/Ecological and Earth Sciences in France (2006-2011) as Assistant Programme Specialist focusing on: promotion of international scientific cooperation and multi-stakeholder dialogue in the field of biodiversity and ecosystem services research, practice and policies, particularly in the context of the UNESCO’s Man and the Biosphere (MAB) Programme and other Multilateral Environmental Agreements (e.g. CBD, WHC, Ramsar, CITES), on promotion of science education through the UNESCO’s MAB Young Scientists Awards Scheme and on development of initiatives on the links between biological and cultural diversity, including design and implementation of the Joint Programme between UNESCO and the SCB on Biological and Cultural Diversity. From 2011 she works at the UNESCO Liaison Office in New York (USA) as Science Specialist in

charge of science matters relating to the UN and in the context of the debates on sustainable development. She speaks fluently Croatian, Italian, English and French.

Name: Pier Luigi Petrillo

Email: p.petrillo@mpaaf.gov.it

Affiliation: Facoltà di Giurisprudenza, Unitelma Sapienza Università di Roma, Rome, Italy.

Biography: He has been in charge of UNESCO Task Force at the Ministry of Agriculture Food And Forestry Policies.

Name: Costanza Pratesi

Email: c.pratesi@fondoambiente.it

Affiliation: Italian Trust for the Environment (FAI), Milan, Italy.

Biography: Costanza Pratesi is currently Head of Environmental Sustainability and External Relations of FAI-Fondo Ambiente Italiano, the Italian Trust for Environment and Heritage. Following a degree in architecture at Politecnico Di Milano she received, in 1993, a doctorate at the same University in Industrial Design (both Magna cum laude), her studies always focused on environmental planning and design. She worked with Prof. Tomas Maldonado at a his chair of Environmental Planning and at his professional studio and was visiting Professor at Politecnico di Milano from 1997 to 2006. As researcher she studied different environmental items: Life Cycle Assessment, waste management and policies, environmental communication, environmental design of products and ecological geography. She joint FAI-Fondo Ambiente Italiano in 2007 approaching deeper the landscape subject, introducing environmental sustainability into the different activities of the Trust and dealing with the conservation and the public acknowledgment of the real value of Italian landscape. She is responsible for the relationship between FAI and public and private Institutions and Organizations dealing with environmental matters. She is member of the National Landscape Observatory (*Osservatorio Nazionale del Paesaggio*) of the Italian Ministry of Culture. For the Trust she works mostly on soil sealing, landscape and agriculture, historical and cultural rural landscape. Since 2009 she is a member of the WWF-Italia National Board.

Name: Gloria Pungetti

Email: gp114@cam.ac.uk

Affiliation: University of Cambridge, UK.

Biography: Professor Gloria Pungetti is Research Director of the Cambridge Centre for Landscape and People (CCLP) and Chair of the Darwin College Society, at the University of Cambridge, UK. She sits on the board of Research Trusts, Evaluating Committees, International Journals and Initiatives, and is member of IALE and IARU. She holds a laurea cum laude in Architecture (Environmental & Physical Planning) from the University of Florence, specialisations in Landscape Architecture, Planning and Ecology from the Universities of Milan and Wageningen, a PhD in Geography (Landscape Research) from the University of Cambridge, and several post-graduate diplomas and awards. In Cambridge she has developed a holistic approach to landscape research from different perspectives: history, character, perception, religions, local communities, rights, ecology, assessment, design, planning, policy, strategy and management. Her research links nature with culture, as well as academia with government and communities, producing numerous articles, reports and 13 books among which are Ecological Landscape Design and Planning; Ecological Networks and Greenways; Mediterranean Island Landscapes; The Right to Landscape. Gloria has widely taught on landscape topics, and has coordinated pioneering international projects, conferences, courses and initiatives under the EC, national governments and international organisations. Her mission to support biocultural diversity conservation and awareness led her to found CCLP (www.cclp.group.cam.ac.uk) with the goal to integrate the cultural and spiritual values of land and local communities into landscape and nature conservation. In view of this mission she is chairing global initiatives among which is the 3S “Sacred Species and Sites” under IUCN, and the editing of the book Sacred Species and Sites: Advances in Biocultural Conservation (Cambridge University Press). Gloria is also chairing the IALE Working Group on Biocultural Landscape, promoting debate and research on the topic. In order to support the European Landscape Convention, and above all understanding and respect for cultural landscapes in Europe, she set up the EUCEL Initiative “EUropean Culture Expressed in Landscapes” with a trilogy of European Projects on agricultural, island and sacred landscapes and cultural heritage.

Name: Marcel André Robischon

Email: marcel.robischon@agrar.hu-berlin.de

Affiliation: Humboldt University Berlin, Berlin, Germany.

Biography: Education: Ph.D. in Plant Sciences. M.Sc. in Forestry [Forest Genetics] (Distinction). University Degree in Forest Sciences (Diplom). Employment history: Professor (tenure track), Department of Life Sciences, Humboldt Universität zu Berlin, Head of Agricultural and Horticultural education unit. Main interests: World Heritage Education; Natural Conservation and education; Intangible Natural Heritage. Visiting Professor, Department of Agriculture and Horticulture, Humboldt Universität zu Berlin, Agricultural and horticultural education unit. Lecturer at the University of Education Freiburg, teaching classes in forest ecology, human biology and Island Ecology and Evolution. Assistant Professor (Akademischer Rat), Albert-Ludwigs Universität Freiburg. Lectures included 'Plant Molecular Biology' and 'Plant Physiology'. Research in tree secondary growth and development and hormonal signaling in trees. Postdoctoral Research Fellow at the Institute of Forest Genetics, USDA Forest Service, Davis, California, researching the regulation of wood formation. Researcher at the Office for Technology Assessment at the German Parliament (TAB) studying current developments in genetic engineering of forest trees. Ph.D. student at the Department of Plant Sciences, University of Cambridge. Research on cytokinin signaling in plant development in transgenic hybrid aspen. Research Assistant at the Institute of Tree Physiology, University of Freiburg. Research on effects of atmospheric pollution on European beech (Fagus sylvatica). Research assistant at Fraunhofer Institute for Atmospheric Environment Research Garmisch-Partenkirchen, studying UV-B radiation effects on Picea abies. Research assistant at the Institute for Forest Policy University of Freiburg. Books: Robischon M. 2011. Planet der Insekten. Von duftenden Ameisen, betrügerischen Leuchtkäfern und gespenstischen Faltern. Haupt Verlag, Bern. Robischon M. 2012. Vom Verstummen der Welt. Wie uns der Verlust der Artenvielfalt kulturell verarmen lässt. Oekom Verlag München.

Name: Suzanne Romaine

Email: suzanne.romaine@ling-phil.ox.ac.uk

Affiliation: University of Oxford, UK.

Biography: Suzanne Romaine is Merton Professor of English Language at University of Oxford. Her most recent publication, Linguistic and Biological Diversity: Identifying Integrative Opportunities for Conservation (2014, jointly with Larry J. Gorenflo) examines the geographic interface between linguistic and biological diversity in Conservation International's 35 biodiversity hotspots and 5 high biodiversity regions. Findings pinpoint specific localities where languages co-occur with key species or conservation areas, defining places for coordinated conservation efforts aimed at protecting both human and non-human diversity.

Name: Jennifer Rubis

Email: j.rubis@unesco.org

Affiliation: UNESCO, Paris, France.

Biography: Consultant, Division of Science Policy and Capacity-Building (SC/PCB), UNESCO, Paris, France.

Name: Ingrid Sarlöv-Herlin

Email: Ingrid.Sarlov-Herlin@slu.se

Affiliation: Department of Landscape Architecture Planning and Management, Swedish University of Agricultural Sciences, Alnarp, Sweden.

Biography: Ingrid Sarlöv Herlin is Professor of Landscape Planning (2010) at the Department of Landscape Architecture, Planning and Management, at SLU, Alnarp, Sweden. Her interests includes policy tools (including the ELC), for planning, management and protection of landscapes; landscape characterisation; integrating landscape ecological approaches with heritage management in landscape planning and management and links between food and a sustainable landscape heritage.

Name: John Scott

Email: john.scott@cbd.int

Affiliation: Convention on Biological Diversity CBD.

Biography: Through his Father (Jack Scott) and his Grandmother (Catherine Maud Evans), Mr. Scott is a descendant of the Iningai people (Indigenous Australian) of central Queensland (Barcaldine area). They are Freshwater Murris. Mr. Scott has a significant background in education, social policy, law, indigenous rights and traditional knowledge. He has moved through various incarnations to get where he is today including as a leading senior high school teacher, Aboriginal Education Advisor, Chief Educational Officer for Aboriginal Programs, Senior Policy Advisor (Office of the aboriginal Social Justice Commissioner, Australian Human Rights Commission), Deputy Director for the School of Indigenous Australian Studies at James Cook University, Manager of the Cultural Rights Unit of the National Policy Branch with National Aboriginal and Torres Strait Islander Commission (ATSIC), Indigenous Human Rights Officer with the United Nations High Commission on Human Rights (OHCHR), and second in charge of the Secretariat of the United Nations Permanent Forum on Indigenous Issues. Currently Mr. Scott is the Senior Programme Officer for Traditional Knowledge and Customary Sustainable Use of Biological Diversity and the focal point for indigenous peoples and local communities at the United Nation's Convention on Biological Diversity since 2004. He is also the Chairperson of the World Indigenous Peoples and Local Community Land and Sea Managers Network, Equator Initiative, United Nations Development Programme and manages on behalf of the Convention, the Joint Programme of Work, between the Secretariat of the CBD and UNESCO on Biological and Cultural Diversity. Mr. Scott's education: Diploma of Secondary Teaching (Arts/Humanities), Graduate Diploma in Aboriginal Education (with Distinction), Master of Law (International).

Name: Elsa Stamatopoulou

Email: es3054@columbia.edu

Affiliation: Columbia University, USA.

Biography: Elsa Stamatopoulou is the Director of Columbia University's Indigenous Peoples' Rights Program of the Institute for the Study of Human Rights (ISHR); and Adjunct Professor at Columbia. She devoted some 21 years of her UN work to human rights and served in various positions at the UN offices in Vienna, Geneva and New York. She was the first Chief of the Secretariat of the UN Permanent Forum on Indigenous Issues. She has written Cultural Rights in International Law (2007, Martinus Nijhoff), co-edited books and authored numerous articles.

Name: Krystyna Swiderska

Email: krystyna.swiderska@iied.org

Affiliation: International Institute for Environment and Development (IIED), UK.

Biography: Krystyna Swiderska, Principal Researcher, International Institute for Environment and Development (IIED). Krystyna has conducted research on traditional knowledge and genetic resources, indigenous peoples' rights and related policy since 1998. She has coordinated two participatory action research projects with indigenous communities in Peru, India, China and Kenya: "Protecting community rights over traditional knowledge: Implications of customary laws and practices" (2005-2009) and "Smallholder innovation for resilience: strengthening biocultural innovation for food security in the face of climate change" (2012-2017). She runs IIED's Biocultural Heritage Initiative, and is co-Director of the ISE Global Coalition on Biocultural Diversity.

Name: Maria Walcher

Email: walcher@unesco.at

Affiliation: Austrian Commission for UNESCO, Austria.

Biography: Since 2006 Programme Specialist for Intangible Cultural Heritage in the Austrian Commission for UNESCO; Lecturer at the Mozarteum University Salzburg. 1989 to 2003 Secretary General of the Austrian Folk Music Society, she launched research projects and educational as well as representative initiatives promoting folk music within private and public life. Maria Walcher holds a degree in European Ethnology and Musicology from the University of Vienna.

Name: Christoph Wildburger

Email: office@wildburger.cc

Affiliation: IUFRO, Austria.

Biography: Dr. Christoph Wildburger is a consultant on environmental policy and natural research management, mainly working at the science-policy interface. He has twenty years of work experience with international institutions and organisations, universities, government agencies, NGOs, and the media, providing scientific synthesis and technical analysis, policy proposals and research on relevant issues. Core areas of his expertise include biological diversity, forest ecology, conservation economics, forest and conservation policy, and as well as in-depth knowledge of related international processes and institutional frameworks. His clients include the World Bank, the United Nations Environment Programme UNEP, the UNFF Secretariat, the CBD Secretariat, UNECE, IUCN-The World Conservation Union, WWF, FOREST EUROPE, the European Commission and governments. He is the Coordinator of the Global Forest Expert Panels initiative of the Collaborative Partnership on Forests (CPF) for IUFRO, the International Union of Forest Research Organisations.

List of Contributors

Index