2. HOW BIOSPHERE RESERVE COORDINATORS ACCOMMODATE MULTIPLE DESIGNATIONS (I.E. BIOSPHERE RESERVES WHICH INCLUDE WORLD HERITAGE SITES, RAMSAR WETLANDS, NATURA 2000 SITES, ETC.)

PLENARY PRESENTATION ON LOWER MORAVA BIOSPHERE RESERVE, CZECH REPUBLIC, BY PETR CUPA

In 2003 the Committee of the International Coordination Council of UNESCO's MAB programme approved the extension of the Pálava Biosphere Reserve (that was designated in 1986) to include the Lednice-Valtice Cultural Landscape and the floodplain forests at the confluence of the Morava and Dyje rivers. The newly designated area, covering over 300 km^2, was renamed the Lower Morava Biosphere Reserve thus creating the youngest Czech Biosphere Reserve.

Situated in the south-east corner of the Czech Republic, about 35 km south of Brno, the Reserve houses a unique combination of limestone cliffs of the Palava Hills, the rare Central European lowland floodplains along the lower reaches of the Kyjovka, Dyje and Morava rivers covered by hard-wood alluvial forests and continental flood-plain meadows (some 8,000 ha) and the largest European man-made landscape – Lednice-Valtice Cultural Landscape.

Amongst other various types of habitat you can find karst, dry grassland, oak forests and scots pine plantations, fishponds and other standing water habitats, saline meadows and marshland, vineyards and other mostly intensively farmed agricultural land. Our biosphere reserve is located in a region that has been formed by human activity for centuries and every remnant of the original habitat is precious. Even today over 20,000 people living in the biosphere reserve are mainly engaged in agriculture and small-scale industry. Tourism has increasingly become an alternative source of income as the Lower Morava Biosphere Reserve encompasses a number of areas of national and international importance that attract the well deserved attention of public.

As from August 2004 the Lower Morava Biosphere Reserve Public Benefit Corporation became the administrative authority responsible for meeting the objectives and fulfilling the functions of the Lower Morava BR. In the Czech Republic it is for the very first time that a biosphere reserve is administered by a non-governmental organization. This concept of independent management is unique as the rest of the Czech biosphere reserves are linked to official government protected areas and share the management. In case of Lower Morava the founders of the Public Benefit Corporation came from a wide spectrum of society. Among founders are representatives of local businesses, agriculture and industry together with the Ministry of Environment and the largest nature conservation nongovernmental organization in the Czech Republic, creating a colorful and sometimes stormy environment for sharing ideas related to the reserve.

Biosphere reserves in the Czech Republic are recognized as sites of international importance, nevertheless as institutions have no legal ground in Czech legislation. The lack of official power determines the style of reserve management and the way of problem solving processes in the accommodation of multiple designations of biosphere reserves. This legal limbo can be perceived as a problem while pursuing certain goals. On the other hand it brings a great opportunity for a "non-directive" approach to various parties enabling us to act as an arbiter between private interest holders, government conservation officials or others. We consider finding the balance between the development of the area and nature protection one of the most important yet most difficult tasks of every biosphere reserve. Lower Morava Biosphere Reserve includes 20 sites designated by the Natura 2000 network (3 Special Protection

Areas for birds and 17 Special Areas of Conservation), over 25 national categories of nature protection areas including the Pálava Protected Landscape Area, the Lednice-Valtice Cultural Landscape listed as a World Heritage Site and also as a Czech historic zone, two Ramsar sites, the Dyje Floodplain Nature Park and many others.

Having this number of interests of various institutions within our reserve boundaries gives us a chance to co-operate with local, national and international organisations and programmes involved in conservation and/or management. Exchange of experience and an opportunity to use external information sources are priceless for strategic decision making in the reserve management.

So many various designations make Lower Morava a great place for study and monitoring, education, increase of public awareness of the biosphere reserves as well as a wonderful work-bench for interesting and helpful projects promoting ideas of sustainable development. In many cases several different protection institutions cover a single location where a certain project is planned. On the one hand it makes permission process more difficult and sometimes leads to its failure before it even starts. On the other hand it broadens the range of potential financing sources in case the project is agreed.
While co-ordinating the projects, Lower Morava Biosphere Reserve also serves as a platform, where different parties can find a compromise. This would never be possible without the direct involvement of local people. In order to engage the locals in biosphere reserve management, including decision-making processes, we have representatives of three regional community associations on our board of trustees. This set gives us an advantage of first hand feedback while proposing new projects or searching for compromise in tight situations. The board of trustees also includes representatives of chambers of commerce and agriculture, nature conservation authorities and representatives of local businesses. Accommodation of multiple designations of the reserve demands a fair amount of funding. Unfortunately there is no sufficient financial source to satisfy all the needs. Our managerial goal is to make as much use of economic/financial incentives provided by European or Czech funds for sustainable resource use as possible. Some of our projects are interesting enough to catch the attention of private donors. Our formula for successful fundraising is to come up with projects promoting local traditions, well-being of local people and all of that in accordance with long-term sustainable development and nature conservation. Our best resources for project ideas are people living and working within the reserve, i.e. foresters, farmers, vintners and other local stakeholders.

Whatever steps we take, we have to bear in mind that the locations are not isolated islands and everything has to be considered in a broad context. I believe the main credo in accommodation of multiple designations of any biosphere reserve should be respect paid toward the land and the people who live and work there. Only then can we succeed.

2.1 WORKSHOP SESSION RESULTS

RAPPORTEUR: Giorgio Andrian, UNESCO-ROSTE
Moderator: Vanja Debevec Gerjevic, The Karst Biosphere Reserve, Park Škocjanske jame, Slovenija

CASE STUDIES PRESENTED:

- H. Kargiolaki, Greece: White Mountains (Samaria Gorge), focus on the management aspects according to the various designations (Biosphere Reserve, National Park, Council of Europe Diploma Site, Natura 2000 site and the wildlife refuge);
- Urtan Andris, Latvia: focus on the transboundary cooperation between the BR framework and the Ramsar site designation;
- Havrylenko Viktor, Ukraine: focus on the steppe landscape management, based on the Ramsar sites and the BR 'Askania Nova', as a basis of conservation of the regional and transboundary biodiversity;
- Debevec Gerjevic Vanja, Slovenia: focus on the integrative approach in managing the Karst Biosphere Reserve.

The diversity of the case-studies presented and the following vivid discussion emphasised how multiple designation sites are facing the complexity of the various operative frameworks to be implemented; the difficulties are compensated by the challenges. Few common issues emerged from the various participants' contributions; namely: the key role of knowledge, needed to properly present the site, to interpret the reasons for individual designations, to establish proper "bridges" among different responsible actors, stakeholders, and interests; the importance of the responsibility, in terms of proper coordination for handling the various requirements, constraints, directives and also to define the operative framework for each designation scheme; additional responsibilities are linked to the need of coordination action to accommodate various institutions and persons in charge, avoiding conflicting issues and maximising the conservation and protection efforts; the relevance of communication, to facilitate the dialogue among the various stakeholders within and outside the BR; tourism as a key-sector to be developed to raise public awareness and to foster the local economy; the need for research and monitoring that enables the BR coordinators to perform conservation and development activities on the basis of solid scientific arguments.

Assuming the diversities in national 'interpretations' of the BR concept, both in legal and operative terms (e.g. the case study from Latvia demonstrated how it was useful to implement a specific law on BRs to assure a proper protection regime for the core zones), participants agreed on the assumption that BRs are not only 'labels'; specific actions are to be taken to foster the relationship between the site coordinators and the national and international authorities.

Ultimately – as suggested by the French participants – the 'core business' of the BR operative concept should be integrated zoning; identification of flexible and appropriate mechanisms to articulate the various components and designations is expected to be the major concern of the BRs coordinators.

2.2 WORKSHOP SESSION RESULTS

MODERATOR: Duska Dimovic, MAB Committee for Serbia and Montenegroˇ

CASE STUDIES PRESENTED:
Bilateral Transboundary Biosphere Reserve Krkonose/Karkonosze. (with the focus on the joint initiatives, generated by the two protected areas authorities to harmonise the management plan within the TBR framework) – Petra Stastna, Krkonose/Karkonosze BR, Czech Republic.

Kristianstads Vattenrike BR: focussed on the integrated landscape management aspect possibly activated by the BR – Sven-Erik Magnusson, Kristianstads Vattenrike Biosphere Reserve, Sweden

The two case studies presentation and the related discussion focussed on the fact that within the multiple designation scheme to be accommodated within BRs, the traditional protected areas frameworks – the national parks in particular – are better known, while the other are less understood by the public.

Furthermore, harmonisation of the various operative and legal aspects is always a very complex activity; in particular a fully shared management plan to be jointly conceived and activated is still very difficult to achieve. In particular, the term 'Biosphere' may wrongly evoke isolated and fully protected areas, with little help in promoting the flexibility incorporated in the original concept. Ultimately, participants recognised the key importance of disseminating the 'BR idea' rather that the name itself.

CASE STUDIES

WHITE MOUNTAINS, SAMARIA GORGE, GREECE, BY HARIKLIA KARGIOLAKI
Humans nowadays pose a strong pressure on nature, due to the contemporary high exploitation of its resources. Industry, energy production, housing, road construction, conversion of lands to agricultural or other 'development' schemes have increased, resulting in sometimes irrevocable changes in the landscape and the organisms that survive on it. The need for natural environment conservation has led to the development of protected areas that safeguard biodiversity, habitats and landscape.

Samaria Gorge, an area on the White Mountains of Crete (Greece), has been known for long due to its rich biodiversity, its characteristic ecology and geology forming a unique landscape that has hosted a human presence for years.

The formation of the gorge itself is an important geological phenomenon; in addition, the examination of the rocky substrate also reveals over a hundred and fifty million years of geological history (fossilized organisms, lenses, intercalations of cherts, etc.). On top of this valuable substrate contemporary plant and animal communities live. A variety of ecosystems, ranging from the arid on the high mountainous, above the tree line areas, to the cypress, pine and oak forests and also the unique cave and mountain plateaus form the gorge's highly variable ecology. Many of these ecosystems belong to the endangered biotope list as mentioned in the NATURA 2000 network. Species diversity is also one of the highest with many special plant and animal species. There are records of one hundred sixty two (162) different plant species with 136 of them endemic, some to the specific gorge area. Twenty-six of the plant species are protected and catalogued as endangered, while six of the priority species (Habitats directive 92/43/EEC) are found natively within the protected area of the gorge (Hypericum aciferum, Zelkova abelicea, Bupleurum

kakiskalae, Nepeta sphaciotica, Origanum dictamnus & Cephalanthera cucullata). The fauna is also rich with fifty recorded animal species that include thirty endemics. Five animal species are mentioned in the Red Data book as endangered for extinction and priority species (Capra aegagrus cretica, Elaphe situla, Rhinolophus hipposideros, Rhinolophus ferrum – equinum & Monachus monachus). Ornithological records include 69 bird species with 41 permanent residents of the gorge; they include griffon vulture and bearded vulture (Gypaetus barbatus).

Man has resided in the gorge since very early. Excavations revealed the ruins of ancient temples, some going back to the 6th century B.C. Venetian castles, Byzantine chapels and the old Samaria settlement reveal the almost continuous human presence inside the gorge. Architecture as well as resource use of the old Samaria settlement are still under investigation, since Samaria village represents a human system that was traditionally based on sustainable use of its natural resources; Communication with the outside world was difficult, so rather rare. However, human presence as a permanent resident of the gorge has stopped as early as 1962, when the area was nominated as a National Park.

Currently, land uses in Samaria gorge (4,850 ha) are mainly forests (72%) and a small percentage of ranging lands (25%) with the remaining 3% being arid rocks. No human activity (agriculture, forestry, livestock grazing, hunting, etc.) has been allowed within the National Park since it was nominated on 1962. Nature was simply protected from any human interference and left alone to take on natural processes. National Park regulations do not allow admittance to the gorge during winter (November to April), while in summer entrance is allowed only during the day, without permitting overnight camping. The once cultivated areas within the gorge have been naturally reforested after the removal of the people from the village of Samaria, since the area became a National Park. Scientific research is the only encouraged activity within the core area. The pathway is excluded from the strict ban since in summer it accepts many visitors, who are managed in a restricted area for a specified length of time.
A larger area of the White Mountains that is planned to be included to the National Park extension is currently very scarcely inhabited. The reason is that the whole area is very mountainous with difficulties in human access, i.e. many difficult gorges in the vicinity of Samaria and the treeless alpine mountain peaks with extreme climatic conditions. There are seven villages that are located adjacent to Samaria gorge; the mountain peak lines that define the boundaries of the core area of the National Park form also the different village borders with the gorge. Average human density outside the core area is very small (1 person/ 10 ha), a result of the harsh conditions of the area that oblige them to live in only a few square meters and leave the rest of the area uninhabited. Land uses of this zone are forests (45%), a large percentage of ranging lands (52%), the remaining being arid area (3%) and a minute 0.41% of cultivated land. They represent mainly olive cultivations on terraces, as practiced in Crete for centuries. Other human activities are free grazing and tourism.

Besides the National Park, the wider area of the White Mountains has been included in the NATURA 2000 network with six nominations in total: GR-4340005 (Sougia gorge of Lissos), GR-4340007 (gorge of Therissos), GR-4340008 (White Mountains), GR-43400011 (Fres, Tzitzifes, Nippos), GR-43400012 (Asfendou, Kallikratis) & GR-43400014 (National Park of White Mountains core area).

Management according to a biosphere reserve, a national park, a CoE Diploma site, a Natura 2000 site and a wildlife refuge.

Every country appreciates in a different way the natural wealth it owns. Most of them, however, have introduced specific laws for the protection of natural environment, as well as several of its components (water, air, forests, etc..). Specific bodies are responsible for the legislation enforcement. The manage-

ment of a protected area incorporates a variety of legislation that includes all the above, as well as some specific legislation for the protected area.

Where a protected area owns more than one designation the issue becomes more complicated since a variety of functions are required from the designated area. It is then left to each country to enforce all requirements to the area management body. However, the legal system of each country is the main lever that is used. Thus, some nominations (national or international) have gone through each country's legal system by passing specific legislative decrees. Their disobedience means suing and taking legal measures against the defiant. Others give recommendations that their defiance means eventual removal from the network, while others simply give suggestions on the way of management.

In the case of the White Mountains Samaria Biosphere Reserve the designations and the required functions are as follows:

- A Biosphere Reserve (according to MAB/ UNESCO guidelines) aims at the conservation of natural and cultural resources, the development of the area (ecologically sound and socially sensitive) and the logistics (communication, scientific research, environmental education).
- A Greek National Park (L.D. 86/69, art. 78 & 1650/86 art. 19) aims at the conservation of the natural heritage, the ecological balance & in parallel to the above environmental education and recreational activities.
- A Council of Europe diploma site requires from the area to work on the conservation of biological and landscape diversity and public information and access, while the socioeconomic interest of the area are a subordinate function.
- A NATURA 2000 site. It will eventually require from the finally designated areas the conservation of the natural habitats (following an authorized Management Plan).
- A wild life refuge requires the conservation of wild life and is introduced via a Ministerial Decree.
- The existence of priority species and biotopes in an area (Habitats directive 92/43/EEC) also means a specific management following an Action Plan for each species survival. (The directive was incorporated in Greek legislation by the introduction of a law.)

The Greek Forestry Service (under the jurisdiction of the Greek Ministry of Agriculture) is managing the National Park of the White Mountains, following an approved management plan. Park management is the duty, among others, of the Dept. of Management, (Forest Directorate of Chania). The same department is responsible for the management of the forests and the wildlife of the region.

The actual area management follows an Action Plan derived from a Management Plan and the main functions are habitat conservation, environmental education, recreation and management of visitors. It is obvious that the requirements of most designations are followed and management is a combination of all above designations.

The system is rather centralized, since the Greek Ministry of Agriculture supervises the Forest Directorate, decides the forest policy and allows a certain budget. The income of the Park (fee entrance) is transferred to the budget of the Ministry and some of it (30%) returns to the local communities (adjacent municipalities); while the Ministry finances selected activities (seasonal personnel, various public works and studies inside the protected area).

The zonation of the Biosphere Reserve is taken into account since the core area of the Biosphere Reserve could be defined by the current National Park boundaries with conservation and scientific research as the main management targets for it. The Management Plan proposes an extension of the Park from its current 4,850 to 24,594 ha; thus, the now proposed Park extension could serve as the Biosphere Reserve buffer zone. It is an area that surrounds the core area. It also includes the pathway,

where visitors are allowed to enter (in a specific area for a specified length of time – daytime only in summer) In this zone, Environmental Centers are built (one general – some thematic on specific issues of local interest). The functions of this zone are beside conservation, environmental education and recreation. The much wider NATURA 2000 site; covering almost the whole of the White Mountains area, could act as the external transition zone. The last zone could have no clear outside boundaries and includes a number of inhabited villages. The main characteristic of the villages in this zone is their insularity, either they are mountainous or by the sea side. A balanced sustainable development plus nature conservation are the main function of the external zone, however, the ability of the current management body to enforce the former is questionable.

The main difficulty that a multi-designation causes is the confusion that arises from:

- The hierarchy and the decision making process, since some designations are vaguely known & enforced by soft laws.
- In cases where there is no specified management body for the area, responsibility for the enforcement of each function.
- The lack of information on the management of priority species – Specific Action Plans.
- Lack of authority and resources for the fulfillment of each designation.

Consequently, for the proper utilization of each designation, it is necessary:

- to have detailed knowledge of each designa tion, the responsibilities but also the opportuni ties that they create.
- to bridge differences between designations and put functions in a hierarchical order for different areas within each site.
- to assure financial and statutory ability of the Management Body.

Multi-designated areas are a challenge and a duty. The challenge, however, goes together with privileges which the area gains from each designation.

ASKANIA NOVA BIOSPHERE RESERVE, UKRAINE, BY VICTOR HAVRYLENKO

An analysis of implementation of UNESCO Man and Biosphere Programme and the subsequent strategies accepted by the international nature protection society shows that part of humanity is concerned with harmony between man and environment. The number of territories under environmental protection has increased considerably for the last ten years in Ukraine. The Biosphere Reserve "Askania Nova" is of great importance among nature protected objects situated in the steppe zone because "Askania Nova" is the oldest steppe Reserve of the World Network and in Ukraine, the largest one in Europe.

Having been thought over and realized the system of nature used by the founder of the Reserve, Friedrick Falz-Fein, forestalled views of world community on nature protection. Today I would like to produce to you evidence of the fact that a prototype of an modern biosphere reservat was found at the end of 19th century in Askania Nova. Friederick Falz-Fein reserved a steppe plot of about 600 ha in 1898, it is the core of the current reservat. The plot was marked by a ditch visible the in reserved steppe today. We find confirmation of this fact in publications of Yo. Pachoskiy (1906, 1908), who began to do a botanical description of the reserved territory since 1902. A schematic map of land use and explanations by K. Zalesskiy (1915) is especially important for us (Fig. 1). Describing the map K. Zalesskiy writes: "Thus the Reserve is surrounded by some cicules, which preserve it from direct accidental invasion of outside elements. The next protected barrier for the Reserve is a hayfield preserved quite well, which is situated along the eastern and widest side of the big protected plot. Pastures are situated next to the hayfield and arable lands are farther." It shows that a structure of a modern biosphere reservat developed in Askania Nova at that time. This structure consisted of a natural core area, buffer zone (pastures and hayfields) and an anthropogenic landscape zone (settlements and arable lands). The

arable lands occupied only 17% of the total area of F. Falz-Fein's land-property (40,000 ha). Besides the conservation of steppe biodiversity, the former owner kept 35,000 sheep, 1000 cows, 200 camels, 400 horses, the well-known zoo with semi-free animals and an irrigated dendrological park.

Askania Nova was declared as a national reserve in 1919. Its structure was not changed till 1927, after that the core area increased to 1200 ha. The areas of steppe ecosystems, including Askania Nova region decreased abruptly later. However, the core area of Askania Nova Reserve increased several times. The stages of development of the current Reserve structure are shown in figure 2. A total of 1156 ha were ploughed up in 1959 and 1960. Agricultural use of the plot lasted till 1966. After that the plot was returned to the reserved area for renaturalization. Unfortunately spacious pastures in the buffer zone of the Reserve were ploughed up in the time of the Soviet Union. It has affected some steppe and semidesert species, which do not need strict reserved conditions, but they need temperate grazing by herbivorous animals of big and middle size.

The favourable conditions for development benefit more than 2300 representatives of plants and 1500 of animals due to reservation. The optimums of existence of different species of rarity and typical flora and fauna do not coincide. Some rare species of birds such as Great Bustard, Little Bustard, Demoiselle Crane, Steppe Eagle and Lesser Kestrel were lost on the nesting. But numbers of other species are reduced. Certainly the reserved regime and some other factors affected this.

A a century of experience of nature protection in Askania Nova shows that a polyvariant system of nature use must be developed as a condition for the functioning of a modern reservat.

There are three systems of use of the reserved core area in Askania Nova. The core area of the Reserve is divided into three parts according to their use. The first part is a hay-cutting area of 1400 ha, within it every year one or another plot of 700 ha is mowed. The second one is a pasture area of 2300 ha for zoo animals. The last one is a strictly protected area of 7354 ha. There are more than 1900 species and forms of introduced plants in the Dendropark situated in the buffer zone of the Reserve and in nearby territories. This is a rather original structure which collides to some extend with requirements of the present nature protection legislation of Ukraine. But the structure provides a chance to conserve regional and transcontinental biodiversity for a long time.

Phytobiota within the current core area of the Reserve "Askania Nova" have been studied for about 160 years. Most research concerned the flowering species, bryophyta, lichens, algae, micro- and macromycetes. Biodiversity of the present flora of the reserved steppe preserves in the main. Now it numbers 478 species of 237 genuses and 56 families. Rare and endemic flowering species total 19.4% of all species. Some new species were found and described namely in Askanian biotopes (2 of them are algae, 1 is of fungus, 25 are of flowering species). Besides new species of soil algae (54 species), micromycetes (11) and agaric fungi (23) were found for the first time in the steppe zone of Ukraine. Polyendemic species from the Black Sea region form the endemic core of autochthonous flora in the virgin steppe. Twenty seven species of the flowering plants, 4 species of lichens and 2 species of fungi are listed in various Red Lists and Books of international, national and regional levels; the species need special protection. The main problem of their protection lies not only in their peculiar biology, but also in the specificity of the management of the given territory, particularly in a reserved system. That is to say the given system may be appropriate for some species and may influence others negatively. A detailed geobotanic cartographic monitoring, which has been carried out since 1927, shows that the process of transforming steppe areas into meadows is very slow due to the fact that the climate in the south of Ukraine is arid. That's why being under protection, vegetation in the oldest

reserved plot remains within demutation stages for a 100-years period. Although plant associations with dominance of the rhizome graminids and sedges occupy 30% of the area, shrub invasion and especially forestation will not threaten the reserved plot for a long time.

Since 1995 some plots in the buffer zone and anthropogenic landscape zone around the core area have been stopped and the demutation process has been setting in there. Anemochorous and zoochores species of plants begin to grow on the plots, their seeds are brought from the core area. Small tussocks of exclusive steppe species, specifically feather grasses: Stipa capillata, Stipa ukrainica and S-. Lessingiana, are to be found among them. Soding plots have appeared between the 6th and 8th year after beginning of spontaneous grassland formation at the side of prevailing winds. Thus the classic model of self-recovery of natural vegetation is observed. It occurs in the former fallow lands, excluded from cultivation in 1966. That's why we have a prospect to restore lands in the buffer zone to their traditional use as pastures and hayfields. First of all the conception of Askania Nova is associated with steppe. Among the arid and boundless steppes a system of depressions with interzonal vegetation and peculiar fauna exists between the rivers Dnepr and Molochna. They are flooded by water from melted snow. Most of the depressions were ploughed up or their vegetation was overgrazed by livestock. The exception is the Great Chapelskiy Depression included into the core area of the Askania Nova Reserve. Formerly the bottom of the depression of nearly 1000 ha had been flooded with water from melted snow every year and the water remained there up to the middle of summer. For the last ten years artesian water is supplied here to fill a pond. Since 1966 due to environment protection and the consequent decrease of the anxiety factor the total of migratory birds number staying here during winter has increased. Flights of the big white-fronted goose (Blessgans) of 30,000 to 500,000 individuals, the gray-gag goose (Graugans) were registered here in the territory of 2300 ha between the end of 20h and at the beginning of the 21st centuries. Such rare species as the Zwerggans and the Rothalgans are observed with the above-mentioned species. For example, we registered a flight of the Rothalgans of 6,500 individuals on January 12, 2005. Askania Nova is well-known in ornithological circles as a location where one of the biggest migratory flights of the common crane is recorded. Their numbers varies from 6,000 to 42,000 individuals. Due to migratory birds, Askanian transcontinental connections reach to the west of France, east of the Central Siberia, north of the islands of New Land and south of the river head of the Blue Nile, as has been found out by ringing. That is why the Great Chapelskiy Depression was included in the list of the Ramsar Convention.

Having success in conservation of biodiversity we have problems with birds on the agrolandscape. The flights of birds harm the seedings of wheat, barley and maize. A zone of their daily influence reaches up to 40 km in radius away from the core area of the Reserve. The negative influence the reserved ecosystem is observed at the locations of their night concentrations. Nitric connections and heavy metals are supplied here. Unfortunately the international scientific conference "Cranes on boundary of millenniums" held in 2002 couldn't produce recommendations to solve the problem. It is difficult because the rare species Entenvogel, Kraniche, Trappen, Austernfischer fly together with other birds and create excessive concentrations only in Askania Nova. It is impossible to regulate their numbers and frighten them off. The problem cannot be solved on the international level because Ukraine just declared about a possibility to compensate losses incurring by wild animals. But a real mechanism does not exist. This fact makes for strive between the administration of the protected area and surrounding locations. It is contrary to the purposes of the Seville Strategy. The same happens also in other countries (Turkey, Romania) where birds fly farther. Unfortunately we don’t know the causes why the Global Ecological Fund stopped financing the project on conservation of biodiversity at the Azov and

Black Sea migratory path. Askania Nova is included in this Project as a stationary center for the birds. Thus we use the polyvariant system, which involves the preparation of a set of legislative documents for settling a problem of interaction between nature and people who live at the anthropogenic landscape zone. At the same time we raise the status of protected objects from a national to an international one. We apply various systems of territorial use for growing and keeping species. The explanatory work with people from the region and different countries who visit the steppe oasis is carried out by a center of ecological education in Askania Nova.

INTEGRATIVE APPROACH IN MANAGING THE KARST BIOSPHERE RESERVE, SLOVENIA, BY ALBIN DEBEVEC AND VANJA DEBEVEC GERJEVIC

Park Škocjanske jame, Slovenija, is a multidesignation site, located in the south western part of Slovenia. In 1986 the Škocjanske jame Škocjan Caves were listed in the UNESCO world heritage list, in 1996 the Government of Republic Slovenia established the Regional Park Škocjanske jame, Slovenija. In 1999 the underground course of The Reka River in Škocjan Caves was designated a Ramsar site as first underground wetland of international importance.

The park lies within three locations Natura 2000. In 2004 Park Škocjanske jame became a MAB locality as The Karst Biosphere Reserve.

The park authority is very proud to present the local and global importance of international designations through the work of natural and cultural protection and conservation. In a constant process of public awareness we have achieved a high level of acceptance by the local people.

Implementation of designations conventions and directives gives a strong input in performing our everyday work according to national legislation. Designations of our site offer a lot of opportunities and challenges for performing the development programmes in a qualitative way, considering them as the highest recognition which results in responsible managing of The Karst Biosphere Reserve.

In 1986, the Škocjanske jame caves were included in the UNESCO list of world natural and cultural heritage due to their exceptional significance for cultural and natural heritage (Law about Ratification of the Convention for the Protection of the World Natural and Cultural Heritage, Official Gazette of the Socialist Federal Republic of Yugoslavia, no. 56/74).

In order to preserve and explore its outstanding geomorphological, geological, and hydrological formations, rare and threatened plant and animal species, paleontological and archaeological sites ethnological and architectural characteristics and the cultural

landscape, and to ensure conditions for adequate development, the Parliament of the Republic of Slovenia passed a law on the Škocjanske jame Regional Park (Official Gazette of the Republic of Slovenia, no. 57/96). The Public Agency Park Škocjanske jame was founded with a decree of the Government of the Republic of Slovenia and started carrying out its activities in 1997.

In 1999, the Škocjanske jame entered the Ramsar List of Wetlands of International Importance. They are the first European Ramsar site included on the list according to the criteria for identification of underground wetlands. (Decree on Ratification of the Convention on Wetlands of International Importance, especially as a water bird habitat; Official Gazette of the Socialist Federal Republic of Yugoslavia, no. 9/77, Act on the Succession Notification, Official Gazette of the Republic of Slovenia, no. 9/92).

The protected area of the Park measures 413 ha and there are three villages within its borders, namely Škocjan, Betanja and Matavun, with the population of 69 inhabitants. The buffer zone covers the entire Reka River watershed and measures 45,000 ha.

In October 2004 Park Škocjanske jame became a member of the international network of Man and Biosphere localities as The Karst Biosphere Reserve.

The entire MAB locality is situated in three Natura 2000 areas: SPA SI 5000023 Karst, pSCI 3000276 Karst and pSCI 3000223 the Reka River.

It integrates aspects of nature, culture and man's presence. The position of the Park is geologically outstanding. This area is being referred to as the Classical Karst, as this is the part of Slovenia where karst explorations were started and where its phenomena were described for the first time. International karstologic terminology uses some Slovene words for describing the phenomena that developed in limestones. Dolines and collapsed dolines have left evident traces on the rocky surface above underground caves, rivers and lakes. Ponors, sinkholes, through which the Reka disappears underground, have developed at interface of flysch and limestone.

Intensive explorations of the Škocjanske jame caves and the surroundings were started to satisfy the needs of the water supply and the curiosity aroused by the stony landscape and its interesting history.

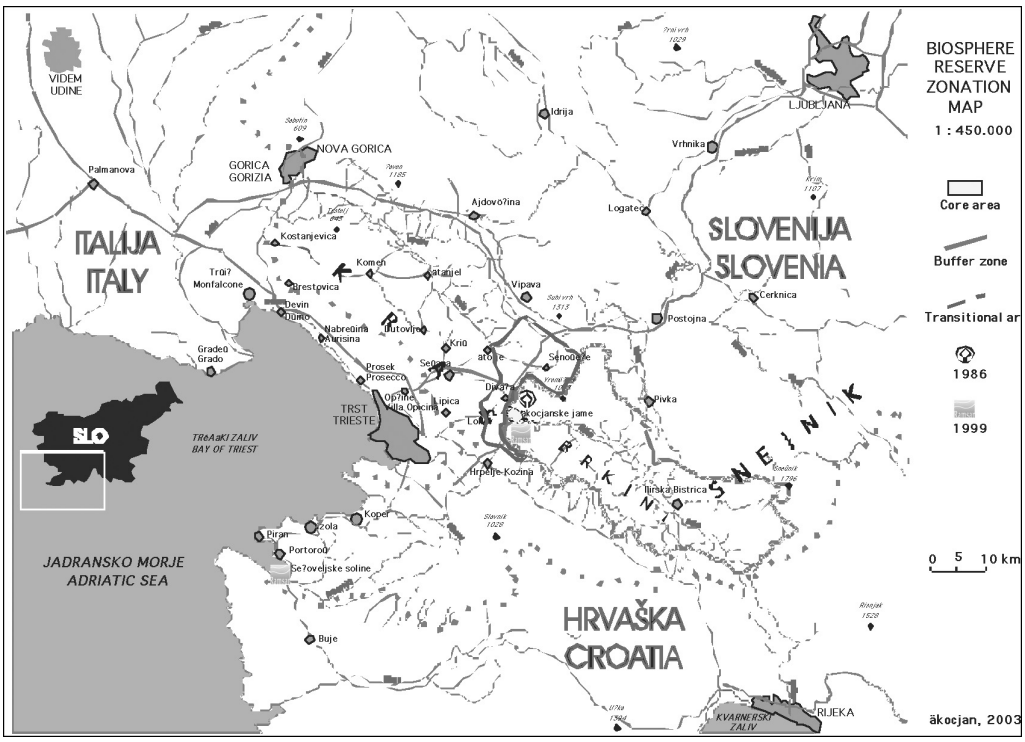

Figure 1: Map of The Karst Biosphere Reserve

Rich archaeological finds prove that man has been present in the area since the Late Pleistocene (140,000-10,000 years ago). People used to seek shelter or dwell in the caves; they buried their dead and held religious rituals there. Traces of man's constant presence in the area are evident. Inhabitants of the area were either cave guides or explorers, thus living with the cave; millers or sawyers, living with the torrential river; or farmers, living with the soil and fighting the great lack of drinking water. Man in the Karst accommodated to harsh natural conditions and has always striven to preserve fertile soil and water.

The extremely dissected surface in the Park is suitable for the thriving of various plant species. The Karst is the only habitat for many of them, some can be found in the Alps as well, numerous others grow all over Slovenia. In the second half of 19th century the Karst was grown over with the black pine (Pinus nigra), which is being supplanted by wild species like hop hornbeam (Ostrya carpinifolia) and flowering ash (Fraxinus ornus). Among rare plants that are thriving in the Park one should mention maidenhair (Adianthum capillus – veneris), Campanula justiniana, and ivy broomrape (Orobanche hederae).

Karst grasslands, overhanging walls and rock cracks shelter numerous animals. Among the birds one should not forget mentioning the wall creeper (Trichodorma muraria), Alpine swift (Apus melba), rock dove (Columba livia) and eagle owl (Bubo bubo). Bats dwell in deserted old karst houses and especially in the caves. The Škocjanske jame caves are a permanent or temporary shelter for 15 bat species, which is more than a half of all bat species that are found in Slovenia. The most important among them are Rhinolophus ferrum-equinum, Miniopterus schreibersi, and Myotis capaccinii (long-fingered bat). There are many animals that are extremely well accommodated to conditions in the dark and inaccessible underground. In such an unpleasant environment one can find the endemic proteus (Proteus anguinus) and numerous invertebrates.

Biotic diversity is a precious value in the park. It is a unique witness of Earth's history and geological development of the area. The data kept in the genetic code of rare and endangered animal and plant species is part of the history of the area and its inhabitants. The facts mentioned enable a special approach to environmental education.

There are many good examples of man's responsible attitude towards nature, which resulted in harmony between them. Peasants cleared rocky fields in preparation for cultivation of the land and built rock walls. Borders between parcels are still visible and gardens are sheltered from gusts of wind by rock walls, which display special building skills and are a habitat of mosses, lichens, reptiles, and insects. Also the ponds that man built with the goal of collecting water, mostly for the needs of cattle breeding, are a good example of this close relationship. Besides their cultural significance, they are an important habitat for amphibians and dragonflies.

A high level of co-operation with the local people has been achieved since the park was founded, especially in the fields of protecting natural and cultural heritage, renovating cultural heritage and setting up various activities. The Park management closely co-operates with the local people and the Tourist Association of Škocjan, with the municipality of Divača, and local communities in the buffer zone, namely with the municipalities Hrpelje-Kozina, Ilirska Bistrica, Pivka, and Postojna. We have trained 59 volunteer park wardens from the park area and the buffer zone.

The natural protection supervisory service programme is based on the constant education of park wardens and attractiion of new forces among the hunters, cavers, fishermen, foresters, nature lovers, mushroom pickers, local people and others. The supervisory service is constantly present in the park area and awareness-raising, informing and prevention of law violations or even catastrophes ranks among its most important tasks. Also the children from the whole Reka watershed area – in Italy and Slovenia – are included in these activities. A part of these efforts is a school network that includes schools from the buffer zone, the park and the area across the Italian border. The network enables children to take part in research projects, it promotes

good relations between various generations, it aims at familiarizing pupils with other languages and dialects, and acquaints them with the work in governmental and non-governmental institutions. We are paving the way for seeking tolerant and responsible solutions regarding environment protection; presenting the benefits of not only biotic, but also social and cultural diversity, and thus establishing a base for awareness of the precious heritage that we create as well.

The park authorities witnessed two years ago a strong initiative by local people from the Dane village beside the border of the parks core zone. In order to take part in activities in world heritage site and contribute to the conservation of the underground world, they proposed the extension of the park to the Mejame cave area, which is marked with the dashed line on the map. The Park management is now planning to enlarge the Park area. The border is supposed to move towards the contact karst that lies to the south. It comprises the Mejame caves and the Golobert torrential stream, and is a geomorphologically rich area with biotic diversity. Its inhabitants would like to join the park, as they are aware that this can improve their living conditions. The area measures 200 ha.

The local people from that area already established a local Tourist Society in order to have a formal institution as an official partner of the park. This clearly shows the high value of natural and cultural heritage and evident respect for UNESCO designation.

Biosphere Reserve integrated monitoring. Karst environment is extremely vulnerable and its resistivity is not infinite. Underground ecosystems differ from the ones on the surface by their specific climatic and biotic parameters. One of their most important characteristics is an extraordinary faunal diversity. Their outstanding vulnerability arises from their low ecological power and the relatively small habitat. Pollution and changing the ecological conditions may well lead to their extinction. Species in the underground ecosystems are endangered due to the habitats' destructions, vandalism, excessive hunting, chemical and bacterial pollution, tourist visits to the caves, especially if the number of visitors is too large. That's why one of the main assets in the park

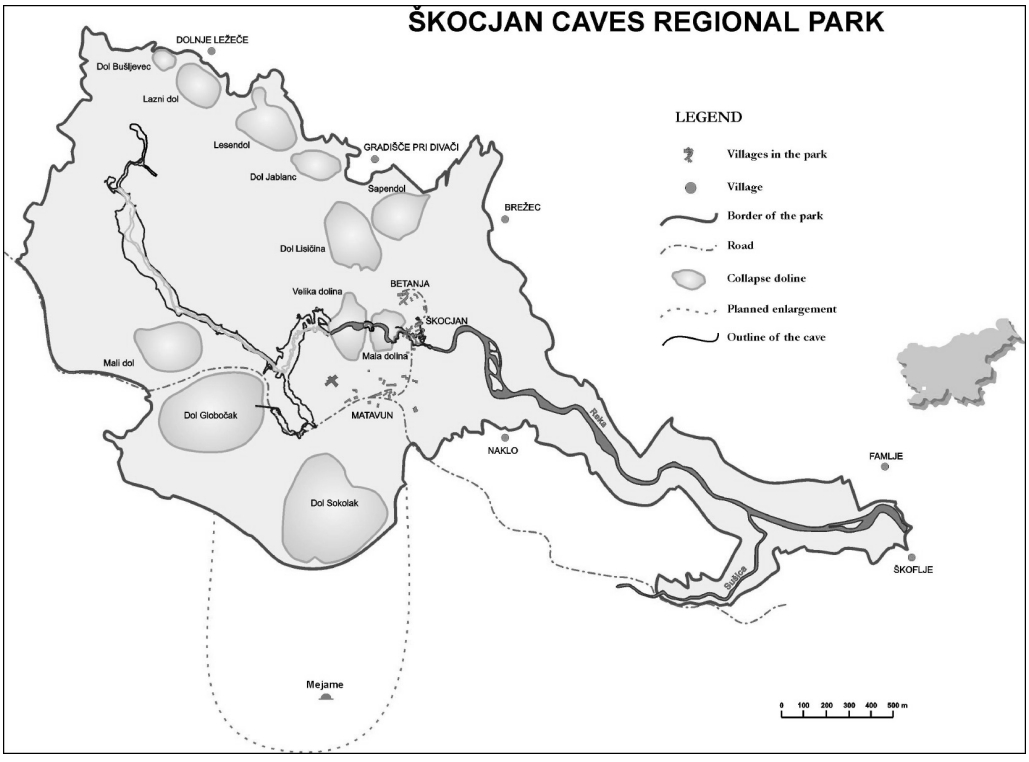

Figure 2: Map of The Škocjan Caves Regional Park with proposed extension of core zone

is monitoring the state in the cave system, especially because underground water from that area represents a part of a large karst aquifer for potable water in the karst in Slovenia and Italy.

The surface area is also very important in preserving the underground. Tourism and other accompanying activities are thus being introduced very slowly and with great precautions. Also farming and construction activities should be carried out in a sustainable way. To reach the goals of sustainable development monitoring should anticipate development plans and along with education provide for a rise in the quality of life in protected areaa.

The monitoring as a process is anticipated in the Law on the Škocjanske jame Regional Park (Official Gazette of the Republic of Slovenia, no. 57/96, article 16) and is a part of the management plan of the Park. Since all designations declare the importance and give a scientific basis for its implementation we found the Biosphere Reserve monitoring the most appropriate for our site. Detailed study and implementation of human ecology should enable us to establish biotic, abiotic and social parameters. Through different sciences branches we could identify and explain a problem and anticipate the effect of changes. Monitoring of complex system is the only way the decisions will be made on holistic research studies.

Figure 3 represents a model of BRIM monitoring schematically focused here on two problems: human impact on the caves and the quality of water. The quality of life in protected area depends also on the implementation of research studies, participation of local people in the monitoring and decision making process and education for sustainability.

In park Škocjanske jame, Slovenija we believe that properly designed monitoring will give rise of public awareness and also enable us to implement a management plan of the park where all designations have been taken in consideration.

Integrating designations of national and international importance: The most important document, which is also an official tool for integration of several designations, is our management plan for 2005 – 2009. It is focused on establishing the goals set by the UNESCO Natural Heritage and Ramsar

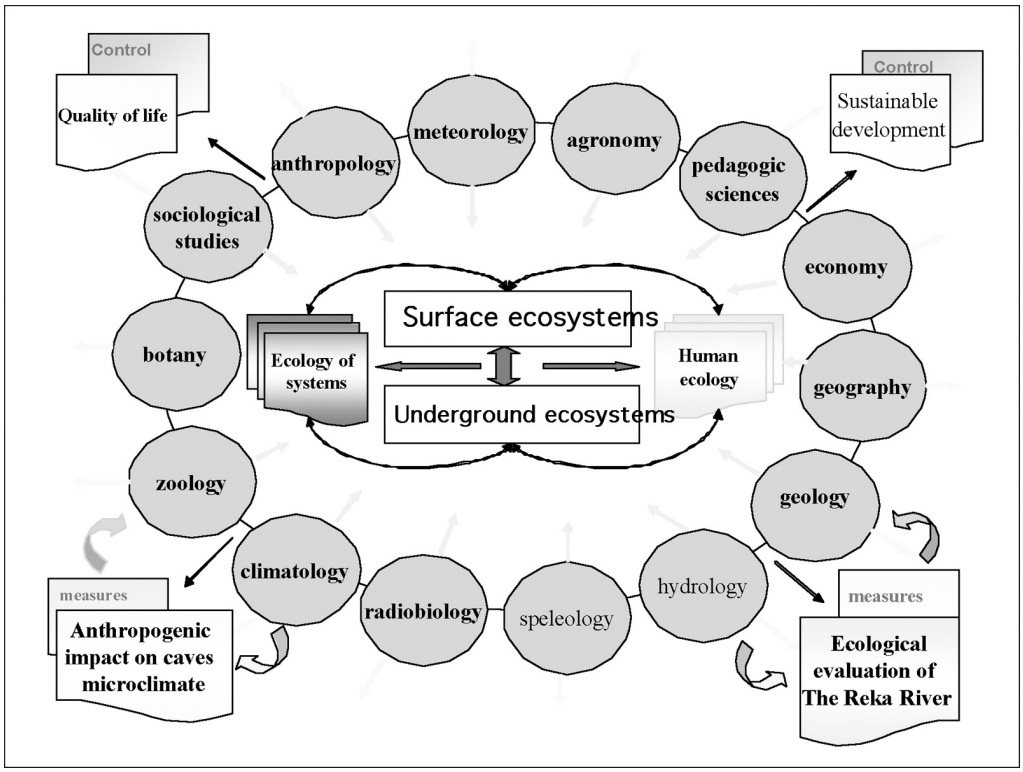

Figure 3: A draft for a model BRIM in the Karst Biosphere Reserve

Conventions and MAB programme preserving natural resources; protecting archaeological sites, and preserving ethnological and architectural characteristics of the area; developing tourist offer that aims at presenting natural resources, cultural heritage and the karst; nature-oriented development; establishing constant monitoring and analysing the state of natural and cultural heritage in the Park; presenting the Park and establishing educational programmes, focused on the environment, in Slovenia and abroad; improving the cave and park infrastructure; open new tourist trails and renovate the old ones; safety devices; functional and aesthetic renovation of the Park Information Centre; collecting and purifying wastewaters in the Park and its surroundings. Commitments from Natura 2000 have already been performed by our special law since the Regional Park was established.

We have established connections with other protected areas in the world, which enables us to exchange knowledge and practical experience and compare environment evaluations and our projects. Besides playing an active role in discussions, we organize round-table discussions and attend conferences on various topics. Our international activities are based on activities that stimulate broad-mindedness and are carefully prepared. We are aware that a wider public brings greater responsibilities and we are more subject to criticism. That is the reason for constant expert educations in the Park, including language courses and presenting the latest scientific and technological achievements. With education and the sensible presentation of outstanding sites it is possible to gain awareness of the significance of natural resources as an important part of our heritage from the past. The Park plays an important role in both aspects mentioned. Especially the latter is based on historical facts, rich local culture and unique karst nature.

In conclusion, Park Škocjanske jame, Slovenia, is a protected area and is inscribed in the UNESCO World Heritage List. The protected area is relatively small (413 ha), but an extreme biotical diversity can be observed on the surface and underground, namely in the Škocjan cave system that has 6400 m of underground channels. The Park is managed in accordance with Slovene legislation, Ramsar and UNESCO World Heritage Conventions. As The Karst Biosphere Reserve the implementation of MAB programme has resulted in new initiatives for efficient monitoring and a holistic approach in presenting the area and planning its development as well. Their implementation of a carefully prepared management plan, which is to be approved by the Slovene government, is extremely important for protecting and preserving the heritage. The management plan is a document that the Park management has drawn up in accordance with expert guidelines and Slovene legislation. The task to present the Classical Karst and Slovenia provides a strong stimulus to strive for good, expert and carefully planned work.

We have accepted all designations with honour and pride. They present a strong commitment to provide successful work in preserving and creating our natural and cultural heritage. Through tools, aims, ideas and challenges gained by UNESCO, Ramsar, MAB and Natura 2000 we actively participate in the dynamic life of our biosphere, hoping we are able to create our heritage for future generations.

BILATERAL KRKONOSE/KARKAONOSZE TRANSBOUNDARY BIOSPHERE RESERVE, BY PETRA STASTNA, CZECH REPUBLIC

Biosphere Reserve Krkonose/Karkonosze is created by the Czech and Polish side of the Krkonose mountains. From the geographic view, the Krkonose Mts. are a part of the Sudetes chain, located in north-east Bohemia and west-east part of Poland. Its area is 425 km2. The altitudes reach from 400 m to 1602 m (Mt. Snezka). The vegetation formation is divided into four zones according to altitude; its major ecosystem types are mixed mountain and highland systems. The most valuable are the highest parts of mountains, formed by tundra biotopes and geomorphologic relicts from the glaciation's periods in Quaternary.
This region is also called an ecological island of arctic and alpine ecosystems in central Europe. Counterparts of such kinds of ecosystems are then found in the Alps, north and north-west Scandinavia and even in the British Isles.
Because of its nature uniqueness this area has multiple designations. In some cases we have no information from the Polish side of the mountains.

- Biosphere Reserve (bilateral Czech Republic/ Poland) since 1992
- National park and its buffer zone since 1959 Polish side, since 1963 Czech side
- Natura 2000 Site (both sides):
  SPA /Birds Directive since 2004 Czech side, Polish side no information
  pSCI/Habitats Directive since 2005 Czech side, Polish side no information
- Ramsar site (subarctic peat-bogs only) since 1993 on the Czech side, Polish side in preparation today
- IBA (Bird Life Int.) since 1989, only on the Czech side

All multiple designations are overlapping in the core and buffer zone of the Biosphere Reserve (36,327 ha – 66% of the area at the Czech side) as is shown on the maps of the slide show. Only the designation of Natura 2000, Biosphere Reserve and the buffer zone of national park cover also the area of a transition zone. Implementation of Natura 2000 is still new for the country and there is not yet a clear strategy how and when to use this designation in an executive way. There are 29 towns and villages situated in the transition zone. The whole area of mountains is settled by around 26,700 inhabitants.

As elsewhere it is not easy to persuade local people to accept other new protective proceedings. Natura 2000 was accepted only because entrance to European Union was conditional upon it. The situation of Krkonose Mts. must also be seen from several points: The Krkonose are the highest mountains in the country and the transition zone has been used as a recreation area for years. Original locals there were mostly Germans; they had to leave this place after World War II. Latter settlers had been mostly people without any connection to this region. After the end of the communist period most of the locals as well as parvenus from the rest of country made literally a "goldmine" out of this area. We have about 5.4 millions visitors per year to this small area. Demands of visitors for accommodation and sport facilities are still increasing; environment takes a backstand. Most town councils support building of new hotels and apartments, developing sport facilities because many inhabitants live off tourism, and management of the landscape declines.

The present political situation in the country is more for the developing strategy of regions than for landscape protection. The villages and towns at the foothills are slowly loosing their original character, some local people are slowly moving out, new parvenus and firms come from Prague and run many of the lodging and sport facilities. In this case it is very hard to persuade "locals" to make some change in understanding the worth of this landscape. For us (also working as the staff of national park) the best strategy is to secure protection for the most valuables biotopes in core and buffer zone than to get on the wrong side of the locals. Visitors are allowed to move in the core and buffer zone on the trails; in

the transition zone are no restrictions. For the entrepreneurs it is profitable to attract visitors by the nice nature near the villages, huts or hotels; it is some kind of a compromise between them and nature protection. For the staff of the national park and Biosphere Reserve these multiple designations are a good argument in many ways for showing the uniqueness and value of this place.

3. PARTICIPATION AND PUBLIC RELATIONS IN BIOSPHERE RESERVES

PLENARY PRESENTATION ON NORTH VIDZEME BIOSPHERE RESERVE, LATVIA, BY ANDRIS URTANS

North Vidzeme Biosphere Reserve (NVBR) is located on the edge of the Republic of Latvia and represents a majority of features characteristic for the marginal areas throughout the rural areas of Europe – slow progress in rural social economics and supportive services, ageing and negative population statistics. According to official statistics (2003), 56% of the NVBR's population was of working age, 23% was retired, and 21% was of school age or younger. The average monthly salary in NVBR is approximately 120 LVL (170 euro). Approximately 15% of the NVBR workforce is unemployed. More than one half of the people work in the private sector, mostly in farming, forestry and retail. Only about 7% of NVBR residents have post-secondary education. Nearly 20% of households have more than five people.

North Vidzeme countryside now represents a phenomenon where features of different historical epochs exist side by side, which are best seen in land property and landscape structure, farming technologies, architecture and customs of the people. Social and economical conditions are changing and many local people need to find a practical justification for their staying there. At the same time farmers still are practically responsible for safeguarding landscape and nature diversity in more than 2/3 of the NVBR area with rather minor State assistance.

Thus to reach the goals set by the Biosphere Reserve concept, Administration of NVBR as a state institution must act as promoter, mediator and educator, at the same time representing State Environmental policy to the local people. It must be done practically. And in our conditions it is possible only by being among local people in their everyday life. To understand them and to be understood by them. And give them facts proving belief that the Biosphere Reserve is supportive and gives local people additional