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Development Prospects of the Protected Areas System in Croatia

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<http://dx.doi.org/10.5772/50482>

1. Introduction

Creation of protected areas is the most common approach to conserve global biodiversity (Fu et al., 2004). Protected areas are places with extraordinary biological value providing numerous functions to humans (Tomićević et al., 2011). In recent years, management of protected areas has become one of the relevant aspects in national and international studies dealing with nature conservation and management (Muñoz-Santos and Benayas, 2012).

Protected areas in a contemporary social context have an important role and responsibility in Croatia. Croatia is attempting a popular participatory approach to nature protection (Kapoor, 2001; Khadka & Nepal, 2010; Parker & Thapa, 2011; Robertson and Lawes, 2005; Sladonja et al., 2012). Protected areas' role is viewed through the fulfillment of the objectives of biodiversity preservation, but also through a full contribution to sustainable development and especially the economies of local communities. The most important features of the approach to managing protected areas in Croatia, together with strategic directions for achieving the goal of further protected areas system development and the increase of their effective management with the active participation of the public must be identified. The key problems of daily functioning of protected areas in Croatia refer to undifferentiated and lacking funding, inconsistency of regulations and legal ambiguities, the lack of a central National Park Agency on "one vision, one mission" approach to managing and the low level of implementation of so far adopted management plans of protected areas.

Prospect of park system development in Croatia is perceived in three key aspects: 1) improving the functioning, 2) contribution to sustainable development and 3) sufficient long-term financing. Achievement generator of these perspectives should be the future National Park Agency for Croatian protected areas (NPA) with the authority to define and implement a unitary park policy and privileges of presenting overall interests and needs of the protected areas system according to the political and professional environment.

The perspective of contribution to sustainable development is related to the establishment of an organized system of visiting the protected areas at national level and implementation of multi-day program of visits – both with significant involvement of local communities. Addition of the tourism development strategy in protected areas is welcome, with emphasis on the unique marketing and widespread use of modern technology in all aspects. The perspective of sustainable funding is based on the current unfavorable income and expenditure of protected areas where almost 85% of revenue is channeled to the costs of employees and current operations, and only 15% on the investments and program costs, which directly affects the volume of activities for reinforcement of local community economies. The calculation of the financial sustainability of protected areas is appreciated and included through the direct and indirect market values, but also non-market and non-usage values and benefits of protected areas as a condition of knowing the total value and actual costs of protection, preservation and development.

1.1. Overview of nature protection legislative in Croatia

The first examples of nature protection in Croatia are linked to the second half of the 19th century. The first institutions that were funded with the aim of nature protection were the Croatian Nature Society (1885) and the Society for the Arrangement of Plitvice Lakes and its Surroundings (1893) (Sladonja et al. 2012). The first official framework for nature protection was set by issuing of the Law for Bird Protection (1893), Law on Hunting (1893) and Law on Underground Protection (1900), while a comprehensive legal framework in the form of the Law on Nature Protection was finally completed in 1960 during the period of communism in the former Socialist Federal Republic of Yugoslavia (SFRJ). Croatia has existed as an independent State since 1991. In the last two decades, nature protection service often changed positions in governmental institutions. From 1990-1994 it was under the Ministry of Environmental Protection, Physical Planning and Construction. From 1995, it was under the State Directorate for the Protection of Cultural and Natural Heritage and then from 1997 under the Ministry of Culture. In this same year the service entered into the system of the State Directorate for Nature and Environmental Protection and from 2000 it was part of the Ministry of Environmental Protection and Physical Planning. The Nature Protection Directorate has been an integral part of the Ministry of Culture since 2004. By coming into force of the Act on the Organization and Scope of Work of Ministries and Other Central State Administration Bodies (Official Gazette (OG) No. 150/11 and 22/12), adopted by the Croatian Parliament at its session held on 22 December 2011, the management of nature conservation has been taken over by the Ministry of Environmental and Nature Protection. In 2002, the State Institute for Nature Protection (SINP) was established by the Government Regulation as the central expert institution for nature protection. It is the central institute dealing with expert tasks of nature conservation in Croatia. The Institute was established according to National Strategy and Action Plan (OG 81/99) and Implementation Plan on Stabilization and Association Agreement. The State Institute for Nature Protection carried out a series of activities aimed at ensuring the lasting conservation and improvement of Croatia's natural heritage (State Institute of Nature Protection, 2012).

1.2. Status and management of protected areas in Croatia

Protected areas in Croatia account for 8.54% of the total area of the Republic of Croatia, or 11,38% of its land area. From this 4,76% are National parks and Nature parks. Up to now in the Register of protected natural assets of the Republic of Croatia 461 protected areas are registered, 9 of which preventatively protected (Table 1). According to The Nature Protection Act (OG 70/05 and 139/08) in Croatia there are 9 national categories of protection, aligned with IUCN categories (Table 2).

| Category | Number | Surface area (km ²) |
|---|----------------|---------------------------------|
| <i>Strict reserves</i> | 2 | 23,95 |
| <i>National park</i> | 8 | 961,35 |
| <i>Special reserve</i> | 83 (4)* | 853,34 |
| <i>Nature park</i> | 11 | 4.242,15 |
| <i>Regional park</i> | 2 (2) | 1.599,91 |
| <i>Nature monument</i> | 116 | 2,46 |
| <i>Significant landscape</i> | 79 (1) | 880,75 |
| <i>Park forest</i> | 36 (1) | 88,89 |
| <i>Monuments of park architecture</i> | 122 (1) | 9,56 |
| Total | 459 (1) | 8.662,46 |
| Protected areas inside other protected areas | | 1.205,15 |
| Total surface area of protected areas in Croatia | | 7.457,31 |

*in brackets are preventatively protected areas

Source: Strategy and action plan for biological and landscape diversity protection of the Republic of Croatia, Ministry of Culture, Republic of Croatia, 2010

Table 1. Review of protected areas in Croatia – number and surface areas according to categories

Protected areas in Croatia are managed by the public institutions for the management of protected natural areas. The basic goal of their activity is the management of protected areas, in the sense of protection, maintenance and promotion, ensuring the unhindered unfolding of natural processes, and sustainable use of natural resources. Public institutions of National and Nature parks are established by virtue of a Regulation of the Government of the Republic of Croatia. Public institutes for the management of other protected areas are established by local or regional self-government units. Decentralization on nature protection started in the 2005 with issue of the new Law on Nature Protection (OG 70/05). Today present regional and local institutions are a direct result of this law (Sladonja et al., 2012). Counties may hand over the management of a protected area to the local self-government unit, i.e. to a public institute established by a town or municipality. In Croatia, there are currently 19 public institutes at the national level, 20 at the county level and 7 at the local level (State Institute for Nature Protection, 2012).

| Protection category | Intent | IUCN category | Manag. level |
|-----------------------------------|---|---------------------------|--------------|
| <i>Strict reserve</i> | Conserve intact nature, monitor the state of nature and education | I | county |
| <i>National park</i> | Conserve intact natural values, scientific, cultural, education and recreation intent | II | national |
| <i>Special reserve</i> | Conservation due to its uniqueness, rarity or representativeness, and of particular scientific significance | I/IV | county |
| <i>Nature park</i> | Protection of biological and landscape diversity, education, cultural, historical, tourism, recreation intent | V/VI | national |
| <i>Regional park</i> | Protection of landscape diversity, sustainable development and tourism | V/VI | county |
| <i>Nature monument</i> | Ecological, scientific, aesthetic or educational intent | III | county |
| <i>Significant landscape</i> | Conservation of landscape values and biological diversity, or cultural and historical values or landscape of preserve unique characteristics, and for rest and recreation | V | county |
| <i>Park-forest</i> | Conservation of natural or planted forests of greater landscape value, rest and recreation | V | county |
| <i>Park architecture monument</i> | Conservation of artificially developed areas or trees having aesthetic, stylistic, artistic, cultural, historic, ecological or scientific values | No adequate IUSN category | county |

Table 2. The national categories of protected areas according to The Nature Protection Act (OG 70/05 and 139/08)

National parks in Croatia are defined by the Law on Nature Protection, (OG 70/05, Article 11), as large land and/or aquatic areas mostly non modified, with exceptional and multiple nature values, embracing one or more preserved or slightly modified ecosystems, primarily aimed to natural genuine values preserving. From 8 National Parks in Croatia, 3 are marine areas (Brijuni, Kornati and Mljet), 3 mountain areas (Risnjak, North Velebit and Paklenica) and 2 freshwater sites (Krka and Plitvice Lakes). Plitvice Lakes National Park, designated in 1949. is the oldest park in Croatia and today is the most visited park, while the most recent one is North Velebit (Fig. 1.).

Nature parks are natural or partially cultivated land or aquatic areas with ecological features of national or international significance, with accentuated landscape, educational,

cultural, historic, touristic and recreational values. Today there are 11 Nature parks in Croatia spread all over the territory (Fig. 1.).

Protected areas in Croatia, due to their special values make the core and bases for biodiversity and landscape protection, and are key points of national ecological network as well as of future ecological network NATURA 2000 in Croatia. NATURA 2000 is the EU ecological network composed of the most significant areas for conservation of species and habitat types. After the accession of the Republic of Croatia into the European Union, NATURA 2000 will also be proclaimed in the territory of our country. In the meantime a preparation project EU Natura 2000 Integration Project (NIP) is going on. Based on the Loan Agreement with the World Bank (IBRD 8021-HR) signed on 22nd February 2011, ratified by the Law on Ratification of the Loan Agreement (OG MU 7/2011 from May 18, 2011) Ministry of Culture began implementing a five-year EU Natura 2000 Integration Project (NIP). Due to new Act on the Organization and Scope of Work of Ministries and Other Central State Administration Bodies (OG No. 150/11), from December 22, 2011, Nature Protection Directorate and NIP accordingly, are under jurisdiction of new Ministry of Environmental and Nature Protection. The objectives of NIP are to:

- help in supporting National parks, Nature parks and County Public Institutions for management of protected natural values to implement European ecological network Natura 2000 objectives in investment programs;
- strengthen capacity for biodiversity monitoring and EU-compliant reporting; and
- introduce programs that involve a wide group of stakeholders in Natura 2000 network management.

In the 2009, WWF initiated the Report on the Representativeness of Protected Areas in Dinaric Ecoregion (Albania, Bosnia and Herzegovina, Croatia, Slovenia and Montenegro) within the Project Protected Areas for Alive Planet – Dinaric Ecoregion (WWF Project, 2010). This project gives a wider prospective on regional biodiversity which was so far performed only on the national basis. Within this Project, analysis of biodiversity aims in Croatia points to some shortfalls. Target species and habitats non adequately represented in protected areas are considered as “blanks”. According to Project results Croatia has “blanks” in protection of plain and hilly areas (altitude 0-800 m), carstic fields and reptiles and freshwater fishes. However, it was established that Croatia has the highest 58,6% of aims adequately included inside protected areas compared to the region average of 34,2%. The whole Dinaric region demands for joined activities since the threshold set by IUCN of 10% of protected areas is reached only for land areas in Croatia. Marine protected areas are far below this margin in the whole area.

On the other hand, considering its number and diversity, protected areas in Croatia have a very important role in tourist concepts shaping. Total economic effects for national and local economies increase on a higher rate than most of other economy branches (Martinić et al., 2009).

Some of the most important approach features for protected areas management in Croatia are:

- legislative framework, conciliated with international standards and praxis, for organization of key issues of protected area management;
- state commitment for administrative and professional support in planning, establishing and management of protected areas through access of crucial professional documents (habitat map and other databases about species and habitats, Red book of endangered species etc);
- imperative directing and controlling role of competent state administrative and professional bodies (Ministry of Culture – Department for Nature Protection, Department for Nature Protection Inspection, State Institute for Nature Protection, other state institutions etc.);
- state commitment for establishing and financing institutions for protected area management of interest for the Republic of Croatia, especially through ensuring state budget financing and issuing of spatial plans for the most relevant categories of protected areas in Croatian parliament.

According to National Strategy and Action Plan (NSAP) for protection of biological and landscape diversity protection of the Republic of Croatia (Ministry of Culture, 2010) which is the basic strategic document for nature protection in Croatia the following goal was defined for protected areas:

To continue the development of protected area system, efficient management of protected areas, increase the areas under protection and instigate active participation of interested public.

In order to achieve the mentioned goal, according to NSAP six strategic directives have been determined:

- create basic documents for the protected area management;
- digitalize borders and continue with revision of existing protected areas;
- valorize, categorize and legally protect singular areas;
- ensure the involvement of interested public;
- improve the system for the protected area management,
- solve legal-assets relations and increase the share of state land inside protected areas.

Key problems in every day functioning of protected areas in Croatia, especially of those on the national level – National parks and Nature parks are:

- lack of targeted budget means for basic and programme activities financing National parks and Nature parks, as a consequence of the wrong positioning of nature protection in relation to environmental protection and other key economy sectors;
- inconsistency of regulation and legal ambiguities affecting directly the impossibility of key questions solving in parks (assets-legal relations, concessions etc);
- lack of the National Park Agency on the state level, which would represent global interests and needs of protected areas system;
- lack of parks functioning standards, especially in relation to staff systematization, including education and advancements of parks staff;

- non adequate spatial planning in parks, especially in the aspect of regional planning upgrading;
- low realization of so far accepted management plans, especially due to the excessive number of action plans requiring non-existent human and financial potentials;
- lack of diversified development models of parks financing, including public-private partnership and concession system (Martinić, 2004a; 2004b).

2. Park system development perspective

Adopting all mentioned we can summaries the park system development perspective in three key aspects:

- improving the functioning;
- contribution to sustainable development;
- sufficient long-term financing.

2.1. Functioning improvement perspectives

Due to its complex ecologic and social roles, and tasks Croatian park system needs to upraise on a higher functioning level. Framework for such higher level is determined by Croatian protected areas system development and especially the part of ecological network NATURA 2000, with long term management documents aimed at area protection, rehabilitation and revitalization actions implementing as well as development plans responding to local population needs and interests.

So far, the management of National parks was performed through park boards established by the Republic of Croatia as public institutions. Each park has its board and the coordination between all parks is ensured by the operation of an advisory council for National parks.

Recently, there are plans for the establishment of the National Park Agency (NPA) for Croatian protected areas. The NPA will be the generator of these activities. The NPA will take over the management of 8 National parks and 11 Nature parks. It will have competencies of defining and implementing of a unitary park policy in order to ensure parks administration and management functioning conforming the principle „one mission one vision“. This would guarantee the equable functioning models in all system units, with previous rationalization and transformation of existing park system. NPA should enter in function as soon as the new Law on Nature Protection will be approved by the Croatian Parliament and issued. NPA will become the central address of the whole park system and will ensure the direct communication between parks and state administration (parliament, ministries) and other state institutions, international bodies and organizations. On the protected areas level, key gains would be more effective solutions of assets-legal relations, systematization of occupational and positional staff, further standardization of administration procedures, sufficient and stable financing etc. Redefining of spatial planning concept is a particularly important role of the NPA, as well as development of

protected areas contribution to local population, introduction of differential model for public financing including the public-private partnership and concession system development. According to Law, spatial planning for National parks and Nature parks is performed by Croatian parliament. Finally, NPA should establish a permanent education system, professional specialization and advancement of park staff – creating a better social positioning of park professionals. In the NPA organizational and personnel capacities for capital project activities in all parks would be developed, including project preparing for financing from EU structural funds, investment projects managing and implementing of concession applications for touristic- recreational services in parks.

The future Croatian NPA is shaped on the pattern of the USA National Park Service (NPS). NPS is the U.S. federal agency that manages all National parks, many National monuments, and other conservation and historical properties with various title designations. It was created on August 25, 1916, by Congress through the National Park Service Organic Act, it has today 21.989 employees, 397 unites and annual budget of about \$2.900 billions (National Park Service, 2012). There are many similar institutions operating in various countries with the same aim, like Canada and France. Parks Canada, also known as the Parks Canada Agency, is the agency of the Government of Canada mandated to protect and present nationally significant natural and cultural heritage, and foster public understanding, appreciation, and enjoyment in ways that ensure their ecological and commemorative integrity for present and future generations. Parks Canada manages 42 National Parks (including seven National Park Reserves), four National Marine Conservation Areas, one National Landmark, and 167 National Historic Sites of Canada. The agency also administers the Canadian Register of Historic Places, a registry of historic sites in Canada (National Parks Canada, 2012).

The French National parks protecting a total area of 3.710 km² are coordinated by the government agency Parcs Nationaux de France. Nine National parks make a unique system of National Parks of France (National Parks of France, 2012). However there are many different experiences. Several countries don't have a unique institution managing National parks and each protected area is maintained by a separate independent institution. There are no firm rules for a guarantee of successful protected area management.

2.2. Sustainable development contribution perspectives

All global social-economic development strategies of the Republic of Croatia consider protected areas to have roles in biodiversity preservation through the contribution to sustainable development. In relation to local communities' progress, it means the possibility to use all protected area qualities with the aim of developing secure, diverse and sustainable workplaces and maintain balanced and healthy local communities.

Although Croatia has a long experience in park policy creating and implementing, there are evident difficulties in achieving roles of protected areas through local communities' contribution (Martinić et al., 2008, 2009). Successful participative conservation requires a legislative framework, management understanding and determination as well as local willingness to implement conservation programs. The traditional top-down approach to

nature protection in Croatia is being replaced by bottom-up conservation. This new approach treats local communities as key partners in wildlife management and calls for their participation in social development and biodiversity conservation (Sladonja et al., 2012). So far positive experiences in park policy implementing are linked to the economically most successful National parks such as Plitvice Lakes, Krka and Paklenica, while other protected areas give modest contribution to rural development and local communities' economic welfare. Tourism incomes (entrance fees, shopping, transportation, parking fees, recreation...) can raise environmental awareness and give incentives for a new rationality in traditional resource use (Chen et al., 2005). Countries with a long tradition and successful environmental protection such as Canada, has recently introduced new products and services, like yurt accommodation and innovative interpretive programming. Some local fees may need to be adjusted or established as a result of these service enhancements. All revenues from fees at National parks, National historic sites and National conservation areas are reinvested at the location for such purposes as maintenance, repairs or replace aging visitor facilities as well as enhancing visitor experiences. Prices are set to ensure a good value to visitors as well as a fair economic return for tax payers based on market value and rates (National Parks Canada, 2012).

The most important contribution to local communities is linked to the development of specific tourist functions in protected areas. Considering global trends, the basis for such programs development is the establishment of protected areas organized system of visiting on the national level and implementing of multi-day visiting programs. It is expected that in most protected areas, and not only in those protected on the national level, museums, visitor centers, ecological education centers etc. will become an inevitable part of tourist offer. Multi-day visits would be organized for groups up to 25 participants with professional guidance through thematic programs in 3-5 protected areas with obligatory contact with local population (accommodation, gastronomic offer, craft demonstrations etc). Recent studies have revealed positive perception of local population toward involvement in PAs activities and high support for conservation in Croatia (Sladonja et al. 2012) which is certainly an important element for successful implementation of tourist programs.

Initial examples of multi-day thematic protected area tour in Croatia were developed by Martinić (2002, 2010) through national model called "Nature – Adven(ture)". It is foreseen that visits include visiting parks of "common ecological sign": in the focus of the "green" path is the diversity of forest ecological systems and communities; in the "blue" adven(ture) freshwater habitats are on the path; in the "carstic" carst phenomenon; in the "sea" tour island vegetation and marine ecological systems (Fig. 1.). Marketing would be managed through a shared centre, suggesting a central informative and marketing point of the whole park system where a unique ticket for all expenses on one multi-day tour could be bought.

Realization of these perspectives needs the application of approved Strategy of tourism development in protected areas. It is extremely important that the process of strategy defining and accepting it is done in collaboration with all interested parts in order to satisfy wishes and needs of all stakeholders. Key parts are regional and local authorities, entrepreneurs, NGOs and local population. It's up to them to identify the core of the tourist offer in protected areas and wider.

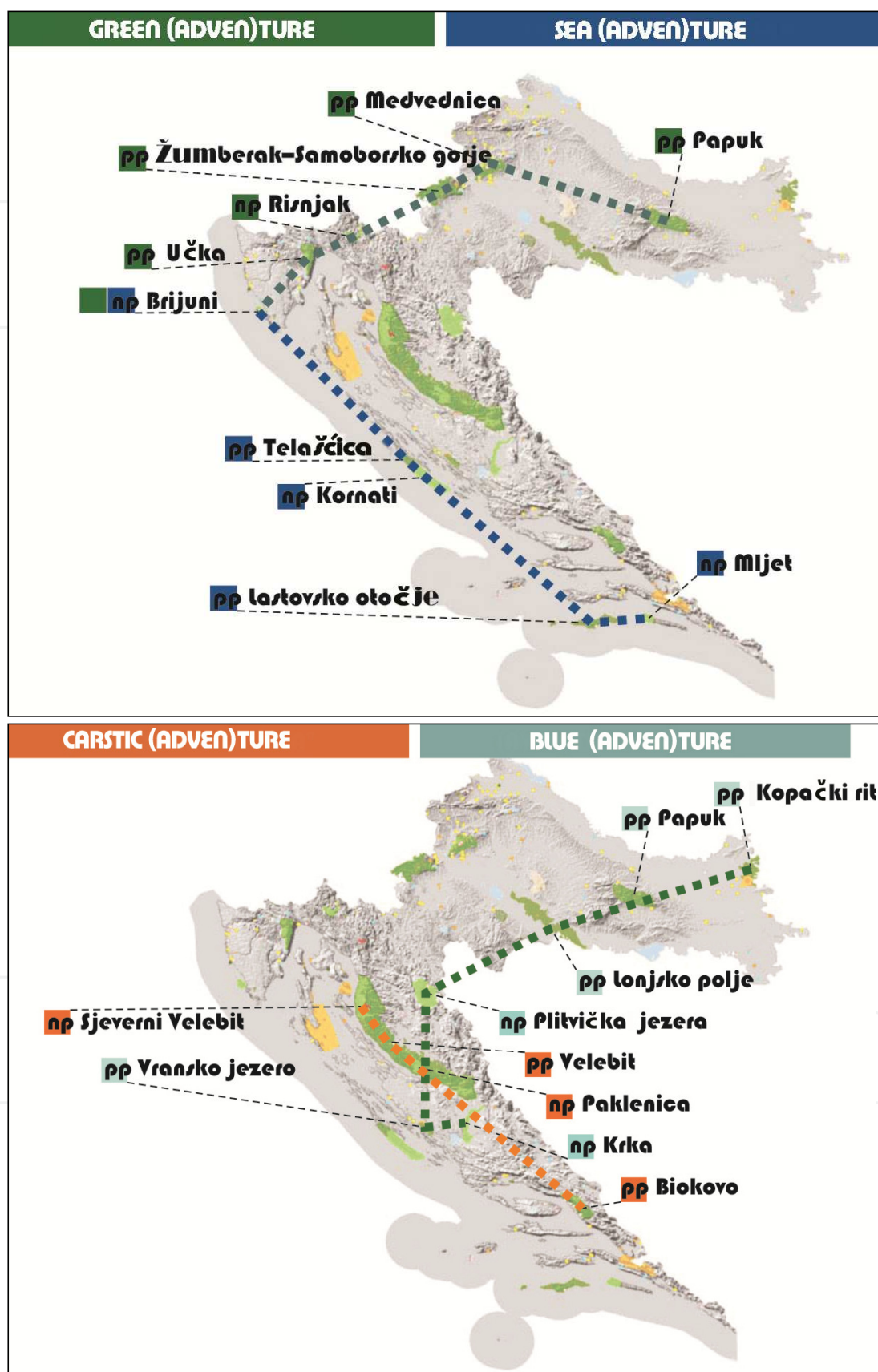


Figure 1. Thematic paths in Croatian protected areas (Martinić, 2010)

2.3. Perspectives of sufficient financing

Sustainability involves balancing ecological, social, and economic development outcomes (Deery et al., 2005; Dwyer 2005; Font and Harris, 2004; Pfueller et al., 2011). The unique character and beauty of protected areas have become attractions for tourism and recreation, it is however important to prevent destruction activities on these sites. Tourism and recreation have a range of damaging impacts on habitats and species (Buckley and Pannell 1990). Even although tourism is a commercial activity requiring economic return to survive, within partnerships with protected area managers, it appears to contribute to sustainability (Macbeth et al., 2004). If tourism is to contribute to sustainable development, then it must be economically viable, ecologically sensitive and culturally appropriate (Wall, 1997). In order to use the tourism in a sustainable way, careful planning and management is required, as well as appropriate budget administration. Budget assignment from national sources to protected areas in Croatia is within global rates. Other incomes of protected areas depend directly from their own possibilities to earn profit from proper activities (entry tickets, tourist services, accommodation, ecological education etc.). In cases of the most known Croatian parks these incomes are very significant and highly exceed the overhead assigned budget.

According to Martinić (2001, 2010) adverse expenses structure in National parks and Nature parks is observed. Even 85% of revenues are channeled to employees' expenses and overheads of the protected areas administration; means that only 15% of incomes are possible to direct in investments and program expenses including activities linked to local communities economy improvement. Low share of program expenses critically diminish possibilities for protected area development and fulfilling their socio-cultural and economic functions. Besides, even preserving the quality of ecological functions is questionable.

In the perspective the calculation of financial sustainability of protected areas is impending by accepting and enclosing not only of their direct and indirect market values but also of their non-market and non-usage values and benefits. Only such structure of economic protected areas will give cognition about its importance, but also real expenses of their protection, preservation and development.

Management concept will have to rely on clear financial mechanisms and concrete financial sources necessary for company functioning and achievements of PAs aims, accepting particularly its commitments linked to the ecological network NATURA 2000.

With this concept, means for working and performing basic activities of park system must be ensured from: state budget for conduction of national protection aims and management of the most valuable nature resources (National parks, Nature parks, Strict reserves) and for performing of international programs for biodiversity preservation (NATURA 2000 etc);

- from other public sources determined by law and special regulations, especially from the Fund from nature protection;
- from charge systems which are usually paid directly or indirectly to park management as entry fees, parking and camping fees;
- from concession fees issued on national level for use of natural resources such water, forest, wild animals, mineral raw materials etc;

- from concession fees according to special contracts with the carriers of tourist-recreational Park activities;
- from tuitions according to special permits for the commercial use of protected areas (promotion, shooting, photographing etc.);
- from souvenirs, maps and books sale;
- from copyright use of protected area sign/logo etc.

Other forms of financial support should be as usually worldwide, more than today based on funds and trusts activities of various agencies, NGOs or structural societies and international projects means. Nowadays, thousands of protected areas in the worlds, especially in developing countries suffer an extreme funding deficit, and many areas have no budget at all (Wilkie et al., 2001). It is necessary to provide rapid actions on global level for stable protected area financing in order to minimize biodiversity loss and promote healthy natural areas as an integral part of sustainable development (Bruner et al., 2004).

3. Conclusions

1. In the modern social context the role and importance of protected areas are observed equally through goals accomplishing in biodiversity preserving and full contribution to sustainable development, and especially to local community economies.
2. Existing park policy concept in the Republic of Croatia gives partial assumptions for further development of protected area system. Their improvement and efficient management with active public participation will contribute to more efficient and sustainable subsistence.
3. Key problems of every-day protection area functioning in Croatia refer to insufficient and non defined financing, legislation and law incapability and partiality, lack of National Park Agency for "one vision, one mission" management approach, weaknesses of spatial planning and low realization of the first generation of management plans.
4. Development perspectives of park system in Croatia can be observed through three key aspects:
 - functioning perspectives,
 - sustainable development contribution,
 - perspectives of sufficient financing.
5. The future National Park Agency for protected areas in Croatia should act as the generator of mentioned perspectives, carrying the responsibility for implementation of a unique park policy and representing global interests and needs of the protected area system.
6. In the close future, real contributions to sustainable development are linked to the establishment of organized protected area visiting system on national level and implementation of overnights visiting programs. The prerogative is issuing of Tourism Development Strategy in protected areas with the accent on unique marketing and wide use of modern technologies.
7. Sustainable financing perspective must be based on calculation of financial sustainability of protected areas considering and embracing direct and indirect market

values and non market and of their non market and non usable values and benefits. Only by this calculation we could acknowledge total values and real costs of protection, preservation and development of protected areas.

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