IUCN European Programme

Biological and Landscape Diversity in Central and Eastern Europe

Best Practice for Conservation Planning in Rural Areas

First Edition, August 1995

Published by: IUCN, Gland, Switzerland, and Cambridge, UK

IUCN
The World Conservation Union

Citation: IUCN (1995). *Best practice for conservation planning in rural areas.* IUCN, Gland, Switzerland, and Cambridge, UK. xxiv + 74 pp.

ISBN: 2-8317-0268-0

Cover photos: *front*
top: Karavasta Lagoon (P.-J. Meynell)
bottom left: Danube Delta Biosphere Reserve (Pisces Nature Photos/P. Goriup)
bottom right: Strandja Mountains (J. Stritih)
back
top: Lonjsko Polje (Euronatur/M. Schneider)
mid-left: Losiny Ostrov (P.-J. Meynell)
mid-right: Green Lungs of Poland (P.-J. Meynell)
bottom: Retezat National Park (Pisces Nature Photos/P. Goriup)

Sub-editing and page layout by: The Nature Conservation Bureau Limited, Newbury, UK

Available from: IUCN Publications Services Unit, 219c Huntingdon Road, Cambridge, CB3 0DL, UK
or
IUCN Communications and Corporate Relations Division, Rue Mauverney 28, CH-1196 Gland, Switzerland

Contents

Acknowledgements

This study, carried out under the mandate of the Task Force for Follow-up to the Environmental Action Programme for Central and Eastern Europe (Lucerne 1993), was made possible through the generous support of the Governments of the United Kingdom, Switzerland and Norway, and the EU PHARE programme.

Encouragement and assistance was received from the Environment Directorate of the OECD Secretariat.

The study was carried out under contract to IUCN – The World Conservation Union by Peter-John Meynell (Cobham Resource Consultants, UK) and Jernej Stritih (Oikos, Slovenia). Review and editing of the texts was carried out by Paul Goriup (Nature Conservation Bureau, UK). The project was directed by Liz Hopkins of the IUCN European Programme.

The authors and IUCN are most grateful to all those who made their time and expertise available for the consultants. They are acknowledged in the appropriate chapters.

Guidelines for Best Practice for Conservation Planning in Rural Areas

The following common principles which contribute to success of projects for conservation of biological and landscape diversity have been derived from an analysis of varied experience in East and Central Europe, especially the case studies of the seven projects described in the second part of this book. Many of these guidelines and action points appear to be common sense, but it is surprising how often they may be overlooked, especially at the outset. They are set out as the following main pieces of advice:

1. Following a planned project process can be helpful.
2. Establish strong and stable institutional structures for long-lasting conservation of biological and landscape diversity.
3. Use and develop the skills and knowledge base of the people and institutions involved.
4. Involve sectors in the management of nature and development through the political process and through preparation and implementation of the management plan, or local sustainable development strategy.
5. Conserve cultural values and artefacts.
6. Ensure appropriate public participation process, involving local population, NGOs and general public.
7. A strong legislative framework is essential for lasting protection of biological and landscape diversity and for sustainable development.
8. Secure financing and funding through various phases of the project.
9. On the national level, ensure appropriate priority of nature conservation projects through legislation, institutional set-up, political and planning process.
10. Be aware of the time taken for project development and financing and use this time constructively.

These pieces of advice are expanded and explained below, together with suggested actions for putting them into practice. This is followed by an Appendix with three checklists for assisting in the development of projects.

1

Following a planned project process can be helpful

It is useful to recognise the steps which projects go through, since different tasks need to be undertaken in these steps, often involving different roles and techniques.

Government agencies controlling resources (financial and natural) and funding agencies should be aware of the processes involved with project development and gear their support appropriately. For those actually involved, a series of checklists is provided in the Appendix to assist with the design process.

During the **CONCEPTION** phase, it is critical to identify the importance of the target area at local, national or international levels. Some of the factors which determine this importance and provide the rationale for conservation of the biological or landscape diversity are included in *Checklist 1*. Importance is usually, but not always, a function of size; as site importance grows, so do the number of sectoral interests and potential actors.

During the **PROMOTION** phase, project champions and developers have to be able to sell their ideas to the actors [*Checklist 2*] from the various sectoral interests [*Checklist 3*] who are likely to play a significant part. Attempts should be made to work with and convince local communities of the benefits of biodiversity conservation. Where possible they should be encouraged to participate in the design and implementation of the project. Promotion amongst key international agencies may also be necessary. Promoters and project champions should be aware of windows of opportunity which may arise due to political and socio-economic changes, and capitalise on them to push for conservation projects. Other windows of opportunity for finance may arise at the beginning or end of funding cycles.

During the **FORMULATION** phase, it is important to determine the objectives of the project, i.e. what problems will the project address and what changes will it bring about. Identify the products or outputs of the work of the project, and what activities will have to be done to achieve them. The human and material resources needed to carry out these activities should be clearly identified as this will determine the funds required.

The formulation phase is also the time to gather together existing information about the area and to describe it briefly, identifying gaps in knowledge, and filling them where possible. Relatively small packages of funding can facilitate this process. Research students can provide a useful source of data, and arrangements for foreign researchers bring in fresh ideas and possible future financial support.

Public consultation is essential during formulation. This should encourage and lead towards public participation during the inception and implementation phases. It is essential to win the support of the people living in the surrounding area and to inform them of the benefits of sustainable development and conservation.

During the **INCEPTION** phase, take a few months before full implementation, to test the assumptions, techniques, administration and other components of the project against the reality of the situation on the ground. The project team should be prepared to review its activities in the light of the feedback from the inception phase.

In the **IMPLEMENTATION** phase, two distinct stages of activity can be identified – the preparation of a management plan or local sustainable development strategy and carrying out its recommendations. In the first stage, the key persons are likely to be natural and social scientists who develop the concepts and strategies for conservation. In the second stage, professional managers will probably be needed to keep implementation on target. The scientists need to let the managers manage the project and adapt their own role to monitoring, advising and redefining the conservation objectives when necessary. During implementation, an ability to work with different organisations, both governmental and non-governmental, and with local people is essential.

Finally, **EVALUATION** during and at the end of the project is vital for preventing drift from the original aims and ensuring that lessons are learned for the future.

Suggested actions

CONCEPTION

- Determine why the area should be protected.
- Support people with vision to develop and express their ideas, e.g. through their work or through small research grants.

PROMOTION

- Use appropriate communication techniques such as mass media, videos, brochures etc. to raise public awareness about the need for conservation and sustainable development of the area.
- Write newspaper articles and consider training of journalists in using local environmental issues as examples.
- Take advice from professional marketing expertise on how best to promote the idea for the project.
- Develop and express convincing economic and social reasons for conservation as well as ecological necessities.
- Find ways of bringing the key actors together to discuss the ideas, evaluate and contribute to project design.
- Organise site visits and informal meetings of the various actors.
- Facilitate the expression of views and ideas of local people through participatory planning techniques.
- Use international agreements and conventions for developing political commitment to conservation of particular areas.

FORMULATION

- Collect data and information from different sources and institutions and analyse and synthesise using appropriate techniques such as GIS.
- Facilitate the work of research students from local and international universities, by building up collaboration agreements, and by providing accommodation and letters of accreditation where appropriate.
- Establish the scientific basis for the boundaries of the project area and define them legally.
- Establish a baseline and indicators of environment and socio-economic conditions for monitoring through the project.
- Use participatory techniques to consult with local people and build support for the project.
- Use project planning techniques, e.g. critical path analysis to consider bottlenecks which may hold back implementation.
- Use time as a tool to reduce conflicts or to carry out small pilot projects whilst waiting for major funding to materialise.

INCEPTION

- Critically review the assumptions, techniques and administration of the project and make changes as necessary.

IMPLEMENTATION

- Develop management objectives and plans for sustainable development of the area to include ecological, social and economic measures; in particular pay attention to development of sustainable businesses in the area.
- Use participatory techniques to develop consensus about these management objectives and measures.
- Organise workshops with the main actors to facilitate a common understanding of the project and improve coordination between them.
- Set up a steering committee of representatives of the main actors to guide and assist the project throughout its life.
- Use decision analysis/conflict resolution techniques to overcome differences of opinion on the access to and use of the natural resources.
- Use technical assistance and consultants where necessary to strengthen and train the project team and the institutions involved, drawing on the advice given to make appropriate decisions.
- Use communication tools for increasing the visibility of the project and its contribution to environmental education, such as information centres, videos, leaflets, newsletters and publications.
- Use or start local celebrations as a means of generating pride and ownership in the area.

EVALUATION

- Build into the implementation phase measures to monitor progress and consider these on a regular basis; make the necessary adjustments to project management in the light of this monitoring.
- At critical points in the life of the project, e.g. mid-term, and at the end, evaluate the achievements and methods used and use this information in the design and management of subsequent phases or follow-up projects.

Guideliness 2

Establish strong and stable institutional structures for long-lasting conservation of biological and landscape diversity

While many institutions may be involved in different aspects of the project, one organisation should have clear responsibility for coordination of these efforts and management of the area and its development. Time should be taken to develop an understanding of the roles of the different actors and to develop consensus between them. These different actors include government agencies, research institutions, NGOs and the private sector. NGOs are independent organisations with specific objectives (e.g. social development of a particular area, protection of wildlife etc.) and usually have a voluntary membership which support these objectives.

Integrate the primary natural resource services, e.g. forest service, in the management of the area through a transparent, fair process of institution building. Establish clear divisions of responsibility between different agencies, preferably in the legislation. Organisations with a major role or stake in the area should be represented on a steering or management committee.

International organisations can play a very useful facilitative role in supporting initiatives at the start, in brokering the project to funding agencies and giving it greater credibility. They also provide a network for publicising success and advances in conservation project management.

International consultants can play a critical role in supporting and assisting the organisations managing the area. Institutional strengthening is an important activity in which the consultants can advise and train, but should not take the management decisions.

Suggested actions

- Develop consensus between the different actors, through site visits, informal meetings, more formal workshops and the mechanism of a steering committee.
- Where appropriate, incorporate the efforts of NGOs through direct encouragement of their participation, using their assistance in making management plans, in setting up a "Friends of the Park" association to help raise money and carry out clean-up campaigns and signboard erection etc., and for providing links with the local people and with international NGOs.
- Make clear what the role of the Steering Committee is at any point in time – e.g. does it have decision making powers which have to be implemented by the project management, or is it purely an advisory group, or is it expected to provide political back-up for the project when necessary.
- Ensure democratic representation of local communities on steering and management committees as appropriate.
- Where technical or other assistance is required from other collaborating organisations, prepare a formal letter of agreement about what is expected on each side in terms of products (e.g. a report, training programme, or payments etc.)
- Use international NGO networks for building support, obtaining information on similar projects, accessing technical assistance and raising funds.
- When appointing consultants, ensure that ecologists and other professionals are nationally or professionally accredited.

Use and develop the skills and knowledge base of the people and institutions involved

Different skills and knowledge are required at different stages of the project. An awareness of what skills are required should guide recruitment at these different stages. There is a definite transition from pure and applied science at the start of the process, through strategic thinking and planning, to ecosystem and institutional management and practical execution of the conservation activities.

In general, the scientific knowledge base in Central and Eastern Europe is very good. However greater skill and experience needs to be built up in ecosystem and natural resource management.

Greater skills and experience are also required in facilitating the process of public participation. Attitudes and skills in conservation management need to be developed in some of the conventional natural resource management agencies, particularly forestry, fisheries, agriculture and water management.

Suggested actions

- Invite national or foreign students to carry out research, assisting them by providing housing and letters of accreditation from the project where possible.
- Develop agreements with foreign universities and research organisations.
- Establish a small project fund for contributions towards researchers' expenses.
- Arrange joint technical training sessions and visits to other parks and conservation areas for project staff and collaborating institutions, particularly for those with a potential for conflicting natural resource management objectives and methods. On the job/on site training is considered especially beneficial.
- Assist scientists working on the project to acquire management skills – carry out strategic planning for human resource needs, management training and consult the growing literature on NGO management.
- Encourage skills in facilitating public participation through local celebrations, encouraging local writers, creating new traditions, arranging meetings between the scientists and people, and between the natural resource users and the general public.
- Train project staff in presenting their technical knowledge in ways of interest to the local people, in listening to them express their needs and in conflict resolution.
- Engage the assistance of public relations professionals in promoting the project and its work in the area; use them in the design of an information centre.
- Enlist the support of volunteers, e.g. for guiding visitors, clean-up campaigns etc.
- Make efforts to educate school children, and through them, their parents, by arranging visits and excursions, talks to schools etc.
- Establish linkages between local communities and the private sector, e.g. encouraging sponsorships by local or national companies and visits by their workers and their families.
- Establish linkages between local communities and foreign communities, e.g. town twinning arrangements.

Sectoral policy links

Involve sectors in the management of nature and development through the political process and through preparation and implementation of the management plan, or local sustainable development strategy.

In every area there exist multiple sectors of the economy and branches of local or national government responsible for them. Introduction of sustainable development will affect each of them to a certain extent, and will not be possible without them changing practices and policies. To achieve this, the representatives of the significant sectors have to be involved in the planning and implementation process from as early as possible – in a formal or informal way.

Suggested actions

- Promote sustainable agriculture in the development of national agricultural policies.
- Provide guidance in organic and traditional farming and in marketing of products to farmers and fishermen.
- Assist in setting up of professional associations, local organisations for marketing agricultural products, management of common resources and other common functions, and assist in their connection with national and international networks.
- Develop appropriate labelling of the products for their quality (organic food) or origin (from the area).
- Assist in improving the conservation culture in the forest agencies. The management is already sustainable from the point of view of forest existence and production, as well as some other functions, but much more can be done for the preservation and enhancement of biodiversity (e.g. management of dead wood, biological cells etc.).
- Change the scope and objectives of the water management agencies. The practices of water management, particularly flood control and drainage, need to be rethought in a time of lack of funds for their performance. There is evidence that significant savings and positive results can be achieved by combining nature conservation and water management. Better flood control can also be achieved by designating the riparian wetlands as natural retention zones. Gains in productivity (spawning areas, habitats) can be achieved by reflooding polders that have not proved economic.
- Work closely with the hunting and sport-fishing associations, because they may be valuable partners in supporting the project and site management.

Through giving them responsibilities, they can also be influenced and required to change any unsustainable practices. The hunting and fishing rights can be given in the form of an enforceable concession contract.

- Prepare local investment priority plans for the municipal infrastructure, following the EAP criteria, especially human health and cost effectiveness.
- Assist the municipalities in preparing priority projects and in approaching different financial sources.
- Develop pilot projects for the specific tourist attractions of the area, including defining the target markets for them. In many countries these may be the domestic tourists in the first instance. After the activity is well established it will be less risky to promote on the highly competitive international market.
- Assist in setting up tourist associations in the areas, that will continue the development of tourism on their own.
- Involve national and local health authorities in the planning of the project to determine the national importance of the area for public health as well as the local needs for improvement of public health and health care.
- Communicate with schools in the area and in a wider region and provide them with opportunities for education about the area.
- Work with secondary schools and universities on various research related tasks necessary for the project.
- Inform the commercial banks and other potential investors about the project and about potential investment or lending opportunities, and set clear criteria for the acceptability of investments.
- Develop clear criteria and rules for industrial development at very early stages: Environmental Impact Assessment and zoning can be used as important tools in steering industrial development. Options should be examined for enforcing stricter pollution standards in these areas.
- For existing industries, make an inventory of the sites and their impacts on the environment. Set up a strategy for tackling these problems according to the EAP criteria.
- Extraction of non-renewable natural resources in protected areas should be well controlled, and limited to the economic needs of the local population.

Conserve cultural values and artefacts

Cultural practices, such as agriculture, forestry and livestock rearing, are often closely interlinked with the ecosystem. Their loss can threaten the existence of certain habitats and the biodiversity they contain. Rare breeds of domesticated animals are an important source of biodiversity and measures should be taken to ensure their survival such as forming or working with specialist societies. If it is considered that these practices are essential for the viability of the habitat, measures must be taken to conserve the practices which ensure that local people who practice them do not lose out economically.

The archaeological remains and architectural features of an area make important contributions to the attractiveness of an area and to the interest for visitors. An understanding of its history and interaction between man in the environment leads to a deeper appreciation of its value. The cultural values of the area can be promoted by specific events and celebrations which highlight their uniqueness and develop a sense of pride in the area.

The environmental education values of some areas can be one of the principal justifications for their conservation. The use of information centres, newsletters etc. which describe the links between historical and cultural activities and the ecosystems can underline the need for a new sustainable culture.

Eco-tourism and sustainable tourism can make an important financial contribution to the economic well-being of an area. Eco-tourism is used in sense of tourists visiting areas specifically to see and enjoy the ecosystems and the flora and fauna they contain. Sustainable tourism is used in the sense of tourists visiting areas to enjoy the natural resources more generally using facilities which do not impair or damage those resources for future use. Tourism of any kind brings other threats and pressures which may not be immediately apparent. Management plans with a strong eco- or sustainable tourism component should include an assessment of the market, and the carrying capacity of the natural resources of an area. Positive steps may need to be taken to limit the number of visitors.

Mass tourism can destroy the indigenous culture and character of an area. Small-scale locally-based initiatives for providing visitor facilities would seem more appropriate to conservation projects, as well as spreading the costs and benefits more widely through local communities.

Suggested actions

- Use sociological and cultural studies to describe the existing situation in the area early on in the project and to make suggestions for aspects which the project should work with and conserve.
- Encourage research into improving the economic viability of old agricultural practices without losing the essential practices for maintaining the ecosystem.
- Consider establishing state subsidies for protection of rare breeds, and for agricultural practices which are essential for maintaining the ecosystem.
- Promote the formation of rare breeds and cultural associations nationally and in the area.
- Include measures in project proposals to protect and conserve cultural and archaeological sites within the area, and their interpretation for visitors.
- Ensure that planning regulations in the area include provisions for new houses to be built in traditional styles.
- Provide credits for old houses to be renovated or adapted sensitively for both personal and visitor use.
- Appoint an architect to provide advice for residents on improving the standards of their houses without damaging their cultural integrity.
- Make use of national architectural students for studies on improving architectural standards in the area.
- Create new cultural customs and celebrations which help to promote feelings of pride in the local area.
- Try to establish a new culture of sustainability in the attitudes and awareness of local people and visitors to the area.

Guideline 6

Ensure appropriate public participation process, involving local population, NGOs and general public

Public participation through different phases of the project is a crucial condition for the general acceptance of the goals and of the implementation of the project. In particular, the local population has to be informed about the developments and must participate in the decision making through democratic mechanisms. The involvement of NGOs and the general public can secure broad public and political support for the project and offset potential opposition.

Suggested actions

- Find out what are the needs and perceived needs of the local population. Methods used can be polls, public discussions, research.
- Study the existing cultural values in the area regarding nature and natural resources.
- Identify the actual users of the natural resources and develop a direct dialogue with them regarding the use.
- Set up a well defined transparent participatory process and follow it through, even if it may stall the project for certain time.
- Use existing local events such as fairs or celebrations to disseminate information about the projects, or introduce new traditions, related to nature conservation.
- Use twinning arrangements and excursions to other similar areas for information, education and relation building.
- Discuss issues with the local population without lecturing them, but encouraging their input into solving problems.
- Involve professional public relations experts in facilitating the process of public participation.
- Inform and if necessary train the opinion leaders such as journalists, mayors, priests, local and national politicians, businessmen and others.
- Use the methods of conflict resolution, decision analysis and management planning in the process of public participation.
- Involve national and local NGOs in the participatory process and let them develop their activities within the framework of the project.
- Provide information to general public through media and publications such as maps, posters, guides, leaflets and monographs, and through NGOs.

Legislation and regulation

A strong legislative framework is essential for lasting protection of biological and landscape diversity and for sustainable development. It forms the basic conditions in which people, government and businesses operate, therefore the achievements in conservation and sustainable development must be underpinned with appropriate legal and regulatory acts. These range from conservation and environment law to laws regulating land use and economic activities.

Suggested actions

- In the nature conservation legislation, secure the comprehensive responsibility for management of the sustainable development of the protected areas. Set up coordination and integration mechanisms between different sectors.
- Use the experience from the project to draft or assist in drafting national legislation concerning the projects or other similar projects.
- Special laws and regulations for particular sites may be necessary in the absence of framework laws or to provide for the specific circumstances of the sites.
- Use the international law, and legal experience of other countries in developing the national legislation, with a special emphasis on local participation.
- Introduce provisions for conservation and sustainable development into national planning legislation.

Financing and funding

Secure financing and funding through various phases of the project. In different phases of the project (see no.1 above), different types of financing are required. In the conception phase, efforts of individuals may suffice. In the promotion phase, national or international NGO support, or government agency support may be required. The formulation phase requires substantial grant funding for technical services either from government or international donors. In the implementation phase the whole range of financing and funding options has to be employed including baseline budget financing for the management agency operational costs, public-private partnerships for provision of various services and localised financial facilities for the development needs of the local population and businesses. National budgetary funding and international funding are indispensable in the first phases of each project, but in the long term they cannot sustainably cover all the needs. To ensure stability of the project achievements priority should be given to mobilising local capital resources and raising private capital.

Suggested actions

- Examine all the existing options and sources of financing (first national and then international), and find out about their terms, requirements and procedures.
- Ensure proper ownership of project components, their financial viability and cost effectiveness and approach financing sources for different types of projects. Group components of similar kind or that fulfil similar criteria for different financing sources.
- Build the capacity to receive and properly spend funds for investments. This capacity may require training for local officials or conservation administration, establishment of a special development agency or use of consultants.
- Look for mechanisms that will enable appropriate private investment, especially commercially viable projects, if possible involving the local population. These may be loans, equity investments and guarantee schemes.
- Develop a revolving credit fund for the improvement of living conditions of the local population and business development. The fund can be managed by the local community, cooperative or an appropriate commercial bank. The initial capital can be provided by a donor or a national level ethical fund or bank. The loans can be based on personal guarantees in absence of other available securities.

NEAPS and other priority setting initiatives

On the national level, ensure appropriate priority of nature conservation projects through legislation, institutional set-up, political and planning process. Action plans for conservation projects may be a part of the National Environmental Action Plans, National Biodiversity Strategies, National Policy Plans for Ramsar Convention, or other form of plans, according to the political and institutional situation in the country. The important thing is to present justification for projects not only on biodiversity grounds but also in terms of their financial viability, cost effectiveness and cost-benefit analysis, involving the amenity and other values of the natural resources.

Suggested actions

- Link into networks of sustainable development areas. There are a number of efforts going on in different countries with very similar objectives, problems and methods of solving them. Communications between these areas should be provided, in order to secure mutual support and learning. None of these projects is finished yet, and most of the drivers of the projects are learning by doing. This developing know-how should be transmitted to others working in this field and also to normal areas, where conservation is important but less formalised.

Guideline 10

Be aware of the time taken for project development and financing and use this time constructively

Whilst the time for formal development, financing and implementation of projects can appear very to be a very long and frustrating process, huge steps towards conservation objectives can be made in a very short time. Plans and proposals should be realistic in terms of the time required to achieve the objectives. When developing projects, make use of appropriate phasing to break down the whole into more manageable parts for ease of financing and implementation.

Do not underestimate the time and energy required to secure international finance. Use the intervening period between project design and its acceptance, to clarify legal and institutional barriers to conservation, and to develop collaboration between the actors. Small measures go a long way towards establishing confidence in the objectives and the different actors in the process.

Suggested actions

- Use time as a management tool for identifying obstacles, resolving conflicts, increasing awareness and developing the ideas which are not at first apparent.
- Use the time between project formulation and funding to get essential elements for the project in place, especially legal and institutional requirements.
- Start some small actions, which do not require major funding, to initiate the process, e.g. emergency conservation measures, publicity materials, visits, discussions with different actors, litter clean-up and the formation of NGOs or associations.

Appendix: checklists for project development

Checklist 1.
Factors to describe and determine the importance of an area

- Site description
- Ecosystems and landscapes
- Flora and fauna species and populations (Red Data Books)
- Land-use practices
- Rare breeds
- Communities and employment patterns
- Cultural values and artefacts
- Use of natural resources
- Ecosystem functions and products
- Problems and threats to ecosystem viability
- Local, national, international significance

Checklist 2.
Possible actors to be consulted in the development of a product

- The lead agency
- Local communities
- Voluntary bodies
- Interested NGOs
- Local authorities
- Government institutions
- Government departments
- Commercial lending bodies
- National funding agencies
- Bi-lateral funding agencies
- Multi-lateral funding agencies
- Inter-governmental organisations

Checklist 3.
Possible sectoral interests to be considered in the development of a project

- Agriculture
- Archaeology
- Biodiversity
- Education
- Fisheries
- Forestry
- Human health
- Hunting and sport fishing
- Industry
- Landscape
- Local infrastructure
- Minerals
- Small businesses
- Tourism
- Transport
- Tourism and recreation
- Urbanisation
- Utilities
- Water management

Guidelines

ALBANIA

Committee of Environmental Preservation and Protection (CEPP), Ministry of Health and Environmental Protection, Zhan Dark Boulvard, Tirana, Albania.
Tel/Fax: ++355 42 27907

Professor Jani Vangjeli, **IUCN Focal Point,** Director, Institute of Biological Research, Kruga Irfan Tomini, Tirana, Albania.
Tel: ++355 42 22764
Fax: ++355 42 27731

BULGARIA

Ms Maya Konstantinova, National Coordinator, **Swiss Programme for Nature Conservation in Bulgaria,** 38B Graf Ignatiev St, 1000 Sofia, Bulgaria.
Tel/Fax: ++35 92 884931

Ms Mira Mileva, **National Nature Protection Service,** Ministry of Environment, W. Gladstonestr. 67, 1000 Sofia, Bulgaria.
Tel/Fax: ++35 92 832279

Diko Patronov, General Director, **Forest Direction Bourgas,** Ivan Shishman Str. 8, 8000 Bourgas, Bulgaria.
Tel: ++359 56 42 984
Fax: ++359 56 42 779

CROATIA

National Institute for the Protection of Cultural and Natural Heritage, Nature Conservation Department, Ilica 44, 41000 Zagreb, Croatia.
Tel: ++385 1 432022
Fax: ++385 1 431515

POLAND

Mgr. Krzysztof Wolfram, **Director of the Secretariat of the Green Lungs of Poland Agreement,** Ul. Elektryczna 12, 15-080 Bialystok, Poland.
Tel/Fax: ++48 85 412 105

Dr Jan Wrobel, Director of Nature Conservation Department, **Ministry of Environmental Protection,** Natural Resources and Forestry, Ul. Wawelska 52/54, 00-922 Warsaw, Poland.
Tel: ++48 22 25 79 67
Fax: ++48 22 25 39 72

ROMANIA

Danube Delta Biosphere Reserve Authority, 32, Taberei Str, P.O. 3, P. Box 32, RO-8800, Tulcea, Romania.
Tel: ++40 40 550344
Fax: ++40 40 550498

Ms Adriana Dinu, **IUCN Project Unit,** University of Bucharest, Faculty of Biology, Department of Ecology, Splaiul Independentei 91-95, Sector 6,76201, Bucharest, Romania.
Tel/Fax: ++40 1 3122310

Ioan Jelev, State Secretary for Environment, **Ministry of Waters, Forests and Environmental Protection,** Bd. Libertatii 12, Bucharest, Romania.
Tel: ++40 1 781 63 94
Fax: ++40 1 312 25 99

Iurie Virgil Maxim, Programme Coordinator, **UNESCO Pro Natura,** Calea Plevnei 61, Bucharest, Romania.
Fax: ++40 1 312 19 20

RUSSIA

Moscow City Committee for Environmental Protection and Natural Resources, N. Arbat St. 11, 121019 Moscow, Russia.
Tel: ++7 095 2020809
Fax: ++7 095 202 1110

Department of Parks and Gardens of the City, Moscow City Government, M. Komsomolscyi per. 4, 101000 Moscow, Russia.
Tel: ++7 095 923 66 08

Mr Vladimir V. Moshkalo, Head, **IUCN Project Office,** c/o Ministry of Environment Protection and Natural Resources, Kedrova St. Block 1 1 Room 112, 117874 Moscow, Russia.
Tel: ++7 095 332 0741
Fax: ++7 095 125 5773

INTERNATIONAL NGOS

BirdLife International, Wellbrook Court, Girton Road, Cambridge, CB3 0NA, United Kingdom.
Tel: ++44 1223 277318
Fax: ++44 1223 277200

European Natural Heritage Fund (EURONATURE), Güttinger Str. 19, D-78315 Radolfzell, Germany.
Tel: ++49 7732 2516
Fax: ++49 7732 3316

IUCN – The World Conservation Union,
Rue Mauverney 28,
CH-1196 Gland, Switzerland.
Tel: ++41 22 999 0001
Fax: ++41 22 999 0002

World Wide Fund For Nature (WWF), Avenue du Mont Blanc, CH-1196 Gland, Switzerland.
Tel: ++41 22 364 9111
Fax: ++41 22 364 4238

MULTILATERIAL FUNDING AGENCIES AND INTERNATIONAL FINANCING INSTITUTIONS ACTIVE IN THE REGION

EU-PHARE and TACIS Programmes, DG I, Rue de la Loi 200, B-1049 Brussels, Belgium.

European Bank for Reconstruction and Development (EBRD), 1 Exchange Square, London, EC2A 2EH, United Kingdom.

World Bank (and GEF), Environment Division, Europe, Middle East and North Africa Region, 1818H Street NW, Washington DC 20433, USA.

UNDP, 1 United Nations Plaza, New York, NY 10017, USA.

INTERNATIONAL CONVENTION SECRETARIATS

Ramsar Convention Bureau, Rue Mauverney 28, CH-1196 Gland, Switzerland.
Tel: ++41 22 999 0170
Fax: ++41 22 999 0169

Biodiversity Convention Interim Secretariat, Geneva Executive Centre, 15, chemin des Anemones, P.O. Box 356, 1219 Chatelaine-Geneva, Switzerland.
Tel: ++41 22 979 9111
Fax: ++41 22 797 2512

World Heritage Convention, UNESCO, 7 Place de Fontenoy, 75700 Paris, France.
Tel: ++33 1 45681571
Fax: ++33 1 40569570

Man and Biosphere Reserves Programme (MAB), UNESCO, 7 Place de Fontenoy, 75700 Paris, France.
Tel: ++33 1 45681000
Fax: ++33 1 45671690

Berne Convention, Council of Europe, Directorate of Environment and Local Authorities, 67075 Strasbourg Cedex, France.
Tel: ++33 88 412000
Fax: ++33 88 412784

Bonn Convention, UNEP/CMS Secretariat, Mallwitzstr. 1-3, D-53177 Bonn, Germany.
Tel: ++49 228 954 3501
Fax: ++49 228 954 3500

European Union Habitats Directive,
DG XI, Rue de la Loi 200, Brussels, Belgium.
Tel: ++32 2 2991111
Fax: ++32 2 2992872

1. Introduction

This report provides Guidelines for use by national and local administrations for conservation of biological and landscape diversity within the context of sustainable rural development. The Analysis draws on the lessons learned from observations made at seven case study sites. A seminar, held in the Danube Delta in June 1995, refined the Analysis and Guidelines and suggested next steps towards implementation of the projects.

The mandate for the study was given by the Task Force for the implementation of the Environmental Action Programme (EAP) for Central and Eastern Europe (CEE). Task force members commented on and approved the text which was finally presented to European environment ministers at Sofia in October 1995.

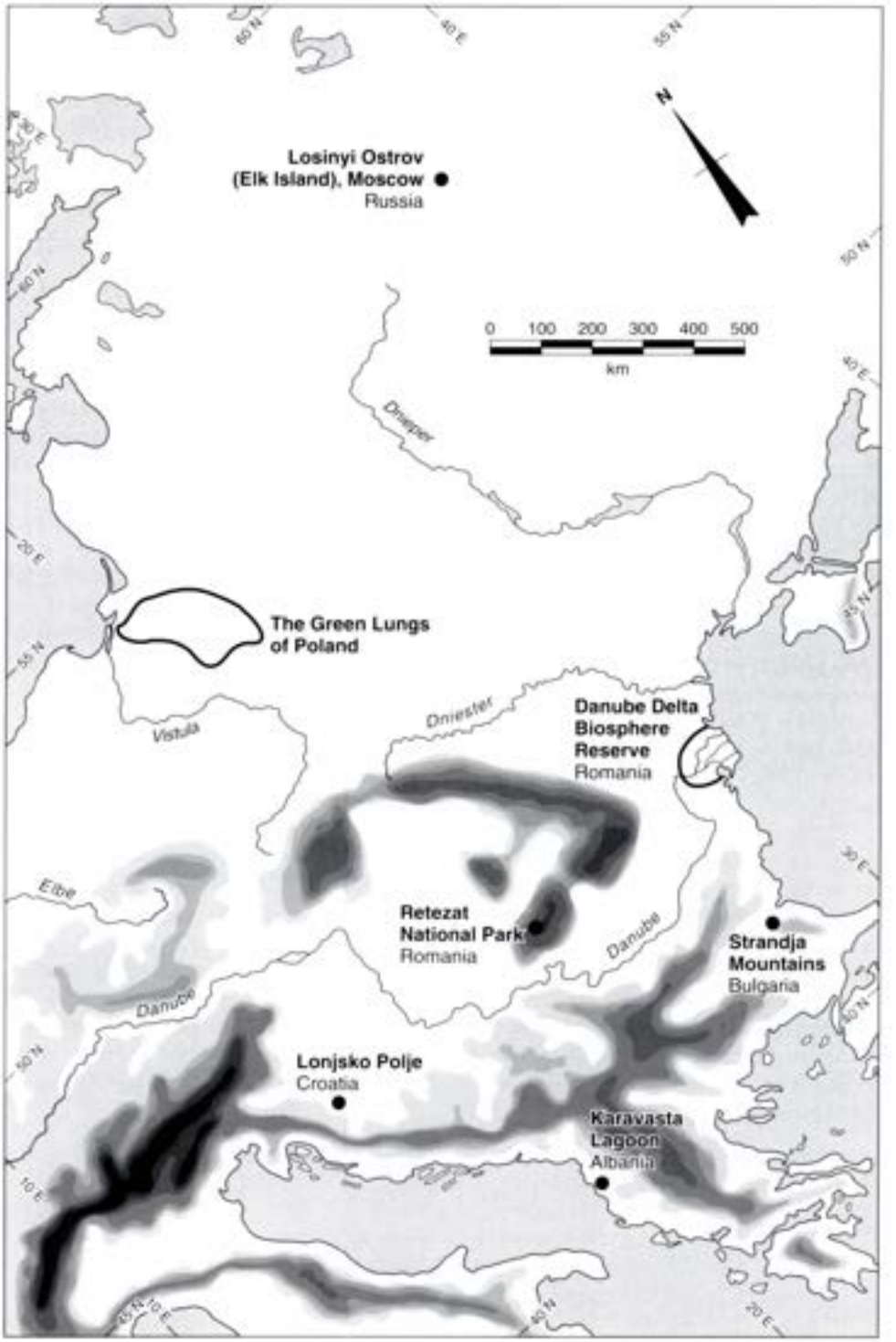
Biological and landscape diversity in the CEE region is generally better preserved than in western Europe. This fact has long been recognised by the members and partners of international organisations such as IUCN, but seems so far to have had little impact on shaping international political decision making. For example, the EAP endorsed by environment ministers at their meeting in Lucerne in April 1993, identifies urgent priorities in CEE countries based mainly on human health risks, which is an obvious and justified need. However, regarding biodiversity, the Programme called for action only where irreversible damage could occur. It listed five sites at risk of irreversible damage and of regional biodiversity importance proposed by governments through IUCN, and two other areas were mentioned. These seven sites (see Map 1) provide the background for the present Guidelines and Analysis.

All those responsible for the first phases of the projects recognised the need to combine the conservation of biological and landscape diversity with sustainable development of local and regional communities. There is now an opportunity to implement sustainable development in rural areas because of the need for thorough restructuring of economies in transition. In particular, nature conservation combined with 'green' tourism is seen as one means of improving the livelihoods of local people in the absence of other development models at present. However, sustainable agriculture, forestry and small-scale enterprises also offer development opportunities which will be explored in the next phases of the projects. In the longer term, communications linked to information technology may also offer opportunities for rural populations.

While all the projects are linked to one or several protected areas, the designations of all of them are principally IUCN Category V, that is, that economic activities, especially recreation, that are not harmful to the biological values and natural functions of the area are permitted. They thus provide models not only for formulating and implementing protected area management strategies but also for sustainable rural development.

The case studies of the seven sites that lie behind the Guidelines concentrate mainly on action on the ground; there is now a need to translate these experiences into policy instruments. The Danube Delta seminar also recommended that the sites constitute a linked group of information centres to disseminate experience to date and to share that gained in the next implementation phases. It also recommended that work be done to formulate appropriate financing mechanisms for implementation.

Map 1. Location of the seven case study sites.



2. Methodology

The study was undertaken through a series of site visits, and meetings and discussions with the main actors involved, by two consultants, Mr Peter John Meynell and Mr Jernej Stritih. Interviews usually ranged across the Ministry of Environment and other government agencies, regional and local authorities, non-governmental organisations and local representatives (they are listed under each case study). In general, collecting information for each case study took three or four days.

Before the visits a set of possible questions was prepared and some initial hypotheses formulated. These proved to be a useful framework for the discussions and analysis, but could not be used directly because of the differences between the projects and the varying depth and quality of the information obtained.

After the visits, case studies describing each of the seven projects were prepared. These placed an emphasis on the process of project development, on the roles of the different actors and on the lessons that could be learned. Although the case studies presented here are based on written and verbal evidence provided by the different organisations and persons interviewed, they also involve a large element of interpretation and judgement by the consultants and the editor who thus take responsibility for their content.

Based on the case studies, the consultants attempted to draw some common conclusions and prepare preliminary guidelines for planning future work on these and other similar projects. The analysis tries to cover the following areas: project design, institutions, skills and knowledge, sectoral policy links, cultural values and artefacts, legislation, financing/funding, National Environmental Action Plans and other priority setting initiatives, and timing of the projects. The final texts were then reviewed and edited by Paul Goriup.

The study was clearly limited by the short time available for its completion and this should be taken into consideration in assessing and applying the results. It is certainly not a comprehensive work, covering all the aspects of biological and landscape diversity. It is more an expert snapshot of a limited number of projects at a certain point in time. All the projects visited were still in the early or mid-term stages of their implementation, so it is impossible to foresee precisely how they will turn out.

Nevertheless, the seven projects did exhibit some similar patterns of establishment, institutional arrangements and development, which gave fair grounds for drawing common conclusions. This was confirmed by the IUCN seminar in the Danube Delta, which supported and expanded on the draft report finalising the Guidelines as presented above.

3. The case studies

3.1 Karavasta Lagoon, Albania

Introduction

The eastern Adriatic is renowned for its coastal lagoons which have developed due to the rapidly accreting coastline and in Albania a number of these lagoons remain relatively undamaged. The Karavasta Lagoon (with the adjacent Divjaka pine *Pinus* forest) represents one of the best examples of these coastal wetland ecosystems. It has a regional significance because it supports some 60 pairs of the Dalmatian Pelican *Pelecanus crispus* representing about 5% of the world population of this endangered species.

In 1992/93, Karavasta Lagoon was proposed to become Albania's first Ramsar site, to be listed once Albania has become a signatory to the Ramsar Convention. This proposal has mobilised significant support for its protection, and appears to be generally accepted so that currently there are no threatening development plans. However, some artisanal fishing practices are still used to harvest the productivity of the extremely fertile lagoon system and in the past there have been conflicting interests between the fishermen and the pelicans.

The protection of the area was highlighted in a project concept submitted to the 1993 Lucerne Conference. The project is included in this series of case studies because the funding for the development of the management plan was approved by PHARE and will start in mid-1995. This illustrates the length of time which the development of such projects can take. However, the example of Karavasta Lagoon is also important because, despite the delays in funding, a number of small but useful measures have been taken which have helped to maintain the *status quo* of the site, and to develop a better understanding of the issues.

Background

Site description and importance

The Karavasta Lagoon and Divjaka pine forest lie some 100 km south of the capital Tirana and are situated between the rivers Seman in the south and Shkumbin in the north. Together they occupy an area of approximately 6,000 ha of National Park/Ramsar site of which 3,900 ha consists of the lagoon, 280 ha of the smaller Godulla Lagoon to the north of Karavasta and 1,200 ha of forest. A 700 ha portion of the forest which was previously a hunting reserve has been converted into a strictly protected area.

The lagoon is shallow, about 1 m in depth, and joined to the sea by two channels. A second lagoon on the seaward side of Karavasta is in the process of forming, and one of the channels passes through this to the sea. The coastal forest lies in the strip of land between the lagoon and the sea and consists principally of Mediterranean coastal forest species, ash *Fraxinus* and other broad-leaved woodland, poplar *Populus* and Mediterranean maquis. The surrounding area consists of rather poor quality agricultural and unused land to the east of the forest which is periodically inundated and is used principally for grazing. From a national and local point of view, the area provides a shelter belt against the exposed Adriatic coast, the forest making up about 7% of such protective forests. The flora and fauna of the area are representative of the coast, but are perhaps better established due to the protection of the National Park and the former hunting reserve.

The principal importance of the area for biodiversity conservation is the nesting colony of Dalmatian Pelicans at the northern end of Karavasta Lagoon. It is also an important breeding site for about 130 other bird species, including the little tern *Sterna albifrons*, cormorant *Phalacrocorax carbo* and pygmy cormorant *P. pygmaeus*, and collared pratincole *Glareola pratincola*. In winter, the site is used by migratory waterbirds. There are occasional occurrences of the Mediterranean

monk seal *Monachus monachus* and white-tailed eagle *Haliaeetus albicilla*. It is also representative of the natural and semi-natural Adriatic coastal zone with its natural forest dominated by Aleppo pine *Pinus halepensis* and stone pine *Pinus pinea*, a unique community in the western part of the Balkan peninsula. There are at least three endemic plants present: *Orchis albanica, Orchis × paparisti* and *Aster albanicus paparistoi.*

In addition to the natural biodiversity in the area, there exists a herd of semi-wild cows indigenous to the area, which have very different characteristics from the normal domesticated breeds. There is also a farm of about 400 buffalo in Divjaka.

Karavasta and Godulla lagoons are used extensively by about 70 fishermen who use traditional methods for catching eels *Anguilla,* mullet *Mugil* and sea bream *Boops*. The total annual catch is about 200–300 tonnes per year. The fishermen were previously part of a state enterprise, but this has now been converted into a single fishing cooperative. The importance of the forest to the local population lies in the protection it affords to the agricultural lands and the potential income from hunting in areas to the north of the River Shkumbin involving intensive pheasant-rearing. The beach is used principally by people from the local administrative area of Lushnje as a recreational site. There are existing hotels and kiosk facilities in the forest adjacent to the beach.

Threats and issues

In the past, there has been significant pressure on all coastal lagoons and flood plains by drainage for intensive agriculture. In the country as a whole, 220,000 ha out of the 250,000 ha of coastal plains have been reclaimed. Of this area, 60,000 ha were swamps or flooded areas. To the south of Karavasta, an area along the River Seman has been drained for intensive agriculture, but the land has not been cultivated for some years, probably due to lack of irrigation water. This particular area is virtually semi-arid with secondary scrub reasserting itself in patches. Despite its high biodiversity value Karavasta has been identified by FAO as a possible site for drainage and agriculture development. Agriculture seems to be more successful in the narrow strip of land above the flood level which encircles Karavasta, in the lee of the highlands, where most of the people live.

One of the critical issues affecting Karavasta Lagoon is the siltation of channels which connect the lagoon with the open sea. The siltation is part of the natural process of succession for such lagoons, and if left alone the channel would become blocked and the land would eventually dry out. The channels can become blocked within days under particular oceanographic conditions. From the fisheries point of view especially, the blocking of the channel is potentially very serious, because it would prevent the fish coming in to breed in the lagoon. This might also have implications for the food supply and survival of the pelican colony. The maintenance dredging of the channels is expensive, and although the equipment is in place, fuel availability is a problem for the fishing cooperative which currently has the responsibility for the dredging.

Water pollution is another threat to the area, although it is not as serious as it was because many of the industries on the Seman and Shkumbin Rivers are lying idle at present. These include fertiliser plants, refineries, a paper mill at Lushnje, textiles and metallurgical works. These could produce significant coastal pollution when they are re-opened, although they do not discharge directly into the lagoon.

The threats to the pelicans were particularly acute during 1991/92, and came from two sources: the fishermen, who regarded the pelicans as a direct competitor for the fish; and visiting hunters, especially from Italy. There were reports of pelican nests being destroyed and eggs deliberately smashed. The hunting pressure on all species (not only pelicans) was largely uncontrolled in the period immediately following the democratisation process, but some attempts have been made to restrict access by foreign hunters.

Another biological threat is that of overfishing. In an enclosed lagoon of this nature, the possibilities of overfishing through uncontrolled access to the fishery has probably diminished

since only members of the cooperative have the licence to fish in Karavasta Lagoon. However, if the financial pressures on the cooperative increase, they may be tempted to try and increase production in the short-term.

The forest area has suffered to some extent due to illegal cutting of fuelwood and timber for local building, especially immediately after democratisation.

However, the biggest threat to the whole area comes from uncontrolled tourism and recreation developments. Tourism in the coastal areas of Albania has a very large potential, and a number of large tourism development projects are being prepared, although not in this particular area. Already the beach area is used extensively by local holiday-makers, and the existing facilities are very run down. There is a significant litter problem around kiosks and beach-huts. Perhaps the most immediate problem is the unimpeded access for cars through the forest and along the beach.

The project

Goals and objectives

At the 1993 Lucerne Conference, a project concept was put forward for a two-phase approach for sustainable rural development which would support and enhance the Karavasta Lagoon and Divjaka pine forest, and promote more efficient protection of the area. Karavasta Lagoon has not yet been designated as a Ramsar site, although the idea for this had been proposed by a World Bank study as part of the development of the National Environment Action Plan (NEAP). The first phase of the project included the initial preparation of detailed inventories and mapping of the area, a socio-economic survey and the preparation of a management plan. This would be followed by the implementation of the plan and provision of emergency assistance to the local community, the development of eco-tourism, restoration and improvement of some of the habitats, and support for the local fishery. This proposal was later developed into the project which will start during 1995, funded by thé European Union under the 3.3 million ECU PHARE scheme for support of the NEAP implementation. The Karavasta component is valued at 350,000 ECU.

The actors

The most important organisation in the process has been the Committee of Environmental Protection (CEP), which comes under the Ministry of Health and Environment Protection. It consists of a small staff in the head office in Tirana and 35 regional inspectorates. Its activities are divided into three directorates: Planning and Finance; EIA, Air Quality and Hazardous Industries; and Water and Solid Waste Management and Natural Resources Management. The CEP has been instrumental in the development of the NEAP process as well as being the main actor in the protection of Karavasta/Divjaka. Its principal responsibilities relate to supervision and monitoring of environmental protection.

The Ministry of Agriculture's Directorates of Forestry and of Fisheries have the main responsibilities for the management of the natural resources in the area. The Divjaka Forest is under the management of the Forest Directorate in Lushnje District and, since 1993, their responsibilities have included the Karavasta Lagoon as well the Divjaka National Park and the hunting reserve (now a strictly protected area). Previously they had one forester to manage the National Park, now they have a team of ten to cover the wider area. Their principal activities include protection of the area and sanitation of the forest, particularly against pine disease.

The Fisheries Directorate has had the responsibility for management of the fishery in Karavasta Lagoon for many years. Under the revised fisheries law the exploitation of the fisheries of such lagoons is carried out by one company or cooperative in order to minimise the risk of over-fishing. The law and regulations specify the fishing seasons, methods, permissible sizes etc., but as yet they have no inspector assigned to Karavasta. Previously the Fisheries Directorate had

a budget for maintenance of the channels, but now this has become the responsibility of the fishermen's cooperative.

The Lushnje District and the Divjaka municipality also have responsibilities in the area surrounding the National Park. They have to manage access to the area and control buildings put up within the park. They have been involved in discussions and seminars concerning the development of eco-tourism in Karavasta.

The Ministry of Construction and Tourism has been preparing a strategy for the development of Albanian tourism with the help of EBRD and EU, aiming to encourage elite and high-quality tourism. The importance of the Albanian lagoons is recognised in this strategy and tourism development will be limited in these areas. In the case of Karavasta/Divjaka, no tourism infrastructures will be allowed in the Park and proposed Ramsar site.

The main NGO interested in Karavasta/Divjaka is the Association for Protection and Preservation of the Natural Environment in Albania (PPNEA). Using expertise from its members, some of whom come from the university and have been involved in the various scientific studies in the area, PPNEA has begun a project with the German NGO Okologischer Tourismus in Europa (OTE) aiming to promote eco-tourism in the area.

International partnerships

There have been several forms of assistance for the development of Karavasta from different international agencies. These have included the World Bank which sponsored the preparation of the Environmental Strategy facilitated by Italian trust funds. This was carried out in two phases during 1992/93, which identified Karavasta as an area of especially worthy of protection, and put forward the idea of its designation as Albania's first Ramsar site.

The UK Know How Fund supported a study carried out with the assistance of the British Geological Survey on the hydrographic characteristics of the area, focusing especially on the siltation of the channels.

The European Union's PHARE scheme is about to start a project on the development of the management plan for the area. The consultants have recently been appointed. IUCN – The World Conservation Union was involved in the initial concept for this project for the 1993 Lucerne Conference, and has facilitated the process of its development to this stage.

OTE is assisting the PPNEA in the promotion of eco-tourism in the area, through commissioning various studies, the organisation of two local workshops, the training of five local people to act as tour guides and establishing an information centre in a room in the hotel on the Divjaka beach. They have also helped in the identification of five local guesthouses suitable for foreign visitors to stay in. During the promotional phase, EURONATURE produced a TV film on the Karavasta Lagoon.

The process

Current situation

The Divjaka pine forest was declared a National Park in 1966, and later the hunting reserve was established by enclosing an area of about 700 ha, and rearing pheasants within it. A beach hotel was built on the boundary of the forest and the area used principally for recreation. After the democratisation process began the pressure on the area intensified with hunting and wood-cutting, increased incursion by cars and kiosk-building on the beach.

In 1992, the first phase of preparation of the Environmental Strategy studies for the World Bank identified Karavasta as an area worthy of protection. The second phase included a specific analysis of the natural resources of Karavasta Lagoon. The principal recommendation of this study was that Karavasta should be designated as a Wetland of International Importance under the Ramsar Convention.

The boundaries of the proposed Ramsar site, which included the Karavasta Lagoon, the Divjaka National Park and the hunting reserve, were approved by the Government in 1993. The hunting reserve (previously protected area management category IV) was converted into a strictly protected area (category I). The management of the whole area was assigned to the Directorate of Forestry, Ministry of Agriculture.

During 1991/92 the hunting pressure within Albania as a whole as well as in the Karavasta area increased considerably due to foreign hunters shooting indiscriminately. Under an initiative from the CEP, the Ministry of Agriculture banned hunting for a year in 1993/94, and has not issued licences for foreign hunters since then. While there is still illegal hunting, the situation has improved.

Also in 1994 discussions were held with the fishermen's cooperative at Karavasta regarding the protection of the pelicans. A regulation was passed making the killing of pelicans or tampering with their nests an offence for which the fine was $200 or up to 3 months in prison. A pelican warden was appointed from the Directorate of Forestry whose salary was sponsored by the NGO Tour du Valat, and the CEP made a donation of $1,000 to the fishing cooperative for channel dredging, from the funds set aside for the Coastal Area Management Programme. With the proposal of the Ramsar site, the Forest Directorate in Lushnje appointed ten staff to protect the area, whereas before only one forester was involved. These include two graduates of the forest high school, five from the forest middle school and three labourers.

Meanwhile the PPNEA's project with OTE carried out some further studies on the ecology of rare species of plants and animals in the area. They organised a local workshop in Divjaka forest hotel to introduce the idea of eco-tourism, and will hold another later in 1995. They are undertaking the training of five local people who can speak foreign languages to act as guides to take tourists around the area; they propose to publish some publicity material and set up an information centre in one of the rooms of the hotel on the beach. OTE will be organising the tourists and hope to bring the first group during 1995.

Next steps

The PHARE project is due to start soon, and this will begin to focus efforts on the protection of the area. It will develop a management plan appropriate to the resources of the government and to the needs of the Karavasta area, which will include a system for monitoring and enforcement of the proposed Ramsar site regulations, encouraging local visitors, developing international tourism, a model for the key hydrological processes, and a plan for improved management of the fisheries.

In parallel, the PPNEA project with OTE is continuing, but it is not entirely clear how these two similar activities will be coordinated. There are no apparent plans for collaboration, and there is some potential for unnecessary conflict. Much will depend upon the attitude of the project managers of the much larger PHARE project.

Financial needs

In addition to the development of the management plan, there is an urgent need for funds for practical measures to maintain the *status quo*, particularly for regular dredging of the channel, which may require an annual running cost of tens of thousands of dollars. At present this is the responsibility of the fishing cooperative, which does not have sufficient funds. Its profitability is very dependent upon the acceptability of its fish, especially eels and sea bass, in the European market. This acceptability is in turn dependent upon the facilities for post-harvest handling of the fish, which at present are rudimentary and in need of upgrading. Funding for the improved management measures for the fishing industry at Karavasta will certainly be required, if the relationship between the fishery and the lagoon ecosystem is to be maintained.

The other significant area for investment is in tourism infrastructure in and around the area, especially if foreign visitors are to be attracted to the site. The PPNEA/OTE project has already

identified a small number of suitable guesthouses of an acceptable standard, but further investment will be needed both in terms of access and reception facilities inside the park and further private overnight facilities nearby.

Analysis

The first aspect to recognise in this process is that significant steps have been taken to protect the biodiversity of Karavasta since its importance was recognised officially during the development of the Environmental Strategy for Albania. These steps have been achieved with very little outside funding and are an important pre-requisite for the success of the PHARE project. These achievements are as follows.

- The site has been officially recognised and will be declared as a Ramsar site as soon as Albania has become a signatory to the Ramsar Convention.
- The value of the site has been recognised, and some inventory work has been carried out by the PPNEA/OTE project and initial hydrological studies done with help from the British Geological survey.
- The hunting ban has reduced pressure on the wildlife in the area.
- Regulations to protect the pelican colony have been passed, and their importance and need for protection stressed to fishermen.
- The Fisheries Directorate had wanted to develop aquaculture on Karavasta, but were persuaded not to develop this idea because of incompatibility with the Ramsar site rules.
- The Tourism Master Plan recognises the site as important for protection and accepts that no beach development should be allowed there.
- The Forestry Directorate has been appointed as managers of the site, and ten forestry staff have been put in place to manage and protect it.
- A local NGO has initiated work on the development of eco-tourism, consulted with local people and trained guides and identified potential guest houses in the area.
- Funding for the next stage of development of the management plan has been secured.

From this list of achievements it is possible to identify the importance of the Environmental Strategy development process sponsored by the World Bank in endorsing the recognition of the site and suggesting its designation under Ramsar. Once this had been done, the role of the CEP was critical in promoting this idea within government and getting it accepted. It is probable that the kudos attributed to its proposal as a Ramsar site has been very important in getting this political recognition for the site. Work towards ratifying international conventions can have this beneficial influence upon the protection of sites, especially in such a time of political change.

Throughout the process the CEP has maintained the momentum, often to the extent of promoting biodiversity protection over pollution control. This promotion by the CEP has had the result that Karavasta is recognised by all government departments which might have an interest in developing the site. There appears to be no official conflict of interest in the area, although the recreational use of the site by local people needs to be balanced. However, while the CEP and the Forestry Directorate will be the organisations most directly concerned with the management of the area and the PHARE project, the efforts of other organisations, notably NGOs such as the PPNEA, may be sidelined unless particular efforts are taken to involve them. There appears to be a certain misunderstanding and mistrust of the role of NGOs in such a process.

The process also shows how long it takes to secure major international funding for this sort of project, even when it has been agreed in principle. The project concept was put forward at the Lucerne Conference in 1993, and the PHARE project will start in 1995, almost three years later. Despite this time lag, the status of the site has been maintained or even improved. This has been achieved using government funds and some small external assistance.

Lessons learned

The lessons learned from the experience of Karavasta Lagoon and Divjaka pine forest include:

- Support and promotion of the idea to protect the site in the NEAP process was beneficial.
- The use of international conventions for gaining political support was important.
- One organisation has promoted the protection of the site, and convinced other agencies of its importance.
- There is often an under-estimate of the time taken to secure international funding for major initiatives, although some small funds for studies etc. may be available. This may lead to a sense of inaction and frustration.
- During the waiting period, significant measures can be taken to protect and promote a better understanding of the area, and to encourage a sense of collaboration between different organisations both within and outside government.
- There is often a sense of misunderstanding, even mistrust, of the role which NGOs can play in this process. This requires learning on the part of both government agencies and the NGOs.

Acknowledgements

This paper could not have been prepared without the assistance of the following people, especially Prof. Vangjeli:

Prof. Jani Vangjeli, IUCN Focal Point in Albania, Director of the Institute of Biological Research, Tirana.

Mr Gani Deliu, Vice Chairman of Committee of Environmental Protection, Tirana.

Mr A. Postina, Director, Natural Resource Management, Committee of Environmental Protection, Tirana.

Mr Aleksander Flokko, Director, Fisheries Directorate, Tirana.

Mr Genc Metohu, Head of Sector, Construction and Tourism Ministry, Tirana.

Mr Nihat Dragoti, Wildlife Management, General Directorate of Forestry, Tirana.

Prof. Leke Gjiknuri, Chairman of PPNEA, Protection and Preservation of Natural Environment in Albania, Tirana.

Mr Sokrat Lapi, Chairman, Council of Divjaka Municipality, Divjaka.

Various fishermen of the Karavasta Fishing Cooperative.

3.2 Strandja Mountains, Bulgaria

Introduction

Strandja is a mountainous region straddling the Bulgarian/Turkish border along the western coast of the Black Sea. The bedrock is partly calcareous and partly crystalline, and several small rivers drain the area and cut the gentle mountain tops with deep gorges. The vegetation represents the transition from the Balkans to the Black Sea: most of the area is covered with natural broad-leaved forests of mixed oaks *Quercus* in the dryer areas and eastern beech *Fagus* in the moister sites. There are a number of plant and animal species that are not found elsewhere in Europe, the most spectacular being the Strandja rhododendron *Rhododendron pontica*.

Historically, Strandja has been a stronghold of Bulgarian culture, even though it was annexed to Bulgaria as the last region liberated from Turkey just before the First World War. After the Second World War most of Strandja was declared a closed border area which, together with the general industrialisation policy, precipitated an almost total exodus of the young generation of rural people to towns and cities. There has been some industrial development – mainly copper mining and forestry – in recent decades, but agricultural practices (chiefly grazing) remained traditional. After 1990, the system of the cooperatives broke down, and now

most arable land is unused. The local population today is rather old with most people living off pensions and from forestry. Most industry is closed and the land has not yet been returned to private ownership.

The first reserve in Strandja was declared in 1931 to protect the Strandja rhododendron site. A southern part of Bulgarian Strandja was declared a National Park in January 1995, based on a protocol signed by the local municipalities and all interested government agencies. It should fall within management category V like a regional or a landscape park. The main goal of the park is to improve the livelihood of the local population while maintaining the high natural value of the area and assuring sustainable management of natural resources.

The next phase of work in Strandja is to develop a management plan with financing provided by the Swiss Government and to set up a park Administration. The main issue in the future of the park will be the management of the development of tourism, at first at the coastline, where investment pressure is already high, and then later in the mountains as well.

Background

Site description and importance

The Bulgarian part of Strandja Mountains covers 123,500 ha, and the highest peak is Gradishte (709 m). The highest peak in the Turkish part is Goliama Machiada (1,304 m) and the area is twice as large as that in Bulgaria. The Bulgarian Strandja is drained by two principal rivers: the Veleka and the Rezovska, with their tributaries, flowing into the Black Sea. The coastal part of the mountains consists of crystalline bedrock, while the inner part is calcareous, abounding with karstic phenomena such as rocky surfaces, caves and karstic springs. The Black Sea coast is predominantly sandy with dune formations and wetlands at the estuaries of the rivers. The annual precipitation varies from 600 mm at the coast to 950 mm on Gradishte.

The Strandja National Park covers 116,136.2 ha with 71% of the area covered by forests, 22% by pastures and meadows, 6% by arable land and 0.5% by settlements. The main natural value of the area is in its forests and the species comprising the forest ecosystems. There are two types of forest plant communities in the area: mesophyllic, dominated by the eastern beech *Fagus orientalis* and xerothermic, dominated by various oaks (*Quercus polycarpa, Q. sessiliflora, Q. frainetto, Q. cerris* and *Q. hartwissiana*).

The area is a transition zone between the Macedo-Thracian and Euxinian phytogeographic provinces, accounting for the very high biological diversity in the area: about half of Bulgaria's plant species can be found in Strandja. Important plants include the eastern beech, Strandja oak *Quercus hartwissiana*, Strandja rhododendron, Strandja daphne *Daphne ponticum*, medlar tree *Mespilus germanica* and laurel plum *Prunus laurocerasus*. Except for the beech, this is the only site where these plants can be found in Europe. The mammal fauna includes wolf *Canis lupus*, jackal *Canis aureus*, otter *Lutra lutra*, and marbled polecat *Vormela peregusna peregusna*. The coastal wetlands are important wintering and nesting sites for waterfowl. Monk seals *Monachus monachus* were once found off the coast and could settle again. Domestic animals mostly belong to traditional breeds.

The area of the park is located in two municipalities – the whole of Malko Tarnovo and a part of Tsarevo. Within the park area there are 11,000 people living, the population density thus being one person per hectare. The population is still rapidly decreasing after a period of 46 years in which area was a closed border zone and most of the young people left for the towns. Today, 40% of the population are more than 60 years old. The main employment of the people was forestry and wood processing, agriculture, copper mining and ore processing, marble quarrying and limestone processing, and sea fishing. In recent years most of the industries and agriculture have collapsed, so the only remaining employment is in forestry. There are five departments of the Forest Direction in Burgas located in the park, each with a sawmill. In Malko Tarnovo there is a copper ore

purification plant, serving five mines, that has accumulated a vast deposit of flotation sludge in the bottom of the Malko Tarnovo valley.

Historically, Strandja has been a centre of Bulgarian culture, but there are also many remains from the Thracian period (a necropolis, sacred sites). Traditional rural architecture is preserved in a number of villages, Bulgary and Brshlian being declared as architectural reserves. There are a number of historic churches in the villages and small monasteries in the forests. While most of Bulgaria was liberated from Turkey in the 19th century, the Bulgarian part of Strandja was annexed to Bulgaria only in 1913 (in 1903, a rebellion against Turkey started in Strandja, causing one of the Balkan Wars). After 1913, there has been some resettlement of ethnic Bulgarians coming from Turkey and Greeks moving to Greece, but there is virtually no Turkish population in the region. From the minorities today, there is only some presence of Gypsies, who are settling the land and houses abandoned by the Bulgarians in one of the villages.

Threats and issues

The main threat comes from uncontrolled tourist development on the coast after the opening of the formerly closed area and will increase as the border with Turkey becomes ever more open. The coast in the area has remained almost intact so far, which is causing a very high investment pressure for tourist facilities. There is already a lot of new construction in the existing villages but the law on agricultural land prevents unregulated construction. A zoning plan for the entire coast is under preparation that should outline the areas and rules for new development and also accommodate nature conservation requirements. No tourist development in the mountains has started yet, but it should be controlled when it does.

There are plans to increase traffic through the area by opening the Malko Tarnovo border crossing for transport of goods and upgrading the road infrastructure. This will mean that the main international north–south road along the western Black Sea coast will go through the region. Currently, the opinion in the area is that this will bring more benefits than problems, in particular the number of tourists is expected to increase. The question is whether these increased numbers can be maintained at a sustainable level in the long-term.

Forestry is today the main source of revenue for the local population. Currently it is well controlled by the Forest Service, but the level of this control may decrease if and when the forests are privatised. Most of the arable land is idle at the moment, but it will come back to use after privatisation in the next few years. Then various short-term profit-oriented activities may develop with excessive use of agrochemicals, and traditional cropping systems may not be reintroduced. Pastures seem well contained within designated land, but again with liberalisation and entrepreneurship, there is a potential for higher numbers of animals and increased grazing in the forest. Careful management will be necessary during the transition from fully state-owned agriculture and forestry to private ownership with state regulation.

Mining for copper and quarrying of limestone and marble are traditional activities in the region. Currently mining is declining, but there are proposals for opening some new mines. Another problem is the vast accumulation of flotation sludge from the Malko Tarnovo purification plant. Steps will be needed to prevent the adverse environmental impact of mining and quarrying while they remain an important source of income. Land use conflicts and environmental impacts can be avoided by careful physical planning and application of EIA.

The project

Goals and objectives

The main goal of the project is to protect and enhance biodiversity in the regionally important representative ecosystems while developing sustainable tourism and upgrading other economic activities. From the proposal to the 1993 Lucerne Conference and subsequent work, the Ministry

of Environment is trying to take a lead in improving the livelihood of the local population through integrated economic development, and thus resisting other development models that might arise.

The main objectives of the project seem to be:

- Conservation and restoration of biodiversity through setting up an appropriate park administration.
- Conservation and restoration of cultural and historic sites.
- Development of sustainable agriculture through extension advice, zoning and financing schemes.
- Development of tourism in the interior and control of tourism development at the coast through a regional strategy and zoning.
- Upgrading of sustainable forestry by appropriate planning, introduction of less damaging extraction equipment and development of wood processing.
- Upgrading of mineral extraction and processing through recycling of tailing and development of processing facilities.
- Improvement of infrastructure, especially roads.

The actors

The Ministry of Environment with its Nature Conservation Service is the main driver of the project at the national level. The Ministry designated several forest reserves in the area in late 1980s, proposed the project for financing together with IUCN in Lucerne, and declared the Strandja National Park in January 1995 after signing a memorandum and a protocol with the local municipalities and other actors.

Forest Direction Burgas has been the promoter of the project at the regional level and has been acting as the management authority of the park to date. The Direction has five forest offices within the park; these plan forest management, designate the trees for cutting, do the logging and planting, build forest roads and own a number of sawmills. They also own a number of forest houses that have potential for accommodating tourists. In recent times they have started to privatise the logging and sawmill operations.

The municipalities of Malko Tarnovo and Tsarevo are responsible for the local infrastructure and for the development of the local economy. Malko Tarnovo is mostly concerned with speeding up the development of its territory, while Tsarevo at the coast is mainly concerned with controlling and steering tourist development. There are 12 villages (the lowest administrative unit) in the park. Each village is represented by a mayor, who is responsible for public affairs within the village and represents the village towards municipality and other agencies. The mayors were informally consulted about the project and generally approve it.

The National Committee of Forestry is an autonomous governmental agency responsible for the Bulgarian forests. The Forest Service already manages one National Park in the high mountain areas of Bulgaria. Currently there seems to be a conflict between the Committee of Forestry and the Ministry of Environment regarding the administration of the parks. The Committee claims that they should be administered by the Forest Service, while the Ministry thinks there should be an overall administration coordinating all the sectors because there are also agricultural lands within the boundary of the National Park and they are not under the responsibility of the Committee of Forestry.

The Ministry of Territorial Development and Construction is responsible for the municipal infrastructure and for physical planning at the national level. Currently, its main involvement is through the preparation of the zoning plan for the Black Sea coast; its role could become more important in the future if the local infrastructure is to be developed to a satisfactory level.

The Ministry of Agriculture is responsible for agricultural activities and for protection of agricultural land. There is at present no coherent agricultural policy for the area: the Ministry's

main function is licensing construction on former agricultural land and so provides the main restraint against uncontrolled building along the coast.

Water management is decentralised and there are seven different agencies responsible for water resources. Among these, the Ministry of Environment is responsible for pollution control and monitoring, the Ministry of Territorial Development is responsible for water supply and sewerage together with municipal utilities, and the Ministry of Transport is responsible for river management. All these interests are coordinated by the Council on Waters which is an autonomous governmental body. The lack of central planning in the water sector seems to have contributed to the preservation of the natural state of rivers in Strandja, but it may become a problem for integrated management of resources in the area.

International partnerships

Following the drafting of a National Biodiversity Strategy that was financed by USAID, the Swiss Government committed SFr1.6 million for a programme of seven Bulgarian biodiversity projects in 1994. The programme is managed by three NGOs: Swiss League for Nature Protection, Swiss Association for Bird Protection and IUCN – The World Conservation Union. The work in the country has just started and is performed mainly by Bulgarian project teams. Strandja is one of the seven projects and will probably receive around SFr158,000 for the development of the management plan and for a visitor centre at Bosna, one of the entrance points.

Another project in Strandja is financed by Monaco, worth FFr250,000. The scope of this project includes preparing management plans for reserves at the estuaries of Rivers Veleka and Silistar, and research on the otter in the Veleka River. The second phase of the project will include a visitor centre at the Veleka River.

The process

Current situation

The first protected area in Strandja – the Silkosia forest reserve – was declared in 1931, mainly for the protection of the beautiful *Rhododendron pontica* growing in a forest of eastern beech and various oaks.

The first thoughts for protecting the entire Strandja originated with Nikolai Stoyanov in the 1950s. Since the mid-1970s there have been various attempts to relaunch this idea by scientists, local foresters, the Ministry of Environment and NGOs. The first regulatory steps were made with declaration of seven additional reserves and 13 protected areas in the region in the late 1980s by the Ministry of Environment.

After the political changes around 1990, the international importance of the area in terms of biodiversity was recognised and it became one of the top priority areas for Bulgarian nature conservation. At the same time, after opening of the closed border zone and the decline of state-run agriculture, there was an urgent need of a development vision for the region. In 1992 work began on the project design to be presented at the 1993 Lucerne Conference. It was prepared between the local foresters and the Ministry, putting forward a combination of nature conservation and sustainable development. IUCN supported this project at the international level, while the local foresters conducted wide local consultations with the mayors, Forest Office managers and other actors in the region itself.

On 19 August 1994 a Memorandum between the Municipalities, Forest Direction Burgas, and Ministry of Environment was signed, setting up a commission to prepare the declaration of the Strandja National Park. The commission, led by the Head of the Bulgarian Nature Conservation Service, finished its work in December 1994. There were serious discussions about the extent of the park; for example, the Ropotamo reserve, which is an important wetland site at the coast, remained outside the park area for the time being, although the park may be expanded after it has

proved its importance for the local economy. The basic strategy was that the park would generally fall in management category IV or V, with existing reserves as category I or II areas.

Between 20 and 22 December a protocol was signed by the Ministry of Environment, Ministry of Agriculture, Ministry of Territorial Development and Construction, the Municipalities of Malko Tarnov and Tsarevo, and all the managers of the forest offices in the region, defining all the elements for the declaration of the park. Only the Committee for Forestry refrained from signing the protocol, because of a dispute regarding the management structure of the park. On 24 January 1995 the Minister of Environment declared the National Park by executive order, one of his last acts in office before he was replaced by the new government.

So far, the declaration has not had much influence on life within the park. The Malko Tarnovo municipality has offered a building for the park administration, and everybody is expecting the management plan, that will be prepared under the Swiss project, to address all the open questions.

Next steps

The most important activity in the next year or two will be the preparation of the management plan for the park. This started in May with the preparation of a background report that will be finished during 1995, and the planning process will start at the end of 1995. Along with the planning process, small concrete pilot projects will be identified through 1995. One of the key issues to be dealt with in the management plan will be the administration of the park. The dispute between the Ministry of Environment and the Committee for Forestry will have to be resolved to ensure the success of the whole venture.

Another planning activity important for the Strandja National Park is the zoning plan for tourism development at the Black Sea coast, which is under preparation by the central government.

Financial needs

Finance will have to be secured for the investment projects that are necessary to achieve the goals of the project. Selection of some pilot projects at the outset may be a good way to proceed, in order to explore different available financial sources, both domestic and international.

Analysis

The project in Strandja is an attempt to use the opportunity offered by the fundamental political changes to achieve the goals of sustainable development in a region that has nothing to lose in the economic sense but everything to gain. The extremely low population density, the decline of industry and agriculture, and the well-organised forest management and nature conservation, offer a viable opportunity in this regard. Indeed, the level of urbanisation, industry and infrastructure are at such low levels that their further growth and development, rather than their limitation or reduction, are included in the objectives of the project. After the 50 years of life in a closed border zone, the population seems ready to accept any model of development that will improve their living conditions. The proposed model seems to meet their expectations: the question is only whether it will be able to fulfil them in reality.

The process of setting up a protected area in Strandja was initiated by local foresters, among the few people with a university degree working in the area in recent times. They were able to recognise the natural value of the diverse and unique ecosystems in Strandja and did their job in getting the process on track, even though this was not a part of their job description. One of the consequences of their local involvement is the moderation of the proposal regarding the conservation regime and incorporation of development proposals for industry and agriculture.

Tourism seems to be identified as the fastest developing sector of the local economy, which is quite apparent in the coastal area, where pressure is already high and will increase with the growing tourist market in Central and Eastern Europe. At the coast most emphasis will have to be

given to controlling tourist development, while in the interior special tourist attractions have yet to be developed and marketed.

The process of declaring the National Park seems to have been sufficiently participatory and effective, involving the local authorities and agencies as well as the national ones. There are some conceptual conflicts between government agencies, but despite that the park was declared by the outgoing Minister of Environment in compliance with the law. There has not been much discussion directly with the local population yet, and this will be one of the tasks of preparing the management plan in the next year or two.

The particular challenge of this project will be the financing schemes for all the different investments that are foreseen. They range from purely public investments such as roads, through municipal investments such as water supply, to fully commercial investments such as wood or metal processing plants. At present, there is little vision as to how to tackle these investments apart from the desire for foreign grants.

The most conflict arises over the division of responsibility between government agencies, in particular between the Nature Conservation Service and Forest Service. The Conservation Service sees the future park administration as a small coordinating and supervisory organisation, while the Forest Service thinks that the overall park management should be done by the Forest Service. Hopefully this will be resolved during the management planning process.

Lessons learned

The process of the project development proves the importance of individuals with vision. It has taken more than ten years for two local foresters to start making first steps of the implementation, after they developed the idea of protection of the area. They were a part of the forest service, probably some of very few graduates in the whole region, and within their institution they were able to develop the concept and even start implementing it. But it is also important to see how the role of the pjoneers changes through the development of the project.

The landscape of Strandja was preserved to a large extent through the presence and management of the forest service. Control and zoning of grazing and sustainable forest management is probably more important for the preservation of ecosystems in Strandja than the protection regimes currently contemplated.

Strandja is a very empty region in terms of human population, which puts nature conservation in an unusual role. Even mining and transport development seem marginally acceptable in this case, in the absence of other development options. Nature conservation has to take its place alongside the economic sectors in trying to secure better livelihoods for the local population. The opposite is the case along the coast, where development pressures are very high. It may also change in the interior in not so distant future.

In terms of political process, there has been significant involvement of municipalities and different agencies in developing the project, but little direct public participation. The National Park was declared by the outgoing Minister of Environment in spite of opposition from the Committee of Forestry. This shows the importance of sometimes using political action in the right moment to promote the process, even if it is not participatory. This has provided a very good background for preparing the management plan, discussing it with the public and implementing the project, even though some important questions will have to be solved in the process.

Acknowledgements

This paper could not have been prepared without the assistance of the following people in Bulgaria:

Stoian Dobrev, Forestry Expert, Bulgarian-Swiss Biodiversity Conservation Programme, Bourgas.
Dora Stamatova, Forest Direction Bourgas.

Maya Konstantinova, Programme Coordinator, Bulgarian-Swiss Biodiversity Conservation Programme, Sofia.
Milko Dimitrov, Biology expert, Bulgarian-Swiss Biodiversity Conservation Programme, Bourgas.
Diko Patronov, General Director, Forest Direction Bourgas.
Geko Spiridonov, Director, National Nature Protection Service, Ministry of Environment.
Dimitrinka Berberova, Expert on Protected Areas, Committee of Forests.
Dimitar Stoev, Forest Expert, Biodiversity Protected Areas and Forest Department, Ministry of Environment.
Atanas Tjankov, Manager, Forestry Zvezdec.
Zhelazko Matev, Mayor, Municipality Malko Tarnovo.
Raicho Raichev, Manager, Forestry Malko Tarnovo.
Georgiy Dimov, Mayor, Gramatikovo.
Stoiko Stoianov, Manager, Forestry Gramatikovo.
Zlatka Kaloianova, Mayor, Kosti.
Petko Nanchev, Manager, Forestry Kosti.
Dimitar Matrakchiev, Mayor, Municipality Tsarevo.

3.3 Lonjsko Polje, Croatia

Introduction

The Nature Park at Lonjsko Polje in Croatia is an outstanding example of a floodplain ecosystem which has been created by the interaction with long-standing agricultural practices and maintained by flood control measures for water retention. It is one of the few surviving examples in Europe of a semi-natural floodplain. The survival of this landscape and the biological diversity it contains is dependent upon rural development to support this traditional way of life without denying the local people the benefits of a modern society.

This, then, is the challenge. In rising to meet it, the Croatian Authority for Culture and Natural Heritage has achieved the first stages of recognition and description of the area, consensus-building and local involvement with small financial contributions from both from their own budget and from outside the country.

Background

Site description and importance

The Lonjsko Polje Nature Park lies within the 1,500 km². Sava alluvial plain and occupies an area of 50,560 ha of the banks of the Sava River downstream of Zagreb, between the towns of Sisak and Nova Gradiska. It is one of the largest semi-inundated areas left in Europe, being a complex of alluvial forests, fish ponds, hay meadows, pastures, marshes, grazing land and oxbow lakes. Land exploitation is largely adapted to the flood cycles. In the drier areas, small cultivated fields separated by hedges surround the villages, which mostly consist of traditional wooden houses of unique construction. These wooden houses are an important part of the landscape, and at one point the designation of Krapje village as a World Heritage cultural site was considered because the village represented a rural culture going back to the Middle Ages.

There are four important interdependent habitat types:

- The alluvial forests consisting primarily of native tree species – mostly oaks *Quercus* and willows *Salix* which make up about 36,000 ha (60%) of the total floodplain. The oaks in particular are of very good quality and have been managed by the Forest Service for the past 100 years on a conservation basis – relying upon natural regeneration, and felling the trees after 120–150 years. The forests are used by pig herders; as well as more common breeds, there

remain about 35 of the rare locally-bred Turopolje pigs. These have a high fat to meat content, and a wool which prevents them from being bitten by the mosquitoes which abound in the area. The pigs are protected and remain in the forest throughout the year.

- Regularly-flooded open grassland (hay meadows and pastures) used according to well-established methods for pigs, cattle, sheep and the Posavina horse – a rare breed of draught horse specially adapted to the wetland conditions found in the area. These areas support a number of rare plants, including cats-paw *Marsilea quadrifolia*, which is dependent upon interaction with the pig herding, and breeding corncrakes *Crex crex*.
- Traditional farmland of small fields and hedges of which about 12,000 ha are cultivated principally for maize and are feeding grounds for white stork *Ciconia ciconia* and lesser spotted eagle *Aquila pomarina*; 580 breeding pairs of stork have been counted nesting on houses in the area.
- Two fishpond areas, and a number of oxbow lakes, near which the villages are often sited, providing them with water and fish. These areas, two of which are protected as special ornithological reserves – Krapje Dol (25 ha) and Rakita (430 ha) – are important feeding and breeding sites of the white-tailed eagle *Haliaeetus albicilla* (15–20 pairs) and the spoonbill *Platalea leucorodia* (Krapje Dol has up to 300 breeding pairs representing 10% of the European population of this species). During migration times and in winter, more than 10,000 ducks, coots and waders are found throughout the area.

In total the biodiversity of this area is high, with 239 species of birds, of which 130 nest locally. A number of special waterplant communities exist in the area, including 30 species which have disappeared or nearly disappeared in western Europe. The wetlands also support significant populations of otter *Lutra lutra*, wild cat *Felis catus*, and red deer *Cervus elaphus*, and some outstanding invertebrates, including one of the most endangered species of dragonfly, *Leucorrhinia caudalis*. The floodplain is one of the most important spawning grounds for the wild carp *Cyprinus carpio* in Europe. The area has been designated as a Ramsar site.

Despite the construction of dykes which were started over 100 years ago as a means to control floods, the whole area is recognised by the Water Management Authority as a flood water retention area. This positive use of the area for flood control was recognised after the disastrous floods in Zagreb of 1964; afterwards, sluices were built into the dykes, and high flood waters are allowed into the floodplain. The retention capacity of the floodplain is illustrated by the fact that the maximum 100-year flood entering the area down the Sava river alone would be 3,600 $m^3 s^{-1}$ and, together with the tributaries Kupa and Una, the combined flow leaving the area would be 4,500 $m^3 s^{-1}$; as it is, by using the Lonjsko Polje area for flood retention the combined flow leaving the area is only 3,000 $m^3 s^{-1}$. In addition the lowered flood peak is delayed by some 40 hours. If the area were not used for flood retention, the dykes downstream would have to be raised at considerable expense. This active flood management and the agricultural and forestry practices have maintained Lonjsko Polje in the near natural balance in which it is found today.

Threats and issues

The most intractable problem affecting the long-term survival of the Lonjsko Polje wetland ecosystems is rural decline: village populations are falling accompanied by the loss of established agricultural practices. In 1971, the population of the 46 villages which lie in or adjacent to the park was 24,058, of which 42% were active in agriculture and 21% aged over 60. By 1981, the population had fallen to 21,456, with 24% active in agriculture and 24% aged over 60. By 1991, the population had fallen to 19,120. The figures for agriculture and age were not available but the trends are known to have continued and are classic indicators of rural stagnation. Other indicators of rural deprivation, such as isolation, inadequate utilities and communication services (bus links and telephones) are compounded by the fact that Lonjsko

Polje lies on the border between Croatia and Bosnia and part of the nature park was occupied by Serb forces until its recapture in April 1995.

The agricultural practices which have developed to use the area are based around the patterns of seasonal flooding. While there are some orchards and cultivated lands close to the villages, the main characteristic is pastoral farming with free-roaming stock. During inundations, the animals have to be moved to higher ground, and the villagers have expressed a wish to limit this flooding to the major flood periods. There is pressure to drain and convert the meadows and to destroy the hedgerows to make the land suitable for more modern agricultural methods. Indeed between 1961 and 1986, meadow land decreased by 35%, wet pastureland by 48% and hedgerow landscape by 64%.

The local production of milk, cheese, meat and honey is less intensive than modern methods, yet there is no premium price to be obtained in Croatia for such products. The main economic benefit from the Posavina horses, apart from their traditional working uses, is the sale of meat to Italy. Thus, while the volume of agricultural products is lower than by using more modern methods, the sale prices are equivalent, so that the income from agriculture is depressed. However, because the area is used as a flood retention area, modern methods cannot be used as effectively. The villagers are therefore trapped in a low income situation, and currently lack alternatives to augment their income. The result has been that many of the young people have moved away, making the traditional way of life even more difficult to sustain, especially as the historical pattern of organisation of farm labour was based upon family cooperation.

The forests are intensively managed by the Forest Service, and while cropping of the oaks is generally carried out at about 150 years, increasing pressure for this top quality timber as a source of much needed revenue may lower the cropping age. Ideally, the managers of the Nature Park would prefer the oaks to be cut at 180 years old. Moreover, some of the woods have been drained in recent years.

If this dynamic from within the area is threatening the Sava floodplain ecosystem, there are a number of threats from outside. These are posed by large-scale development projects including the proposed construction of four or five run-of-river multi-purpose hydro-electric plants on the Sava river and its tributaries; a proposal for a railway by the Croatian Railway Company which was successfully opposed by the Urbanistic Institute with the Authority for Cultural and Natural Heritage; plans for a motorway through the area; and a major navigation canal which would link the Danube via the Sava river to the Adriatic. These are all at the concept stage at present, dependent upon international finance, and have not yet been subjected to comprehensive EIA.

In addition, an artificial fertiliser factory has been operating for many years at Kutina adjacent to the north-eastern boundary of the park. As well as discharging untreated effluents containing fluorides and other poisons, there are several waste phosphoric acid disposal sites from this factory which lie within the park. Water pollution from the industries around the major towns of Zagreb, Sisak and Kutina have reduced the water quality in the Sava River to between categories III and IV. Infertile eggs of the white-tailed eagle have been found to contain organochlorine residues.

The project

Goals and objectives

A project concept to conserve the biological and landscape features of the Lonjsko Polje Nature Park was put forward at the 1993 Lucerne Conference. This proposal aimed to protect the biodiversity through the preservation of traditional agricultural systems which would be supported by the provision of alternative income-earning activities for the local population. In addition to support for the preparation of a management plan, management training and the preparation of EIAs specifically oriented towards the effect on the Nature Park of the possible capital development projects, the bulk of the investment was aimed at the development of eco-tourism,

especially the provision of small grants to assist local people in the restoration of their houses for improving tourist accommodation and other similar initiatives.

While the funds for this project have not yet been forthcoming, considerable background work has been carried out using the small budgetary contributions of the Cultural and Natural Heritage Authority supplemented by a total of about 200,000 DM from the German Environment Ministry and several European NGO sources. Euronatur has provided continued support through donations from private sponsors since 1987.

The conservation of the biological and landscape diversity of Lonjsko Polje must address a number of interrelated issues. These include the definition and legal status of the Nature Park, identifying and describing the ecological processes and functions involved, and the development of the management plan. However, the continued use of the area for flood retention is as critical as the agricultural practices – as a case in point, while young oak trees can adapt to non-flooding regimes, once they are over about 60 years old, these oak forests would not be able to survive changes in flooding patterns. Water management issues, forestry and agriculture are all closely interconnected.

The natural biodiversity which characterises the area is of prime concern, but the biodiversity represented by the unique rare stock breeds which were developed for this wetland area – the Turopolje pig and the Posavina horse – is also of great importance and will require different conservation approaches. While the natural biodiversity essentially requires maintenance of the different ecosystems, the rare breeds require encouragement of the local population to keep and use them. This may mean both providing direct financial incentives and the encouragement of alternative income generating activities. In the latter case, eco-tourism has been identified as the principal additional source of income.

The cultural heritage embodied in the physical make up of the Lonjsko Polje villages – the wooden houses – also needs to be addressed. Modern houses are being built in the area, and the old wooden ones are often left to decay. The character of the villages is in danger, and with it much of its attraction for tourists. The issue which needs to be addressed here is the compatibility of modern building standards (to which the villagers obviously aspire) and the traditional designs; there is also a requirement for upgrading old houses for visitor use.

The actors

The principal institution involved with the promotion of the Lonjsko Polje Nature Park is the Cultural and Natural Heritage Authority, which coordinated the declaration of the area as a Nature Park by Parliament in 1990, and its designation under the new Nature Conservation Law in 1994; it has been responsible for the collection and collating of all the scientific information and mapping in order to prepare a GIS database. The collection of this information included coordination with a number of local and foreign postgraduate students who carried out their fieldwork in the area. The Authority has also organised various emergency conservation initiatives, the reaction to proposed developments which could have threatened the park, and the involvement of the local people. It is significant that with a small budget and few staff, this Authority has been able to develop the vision for the Nature Park and to promote it.

In order to carry out its work, the Authority has built up good relations with the Forestry Service and the Water Management Authority, upon whose management practices the survival of the area depends. It also has links with the three district authorities which are responsible for the villages within the Lonjsko Polje area – Sisak, Kutina and Novska.

Furthermore, the Cultural and Natural Heritage Authority has collaborated with a number of scientific organisations such as the Croatian Ecological Society, the Ornithology Institute, the Geology Institute, the Authority for the Environment, and the Zoology and Botany Departments of the University of Zagreb and the Forestry University. These organisations have provided much

of the data for the GIS. An active partner on the protection of the rare breeds is the Livestock Selection Centre of the Agricultural Centre of Croatia, which helped set up the Posavina Horsebreeders Association.

International partnerships

In developing the project so far, collaboration with several universities and NGOs in Europe has been extremely fruitful. A number of graduate students have come from various European universities to carry out their field studies in the area. This has contributed enormously to the level of knowledge about the area and has built up a series of strong links between the students and their universities and the Nature Park. It has been influential in generating some financial support.

There are four foreign NGO agencies which have formed partnerships with the Lonjsko Polje Nature Park. Perhaps the most important has been the support from Euronatur – the European Natural Heritage Fund which obtained 200,000 DM from the German Ministry for Environment principally for the GIS system and the development of the database. It is significant that the project manager of Euronatur was himself a graduate student who spent three years in Lonjsko Polje doing the field work which started the data collection and developed the arguments in favour of a Nature Park.

The second foreign partnership is the Zoological Society of Frankfurt which has provided funds for the two emergency works which were needed to protect the ornithological reserves. A canal to bring water back to the oxbow lake of Krapje Dol, where the spoonbills nest, was successfully constructed after it had dried out for about two years. At the Rakita reserve, dykes were constructed to prevent over-flooding which was threatening to change the character of the reserve with consequent loss of biodiversity.

A third partner has been the organisation Pro Specie Rara of Switzerland in cooperation with SAVE (Safeguard Agriculture in Europe), which has given funds for work that has elucidated the status of the Posavina horse and the Turpolje pig. A book on the Posavina horse has been published with assistance from a Euronatur grant.

Finally the European Programme of IUCN – The World Conservation Union has provided indirect support in promoting the proposal for assistance to Lonjsko Polje, initially at the Lucerne Conference. Although funds for this project concept have not yet been forthcoming from international funding agencies, the profile of the area as a significant resource of biodiversity has been raised.

The process

Current situation

The process of conservation of the Sava floodplains at Lonjsko Polje dates back to the forest management practices over 100 years ago. At about the same time, water management practices began with the construction of dykes and drains, but these were never fully effective. The regular flooding of the area became a positive flood control policy about 15 years ago with the construction of sluices to allow the high floods into the meadows and forests.

During the 1980s, scientific interest in the area became more focused as it became increasingly apparent that here was an area of unique biodiversity and landscape character. The role played by a series of local and foreign students in describing the biodiversity was critical to the next stage of its conservation, namely the declaration of the area as a Nature Park in 1990. The research results showed how important the area was at both the national and European levels. The declaration and the development of management mechanisms of the Nature Park is seen as a model for other Nature Parks in Croatia.

The research data provided much of the information for making a very detailed inventory of the area, and mapping this using sophisticated GIS technology. The level of detail is very high,

including for example the siting of storks nests in certain villages, as well as the locations of endangered species to identify the hot-spots within the area. This has not only allowed a more exact valuation of the park but will be of great importance in developing the management plans. The preparation of these maps has facilitated the collaboration between different agencies, and has helped to build a consensus about the importance of the area. A video has been made on the GIS mapping of Lonjsko Polje.

However, when the Nature Park at Lonjsko Polje was first suggested by the Cultural and Natural Heritage Authority and declared by Parliament, the local people were very suspicious. They could not see the benefit to themselves of living in such an area, and considered that this would be an additional burden upon an area which was already financially starved and deprived. The Authority had to begin by creating awareness and communicating this sense of uniqueness to the people in the area, as well as convincing them of the tourist potential – the main economic benefit for them.

Various methods have been used for this, both direct and indirect. Of the indirect methods, the presence of researchers has helped, particularly when they lived in the villages and in the case of one German-born Croatian forester who came to study the Turopolje pig, when he started keeping them himself. In fact he has now married a local woman and settled in the area, all of which adds confidence for local people.

The most direct method used was the idea of special celebrations for different villages. The first of these was organised in 1994, with the declaration by Euronatur of the village of Cigoc as European Village of Storks, because of its 50 stork nests on the wooden houses. The day was celebrated with music and feasting attended by various dignitaries, schools and other visitors. The local people produced souvenirs and sold agricultural products such as cheese and honey. A video was made of the occasion which was shown on national television. It is hoped that such festivals will become a regular feature of Lonjsko Polje, with other villages celebrating the otters, the spoonbills and other such natural features. As a result of this, local pride in the area has grown and a number of small-scale private initiatives have been taken to improve visitor facilities, and promote the sale of local products.

Next steps

Although much has been done to bring the process this far, the next steps have to be taken on a more formal basis. A proposal has been put to the government for the setting up of a Steering Committee and a Public Enterprise to manage and promote the Nature Park. A decision is expected within a few months. This Steering Committee would consist of representatives of the following organisations/interests:

- Cultural and Natural Heritage Authority.
- Water Management Authority.
- Forest Service.
- Sisak District.
- Three representatives from the public enterprise.
- One representative of the local inhabitants.

The Public Enterprise to be set up is essentially a local company which would coordinate the management of the Natural Park and be responsible to the Steering Committee. It would promote the area and its tourist attractions, arrange for credit facilities for local people wishing to develop visitor accommodation and so on. In the first year it is anticipated that the Public Enterprise would consist of a Director, a Technical Director (probably a biologist) whose task would be to collaborate with all the relevant agencies, an Administrator and three Wardens. One of the first tasks of the Public Enterprise would be the development of the management plan.

Financial needs

The implementation of the management plan, which would include development of locally sensitive tourism facilities, will require funding. While the government have supported the development of the Nature Park to date out of the budget of the Cultural and Natural Heritage Authority, the Steering Committee and Public Enterprise would require about $100,000 annual budget. In addition the critical factor of funds for the development of alternative sources of income, such as bank loans for local people who have little to offer in terms of security, needs to be resolved.

Analysis

The process of the development of the Nature Park shows some classic signs:

- The identification of the area by scientists as being worthy of conservation was a necessary pre-requisite before legal recognition and protection could begin.
- The building of consensus among different agencies leading to its declaration as a Nature Park and recognition under the 1994 Nature Conservation Law. The next step of gaining approval for the Steering Committee and Public Enterprise from the Parliament is in process, and is recognised as essential before the active management and promotion of the area can begin in earnest.
- The collection and collation of much data about the area and its detailed mapping is a significant achievement, assisted by foreign NGO funds. This laid the basis for the attempts to protect the area from damaging infrastructure developments.
- The successful efforts to protect the area against proposed developments such as the road and rail links and the major navigation canal. Although many battles remain to be fought on this front, it has been accepted that such developments would have to be subjected to EIA procedures and that the Cultural and Natural Heritage Authority would be consulted and would have to give its approval for such developments. These efforts have helped to raise awareness of the Nature Park.
- The attempts at increasing local awareness and pride in the area have been successful, but obviously need to be backed up by results in terms of assistance for alternative income generation if local support is to be maintained.
- The two emergency conservation measures to protect the ecosystems in the ornithological reserves have been successful, and spoonbills have returned to Krapje Dol.

Lessons learned

One of the characteristics of such projects appears to be the vision of the protected area which is promoted and developed by a single agency or individual. Without such vision, little can be achieved. However, this is a very sensitive topic, and organisations, both government, NGOs and funding agencies need to be aware of and encourage the individuals who have the visions and energies to promote them.

It is apparent that much can be achieved without a great deal of funding, but that seed money, be it out of normal budgets for the agency, or by using the energies of graduate students, or small funds for particular aspects (conservation, research or promotion), can be extremely effective in the initial stages.

However, in order to move beyond these descriptive, consensus building and promotional aspects, into more concerted management and development activities, both political commitment and larger financial resources are necessary. It is critical to the long-term success of conservation that the area should become economically more sustainable by developing income-generating activities – in this case eco-tourism and the sale of local produce. Income generation in an under-developed, deprived area such as this usually requires access to credit or grant facilities.

This project shows the importance of building consensus about the conservation of the area between different agencies – particularly those which have a management role. They may not always agree about the management detail, but the overall approach is understood and organisational relationships are clear. The building of consensus is important for getting political support and for putting the legal and institutional framework for management in place.

The role of outsiders to the area, be they foreigners, such as the student researchers, or people from the national agencies, is seen to be important. Not only can they act as agents for change, but they can also help the local villagers to appreciate that they are living in a unique place, and that visitors from outside might be prepared to come to share it with them and indeed to pay for the privilege.

The importance of building a consensus with the local people is critical to such projects. The process of doing this gives greater understanding and insights into the area for its management, for the needs and aspirations of the local people to be realised and for their commitment to maintaining the established land-use practices, livestock and houses upon which the character of the area depends. Without this commitment nothing can be done. The timing of starting such discussions with local people is open to debate and ultimately is dependent upon the practicalities of the situation. Indications are that they should start early: the sooner the better.

As an aid to the on-going dialogue between the park managers and local people, the use of discrete events which raise the awareness and pride in the area is invaluable. Such events help to give a practical reality to the dialogue, which otherwise might tend to become rather abstract and an exercise in wishful thinking.

In summary, the development of the Nature Park at Lonjsko Polje shows how much can be achieved with a relatively small funding base, but with vision and consensus building at the political, managerial and local levels.

Acknowledgements

This paper would not have been possible without the assistance of the following people in Croatia, especially Mr Dezelic:

Mr Miho Miljanic, Director of Authority for Cultural and Natural Heritage, Zagreb.
Mr Radenko Dezelic, Biologist, Authority for Cultural and Natural Heritage, Zagreb.
Mr M. Floriani, Geologist, GIS Designer, Authority for Cultural and Natural Heritage.
Ms Yasmina Karalovic, Ornithologist, Authority for Cultural and Natural Heritage, Zagreb.
Mr Miroslav Braun, Engineer, Water Management Authority, Zagreb.
Ms Nivas Farcas, Ecologist, Croatian Forest Service, Zagreb.
Mr Goran Gogic, Forester and Researcher, Krapje, Lonjsko Polje.
Mr Zvonko Rastovac, Owner of Tourism facility, Cigoc, Lonjsko Polje.
Watcher for ornithological reserve, Krapje Dol.

3.4 The Green Lungs of Poland

Introduction

The Green Lungs of Poland (GLP) project has the largest area and the broadest scope of all the case studies. Indeed, it is one of the most extensive initiatives in all of Europe, with the exception of efforts such as the Alpine Convention.

Nine north-eastern Polish Voivodships have so far entered an agreement together with a number of Ministries, to pursue sustainable development in an area covering around 60,759 km^2 of agricultural land, forests, lakes and wetlands: an area bigger than Switzerland, Belgium or Netherlands, with 4 million inhabitants. The project comprises the establishment and strengthening of protected areas such as national and landscape parks, expansion of forests, sound management

of water resources, development of organic farming, environmental rehabilitation of towns and villages, protection of cultural values, and development of low-intensity tourism and recreation.

Poland then proposed to expand the idea of the Green Lungs of Poland to become the Green Lungs of Europe, covering Belarus, the Kaliningrad District of Russia, Ukraine, Lithuania, Latvia and Estonia. The concept was presented at the 1993 Lucerne Conference and later a joint declaration of these countries was signed at Wigry Lake.

So far a comprehensive policy plan has been prepared for the area, based on a participatory process involving all the relevant actors. Furthermore, a number of projects are being implemented concerning environmental infrastructure, protected areas, organic agriculture and sustainable tourism. Physical plans are being prepared for the region and for a number of model municipalities that aim to integrate all development initiatives and make them sustainable.

Background

Site description and importance

North-eastern Poland, comprising the Voivodships of Bialystok, Loma, Olsztyn, Ostroleka and Suwalki, and parts of Ciechanow, Elblag, Siedlce and Torun, is a gently undulating landscape drained by the rivers Narew, Biebrza, Bug, Lyna, Nida, and Drweca. The landscape exhibits a strong influence from the last glaciation, with many lakes (Mazurian lakes) and thin sandy soils. Forests are comprised mainly of Scots pine *Pinus sylvestris*, birch *Betula pendula*, Norway spruce *Picea abies*, oak *Quercus robur*, alder *Alnus glutinosa* and willows *Salix* spp. Most of the land has been converted for agricultural use, so that the forests today cover only 27% of the territory. Along the flat river valleys there are important extensive floodplain wetlands comprising peat bogs, marshes and floodplain forests.

The population density varies between 40 and 70 persons per km² compared with the Polish average of 122 persons per km². The region has been virtually the only part of Poland that has not been seriously affected by industrial pollution. Rivers were polluted by the towns and agriculture, but their course was not physically altered except for some canals in the 19th century. The Mazurian lakes are one of the main summer tourist destinations in Poland. Apart from the population in 20 towns with more than 10,000 inhabitants, people mainly still live from traditional farming, since farmland was never nationalised in Poland.

Important animal and bird species include European bison *Bison bonasus*, beaver *Castor fiber*, wolf *Canis lupus*, red deer *Cervus elaphus*, elk *Alces alces*, lynx *Lynx lynx*, black stork *Ciconia nigra*, white-tailed eagle *Haliaeetus albicilla*, spotted eagle *Aquila clanga*, lesser spotted eagle *Aquila pomarina*, eagle owl *Bubo bubo*, capercaillie *Tetrao urugallus* and black grouse *Tetrao tetrix*. In 1991, in Bialystok, Loma, Olsztyn, Ostroleka and Suwalki alone, by making the most of the Green Lungs scheme, there were three National Parks, 11 Landscape parks (30,000 km² of protected landscape), 183 Nature Reserves, 191 Forest Reserves, five World Heritage Sites, three Ramsar Sites and six Biosphere Reserves.

Through history parts of the region formed, at various times, part of Prussia, Russia, and Poland. Today a number of minorities remain in the region: Belorussians, Ukrainians, Lithuanians and some Tatars. Many Germans left the region at the end of the Second World War, and they are now the most significant group of foreign tourists. The unemployment rate in the region is currently above 21% (around 30% in Suwalki and Olsztyn) and economic development is badly needed.

Threats and issues

In the past, there have been proposals to develop mining and heavy industry in the region, and one of the reasons for the development of the concept of Green Lungs was to stop such developments. In view of the high level of unemployment, numerous abandoned industrial sites and the low price of land in the area, the danger of uncontrolled, unsustainable development still exists.

Although air pollution has never been an important threat to the Green Lungs, water pollution represents a significant problem in a region of lakes and lowland rivers, with underdeveloped infrastructure such as sewer systems and sewage treatment plants.

The sustainable development model has been adopted as the goal for the region, but there is little consensus on what this actually means and, in particular, uncertainty about what benefits it actually brings. Currently there is little understanding of the concept in most local communities and if the project of the Green Lungs fails to produce evidence that it is possible to combine economic development with conservation and environmental protection, the region will be a target for aggressive development of tourism, agriculture, food processing, and other industry.

One of specifically identified threats is the proposed Via Baltica highway from Warsaw to Tallinn and on to Helsinki, that is planned to go through the region. Its construction would lead to a deterioration in the state of the environment and trigger unwanted development. The development of a transport corridor along the east coast of the Baltic Sea will be hard to avoid, but measures should be taken to ensure that as much as possible of the freight is carried by rail.

Currently the main threat is the uncontrolled and often illegal construction of holiday homes in the most valuable areas of the region, for example along lake shores and in National Parks.

The project

Goals and objectives

The Green Lungs of Poland is a coordinated development policy initiative in the nine Voivodships, with the goal of preserving the natural character and resources of the region and, at the same time, improving economic and social conditions. This demands a novel development philosophy, recognising that technical protection of the environment will not be sufficient. The main objectives of the Green Lungs of Poland are:

- Management of water resources in accordance with the natural ecological advantages of the region.
- Development of agriculture with special emphasis on the production of healthy food.
- Securing the sustainable use of the region's forests.
- Creation of an extensive system of protected areas.
- Development of health resort treatment based on natural resources.
- Protection of cultural values, and ethnical and cultural diversity.
- Subordination of industrial development to environmental requirements.

The actors

The National Foundation for Environmental Protection, a non-governmental organisation established in 1989 by the main persons involved in the development of the idea of Green Lungs of Poland, has been the main institution promoting the programme in its early stages. It has financed the development of the strategy and is, through its office in Suwalki, implementing various projects from establishing National Parks to development of organic farming. With the development of the programme into a serious governmental activity, the Foundation's role is changing from the main driver of the process towards monitoring and providing advice.

The Voivodships have all recognised the opportunity offered by the idea of the Green Lungs of Poland to promote their region as a national priority of a kind different from the main industrial regions. By setting up the programme they managed to receive significantly more attention and financing from the central government. Although they all signed the GLP Agreement, their attitude towards the programme is opportunistic and they still take certain decisions that are only marginally acceptable for the programme.

The Ministry of Environment acceded to the GLP Agreement in 1991 and is supporting the project as a vehicle to implement environmental policies in this significant region of Poland. The

ministry is providing full political and regulatory support to projects within the programme, such as the declaration of protected areas.

The Ministry of Agriculture signed the GLP Agreement in 1993. Its extension service is active in the region in promoting sustainable and organic agriculture. The soils in the GLP region are rather young (from the last glaciation) and therefore poor and prone to dessication. Consequently, it is hard to expect highly productive industrialised agriculture. Organic or traditional agriculture seems the most appropriate to retain the existing social and economic structure of the rural areas. An important task for the ministry is the privatisation of state-owned farms that lie idle at the moment.

The Ministry of Physical Planning and Construction has expressed interest in signing the GLP Agreement in the near future, as have some other ministries and government agencies. It is responsible for the regional physical planning (done by the Institute of Physical Planning and Municipal Economy) and for the development of the municipal infrastructure and services. The ministry is also supporting a number of pilot municipal physical plans in the region.

The National Fund for Environmental Protection and Water and the EcoFund are the two national institutions financing environmental investments in Poland. The National Fund collects a part (the other part goes to Voivodship funds) of environmental licence fees and fines. Annually it distributes approximately 400 million dollars in grants and soft loans, largely for waste-water treatment. The EcoFund is funded by the proceeds from the Polish foreign debt for environment swap. Annually it distributes 20 to 30 million dollars in grants. Both funds consider GLP as a priority area of their activity. Currently they are financing a study supporting the establishment of a regional development agency that would enhance the capability to develop and implement environmental projects.

The municipalities are the lowest level of government in the region, and they are responding to the programme in different ways. Some of them see an opportunity in nature conservation and sustainable development, and others mainly see these activities as a threat. The main means of persuasion by the programme so far is the allocation of funding for infrastructure in those municipalities that work actively in the implementation of the GLP Agreement. There is still a wide range of understanding of sustainability in the region, and the programme has yet to prove its justification in economic terms.

International partnerships

The Green Lungs of Poland is developing partnerships in two directions – east and west. Towards the east, the idea is to expand the programme into the "Green Lungs of Europe", including areas of Russia, Belarus, Ukraine, Lithuania, Latvia and Estonia. In 1992, the "Wigry Declaration" was signed by the representatives of the countries involved, calling for mutual cooperation in developing the programme. The Polish delegation presented the idea at the Lucerne Conference in 1993, but received little international support. The process of cooperation between the countries is slow, but progress is being made. The international arena seems to be much more complicated for implementation of such projects than at the national level.

There has been a fair degree of Western donor assistance in developing projects within the programme. WWF has provided assistance in the development of organic farming, environmental education, preparation of the Biebrza National Park and the promotion of GLP. IUCN and Euronatur have been involved together with Polish Ecoland in training for organic farming. Euronatur is now helping to develop the Narew National Park. The French Federation of National Parks provided training for park personnel in France. PHARE is financing a project on agrotourism in five municipalities around Suwalki. The UK Environmental Know How Fund has financed a workshop on sustainable tourism. Although this seems a lot of projects, in comparison with national funding the foreign input is very low. It is far below the expectations of the Poles, but so far it has had an obvious catalytic and educational role.

The process

Current situation

In the early 1980s, the extent of environmental deterioration in the southern parts of Poland, especially Upper Silesia, became publicly known both in Poland and abroad. Forest decline and health problems of the "black triangle" and industrial cities in other parts of Poland received a lot of public and political attention. As the model of industrial development had seemed unquestionable, this deterioration presented a direct threat also to other regions.

In contrast, north-eastern Poland, a mainly agricultural region and summer resort, was hardly touched by pollution, but as the government started making plans for an iron-ore mine and steelworks in Suwalki, environmentalists realised that this region could also be destroyed, just as any other. This led to activities against the plans, but also to the idea that at least some part of Poland must be preserved where it is possible to breathe – hence the Green Lungs of Poland. The idea was first rejected by the authorities, but by 1988 the Nature Conservator of the Suwalki Voivodship, Krzysztof Wolfram, persuaded the Voivods (Governors), the Chairmen of the Voivodship Councils and Party Secretaries of five Voivodships (Bialystok, Loma, Olsztyn, Ostroleka and Suwalki) to sign an agreement about the sustainable development of the region. In the same period, the National Foundation for Environmental Protection was established as one of the first proper NGOs in Poland, and it adopted the promotion of the Green Lungs of Poland as one of its principal tasks.

After the changes in the Polish government, the GLP Agreement was changed and signed again at the end of 1990 by the five Voivods and Chairmen of the Voivodship Councils, as well as by Mr Wolfram as the representative of the National Foundation for Environmental Protection. The Minister of Environment associated himself with the agreement in June 1991. Four more Voivodships joined the Agreement later: Ciechanow, Elblag, Siedlce and Torun. So did the Ministry of Agriculture, and the National Fund for Environmental Protection and the EcoFund – the two main funding sources for environment in Poland. In September 1994, the Polish parliament adopted a Declaration, supporting the concept and programme of the Green Lungs of Poland, making the programme a key national priority.

The Green Lungs of Poland Agreement of 1990 established the Programming and Science Council, which is entrusted with the implementation of the agreement. As one of its first actions, the Council ordered the preparation of a policy plan for the region, that was financed and prepared by the National Foundation for Environmental Protection.

The work was lead by Dr Andrzej Kassenberg, who headed a core team of eight experts with a wide circle of other partners. By 1993, they had produced four synthesis documents, 35 detailed reports, 90 maps and a geographic information system. The work had the following phases: problem identification, regional policy outline, methodology, and general strategy formulation, supplemented by 21 subregional strategies. In terms of the process, the most important event was a workshop with 70 invited key persons (stakeholders from the region) where the draft regional policy was hammered out in one weekend closed session. To solve the key problems during their work, the experts used an advisory group.

In physical terms, the area of the Green Lungs of Poland was defined using 1,321 micro-watersheds as basic elements, mainly in the catchment of the rivers Narew and Bug. The strategy document presented four different scenarios ranging from completely environmentally friendly development to an 'everything goes wrong' scenario. The main problem they encountered was the development of detailed sectoral policies, because nobody in Poland had the relevant experience.

In early 1993, the Ministry of Environment presented the project at the Lucerne conference, proposing to expand it to Ukraine, Belarus, Russia, Lithuania, Latvia and Estonia under the title "Green Lungs of Europe". At the same time, the process of accession of new partners to the programme in Poland started, including the Voivodships of Ciechanow, Elblag, Siedlce and Torun.

Interestingly, Kassenberg's team opposed the expansion, arguing that expansion would threaten the ecological consistency and change the character of the region. They refused to do the planning for the expanded region, so the National Institute for Physical Planning and Municipal Economy (an agency of the Ministry for Physical Planning and Construction) took on this exercise, using the same methodology. They are using municipalities as geographic elements for the area of the region, but realise that the newly added area will mainly be managed as a buffer zone to the ecologically defined core zone.

In recent years a number of implementation projects began. One of these was the declaration of the Biebrza National Park in 1993, where the management plan was financed by WWF. In five Municipalities, model physical planning exercises are under way to secure the conditions for sustainable development. There are several training and extension service projects especially in the field of organic agriculture (supported by WWF) and low intensity or farm tourism. Most of these activities are coordinated by the regional office of the National Foundation for Environmental Protection, lead by Zdzyslaw Szkiruc in Suwalki. This seems to be the main implementation agency for the GLP programme at the moment, working with the Voivodship and municipal authorities as well as with individual farmers.

The national agencies, especially the National Fund for Environmental Protection and Waters (collecting environmental fees and fines) and the EcoFund (managing the proceeds of the Polish debt for environment swap) have taken GLP as one of the main priority areas of their spending. The National Fund, for example, directs ten times as much funding (mainly for waste-water treatment plants) into the GLP region as it does into other comparable regions, e.g. north-western Poland.

The Green Lungs of Poland programme today receives wide recognition in Poland and increasingly internationally. It is well into its implementation phase and the first results are visible, even though the main drivers of the programme are far from satisfied.

Next steps

The main issue regarding the future of the programme is whether or not to establish a development agency for the implementation of the programme. The decision about this will probably be taken at the next meeting of the Council of the GLP Agreement. The main questions regarding this agency are how to set it up in terms of structure and what role it should play in relation to regional and local authorities and other organisations. The main problem seems to be how not to threaten other actors by introducing a new body, but on the other hand there is more and more recognition of the fact that cooperation and coordination is necessary. The main mandate of the agency will probably be assistance in providing the financing for different projects and technical assistance to municipalities and other actors.

There is a growing number of projects being developed in the framework of the programme that will be implemented by different agencies and also NGOs. Significant funding, both domestic and international, will be required to implement them. Moreover, these projects will have to outcompete the 'classic development' that will inevitably start after privatisation of industry and general economic development of the country.

New efforts will be made to cooperate with other countries in order to establish the Green Lungs of Europe as a region of sustainable development. This very ambitious project is a means of developing Polish relations with its eastern neighbours, based on environment and nature conservation. It is very hard to predict the final result of this idea because the political factors at the international level have more influence than local or regional interests.

Analysis

It is important to note that the whole project has been initiated and brought to life by a single person, Krzystof Wolfram, backed by a small group of associates, who formed the National Foundation

for Environment Protection in the late 1980s. Mr Wolfram was able to take the advantage of the political and environmental situation in Poland at that time to develop the programme in the then Communist system of government. The term "Green Lungs of Poland" represents an idea that so far has only taken root in Poland. Its main argument is that a part of the country has to be protected from air pollution, so that workers from heavily polluted regions can come and breathe clean air during their vacation.

The initial group, gathered in the National Foundation for Environment Protection, was able to carry the programme through the political changes in 1990 and to secure funding for the initial activities of the programme. They basically provided a secretariat for the Agreement between different Voivodships, and advanced it in a professional manner, avoiding the bureaucratic obstacles that would have been inevitable if the regional authorities had managed the programme between themselves. The Foundation managed to complement Mr Wolfram with Dr Kassenberg, who had the ability to develop the strategy (involving 240 different experts and a three-day meeting of stakeholders in the area to discuss solutions to given problems) and Mr Szkiruc, who can motivate authorities, and coordinate implementation of the growing number of projects in the field (50 training courses for farmers on ecological farming alone).

By investing an initial sum in the development of the strategy the Foundation was able to attract a large measure of domestic and foreign funding for the projects in the region. They also successfully raised the public and political profile of the under-developed region within Poland, leading to the special declaration of the Parliament. Mr Wolfram's work on the programme was probably an important factor in his election to Parliament.

Today, the Green Lungs of Poland facilitates a regional linkage of Voivodships with the cleanest environment, the lowest development and the highest biodiversity, to create a common identity, to balance and provide a selling point for the region in competition with demands from other regions which are more polluted. They are trying to find ways of creating a sustainable economy using different forms of legal protection, ecological agriculture, specialist tourism, rest and sanatorium treatment, water supply and treatment, energy saving investments, forestry, cultivation and protection of cultural variety. The programme is promoting the area as a healthy place to come, enjoy nature and eat healthy food. The network of protected areas is in place, water supply and treatment in rural areas will be improved during the next three years, and a common statistics booklet is produced to monitor progress. All these initiatives were made possible by the 'snowball' effect of the well-defined initial idea, and by the availability of significant funding for environmental projects in Poland through the two environmental funds.

In the process, there was a lot of 'learning by doing', and the results are still considered far from satisfactory by the people who initiated the programme. They are able to cope with the national politics of the programme (having a Parliamentary declaration, and the support of ministries), but the main obstacles to implementation come from regional and local politics. These include the complexity of tasks, the differences of understanding among districts, changes in political leaders, and the need to re-educate leaders each time there was a change. The methods used for overcoming these obstacles are short-term assistance for communities to follow principles for sustainable development and longer-term assistance for communities within protected areas, and the presentation of different scenarios to authorities during the preparation of management regimes, offering a choice in development options.

The programme is becoming more and more decentralised to Voivodship and Municipality levels, and it is becoming impossible for the core group to run all the different projects. So the core group – the Foundation – is increasingly changing its role from an implementation agency towards a monitoring and evaluation pressure group, ensuring adherance to the initial idea. One of the main challenges to the programme is the lack of a common understanding of sustainable development – it can mean different things in different situations, but also different things to different people.

The Foundation will need to remain responsible for promoting a common understanding of sustainable development.

If the programme keeps developing in the current direction, and if the idea of Green Lungs of Europe is adopted, this programme may become one of the most significant sustainable development projects so far.

Lessons learned

The programme started in 1989/1990 and one can observe the time needed for the process to take place. The work on the strategy took three years, and so did the preparatory work for the Biebrza National Park. This length of time is needed to allow a change of attitude, and for the communication of the idea of sustainable development to provincial authorities, districts, farmers and other people.

In view of the long time period and shifting personalities and institutions involved, the necessity for professional documentation is demonstrated. The strategic planning exercise done for region provides a sound scientific basis for taking the approach down to municipal level, to new areas and to projects implemented.

The Green Lungs of Poland Agreement has played the role of a sound philosophy for the whole process. Under the catalytic influence of the National Foundation for Environmental Protection, it was able to combine political will and vision with active implementation of the programme, and it provided the regional ownership of the programme. Not least, it created the critical mass at the national level to bring political attention and funds into the area. After the critical mass was reached, it is notable how other institutions (ministries and funds) increased their interest in the success of the programme and their role in its implementation.

Key roles in developing, promoting and implementing the project are clearly personalised: Mr Wolfram had the vision, was able to motivate the politicians and is still steering the process. Dr Kassenberg was able to prepare a strategy on a scientific basis that was accepted by the actors and implementable. Mr Szkiruc is the day-to-day manager and implementer of the projects in the field, able to translate the language of strategy and ideas in to the practical life of farmers or town people.

The significant funds available in Poland for environmental improvements have enabled the programme to be implemented and had an important role in providing motivation for regional actors.

The process was started and is managed by Poles, who attracted significant international support for a number of projects. It is inconceivable that an international organisation or an assistance programme would have been able to mount such an effort.

The ideas about financing the programme are mainly turning around budgetary sources and international assistance. No effort has been made to develop private investment schemes.

Acknowledgements

This paper could not have been prepared without the assistance of the following people in Poland:
Zenon Tedenko, Head of the IUCN office, Warsaw.
Mr Krzysztof Wolfram, Member of Parliament, Warsaw, Bialystok.
Dr Jan Wrobel, Director of Nature Conservation Department, Ministry of Environmental Protection, Natural Resources and Forestry, Warsaw.
Mieczyslaw Metler, Director of International Activities, National Foundation for Environmental Protection, Warsaw.
Ryszard Zakrzewski, Institute of Physical Planning and Municipal Economy, Warsaw.
Malgorzata Teisseyre, Institute of Physical Planning and Municipal Economy, Warsaw.
Dr Andrzej Kassenberg, President, Institute for Sustainable Development, Warsaw.
Bozenna Wojcik, Institute for Sustainable Development, Warsaw.

Zdzislaw Szkiruc, Head of the Regional Office for the GLP of the National Foundation for Environmental Protection, Suwalki.
Michal Wilczinski, Member of the Management Board, Ecofund, Warsaw.
Grzegorz Dobranski, Bureau of Regional Planning, Byalistok.

3.5 Danube Delta Biosphere Reserve, Romania

Introduction

Although it was not presented at the 1993 Lucerne Meeting, the project to develop the Danube Delta Biosphere Reserve was selected for this series of case studies because it illustrates a project which has received a very high degree of international publicity and support and is in many respects the most advanced of all the cases presented here.

It is an outstanding example, because it shows international collaboration over a very large geographic area, the importance of legal and institutional arrangements, and the progress of a project well into implementation. However, it has not yet reached a stage of sustainability, although there are strong possibilities of economic and social sustainability being built upon ecological sustainability for the medium-term future. The project has also started a large-scale rehabilitation of empoldered wetland areas which can serve as a model for such restoration work.

Background

Site description and importance

The Danube Delta is the largest and least damaged wetland complex in Europe, covering some 600,000 ha, with about 450,000 ha in Romania and the rest in Ukraine. It is an extensive network of river tributaries, canals, lakes and reed swamps, with forests, meadows, sandy grasslands and dunes on the higher ground. Together they form a unique mosaic of terrestrial and aquatic habitats, each supporting a rich biodiversity of fauna and flora.

The Delta exhibits a classic triangular formation with branching tributaries of the Danube River, extending out from an apex to nearly 100 km in length and width before discharging into the Black Sea. The delta acts as a large-scale filtering system between the Danube River and the internal lakes in such a way that the ecological integrity and health of the delta is dependent upon the condition of these dynamic water courses.

The terrestrial and aquatic habitats in the delta can be classified into three distinct zones: (i) the fluvial zone with natural levees along the Danube River tributaries and canals; (ii) the transition zone of lagoons and back-swamps, extensive peat fens and large well-filtered, clear-water lakes; and (iii) the coastal zone with sandy beach barrier complexes including dunes, soils and islands that have been deposited from north to south by coastal drift in the Black Sea.

These habitats support an impressive diversity of vegetation and fauna. White willow *Salix alba* hardwoods line the river tributaries, while coastal dune systems support ash *Fraxinus* and oak *Quercus* forests and areas of dry grassland. While the forested areas occupy only about 5% of the Delta area, the willows are important nesting sites for colonies of egrets, herons, ibises and raptors such as falcons and eagles, including the white-tailed eagle *Haliaeetus albicilla*. The dry grasslands in the depressions between the dunes support breeding populations of curlews *Numenius arquata* and the sandy coastal fringes are used for feeding by terns, gulls and Dalmatian pelicans *Pelecanus crispus*.

Most significant for the waterfowl and for human use are the lake and reedbed systems, which are the most extensive in Europe. The freshwater lakes and marshes of the delta are the main feeding habitats for most of the Delta's 320 bird species, which include bitterns, harriers, rails and nesting colonies of pelicans, egrets and herons. Cormorants, diving ducks, geese and swans feed

and roost on the lakes in winter. Over 2 million wildfowl are reported to winter in the delta. The Danube Delta has considerably more breeding bird species than the other south European deltas; these include the pygmy cormorant *Phalacrocorax pygmaeus*, half the Palearctic breeding population of white pelican *Pelecanus onocratalus*, and 5% of the world population of the Dalmatian pelican. There are also a number of mammal species including the European mink *Lutreola lutreola*, otter *Lutra lutra* and wild cat *Felis catus*.

There are 75 species of fish, most of which are freshwater species, but also a number of Black Sea species which rely on the Delta for breeding and survival of juveniles. Of greatest significance are the migratory species of sturgeon and shad, and semi-migratory species of carp and bream.

The significance of the biodiversity of the Danube Delta has been internationally recognised on three counts. The Danube Delta Biosphere Reserve was recognised by UNESCO in 1990. Much of the area was also designated as a World Heritage Site, and as a Ramsar Site in 1991. Because of its size and complexity it is widely seen as a model for conservation efforts both within Romania and the rest of Europe.

The natural resources of the Danube Delta have been used extensively by the human populations which live in and around the delta. About 15,000 people currently live here, although the population has declined in recent years (from 22,000 in 1970) due to declining fish catches and lack of transport and infrastructure facilities, and employment opportunities. Traditionally fishing has been the mainstay of the communities, supplemented by reed harvesting for thatching, fencing, fuel and cattle litter, and small-scale agriculture and animal husbandry.

In 1958 mechanical reed harvesting to provide raw materials for the cellulose factory at Braila was developed, and by 1965 63,000 ha were empoldered for reed production with a total of 226,000 tonnes being produced. However this fell rapidly since polderisation prevented the free flow of water necessary for the healthy development of the reeds and the mechanical harvesting damaged the rhizomes. Subsequently some of the empoldered areas were converted for agriculture and fish farming. However, the production from this land has also been disappointing mainly due to unsuitability of soils, low rainfall, and inadequate technologies, and shortages of funds for pumping water and to purchase feed (maize) for the fish.

Navigation for large ships from the Black Sea up the Sulina channel to Tulcea has been important for the last 150 years, and the river channels have been straightened and deepened in some parts to take these ships. In addition to navigation, fishing and agriculture, tourism is a significant economic activity in the Danube Delta, mostly for Romanian visitors. However, the potential for expanding and improving the facilities for more foreign visitors, especially for eco-tourism, has been recognised.

Threats and issues

The threats to the habitats and biodiversity of the Danube Delta derive from man-made changes to the hydrology of the area, through a variety of developments starting with the creation and maintenance of the shipping canals in the three major branches of the river from the middle of the 19th century. This was followed by canalisation of some channels linking the internal lakes to the major branches.

Polder construction started in the 1930s and major interior canal construction and polderisation took place between 1948 and 1965. Upstream of the Delta, flood protection banks on the left bank were constructed in the early 1960s, and dams on the Romanian tributaries, the Iron Gates Dam and irrigation intakes along the Danube were built between 1969 and 1989. In 1990, the Black Sea shipping canal was completed, linking the harbour of Constanta directly with the Danube.

It is difficult to prove with absolute certainty that these changes in the regime of the river have threatened the biodiversity, but it is recognised that at the same time as these changes were

occurring, there has been a dramatic reduction in the high value fishes, especially the sturgeons; there has been a visible increase in eutrophication – illustrated by algal blooms and high nitrogen and phosphorus contents of the water; and there has been an increased rate of sedimentation in some lakes and channels. Other changes have also played their part, particularly pollution from industry and agriculture, and overfishing and the destruction of fish breeding grounds. Mention has already been made of the damage caused by attempts at mechanical reed harvesting. With the decline of fishing activities, animal husbandry has increased and overgrazing in some areas (especially the grasslands) has been a problem.

Rural deprivation and depopulation is also a problem for the health of the delta, since the traditional activities have become a part of the ecosystem, and for the future, sustainable production and tourism activities require viable communities living in the Delta. Almost all the population lives in seven villages of which the largest is Sulina (a port at the mouth of the Sulina branch) with 5,500 people. Not only is the Delta sparsely populated, it is also ageing with only 20% under 39 years in 1992 compared to 55% in 1970.

For the future, a potential threat is uncontrolled tourism. Although much hope is put on the development of tourism to restore the economic sustainability of the area, too many visitors invading the delta, with fast boats which cause bank erosion, pollution and illegal hunting, may cause considerable damage.

The project

Goals and objectives

The series of projects which have been developed in the Danube Delta have the sustainable management and restoration of the Danube Delta Biosphere Reserve as their overall objective. The main institution involved with these projects is the Danube Delta Biosphere Reserve Authority (DDBRA), and the initial major project between 1992 and 1995 with finance from the EBRD was aimed at strengthening that institution through training, technical assistance, review of legislation and the development of an integrated environmental management plan involving community participation.

A follow-up project started in April 1995, funded under the GEF with the objective of protecting and enhancing the Delta ecosystems, contributing not only to conservation of the biodiversity, but also to improvement of water quality and ecosystems in the Black Sea. This will involve strengthening the wardens department of the DDBRA to support nature protection, surveys and public awareness and nature interpretation; monitoring and database development; pilot restorations of polders and wetlands, willow planting, village woodlots and a sturgeon recovery programme; public awareness and environmental education, and support for international cooperation between Ukraine and Romania.

A third component project is currently under consideration by the Dutch Government to continue the strengthening of DDBRA in both management of the Biosphere Reserve and in encouraging the participatory process, and encouraging the development of the private sector through a revolving fund and a Service Centre to help potential entrepreneurs.

The actors

The two principal organisations involved with the conservation of the Danube Delta are the DDBRA (Danube Delta Biosphere Reserve Authority) and the DDI (Danube Delta Institute), both of which come under the Ministry of Water, Forests and Environmental Protection (MWFEP). The DDBRA was established in August 1990 to administer the Biosphere Reserve, and to protect and rehabilitate the physio-geographic units of which it comprises. Its constitution and responsibilities were confirmed in special legislation of December 1993. This established a Scientific Council to lead the DDBRA, consisting of 31 members appointed from the Romanian

Academy of Sciences, local experts, representatives of important economic concerns and of the Tulcea Judet Council and the Director of the DDI. Its decisions are implemented by the Executive Board, and the Governor of the Reserve is President of the Council and Chairman of the Board; he has the status of Under-Secretary of State in the MWFEP.

About 90 of the 207 staff members of the DDBRA consist of inspectors and ecological wardens whose duty it is to supervise the whole territory and to enforce the protection measures. The legislation sets out the different tasks of the Authority and the prohibited activities in the reserve. The expenditure of the DDBRA is met by an allocation from the State budget, from grants and from its own revenue. The Romanian Government has allocated a sum of 3.5 million US$ for the ecological restoration of the area.

The DDI is a much older institution that was set up in 1970 to provide research and development facilities for the Ministry of Agriculture. Its focus at that time was very much hydrological control and polderisation, fish culture, silviculture and transport design. With the change in emphasis towards conservation and protection of biodiversity implicit in the function of the DDBRA, the focus has altered. The prime beneficiary of the research and development activities carried out by DDI is the DDBRA. The DDI is a part of the MWFEP, but reports first to the Governor of the DDBRA. It is financed by extra budgetary provisions on a contractual basis principally from the Ministry for Research and Technology. Most of the research programmes are geared to the management plan objectives for the Danube Delta; they include assessment of fish populations, reed resources, flora, game resources and environmental impacts of various activities in the Delta.

There are a number of other organisations which are involved in different aspects, principally economic use of the natural resources. Furthermore, a number of (semi-)private companies, some of which derived from previous public enterprise, are involved with the fisheries and reed use, navigation and tourism development. There are 11 fishery companies and five agricultural companies which employ 5,700 people including 4,000 Delta residents. The largest of these is ECODELTA.

In addition there are at least two active NGOs interested in the Danube Delta, called PRODELTA and Friends of the Delta which work with local communities in promoting public awareness of the importance of the Delta and its conservation.

International partnerships

A number of international organisations have been involved in the development of conservation of the Danube Delta. The first partnership which was active was that with IUCN – The World Conservation Union and UNESCO in the organisation of an international seminar held in the Delta in September 1991 which produced the DDBRA Management Objectives. This followed a period of 18 months work on data analysis, consensus building and efforts to secure international recognition of the importance of conserving the Delta. This work duly paid off in the major technical assistance package for DDBRA, known as the Danube Delta Environmental Management Programme (DDEMP) funded by EBRD. This provided for assistance from the consultants, Euroconsult and BMB Consultants from the Netherlands with continuing collaboration from IUCN, which appointed the Resident Adviser for the DDEMP and recommended various specialists to undertake key studies.

In addition a number of more specific research, remote sensing and mapping assistance has been forthcoming from other parties. In particular these include the Auen Institute for Floodplain Ecology of WWF Germany, the Dutch Rijkwaterstaat (Flevoland) and the American Academy of Sciences. BirdLife International have been assisting DDI and DDBRA on bird monitoring and public awareness, and the Cousteau Foundation has done some investigatory work in the Delta.

The process

Current situation

Although some of the key sites of particular interest in the delta were recognised as strictly protected areas as early as 1934, the process really began with democratisation in late 1989, when the idea was suggested of designating the whole of the delta and the coastal wetlands to its south as a Biosphere Reserve. A Government Decision in August 1990 set up the DDBR. IUCN investigated the possibility of assistance that led to consultation missions and data assessment, and finally to the Management Objectives workshop in September 1991. The recognition by the World Heritage and Ramsar Conventions also occurred in 1991.

However, legal problems arose from the inadequacy of the legislation concerning protected areas in Romania. These problems still exist, and a new framework for environmental legislation is currently under discussion containing articles on protected areas. But by 1993 concern was felt that the Danube Delta was not sufficiently protected and that this opportunity for conserving it might be lost. The occasion of the Tunis meeting of the World Heritage Convention was used to draw international attention to this fact, since this Convention requires adequate legal protection of designated sites. After the Meeting UNESCO sent a letter to the government threatening to remove Romania from the World Heritage Convention unless legislation was passed. This threat of international disgrace proved enough and between July and October 1993, the Danube Delta Legislation was drawn up and passed through the Senate.

After international finance for technical assistance became available, the DDBRA with the help of the Dutch consultants carried out the process started at the Management Objectives workshop to develop the more detailed management plan. This included the preparation of a series of sectoral studies with Romanian scientists assisted by an international expert in each of the following sectors: hydrology, fishery management, tourism, reedbed management, low-input agriculture and biodiversity. When these were completed five management planning workshops were held using the findings of the sectoral studies. These workshops considered in turn the coastal and marine buffer zones, the strictly protected areas, the freshwater and terrestrial buffer zones and sustainable economic development zones. The final workshop was cross-thematic and aimed to consolidate and integrate the outputs from the zonal workshops. During the workshop process a vigorous public awareness campaign was organised to encourage comment by the public and local NGOs. The whole process came up with over 70 sub-projects aimed at achieving the 35 objectives of the management plan.

Next steps

During the development of the project, a number of issues emerged, which tended to inhibit progress. These often related to unforeseen bottlenecks such as the problems arising from the DDBRA office space which was dispersed between a number of buildings making communication difficult, and the lack of available housing in Tulcea to attract professional staff to DDBRA. There is a need for a new headquarters for the DDBRA and an improved salary system.

Also the need for skilful management became increasingly evident as the DDBRA grew into its role. The process included a change in the role of the Governor; once the scope and objectives of the DDBRA had been defined by the scientist initiators of the project, the task of implementation required different skills – those of organisation and personnel management. In particular the first Governor was replaced by a professional manager, who proved to be more effective in the implementation.

Thirdly the role of public participation in the process was perhaps not so easily encouraged as the rhetoric might imply. Always a difficult process, the skills in facilitating it need to be learned, especially when the officials have been brought up under a centralised system, and the public are understandably wary of apparently criticising the system. An associated problem arose in the attitudes of the ecological wardens who were often drawn from the Delta communities, given

training and powers of enforcing the regulations. Difficulties arose in their relationships with the people in the Delta, largely because of attitudes and misunderstandings. The DDBRA acknowledge the importance of staff training in changing their attitudes towards more open management of the resources rather than policing.

However, real local suffering was experienced by some local people when the strictly protected areas were declared. Although there were no demonstrations, the feeling of the people was expressed in individual discussions; some compensation is currently being considered. Also a more understanding attitude towards the licences and penalties has been developed so that local fishermen do not now pay a fee for fish for their own use, nor do villagers collecting reeds for their houses, but they are required to obtain a permit. Similarly collectors of medicinal herbs do not have to pay a fee but need to have a permit from the DDBRA, since the discipline of regulating and monitoring the exploitation of natural resources is still necessary.

The importance of getting the local population on the side of the authority has been learnt by DDBRA, who acknowledge that this takes time; the benefits of ecological restoration do not appear immediately and the effects of restoring the hydrological equilibrium may take years to show.

The DDBRA also experienced difficulties in their relationship with the central authorities – for example, the Ministry of Finance found it difficult to accept the apparent loss of revenue by waiving the permit fees for fishermen catching 1,000 tonnes of fish for their own use each year, and it has also had difficulties with evaluating and accepting an EBRD loan for promoting sustainable development projects in the Delta.

Analysis

From a description of the process, it is apparent that the conservation of the Danube Delta as a Biosphere Reserve was championed by a few scientists who appreciated its importance and who were in the right place at the right time to take advantage of a window of opportunity immediately after the revolution of 1989. They had the vision for this and with astute political management and limited assistance initially from two international NGOs, IUCN and WWF, as well as UNESCO, they were able to convince the Romanian Government and the international funding agencies.

The use of international conventions in convincing the Romanian Government to back up its actions with special legislation was particularly astute, and illustrates the power of such conventions. Although the Danube Delta has its own special legislation as befits an area of such size, it is not practicable for each Biosphere reserve to have its own legislation. The need for the Framework Environmental Law for Romania is still urgent.

Another critical element in the success of the conservation of the Danube Delta to date has been the establishment of a strong institution to manage the process. The existence of an old organisation on which to build (the now defunct Danube Delta Commission) is not always appropriate, but in this case it seems that the change in objectives and attitudes to create both the DDBRA and DDI have been successful. This is not always the case, because institutional vested interests, experience in conventional exploitation of natural resources and the presence of expensive construction equipment which needs to be justified may all conspire to maintain ecologically damaging practices. This is especially true in the powerful water management and forestry institutions.

The process also illustrates the difference in roles between the scientists who identify the importance of a site and develop management objectives, and the managers who have to implement the plan. After the initial identification period, the scientists have to let the managers get on with the job. However, the role of the scientist changes in the implementation stage towards monitoring and ensuring that the managers stay on course becomes important. It is possible for managers to lose sight of the scientific objectives and in a given situation to take the course of least resistance.

However, scientists do not have the monopoly of setting objectives, and although the workshop period for development of the plan was extensive, the importance of local participation in this process should be and was recognised. Local people are often able to correct impractical ideas, and their involvement engenders greater understanding and commitment to conservation. In the democratic transition there is a need for both officials and public to learn the skills of participation and confidence in the process.

The experience of the Danube Delta also illustrates the important seed support role of international NGOs. Small funds and technical assistance in the initial stages can make all the difference in promoting an area for conservation of biodiversity. The role of IUCN and WWF in assisting publications, scientific studies, consensus building and brokering was especially valuable. It paved the way for more substantial funds to come in. Their continued role in providing professional support where necessary, sharing of information and acting as an international watchdog is also acknowledged.

The role of the larger donors has also been of immense significance. The downside of involving the international agencies is the long-drawn out missions and negotiations which can be extremely frustrating. However, this process does allow for changes to be made in the light of different perspectives, and for paring an initial wish-list of funding requirements which are not always practical or advisable.

Finally the role of the consultants involved in technical assistance needs to be recognised. The DDBRA have acknowledged the good relationship which they have had with their consultants. For their part the consultants made efforts to ensure that they advised the DDBRA on different courses of action, rather than trying to prescribe what they should do. The DDBRA management made the decisions based upon the information available. The training and coaching roles of the consultancy team were perhaps the most critical in strengthening the institutions which have to continue the work when they leave.

Lessons learned

The lessons which can be taken from the experience of conservation of biodiversity in the Danube Delta include:

- Having a champion is often critical for the concept of conserving biodiversity in an area; a person who is able to promote the idea, and manage its development technically and politically until it becomes firmly established.
- International conventions can be used to promote and support the conservation of particular areas within the country.
- Small-scale support from international NGOs can be useful initially in establishing the credibility for a project by preparing much of the background data, making links and brokering the project.
- Having a stable institutional structure on which to develop the project is essential for both credibility and rapid implementation.
- A strong legal protection, whether it is in terms of specific legislation, or more generalised framework laws for protected areas, is essential for both credibility and long-term security of the protection work.
- It is essential to win over the people living in and around the protected area and to convince them of the benefits of sustainable development of the area. Public participation and public awareness are mechanisms for this, but this can be a long learning process for both staff and people.
- In the design of a project, consider questions of staff housing availability, skills required and how to attract them, and the office space available.
- When projects move into the implementation phase, skilled managers are required, and the scientists who initiated the project should ensure that they observe the scientific objectives.

- Consultants chosen for technical assistance should aim to help the institution make the decisions by advising on the options rather than prescribing solutions.

Acknowledgements
This paper could not have been prepared without the assistance of the following people in Romania:
Ms Adriana Dinu, IUCN Project Coordinator, Faculty of Biology, University of Bucharest.
Prof. Angheluta Vadineanu, Head, Faculty of Biology, University of Bucharest.
Academician Nicolae Botnariuc, Romanian Academy of Science, Bucharest.
Dr George Romanca, Senior Researcher, UNESCO/Cousteau Chair of Ecology and Environmental Management, Bucharest.
Mr Eugen Tarhon, Governor, Danube Delta Biosphere Reserve, Tulcea.
Mr Virgil Munteanu, Head of External Relations, Danube Delta Biosphere Reserve, Tulcea.
Mr Romulus Stiuca, Director, Danube Delta Research and Design Institute, Tulcea.
Ms Diana Bota, Biodiversity Programme, Danube Delta Research and Design Institute, Tulcea.
Mr Gerard Fischer, Consultant, Danube Delta Biosphere Reserve Authority, Tulcea.
Mr Toader Badiu, owner of ATBAD Ltd., private tourism company, Tulcea.

3.6 Retezat National Park, Romania

Introduction

IUCN proposed the Retezat National Park project as one of the five demonstration projects on sustainable rural development to the 1993 Lucerne Conference. The scope of the project covered integration of the existing National Park management with the restructuring and development of the adjacent rural areas. So far the project has received virtually no international funding, but a number of activities and initiatives on the national level have taken place.

Background

Site description and importance

Retezat Mountains are located in the western part of Romania, in the Hunedoara Judet. The peaks are up to 2,500 m high; geologically they are partly crystalline and partly calcareous. In the lower part, they are cut by deep narrow valleys, while the higher part consists of glacial plateaux with numerous small lakes. Slopes are covered with broad-leaved (lower levels) and coniferous (higher levels) forests. In the alpine zone, pines intermix with grasslands and rocky crests and peaks. Due to high precipitation, the drainage network is very dense. The vegetation is very rich because of its location between different vegetational provinces (central European, Iliric, Balkan, Carpathian, and Moesian) and there are some endemic species.

Retezat National Park was established by law in 1935 after the feudal owners renounced their ownership. The park has an area of 54,500 ha; of these, 1,800 ha have been declared as a scientific reserve called Gemenele. The management of the park was entrusted to the Nature Monuments Commission of the Romanian Academy of Science, by this law and a later Nature Conservation Law in 1973. In 1979, the park was declared a UNESCO MAB Biosphere Reserve. After 1990, there have been various proposals for expansion of the park (e.g. to the southern calcareous region), but none has yet been effected.

There are two basic traditional activities in the park: forestry and sheep grazing. The forests have been moderately exploited and have more or less retained their natural structure with beech *Fagus sylvatica*, silver fir *Abies alba*, and Norway spruce *Picea abies*. The park is managed by three forest districts of the national forestry company Romsilva, that also manage

forests outside the park. The management of the forest in the park and in the surroundings is appropriate for a protected area: mainly sanitation of spruce stands because of bark beetle. The forestry districts are also managing hunting and fishing. There is no legal hunting or fishing within the park, but there is moderate planned hunting and permitted recreational fishing in the surrounding area.

Sheep grazing is a traditional activity in the alpine zone of the park by the farmers from surrounding villages and by nomadic shepherds (it is a transhumance region). There is no milking or cheese production, so only the infertile sheep are on the pasture. Grazing is not allowed in the Gemenele reserve, and construction of cottages or stables is prohibited in the entire park. However, after 1990 there was a major increase in the number of sheep, causing overgrazing.

When the park was established, grazing rights were not changed as opposed to the land property rights. Traditionally, grazing rights were managed by the local councils. During the communist time, grazing was managed by a special department of Romsilva that employed animal husbandry experts, but after 1990 the management was returned to the local councils. These local councils are now letting areas to large scale shepherds from other regions to bring their sheep to Retezat in addition to the sheep from the surrounding villages. Furthermore, there are a number of shepherds grazing without any permission. It is generally thought that while grazing just with locally owned sheep would be sustainable, the current practice is not.

In summer, Retezat is a popular mountaineering and hiking area. Around the park there are chalet centres (Gura Zlata, Pietrele, Balcia and Buta) that are used as starting points for hikes through the park. Because there is no chalet in the central part of the park, the visitors usually camp overnight. This causes problems with litter and burning wood. Other forms of tourism in the wider area are hunting, fishing and kayaking on the Riul Mare.

Since the 1970s, a hydropower dam has been under construction on Riul Mare and is approaching completion. Part of the reservoir will extend into the park area and most streams coming from the park are planned to be captured. The Academy of Science succeeded in preventing abstraction from the streams in the reserve, and the abstraction pipe will cross the reserve through a tunnel. The construction, consisting of a 100 m high earth-filled dam, a 20 km tunnelled feed-pipe, and an even longer secondary abstraction pipe has led to much accompanying construction in the valley: a two-lane road, several workers camps, and other facilities for the construction. Some of the buildings are now used as summer resorts and after the restoration of the valley, the water reservoir will probably offer an opportunity to develop tourism on a larger scale.

The project

Goals and objectives

The goals of the project in Retezat are not yet clearly specified, but there is quite an array of proposed goals from different actors. From the point of view of nature conservation in Romania, the general goal is to support and maintain the only existing national park and one of three biosphere reserves in Romania as an example for other mountain areas (eleven) that are proposed for protection. This means continued strict protection of the reserve area as well as solving problems with grazing and visitors through a model of sustainable management of the natural resources.

The following objectives might be identified:

- Establish a park administration with sufficient authority and capacity to manage the park.
- Reduction of grazing pressure.
- Improvement of visitor culture to avoid littering and burning of dwarf pine.
- Continued existence of animal populations, especially of chamois, wolf and bear.
- Continued strict protection of the Gemenele reserve.

- Continued and improved management of the forest in and around the park.
- Creation of new income opportunities for the local population through management activities, tourism and direct marketing of local products.

The actors

The Commission for Nature Monuments of the Romanian Academy of Science is the legally designated authority for administering the park. Their main interest is in ecosystem research inside the Gemenele reserve. This is mainly undertaken by Napoca, the Biological Research Institute from Cluj. The Academy employs four wardens, whose main task is the protection of the reserve and maintenance of the Academy's facilities (a field station inside the reserve and a house at the entrance).

The Environmental Protection Agency of the Hunedoara Judet in Deva is the regional office of the Ministry of Waters, Forest and Environmental Protection (MWFEP). They have a wide range of tasks, from environmental inspection to care for protected areas. They are mainly concerned with the pollution problems of metallurgical industry in the Judet. Recently they prepared a proposal, upon the request of MWFEP, for renewed and further declaration of protected areas in the Judet, that is still under the consideration of the Judet Council. In this proposal they designated the Forest Service to manage the Retezat National Park.

Romsilva (Forest Service) is a state enterprise, under MWFEP, that according to the forest law manages all the forest in Romania. Since there are no exceptions provided for in the law, they are also legally responsible for the management of the forest within the national park and the reserve. Their management consists of monitoring, planning, protection and exploitation of forests, hunting and recreational fishing. Forest management has been regulated by law in Romania since 1881, and the forest service has a long tradition of forest management. In the area around Retezat they are organised as the Judet Forest Service, Deva Branch, with three of the Forest Districts reaching into the park. The Forest Service is already managing the forests inside and around the park according to their conservation and recreation function, but have no control over the grazing outside forests and they are ready and willing to take over the entire management of the park. They are the only organisation currently having the capacity to do that.

The electricity utility is gradually completing the construction of the hydro-power dam. However, it seems that the project is not on the top of their current investment priority list and it is not known whether or when they will be able to remove the construction facilities from the valley.

Local communities manage the grazing rights on the alpine pastures. They contract them out to their own villagers as well as shepherds coming from other regions. It is not clear what procedures are used to award these contracts and it seems that they do not fully appreciate their responsibility for the resource at this time. Most local farmers are also employed in industry, so they do not have a vital interest in alpine grazing, since the milking sheep have to stay in the valleys anyway. They apparently prefer to add their sheep to the flocks of professional shepherds coming from elsewhere. However, there are signs of developing conflict between the locals and those from elsewhere, especially since many shepherds bring their flocks without a permission from the local councils.

In Romania nomadic or semi-nomadic (transhumance) shepherding is still widely practised and obviously very profitable – at least in comparison with other activities and because of the extent of poorly controlled public land. The shepherds spend winter in the lowlands (as far as the Dobrogea/Danube Delta) and move towards the alpine pastures in the spring, stay there over summer and move back to lowlands in the autumn. They are able to pay, in one way or another, significant fees for the grazing on the alpine pastures managed by the local councils. On the other hand, it is almost impossible to effectively control them and many come without permission. It is unknown whether they would be able to find alternative pastures if those in Retezat were closed

for them, and how long this kind of operation will be economically viable after the privatisation of land and the start of economic growth in the country.

Pro Natura is an environmental club of students in Bucharest, established in 1990, with its main activity directed towards environmental education and nature conservation. In the last few years the club developed a project in the Retezat National Park and in the nearby Valea Cernei aimed at educating visitors through cleaning up litter (cans etc.), fitting out the area with information signs and direct contact with visitors through leaflets and discussions. Some 200 club members and other volunteers cleaned up most of the existing litter throughout the park in July and August 1992 and 1993. This received a very positive coverage in the media, as well as from several international organisations, especially a German NGO, Banat-JA. In 1994, the Romanian Army took part in the cleaning, assisting in the transportation of waste: more than 30 tons was transported to the landfill at Hateg.

Based on their activity, UNESCO Pro Natura put a request to the Academy of Sciences that their members become custodians of the park. So far the Academy has issued a number of identification cards, and they have the authority to collect fines from visitors who break the regulations. Similar authority was also given also to seven members of SALVAMONT and for seven guardians of the Academy itself. Some of them took a course for national park wardens in Germany, provided by the Wilderness Education Association from USA. The goal of the club is to be involved in the future management of the park, and to connect the Retezat National Park with the nearby site of Valea Cernei into a single biosphere reserve.

The Process

Current situation

The project concept submitted to the 1993 Lucerne Conference was prepared by IUCN representatives in Romania in close cooperation with MWFEP and the Academy of Science. This proposal was based on the existing situation, as well as proposals for new protected areas and expansion of the park. The proposal included improvements in park management and development of tourism and local infrastructure.

Since then, however, little has happened. There has been hardly any consultation about the issue in the country and especially the region: this can be partly attributed to other priorities in Romania, including environmental legislation reform, the Danube Delta project (see section 3.5), and the low staffing level of the nature conservation department in MWFEP. There was also very little international attention for the project and it remained the only IUCN project in Central and Eastern Europe without international financing after Lucerne.

Recently, a new Environmental Protection Act was adopted by Parliament. It is a framework law, and several special laws are still required, including a law on nature conservation. In the preparatory process for this law, proposals for 12 new parks in montane areas were developed, and in 1994 MWFEP requested all the Judets concerned to establish new reserves (of all categories) in their territory, as another step towards a proper network of protected areas in the country.

Some NGOs are already preparing a draft law for submission to the Parliament. The main issue about this law is the institutional structure and operation of the nature conservation service and its relation to the existing forestry and water management agencies.

The only conservation actions that took place in the park itself were the activities of the UNESCO Pro Natura described above. On the other hand the grazing pressure has been increasing and is leading to overgrazing. Recently, the Environmental Protection Agency from Deva proposed an act on the establishment and re-establishment of protected areas in Hunedoara Judet, but it was rejected by the Judet Council, mainly because of opposition from rural representatives. The proposal entrusts the leading role in management of the Retezat National Park to Romsilva.

A meeting took place in the presence of the present consultants at the Judet offices to clarify the misunderstandings between different actors. This was obviously the first meeting when the issues of nature conservation and the Retezat National Park in particular were seriously discussed. A number of contacts were established and readiness was expressed on all parts to participate in the process of improvement of the park management. The establishment of a steering committee was proposed by Romsilva and endorsed by all the participants. The Judet Council member, representing the rural electorate, stated that the Farmers Association is planning to establish a shepherds syndicate, that could effectively represent the interest of local farmers and shepherds in such a steering committee.

Next steps

In the near future, more discussions will be held at the Judet level regarding the Steering Committee and the management of the park. The question of a park administration and wardens will have to be resolved between the Academy, MWFEP (through Romsilva) and UNESCO Pro Natura.

Crucial for future development will be the passing of a Nature Conservation Act, because the management of the park (including the grazing rights and their management) will have to be based on its provisions. Potentially, the Retezat National Park could be used as a pilot project within the process of the preparation of the new law. For that, a more active role of MWFEP will be necessary.

Analysis

The current quality of the natural environment in Retezat is a consequence of legal arrangements dating from the previous century (forestry) and before the Second World war (the National Park). Moreover, the Biosphere Reserve was declared during the previous regime. The park is therefore a legal fact that still needs to be fully implemented in practice, but it would be extremely hard to rescind it.

In accordance with forestry legislation and the standards of Central European forestry practice, the forests in Retezat have been managed on a natural basis, maintaining the natural species structure, using long rotation periods (over 100 years) and natural regeneration. Similarly, the natural wildlife populations have been managed in a planned sustainable manner. Thus, destruction of forest ecosystems has been largely avoided and, with the relative lack of pollution damage, the forest ecosystem is in a remarkably natural state by West European standards.

The Gemenele reserve has been a central point of forest and mountain ecosystem research in Romania. There exists a long bibliography of research results in the field of botany, zoology, ecosystem science, soil science etc.

With respect to the hydro-electric power dam, during the decades of planning and construction the Academy and other actors have managed to modify the project in order reduce damage to the park. In particular, the Academy caused the primary feed pipeline to be shifted to the slope opposite the park and run under the ground, and also prevented abstraction of water from the park for a secondary feed pipeline.

The campaign of UNESCO Pro Natura to clean-up and equip the park and to educate the visitors has achieved significant results: 30 tons of waste have been removed, a number of signs have been repaired or erected, the patterns of visitor behaviour are starting to change, there was extensive national media coverage, and international knowledge about the park was expanded. This campaign is giving UNESCO Pro Natura the authority to push for new improvements of the park management and also to participate in it.

The level of dialogue with the local population has been very low so far. As the grazing in the alpine zone is the main threat to the park today, pastoralists are a key factor in the park. Through the consultants visit, an opportunity was created for a constructive dialogue between different actors. For UNESCO Pro Natura, for example, this was the first time it met the foresters and the

Judet officials. Agreement was reached that the discussions should continue and that a visit would be organised to the Danube Delta Biosphere Reserve. Our visit also gave the actors involved a sense of the wider importance of the park.

The new Environmental Protection Act contains provisions for a Nature Conservation Act that should regulate the institutional arrangements for protected areas. There are two basic options: establishing a new nature conservation agency within the MWFEP, or entrusting the management of the parks to existing agencies. It seems that the MWFEP is planning a combined approach, using Romsilva as the management agency in the forested areas, and managing others through the Environment Department (like the Danube Delta Biosphere Reserve Administration), but in both cases they plan to retain an important role for the Academy of Science.

Lessons learned

The activities of UNESCO Pro Natura are showing how much can be done almost without financial means or big efforts of various agencies. Their actions are directly benefiting nature in the park and are raising the publicity profile of the area.

In part, the environmental situation in Retezat has deteriorated since the democratisation, because of the liberalisation of the pasture management. On the other hand, forest and wildlife management seems sustainable, as it has been for the last century. Also the Gemenele reserve is something that has survived several political systems. This shows the long-term importance of institutional continuity. The municipalities, to which responsibility for the management of pastures was returned after forty years, are not able to manage them properly.

Uncertainty in institutional set-up can block the process for a long time, and it is very hard for the government agencies to get out of a stalemate position without decisive political action. Non-governmental organisations have more flexibility and can do a lot to carry on the activities, and to provide an appropriate context for the government to take action. In setting up the park the issue is how not to lose the capacities and experience of existing institutions, but to overcome their inherent rigidity.

The question of management of pastures exposes the problem of ownership and responsibility. The local councils may have been good managers of pastures in the past, when the local people were dependent on them. Today, most of the locals work in the industry, and there is no long-term interest in the pasture resource. The only interest is for quick profits from grazing permits. There is also no control on the mountain, giving opportunity for additional illegal grazing. The resources must be managed by entities, that are genuinely interested in their sustainability and not in extra profits.

Acknowledgements

The help of the following people in preparing this account is gratefully acknowledged:

Adriana Dinu, Country Project Coordinator, IUCN.

Ioan Jelev, State Secretary for Environment, Ministry of Waters, Forests and Environmental Protection.

Teodor Bitca, Director, Hunedoara Judet Environmental Protection Agency, Deva.

C. Teodorascu, Chief Inspector, Hunedoara Judet Environmental Protection Agency, Deva.

Alexandru Brateanu, Technical Director, Romsilva, Forest Service Branch Deva.

Jan-Dorin Calciu, Secretary, Hunedoara Judet Association of Hunters and Sport Fishermen.

Guido Toniuti, Chief, , Romsilva Forest Service Retezat Forest District.

Erika Stantiu, Forest Inspector, Romsilva Forest Service Branch Deva.

Iurie Virgil Maxim, Programme Coordinator, UNESCO Pro Natura.

Doru Lasc, Administrator of the Scientific Reserve and Guardian, Romanian Academy of Science.

3.7 Losinyi Ostrov (Elk Island), Moscow, Russia

Introduction

Losinyi Ostrov illustrates the issues encountered in the extreme contrast between the urban conditions of a major city, and the wildness of natural forest and wetland. Moscow is the somewhat unlikely place where this has occurred, and the ongoing battle for the survival of Losinyi Ostrov is coupled with the moves toward independent management of a National Park and the changes in attitudes in learning to cope with visitor pressure in a democratising society.

Originally put forward among the five project concepts at the 1993 Lucerne Conference, the project at Losinyi Ostrov has not received major funding from an international donor. Notwithstanding this, it has been supported internally by Moscow City Government, with significant steps being taken to secure the park legally and managerially. The financial security of the park is, however, still very dependent upon the conditions of the Russian economy as a whole.

Background

Site description and importance

Losinyi Ostrov (or Elk Island) is a ten-year-old National Park covering an area of 14,000 ha shaped like the segment of the pie, which is Moscow City. Its southern tip is within 5 km, and its core zone within 12 km, of the Kremlin. Busy roads bound the park on the southern, northern and western boundaries along which a railway line also runs. The park is cut by the five-lane Moscow ring road. The inner third of the park lies in the Moscow City area, and the outer two thirds lie in the Moscow District area. Three small industrial towns lie to the north and east, and Moscow apartment blocks to the south. In reality, Losinyi Ostrov is an island of wildness in an urban setting, and there is only one corridor to the outside countryside to the south-east.

The park consists of managed birch *Betula* forests in the area closest to the centre of the city, which is used principally as a recreation area. On the other side of the ring road, there are about 1,000 ha of wetland on either side of the channel of the Yauza River which originates in the heart of the park. Surrounding the wetlands there are natural stands of mixed deciduous and coniferous forest, typical of European Russia. This extends over 90% of the park, interspersed with scattered meadows. Some areas of virgin forest represent the only virgin forest around Moscow, and one of the few outside of reserves in Central Russia.

The fauna of the park includes 45 species of animals, including about 30 elk *Alces alces*, about 40 beaver *Castor fiber*, wild boar *Sus scrofa*, mink *Lutreola lutreola*, muskrat *Ondatra zibethicus* and an introduced herd of reindeer *Rangifer tarandus*. The wetlands are used by many wildfowl, including tree-nesting ducks, and rare waterbirds visit the site on migration.

The protection of the park has a long history, for it was originally a hunting forest of the Russian Tsars. It contains a number of archaeological monuments, which include Tsar Alexei Mikhailovich's hunting palace, a chapel sited over a spring, and the historically very significant water-supply pipes, pumping stations and aqueduct first installed in the reign of Catherine the Great. The water quality of the area has long been renowned.

The significance of Losinyi Ostrov derives principally from its location in the centre of a major city. It can serve as an example that it is possible to reconcile the pressures of urban conditions with conservation of the wilderness together with its complement of typical flora and fauna, including elk and beavers. Within the local context, the park provides the rather polluted city of Moscow with 'green lungs' – an opportunity for the inhabitants to use relatively untainted recreation space, and most importantly it provides a significant environmental education resource. It is these two roles for biological and landscape diversity which provide a model for national parks close to urban centres – a concept which is certain to grow in the future.

Threats and issues

With Losinyi Ostrov National Park located so close to urban areas there are a number of unique pressures which result from this. Perhaps the most obvious is the threat of pollution from the urban population and the industries situated or planned close-by. The park itself lies at the top of the water catchment area, and so there is little direct flow of water pollutants into the Yauza River before it leaves the park. However, air pollution from the city, the illegal dumping of solid wastes and soil contamination from derelict industries adjacent to the park are evident. These impacts will be exacerbated if the plans for the construction of a second thermal power station near the north-western park boundary are carried out. There is already an existing power station with poor pollution control sited half a kilometre from the southern boundary.

More fundamental than this are the threats to the park boundaries. Since *perestroika*, there has been an increasing appreciation of land prices. The park represents an area of prime undeveloped land and as such has considerable value; in the process of defining the boundaries local authorities, existing occupiers, farmers and industries are either reluctant to give up their title to the land (if they have one) or have tried to encroach illegally and set up vegetable gardens and buildings. This is likely to be an ongoing process, which will intensify as the premium for land increases.

If water pollution coming into the park is less of an issue, a very obvious and serious threat has developed due to hydrological changes caused by flood dykes being built downstream of the Yauza River, to protect industries outside the park. This has resulted in the water table rising in the park and creating permanent waterbodies; in some previously forested areas the trees have died. The issue of whether to accept this new hydrological balance, or whether to seek measures to return the site to the original condition, is currently concerning the park managers.

The problem of roads and traffic is also a concern, especially as the Moscow ring road effectively divides the park, causing both noise and a physical barrier between the two parts which can only be crossed by animals at specific points. The island nature of the park may also be an issue both in the movement of animals between the park and the woods to the south-east, and in the event of increasing populations of some species beyond the capacity of the park.

Another major threat to the natural resources is the visitor pressure. In some of the designated recreation areas, the park may receive 100 visitors per hectare on a typical weekend, although numbers would be less outside of these areas. No accurate survey of visitor numbers has been carried out yet, so it is hard to make predictions. Nevertheless, the issue of management of visitors is critical if the park is to retain its wilderness character, rather than becoming yet another recreational site with little biodiversity value.

As well as physical management of the visitors, the control of visitor pressure not only requires a change of attitude on the part of the visitors to respect park boundaries and regulations, but also a change for the wardens and rangers who have to police visitor activities. With the freedom of the democratisation process, regulations are less respected and the park authorities have to find a more persuasive and educative means of managing visitors than the fear of penalties. Such changes in attitudes take some time to develop and are difficult to ensure.

The financing of the park is still uncertain, since administratively the park management is responsible to Moscow City Government and Moscow District Government, which are in turn responsible to the Government of the Russian Federation. Of these only Moscow City have been able to find the funds to support the running of the park. The long-term financing responsibilities have not yet been established, raising a question mark over its sustainability.

The project

Goals and objectives

The three main objectives of the Losinyi Ostrov National Park management are:

- The protection of the area and its flora and fauna.
- The development of environmental education resources, especially for school children.
- The provision of a recreational resource for the people of Moscow.

While these are obviously inter-connected objectives, the educational and recreational purposes alone of the park justify its protection.

The actors

Legally the responsibility for management of Russia's 17 National Parks lies with the Government of the Russian Federation. However, Losinyi Ostrov is an exception, since in 1994 a decision was taken to set up a semi-autonomous National Park Management responsible to the Moscow City Government and the Moscow District Government. The Moscow City Government has made most of the initiatives to develop and protect the park. The authority is responsible to the Department of Parks and Gardens of the City.

The park management has about 150 staff, of which the majority are 60 wardens who have the task of managing the visitors and policing, and about 40 rangers who have the task of managing the natural resources – the forestry, wetlands and flora and fauna. They are supported by another part of the Moscow City Government: the Committee for Environment Protection and Natural Resources which is responsible for setting standards, surveying and monitoring of the environment and issuing permits and prosecutions. They administer the Moscow City Ecological Fund which accumulates the fees from waste discharge permits, penalties and taxes for use in environmental programmes, especially pollution control, and environmental education in the city. Some moneys have been used from this fund for publications on Losinyi Ostrov, e.g. school books, a newspaper.

The other main institution involved in Losinyi Ostrov is the International Institute of Forestry (IIF), which was commissioned by Moscow City Government to prepare a description and conceptual management plan for the National Park. This involved the coordination of ten different scientific and other organisations. The IIF was chosen because of its previous involvement with the management of the forests in the area, since 80% of Losinyi Ostrov is covered with forest.

International partnerships

Despite the presentation of a concept proposal at the 1993 Lucerne Meeting, which had been prepared in consultation with IUCN, no major donor has yet been found to assist with the development of the park and the capital investments needed. However, the UK Environmental Know How Fund supported a study tour for three of the park managers to visit the Lake District National Park. This was appreciated by the park managers, giving them considerable ideas for the development of environmental educational facilities in the park. In addition, Moscow City Government and the IIF have a number of contacts with international organisations some of whom have provided small sums of money for particular activities, e.g. Tree International from the USA assisted a tree planting programme in 1994.

The process

Current situation

The idea of formally protecting the Tsarist hunting forest of Losinyi Ostrov goes back to 1912, when the city tried to obtain the territory, but the State wanted to keep it private. If it had not been for the Great October Revolution, the idea would have been put into practice much earlier. As it was, the concept of nature reserves was introduced in the Soviet Union during the 1960/70s

because of a tourist boom and Losinyi Ostrov nature reserve was created in 1978. Later the concept of National Parks was introduced and Losinyi Ostrov became the first National Park in 1983. By the early 1990s, the threats to the park were growing and the proposal for investment and management of the park was developed in 1992.

Since that time a number of significant measures have been taken to secure the boundaries and protect the park. These have included the negotiation and definition of the boundaries of the park. This was a critical step if encroachment was to stop. Now the park has been increased to include an extra 1,000 ha to the east of the main area; the boundaries all the way around the park have been agreed except for an area in the north-west where some small industries exist, and the local authorities are not keen to release the land. This is an important area because it slopes down into the Yauza river basin and could be a source of water pollution in the future.

A number of industries have been moved out of the area immediately adjacent to the park; out of 40 small and medium-sized industries and garages, only 9 remain in addition to a military compound. It is unlikely that these will moved. A small community of about 100 households which used to be dependent upon the mining of peat in the area is being rehoused, with land being provided by the Moscow District Government and funds for houses provided by Moscow City Government. The encroachment of some farmers who illegally planted vegetable gardens in the park was reversed with the assistance of interested citizens living nearby.

Between 1992 and 1993, the Moscow City Government commissioned the IIF to prepare the management plan for the park. This plan was formally accepted in late February 1995. It consists of a concept from which detailed work plans will have to be developed for all the main activities of the park. These include the protection of the natural ecosystem and the historical and cultural monuments, the development of environmental education by providing centres, museums, walkways, publications and organising events, and the development of recreational activities to include walks, horse-riding, picnic sites and playgrounds.

One of the most important but difficult aspects of the plan was the definition of the different zones of activity in the park. The question of whether to have specially protected areas was debated; it was accepted that despite such designation some people would enter them anyway. It was recommended that temporary specially protected areas should be created for a period of 10–15 years, after which it might be possible to tell how effective they were. Such areas lie at the core of the park and would be closed to everyone except scientists responsible for researching and monitoring the environment. Within these there would be reserve areas within which no-one would enter. Around the specially protected areas, there has been established the Excursion Zone. The purpose of this zone is for visits by groups of people, especially schoolchildren, to see the natural resources. This covers the area to the east of the ring road in which the forest management practices would be minimal. On the western side of the ring road in the so-called Recreational Zone, forest management is more intensive to keep the area clean for the large numbers of visitors using the park. Around the park itself, a buffer zone was established, in which industrial and other activities should be limited.

The management plan also provided for scientific monitoring of the environment, and for the facilities for research. Contrary to usual practice in more remote National Parks, a large research department was not set up because it was felt that there were already many existing organisations in Moscow which would like to participate in such research. An in-house research department would tend to inhibit such involvement.

In addition the management plan also considered the law and legal regulations necessary to protect the park, as well as the services for wardening and policing it. Most National Parks in Russia contain a police station, but not Losinyi Ostrov at present. The development of the legislative aspects was also unique, because most parks do not have special regulations. In 1994, a special legal instrument was passed by the Federal Government giving the responsibility for

management of the park to the Moscow City and District Governments, and setting up the semi-autonomous management board. This means that the park managers have the authority to take management decisions, hire and fire staff, and issue penalties for infringement of the regulations. Such penalties are dependent upon the offence and the zone, e.g. driving cars in the area, access without authority and lighting of fires.

While this was being developed a number of educational and promotional activities have been carried out, including regular contacts with schools and leading of field trips and excursions, the organisation of a March of the Parks and Earth Day celebrations. A regular newsletter is produced and distributed to staff, schools and interested citizens, and the first volume of the parks scientific journal produced.

Future steps

These small but significant steps are but precursors for the implementation of the management plan. Detailed work plans have to be worked out and a quantum leap in the promotional and educational activities taken. This will involve significant investment in the development of an Information Centre/Museum near the old city water-works, the restoration of some of the archaeological monuments, and more ambitiously the construction of an underwater beaver viewing chamber. The educational role of the park is a big justification for its protection.

Steps need to be taken to ensure that the small resident community is moved out of the park in a satisfactory manner, and that the work on the boundaries and removal of the industries is completed. The major problem of the rising water table requires hydrological study, followed by decisions on how to overcome it. This may require negotiations with companies outside the park boundaries, and needs urgent attention.

The issues of visitor management and park policing need to be seriously addressed and the policies of trying to provide all the facilities which casual visitors might need inside the Recreation Zone so that they do not move into the more highly protected zones.

Financial needs

At present, Moscow City Government is carrying all the financial burden, but under the parks constitution the Federal Government and Moscow District are also supposed to contribute. The decision of the Russian Federation contained an item which instructed the Federal Ministry of Finance to consider the possibilities for investment, operation and maintenance of the park coming in part from the national budget. Another item recommended that the two governments of Moscow City and Moscow District should share the participation in the works for protecting and preserving the complex from the city and district budgets. A budget of 10 billion roubles (US$2,000,000) has been proposed to the Russian Government, which is still pending.

This funding arrangement is for a limited period, but more long-term funding has not been worked out yet. It is expected that some funds will be generated from visitors to the information centres and museums and from sale of publications etc., but entrance fees to the park are not being considered.

Analysis

The case of Losinyi Ostrov has great significance for the future, because the pressures which are exhibited so strongly upon this National Park will be experienced in one form or another in most national parks, especially those nearer to centres of population. Here we have a wilderness area which is essentially an island, dependent upon the environmental conditions and the actions of powerful interests outside.

The steps which have been taken relate principally to securing the boundaries both legally and physically; industries in the buffer zone around the park have been removed, farmers encroaching with vegetable gardens have been evicted, and the process of maintaining these boundaries is

likely to continue as the pressure for land and its value increases. A strong legal constitution for the park is essential. However, bigger battles may be faced when the park managers try to protect the park against critical outside influences such as the dykes affecting the hydrological balance and pollution from the city.

The process of protection has been led by the Moscow City Government, which in fact owns the smaller and less diverse part of the park. It would have been quite easy for them to accept that their part would evolve into a conventional city park, and to forget about the larger area. The complications of management of an area which covers two political entities – Moscow City and Moscow District – have been overcome by the creation of a semi-autonomous management structure for the park. As yet, Moscow District is the more passive partner, although both are responsible to the Federal Government. Nevertheless, having an independent management for the park is a significant step forward from the more centralised management of former times.

The management structure consists of a strong complement of wardens and rangers – far larger than many, much larger National Parks in other parts of Eastern Europe (c.f. 90 wardens in the Danube Delta, three proposed for Lonjsko Polje, ten in Karavasta, and four for Retezat). However, this reflects the main objectives of the park which are environmental education and recreation for the people of Moscow. In this respect, perhaps the numbers of staff are in proportion to the numbers of people served, rather than to the area of the park. There is concern, however, that staff are not adequately trained either in scientific management or in environmental education.

It also reflects one of the main concerns of park managers – visitor management and control. There is a process of transition to more democratic structures, with a debate about the level of policing and the imposition of penalties. In practice, although the penalties are in place, the need to educate rather than alienate visitors who transgress the rules, usually means that fines are not imposed.

The park's justification of environmental education is most strongly promoted, and attempts have been made to involve schools and people living nearby. Although a number of publications and events have been organised, it is probable that their impact has been limited, and as yet the organised involvement of NGOs or environmental groups has not been developed. There are signs of this in the help which the park managers received from local people in evicting vegetable farmers.

Significant steps have been taken in the preparation of the management plan. The most difficult task appears to have been the definition of the different zones and the adoption of a policy to attract visitors to specific places, located in the recreation or excursion zones. This policy is meant to keep people away from the strictly protected and reserve areas at the heart of the park. Nevertheless this is still seen as a temporary policy to be reviewed in the medium-term.

It has been realised that the preparation of the management plan was perhaps too forestry dominated, and a wider representation of expertise was needed, including ecologists, educationalists and social scientists. There was little consultation with the people living around or using the park.

Finally the financing of the park is still very uncertain, with the present running costs being covered by Moscow City Government alone. The park is viewed as a public good to be financed out of the government budgets, with some funds to be raised from the services offered. However, considerable investment is required to make those services more widely available, and with an interest and a standard to attract people to use them. Without this investment, the educational justification for the protection of the park will be limited.

Lessons learned

The lessons which can be drawn from the case study of Losinyi Ostrov include:

- The importance of establishing strong legal boundaries and a constitution for the park to protect it from encroachment.

- The setting up of an independent park management body responsible to the government gives greater freedom of day-to-day operation for the park managers.
- The numbers of park staff may be more related to the numbers of visitors received and managed than to the natural resources of the area.
- In an urban situation, environmental and cultural education and recreation in a clean environment are the most important justifications for protection and for financing investments in such areas.
- In such an intensely used park, the importance of zoning for different uses and degrees of protection becomes even greater, even if it is accepted that the strictly protected areas will never be completely closed.
- The dilemma about the level of policing, and the balance between allowing visitors to do what they want and protecting what they have come to enjoy, is very delicate, and requires a learning process in the democratic transition.

Acknowledgements

This report could not have been prepared without the assistance of the head of the IUCN office in Moscow, Mr Vladimir Moshkalo, who made arrangements for discussions with the following people:

Prof. A. G. Ishkov, Chairman of Moscow City Committee on Environment Protection and Natural Resources.

Dr Natalia A. Sherstneva, Leading Specialist, Moscow City Committee on Environment.

Mr Yuri Olegovich Platonov, Chief Sector for International Relations, Moscow City Committee for Environment Protection and Natural Resources.

Mr Viktor Novikov, Chief Moscow City Inspectorate on Soils, Flora and Fauna.

Mr George A. Sitnikov, Chief of Foreign Relations Division Moscow City Government, Engineering Department.

Mr Vladimir Shepurnov, Chief of the Department of Parks and Gardens of the City, Moscow City Government.

Mr Alexander Prechkin, Deputy Director of Losinyi Ostrov National Park.

Mr Valery Gerassimov, Deputy Director of Losinyi Ostrov National Park.

Mr Alexander Balykov, Head Warden of Losinyi Ostrov National Park.

Dr Georgy N. Korovin, Deputy Director, International Forest Institute.

Prof. Alexander A. Nikolskii, Faculty of Biology, Moscow State University.

Mrs E. A. Parnasova, Senior Expert, Department for Nature Reserve Management, Ministry for Environmental Protection & Natural Resources of Russia.

4. Analysis

The project concepts put forward at the 1993 Lucerne Conference were selected as examples of sites where biological and landscape diversity was threatened, but where there was also a reasonable chance of success in preventing irreversible damage. Although these were all internationally recognised projects, the following Analysis and the Guidelines derived from them are applicable to projects at all levels. Since that time significant support from international donors has been slow to materialise, but nevertheless there has been significant progress in stabilising the status of these sites, understanding them and beginning to develop management plans. It can be argued that the work which has been done, largely through indigenous financing and expertise, has brought the situation to a point where the projects are more ready for implementation than they were before. But more worryingly perhaps, unless investments are made within the next year or two, not only will the efforts of the organisations responsible be wasted, but the attempts to find sustainable solutions to the problems of biodiversity conservation may become discredited in the eyes of both government officials and local people.

In order to examine the common threads running through these stories of incipient success, they are analysed below according to the headings used in the methodology section: project process, institutions, skills and knowledge, sectoral policy links, cultural values and artefacts, legislation, financing and funding, Environmental Action Plans and the timing of projects. Throughout the seven case studies three themes recur – issues of ownership and land privatisation, the decentralisation of authority, and the importance of public participation. Table 1 shows some of the basic data about the seven case studies for ease of comparison.

4.1 Project process

It is difficult in these case studies to discriminate the exact stages of design and implementation. Even the proposal concepts put forward at Lucerne only formed part of a continuum for developing and promoting many of the ideas for conservation of these sites that had started long before 1992/93. Subsequently, some parts of the concepts were developed while others remained undeveloped or redundant, depending upon the availability of new information and funds. Nevertheless, it is possible to develop a general scheme for the phases of the project process. Table 2 shows the estimated present position of the case studies according to this scheme.

One thing which stands out amongst the case studies is that, at least in the initial stages, the projects developed in a rather haphazard way and relied upon the creative vision and energies of the people promoting them. Whilst many project development guides advocate following a strict sequential process, in practice it rarely works in quite such an ordered way. The important thing is to know where you are in the process and accept that the refinement of the project will involve re-iteration and uncertainty.

Conception

During this stage, a person or group of persons (from government, an NGO, or a university) conceive the idea, often in quite vague terms, and as an ideal along the lines of "this area is worthy of protection". They may also develop some definite reasons why the area should be conserved. The mechanisms of how to conserve the area may take various forms such as a National or Nature Park, a Biosphere Reserve or a sustainable development area.

Usually the people who develop the idea have had a significant relationship with the area – they live there or they have done research or development work there. In all cases they know it well

and are prepared to promote the idea in the next stage. At the same time, some research may have been going on as part of a programme of study from universities or other research organisations (especially biological research). A very low level of funding may be provided for this research or NGO activities, but at this stage the project is not well defined and the research not coordinated. The idea may incubate for a very long time, e.g. at Strandja where the foresters had the original idea in the 1970s, or for a relatively short time, for instance in Albania where the idea for protecting Karavasta Lagoon was confirmed by the NEAP process.

Promotion

In this phase the project process really starts as the initiators or project 'champions' promote their ideas. This is the time for convincing the local people, different organisations, the government and international bodies that this area is really worth conserving for its biological and landscape diversity. Local people must be involved, since their early acceptance will make implementation much easier; however, it is also necessary to balance their requirements with the national interest – in some cases, e.g. in the Danube Delta, the project would never have got off the ground if the decision had depended upon the full agreement of the local people.

In order to get the project accepted, a critical mass of institutional support is required. It is a time for active lobbying and possibly political manoeuvre, which requires special skills, not always found among those who have the initial idea. The support of international organisations and conventions may be called upon to back up the project concept. The two classic examples of this are the Danube Delta and the Green Lungs of Poland, both of which were guided through this stage by astute political champions.

The role of the media in promoting the areas and efforts to conserve them was also highlighted in the case studies, and especially the assistance which international NGOs can give at this stage (such as funding TV and video documentaries, producing publications, and providing leadership support). However, the studies showed that local actions are also beneficial. These aimed at drawing attention to the site through the local and national press, briefing and training local journalists to write about environmental issues, and even inviting foreign experts to talk about the site to give added credibility. This latter tactic needs to be used with caution, though, as in some countries it can have the reverse effect.

It is also probable that there was a distinct window of opportunity which opened during the political fluidity brought about by the democratisation process. It is/was a time when people and institutions look for new ideas, when they have hot become hardened into set patterns, when vested interests may not be so strong, and when it is possible to have greater access to decision-makers in reforming governments. In many of the cases examined, the people interviewed recognised that what had been achieved in the early 1990s could not now be repeated.

It appears that Retezat Biosphere Reserve is an example of an idea still in the promotional phase, with the different interested organisations beginning to come together, but with no appropriate institutional or legal structure underpinning it.

Formulation

This phase begins when an institutional home for the project has been agreed, and the various actors engage in a process of planning and coordinating the project. This stage requires a certain minimum funding base, most often supplied out of government budgets for the institution's staff time. This is illustrated by the cases of Losinyi Ostrov supported by Moscow City Government, or of Lonjsko Polje supported by the Croatian Government through the budget of the Cultural and Natural Heritage Authority.

Table 1. Comparison of basic data about conservation projects

site	size	ecosystem	biodiversity importance	cultural value	protected area status	international conventions	issues/ threats	population in area	economic activities
Karavasta Lagoon, Albania	6,000 ha	Coastal Lagoon and Coastal Pine Forest	Nesting colony of Dalmatian pelicans, 130 bird spp. breed; collared pratincole, little tern; 3 endemic plant spp.	Traditional fishing practices	National Park and Strictly Protected Area	Ramsar Site	Siltation of channels, water pollution; hunting, pelicans' nests destroyed; overfishing, uncontrolled tourism	None in park; 70 fishermen	Fishing for eels and mullet, sea bream; tourism (potential)
Strandja Mountain, Bulgaria	116,362 ha	Forests – beech, oak; pastures/meadows; mountains (709 m); coastal wetlands	Oriental beech, Strandja oak, Strandja rhododendron, daphne, medlar tree, laurel; wolf, jackal, otter, polecat; Egyptian vulture, wintering waterfowl	Core area of Bulgarian culture; archaeological sites; traditional rural architecture, historic churches, monasteries	National Park	None	Uncontrolled tourism; transport infrastructure; forestry; mining/ pollution	11,000	Forestry, wood processing, agriculture; copper mining, marble, limestone; sea fishing
Lonjsko Polje, Croatia	50,600 ha	Flood plain, alluvial oak forests, farmland, oxbow lakes	Breeding colony of spoonbills; white stork breeding; white tailed eagle; rare waterplants; rare dragonfly; rare breeds of pig and horse	Traditional wooden houses, traditional agricultural practices	Nature Park	Ramsar Site	Drainage, hydropower dams, canals; rural depopulation, loss of traditional agriculture; pollution	19,120 (4,000 within park)	Forestry, agriculture, livestock, fish farming; tourism (potential)
Green Lungs of Poland	60,759 km² sq km	Agricultural land, forests, lakes, wetlands, floodplains	European bison, beaver, wolf, red deer, elk, capercaillie, lynx, black stork, white tailed eagle, spotted eagle, eagle owl, osprey, black grouse	Low input/organic agriculture; traditional housing; archaeological sites	3 National Parks, 11 Landscape Parks, 183 Nature Reserves, Forest Reserves	World Heritage Sites, Ramsar Sites, Biosphere Reserve	Industrial spread, pollution, motorways; failure of sustainable development to deliver economic benefits; uncontrolled tourism	40–70 person/ km², 20 towns with >10,000 people	Agriculture, forestry, tourism

Table 1 (continued)

site	size	ecosystem	biodiversity importance	cultural value	protected area status	international conventions	issues/ threats	population in area	economic activities
Retezat Mountain, Romania	54,500 ha	Alpine pasture, glaciers, glacial lakes; dwarf pine, coniferous forest, oak and beech forest	Virgin oak and coniferous forests, endemic plant species; wolves, bear, lynx, red deer, roe deer, chamois, capercaillie	Traditional alpine pasture grazing	Biosphere Reserve with Strictly Protected area, National Park	Biosphere Reserve	Hydropower development; illegal hunting, fishing; overgrazing; cutting of dwarf pines for fuel	None	Forestry; sport fishing, hunting; sheep herding; electricity generation; recreation, tourism
Danube Delta, Romania	450,000 ha	Delta: fluvial zone of rivers and canals, transition zone of lagoons/peat fens; lakes/reed swamps Coastal Zone: dunes, islands, grassland, forests	320 bird species: inc. bitterns harriers, rails, Dalmatian/white pelicans, cormorants, egrets, heron, ducks, 2 million waterfowl in winter; mink, wildcat, otter; 75 species 75 species of fish: inc. sturgeon, shad	Various archaeological sites, traditional way of life	Biosphere Reserve with 17 Specially Protected Areas	World Heritage Site, Ramsar Site, Biosphere Reserve	Hydrological changes, polder construction, dams/irrigation upstream; decline of fisheries, overfishing; pollution; rural deprivation; uncontrolled tourism; illegal hunting	15,000	Navigation, fishing, reed harvesting, agriculture, forestry, tourism
Losinyi Ostrov, Moscow, Russia	14,000 ha	Mixed deciduous/ coniferous forest; springs, wetlands, river; meadows	45 species of animals, elk, European beaver, wild boar, musk rat, mink; migrating waterbirds	Archaeological sites, including chapel, old Tsarist hunting lodge, original water supply for Moscow	National Park with Strictly Protected Area	None	Pollution, encroachment of city; mass visitor pressure; hydrological changes	None in park, but adjacent population of city of Moscow	Recreation, environmental education

Table 2. Comparison of status of conservation projects.

site	stage of process	objectives	activities	management plan prepared	degree of consultation/ participants	funding status	source of funds
Karavasta Lagoon, Albania	International project implementation about to start	Sustainable rural development for protection of area.	Inventories and mapping; workshops for tourism development; appointment of wardens; dredging of channel; support for fishing cooperative	Not yet, but part of project	Consultative workshop organised by NGO	Project approved; 350,000 ECU NGO project implemented	PHARE OTE (Germany)
Strandja Mountains, Bulgaria	International project implementation about to start	Protect and enhance biodiversity; improvement of livelihood of local people through integrated economic development	Setting up park administration; conserving cultural and historic sites; development and control of tourism sustainable forestry/agriculture; control of mining pollution	Not yet, but part of project	Little	Projects approved 158,000 SFr 250,000 FFr	Swiss Government Monaco
Lonjsko Polje, Croatia	Local implementation	Protection of biodiversity through preservation of agriculture systems; development of income generating activities; protection of cultural heritage – buildings and rare breeds	Research and mapping; coordination with water management and forestry agencies; development of tourism; village celebrations; videos, publications	No, but much data collection and mapping has been done	Some local involvement	Some government budgetary support; small funds from international NGOs total 200,000 DM; private sponsorship c. 30,000 DM/yr	EURONATURE; German Ministry of Environment; Zoological Society of Frankfurt Pro Specie Rara/SAVE
Green Lungs of Poland	Local implementation	Preservation of natural character and natural resources of the region; development of sustainable economy and culture	Water resource management; pollution control; low input/organic agriculture; creation of protected areas; sustainable forestry; healthy tourism development	Yes, extensive; strategic planning done, but detailed plans required	Consultative workshop done and extensive publicity	Strategic plan preparation funded; implementation requiring funds	National Fund for Environment, Protection and Water Management, Ecofund of Poland, EURONATURE
Retezat Mountain, Romania	Incubation/ Promotion	Support and maintain only existing National Park and one of three Biosphere Reserves as a model for sustainable management of mountain areas	Research; protection of strictly protected area; forest management; park clean up; management of tourists	Not yet	None	None	None
Danuba Delta, Romania	International projects implementation in progress	Sustainable management; restoration of Danube Delta; institutional strengthening	Ecological wardens; surveys and mapping; training and technical assistance; restoration of polders; public awareness, information centre	Yes	Consultative workshop and encouragement of participation	Project completed 730,000 ECU; Project about to start 3.88 million US$; Project for approval 435 million D.Fl	EBRD, Romanian Government, GEF, Dutch Government
Losinyi Ostrov, Moscow, Russia	Local implementation	Protection of area, flora and fauna; development of environmental education resources; provision of recreation resources	Securing boundaries of park; moving industries and vegetable farms; protection of cultural resources; educational excursions; newsletter, information centre	Yes	Little	Uncertain; visit to UK National Parks sponsored £31,000	Moscow City Government UK Know-How Fund

Formulation requires the collection and compilation of data and the preparation of the project proposal, seeking to justify funding from government and/or from outside donors. A good example of this is the 18-month period during which the DDBRA and IUCN produced the Management Objectives for the Danube Delta, which in turn elicited the technical assistance project set up by the EBRD. Similarly, the work which was carried out at Karavasta Lagoon in Albania as part of the NEAP process led to the funding by PHARE. The Strandja Mountains in Bulgaria is at a similar stage, with the project for the development of the management plan accepted for funding by the Swiss government.

Often this data collection process may be funded by specific grants for research or mapping from international organisations. These are relatively small sums that help to build up the case for the larger implementation project. In addition much of the information may be scattered through the archives of a number of different institutions or research studies in universities; the coordination of these institutions to share this information and then interpret it can be a long and delicate process. It is a necessary and useful experience for institutions to learn a more holistic approach to the management of biodiversity conservation. A good example of this coordination is the work of the Croatian Cultural and Natural Heritage Authority in their work on Lonjsko Polje.

During this planning phase, a number of issues and problems may appear to hold back the process. Sometimes these are referred to as pre-requisites – things which are needed before the project can be accepted. Very often these are legal or institutional issues. A good example of this is the law setting up the Danube Delta Biosphere Reserve Authority which had to be passed – a process which required international pressure and technical assistance. Another example is the law defining the boundaries and establishing the independent status of Losinyi Ostrov National Park in Moscow. At other times the passage of laws is part of the process of the project, and a good example of this is the legal process of acceptance of the Green Lungs of Poland by the provinces, the ministries and central government.

Inception

In many cases, projects commence in two stages: an initial inception phase, and then full implementation. The inception phase (which may take the form of one or more pilot sub-projects) serves to test the assumptions and practicality of the overall project formulation. The feedback then improves the full project design to ensure its effectiveness (with particular emphasis on value for money). The inception phase for the Danube Delta Environmental Management Programme lasted five months, and it is even possible to consider the whole two-year project as the inception phase for the subsequent GEF Danube Delta Biodiversity Project.

Implementation

The substantive on-going phase is one of implementation. It is highly likely that even during the formulation phase, and certainly during the inception phase, some form of implementation will have been going on, whether it is in raising public awareness, environmental education, carrying out urgent works or just getting on with the job of managing the resource. All the projects described contain examples of this sort of activity, and much has been achieved to maintain the status of biodiversity. Examples are the restoration works carried out at Lonjsko Polje; the dredging of the channels at Karavasta and appointment of pelican watchers there; the information centres set up in Danube Delta and observation points in the Green Lungs of Poland; the excursions of school children in Losinyi Ostrov and other sites.

However, the major implementation projects are usually further split into two phases. The first is the development of a management plan for the area usually requiring technical assistance in some form, and the second is the implementation of the management plan and investment in infrastructure, e.g. for tourism or environmental education. Only the Danube Delta and the

Green Lungs of Poland can be considered to be at this stage. A number of the case studies have prepared management plans financed internally, e.g. Losinyi Ostrov, and Lonjsko Polje, whilst the preparation of plans for Karavasta Lagoon and Strandja Mountain is about to start with the help of international finance.

One other aspect which is considered by many practitioners of sustainable development to be essential to the process is public consultation and participation. The experience from these case studies seems to be that while consultation has been a part of the process to a greater or lesser degree, public participation has been limited in reality. Sometimes the consultation and consensus building phase has been confined to specific groups of people, such as scientists, influential people and community leaders. The plans which have been drawn up tend to have been the work of the scientists and officials. Opportunities for public participation are usually considered as part of the implementation phase, although some efforts may have been made to solicit public comment in earlier stages, e.g. in the Danube Delta and Green Lungs of Poland.

The mechanism which seems to be most often used for consultative planning is the workshop at which representatives of different interest groups and communities, and experts from the collaborating agencies, get together and discuss the issues and their solutions. Informal social meetings and site visits for discussion between key agencies which may have different objectives for natural resource use have been found to be particularly effective at resolving differences. In meetings with communities, the experience of the Green Lungs showed that the public preferred open discussions to being lectured by experts, and such open discussions are often the best means of environmental education. This formed an important part of the process in the Danube Delta and in the Green Lungs of Poland. Workshops also played a part in the development of the work of the NGO, PPNEA, on eco-tourism in Karavasta lagoon.

One of the objectives of encouraging public participation should also be to help small businesses develop, since the discussion process can lead to illustrating various opportunities for income generation. This is particularly relevant in helping farmers or other local residents to open up accommodation facilities for tourists, or for setting up some sort of marketing scheme for organic or specialist farm produce. This has been started in Lonjsko Polje and in the Green Lungs of Poland, and is anticipated in Karavasta.

Evaluation

This is the final phase of the project: an analysis of the work done, objectives achieved or not achieved, benefits obtained, and lessons learned. It will lay the basis for new concepts. Evaluation can and should also be used at intervals as a monitoring exercise during the implementation phase to fine-tune the project in the light of changing circumstances. For effective monitoring and evaluation, it is necessary to build these activities and the indicators identified as being useful, into the project design from the beginning. This has not really been done in any of the projects, although the collection of base-line data will provide a basis for later evaluation. Monitoring can also be an activity for NGO activity in partnership with the project.

Some of the international funding agencies and other partners involved in the project may have their own evaluation agendas, e.g. they have to justify how their money has been spent. Project managers should be wary of relying upon these evaluations to help in guiding their project.

4.2 Institutions

A variety of institutions have become involved in these projects, including governmental organisations, NGOs, international funding agencies and internatiotal NGOs. These are shown in Table 3.

Table 3. Organisations involved in conservation projects

site	PRINCIPAL ORGANISATION		COLLABORATING AGENCIES			COLLABORATING INTERNATIONAL ORGANISATIONS
	Governmental	NGO	Governmental	NGO	Communities	
Karavasta Lagoon, Albania	Ministry of Health and Environment; Committee of Environmental Protection	–	Directorate of Forestry; Directorate of Fisheries	DPNEA	Municipal Authorities	IUCN; PHARE Consultants
Strandja Mountains, Bulgaria	Ministry of Environment Forest Directorate, Borgas	–	Departments of Agriculture and Forestry	–	Villages	IUCN; Swiss Government
Lonjsko Polje, Croatia	Authority for Cultural and Natural Heritage	–	Forest Service; Water Management Authority		Sisak Municipality	EURONATURE; Zoological Society of Frankfurt; Pro Specie Rara (Switzerland)
Green Lungs of Poland	–	National Foundation for Environment Protection	Ministry of Environment; Voivodship Councils; Ministries of Agriculture, Health, Physical Planning and Construction, Foreign Affairs and other departments	Institute for Sustainable Development	Municipalities	WWF; IUCN; EURONATURE
Retezat Mountain, Romania	Romsilva	Romanian Academy of Sciences *	Environmental Protection Agency	UNESCO – Provaatura	Municipalities	None
Danube Delta, Romania	Danube Delta Biosphere Reserve Authority (DBRA)	–	Danube Delta Institute; Environment Protection Agency; Romsilva	ECODELTA (private)	Pro Delta; Friends of the Delta; villages;	IUCN; WWF; EBRD/GEF Consultants; Aaen Institute of Floodplain Ecology; America Academy of Sciences; Rijkwater (Flevoland); Bird life International; Cousteau Foundation
Losiny Ostrov, Moscow, Russia	Department of Parks and Gardens, City of Moscow Government	–	Committee for Environment Protection (Moscow City) (Moscow District Government and Government of Russian Federation)	International Institute of Forestry	–	UK Know-How Fund Tree International (US)

Apart from the Green Lungs of Poland for which the principal organisation is a foundation, i.e. effectively an NGO, all the other leading agencies are governmental bodies. Most of them derive their authority from the relevant Ministry responsible for environmental protection (referred to here generally as the MoEP). In Romania the situation is slightly different, because on the one hand the responsibility for Retezat is divided between the Romanian Academy of Sciences and Romsilva (the semi-privatised Romanian Forest Service) whilst in the Danube Delta a specific regional environmental planning organisation, the DDBRA, has been set up to manage the whole area. It is significant then that Retezat is the least advanced of all the cases, and the institutional responsibilities remain unclear, whereas in the Danube Delta the DDBRA has relatively clear legal authority and the implementation is most advanced.

The sectoral organisation which usually has the greatest involvement, either as the principal agency or as an important collaborator, is the Forestry Service. Sometimes, as in Romania, this service is a part of the MoEP, in other cases, as in Albania, it is part of the Ministry of Agriculture. The other major sectoral collaborators are the water management agencies; the greatest sectoral conflict between forestry and water management occurs in Retezat. The importance of building consensus between agencies which have a common interest in the area is illustrated by the case of Lonjsko Polje, where forest service and water management agencies work together and have compatible objectives with the Authority for Cultural and Natural Heritage.

There is no right or wrong type of institution to be the lead agency. It is most usually a government agency, simply because the government most often 'owns' or has responsibility for the protected area and secondly because major funding initiatives for conservation usually come through government. However, it is interesting that in the case where a non-government agency is leading a project, the Foundation for Protection of the Environment on behalf of the Green Lungs of Poland, the project has a regional, non-site specific nature. This Foundation has to coordinate with the central and provincial governments.

The collaboration with local NGOs is often seen as an essential part of a project, but the evidence from some of these case studies is that the relationships may be rather uncertain. In cases such as Retezat and Karavasta, NGOs may be particularly active in ways which are not part of the main project, but which may overlap. There is potential for conflict and it is necessary to try to encourage collaboration by better clarification of the roles which NGOs can play. It seems that in some countries there is still misunderstanding about these roles and a learning process is necessary for government agencies to collaborate with NGOs in conservation projects and vice versa.

At some stage in a project, it is found necessary to formalise the collaboration arrangements. Usually this takes the shape of a steering committee or management board. In the case of the DDBRA in the Danube Delta, the mechanism is a Scientific Council which makes the policy, derived from the law, to be implemented by the DDBRA. In Lonjsko Polje, a Steering Committee made up of the interested organisations and municipalities will guide the management of the Nature Park, through a public enterprise set up for the purpose. Until such committees are set up, most of the collaboration would be done on an *ad hoc* basis depending upon the relationships with the different organisations. Similarly the involvement with local communities and municipalities may develop from occasional consultation to representation on steering committees.

Local and national businesses are other possible collaborators, either as sources of sponsorship or more direct forms of assistance. In return the projects can offer recreational and educational facilities and, more guardedly, advertising opportunities for the companies. Similarly on an international scale the idea of twinning towns in different countries can lead to the exchange of ideas, visits and even financial support. The Danube Delta is twinned with some towns near wetland reserves in France.

As the project progresses, it is likely that financing needs for small businesses within the local area will become important. Local and national financing and banking institutions will have to be

brought into the process. This will require another exercise in promotion and convincing these organisations of the viability of the different small businesses, especially as eco- or sustainable tourism activities are not usually part of their lending experience. However, such institutions can be a valuable source of advice on economic sustainability. By the same token, such institutions are often involved in financing much larger projects which may have the potential for damaging the sites. Education of bank officials to ask environmental questions about such developments and to require an impact assessment before granting loans, will be beneficial in the long run.

The roles of international organisations in the process was evident in many of the projects, ranging from the provision of research students carrying out much of the detailed descriptive work of the ecosystems, to the funding of specific aspects such as GIS technology and training, urgent ecological restoration works and publications. Such relatively small funds can make a great deal of difference in the early stages and provide a link with other international institutions. The role of organisations such as IUCN, WWF, Birdlife International and Euronatur in promoting these projects in the international arena, in facilitating planning and in brokering projects with funding agencies, must also be recognised. However, it is also apparent that when such attempts are not funded, the expectations raised can be disappointed, leading to frustrations with such organisations. There can also be conflict when an NGO, especially an international one, changes its role from facilitator and provider of funds to active participant and even recipient of external funding. Official agencies in particular can still be quite reluctant to accept that NGOs operate in an independent manner and can be sources of criticism as well as support.

Finally the other type of institution which plays a critical role in the implementation phase is the consulting company. This is a very sensitive role in providing advice to help the lead institution to make the decisions because the consultants can wield disproportionate influence. The example of the relationship between DDBRA and their consultants is useful here, especially the consultants' emphasis on coaching and institution strengthening rather than prescriptive dogma. This will be important in Karavasta and at Strandja where the management planning phase is beginning with the help of outside consultants. It will be particularly vital to ensure that NGOs monitor the expertise deployed by the consultants, with particular regard for the inclusion and role of professional ecologists and environmental managers. The team leader (Resident Adviser) for the Danube Delta project was an experienced ecologist and project manager.

4.3 Skills and knowledge base

In most of the case studies, the level of scientific knowledge and expertise was seen to be very high. The detailed knowledge of specific organisms and ecosystems was impressive, and in some cases probably as good as anywhere in the world. However, it is also apparent that East European scientists, understandably, often tend to neglect smaller habitat units close to the core area which in Western Europe would be declared nature reserves. These are still relatively easy to protect and ought to feature in the feasibility studies as future sites in eco-corridor schemes. People working on projects expressed the need for reliable scientific back-up for their work and for more applied research with a focus on conservation. The use of university students, whether from national or foreign universities, was recognised as a useful tool for developing scientific partners for the projects.

The data collection and mapping expertise using GIS systems had likewise been an important part of the pre-project planning exercise supported in particular by the Auen Institute of Floodplain Ecology in Germany in the Danube Delta, and in Lonjsko Polje. Whilst training in interpretation of satellite imagery and GIS may be a useful part of a project, there is a perceived danger that with the technological attraction of the subject and the ease with which it can be used for promotional

purposes, its use can become out of balance with actions on the ground – in other words, the GIS becomes the driving force of the project, not just a tool for management.

However, throughout the case studies there ran the theme of transition from pure to applied science, from a description of the biodiversity through understanding the ecosystem to ecosystem management; and from ecosystem management to management of human activities in a democratic society, especially conflict resolution. These new areas are the ones where the skills are required. Up until now this has not been so urgent, since many of the projects are in the planning and descriptive stages, but as they move into the implementation phase, these will be the skills which need to be learned.

The Danube Delta is the best example of this, because the emphasis of the various projects there has been on institutional strengthening, training and supporting the DDBRA and DDI in making their own management decisions, rather than trying to solve all the ecological problems straight away. In this sense, the opportunity (and perhaps the only such opportunity) was taken to build a solid administrative foundation for future planning and operation: it is worth spending time to get the structures right from the outset because the ecological problems will never go away and certainly cannot be dealt with by poor organisation. This approach was endorsed in discussions in Bucharest when Prof. Vadineanu said that it is time for the role of the scientists to change, and for them to allow the managers to manage. The scientists' role becomes one of monitoring what is done and the effects it has on the ecosystem and progressively reassessing the scientific and conservation objectives. It is interesting that the governing body of the DDBRA is named the Scientific Council.

In the development of a project, accordingly, there seem to be three very different but equally important roles:

- The Champion, who either has the idea or takes it and promotes it so that it becomes accepted by the different institutions and the government. The champion is a publicist able to convince others and a political operator.
- The Strategist, who develops the idea, draws up the plans and produces the documents. The strategist also has to be able to work with the different actors helping to define their parts and drawing together their views. The strategist should be a facilitator for public participation and be able to interpret the views expressed.
- The Executor, who manages and implements the strategy in the field. The executor is a practical person, who is able to get things done both within his or her own institution, and with the people and communities around the project area. The executor has to interpret the strategy in the light of the situation on the ground and be flexible enough to make changes where necessary.

These roles were shown clearly in the principal individuals in the Green Lungs of Poland. The roles need not be taken by individuals but can be taken on by institutions; indeed the individuals are usually supported by or work within institutions.

Whilst these roles require different characteristics, certain skills can be learnt. Perhaps the skill which requires most training is that of working with people and communities, and encouraging public participation. In Central and Eastern Europe, decisions here in the past have come from the centre, and the general public is not used to making its views known and having them listened to; the officials are not used to taking them into account. Both sides have to learn the ways of doing this constructively.

4.4 Sectoral policy links

Traditionally, different sectors of the economy have been covered by different laws and managed by different government agencies. And traditionally the relations between the sectors have often been

a matter of dispute between these agencies. Nature conservation, as one of the younger government activities, has always had a problem of finding its place between or above the established sectors and of securing appropriate trade-offs to be able to implement environmental projects.

Relations with different sectors of economy and government present a particular challenge in trying to implement sustainable development. On one hand the scope of change goes very deep in these sectors, but on the other hand it provides more flexibility in setting up the conservation projects. Management plans and consensus building seem to be the tools for integration of different sectoral policies.

Agriculture and commercial fishing

In all the countries, state-run agriculture largely collapsed after 1990; farming was unaffected only where the land was privately owned. Some agricultural activities have picked up with liberalisation, such as nomadic grazing in Romania, but others are following the process of privatisation of the land. There is very little agricultural extension service provided or organised marketing of farm products. The only project where there are significant efforts in the agricultural sector are the Green Lungs of Poland, where the land has always been private and the extension service available. There seems to be good cooperation in promoting organic farming with farmers that are interested.

Grazing is most significant in two sites: Retezat and Strandja. In Retezat poorly controlled grazing by the newly empowered municipalities is already threatening the alpine zone pastures because of too many nomadic shepherds moving in for the summer. On the other hand, in Strandja the impact of goats seems moderate and limited to designated land. The crucial difference is that Bulgaria prohibited the nomadic sheep herding before the Second World War while uncontrolled grazing on public land (along the roads, railroads etc.) is a common practice in Romania.

Fishing is a major source of revenue for local populations in the Danube Delta and in the Karavasta Lagoon. In both cases, water management is more critical to the abundance of fish populations than the harvests by fishermen. In the Danube Delta, native fish populations decreased dramatically after the dyking and damming up of the upstream Danube, when the major spawning areas (e.g. the large island of Braila) were suddenly destroyed. In Karavasta the fish depend on artificial channels that allow them to move between the lagoon and the sea. So, in both cases, there is significant interdependence between the conservation management and fishing. The institutional structure is more favourable in Karavasta, with just one fish cooperative, than in Danube Delta, with a number of fishing companies that buy fish from the individual fishermen. In both cases quotas, times and size of fish are regulated, but they are much harder to enforce through several fishing companies with only loose ties to the fishermen.

Agriculture is the main challenge for integration of conservation and sustainable development in all the projects, except Losiny Ostrov. There seem to be two sets of tools, regulations and incentives, for organic or at least traditional farming. There seems to be a common recognition that both will have to be used at the same time.

An important dimension on all the sites is the virtual absence of major trading firms in agricultural products and agrochemicals, which is probably the consequence of low output and low purchase power of farmers. But this fact is offering an opportunity for setting up sustainable or organic cooperatives and linking them with appropriate marketing networks, especially in western Europe. There is a question whether the expectations about higher prices of organic products will be met. This problem might be offset by direct supplies to tourist facilities that will develop in the vicinity (Hindelang model) or by the fact that a lot of money in investment and inputs can be saved while keeping a decent livelihood for the farmers' families. All these of course depend on the national agricultural policies such as subsidised investments or chemicals, sanitary regulations about slaughtering, accounting and tax regulations for the farmers, product volume

subsidies *versus* direct payments etc. Most of these policies have yet to be developed, so there are chances for making them environmentally friendly.

Forestry

Systematic forest management has generally had a century or more of practice in Central and Eastern Europe. It has developed as an activity maximising sustained yield from forests, but has adopted more and more the practices and activities of nature conservation. Forest services have invaluable information about the history and ecology of their areas, but so far foresters have little training in planning for conservation or recreational use. The forest laws and forest services have limited grazing (especially by goats) to pastures or specially designated parts of forests and have also established control of all the forests, regardless of ownership, by the public forest service. Forestry has many times been able to stop major interventions by protecting the forestry land use. Foresters have often been among the first conservationists. Especially important is the concept and practice of forest reserves that are frequently formally designated only in the forest management plans, but which effectively represent category I protected areas.

Today, forestry is moving towards multiple use management of forests, managing for them for their environmental, productive and amenity functions. In this movement, many traditional practices, directed only at the productive function, still pertain, even though they may have adverse impact on the biological diversity and stability of the forest. Such practices include sanitation (removing dead trees from the forest in order to contain pests) and clear-cutting followed by planting, usually conifers. Although justified in some circumstances, these practices are more often employed as a matter of habit than for economic return.

In several projects, one of the main issues is the relation between the forest service and the nature conservation service in managing protected areas. In some cases, the issue has even grown into an institutional conflict, as in Strandja. The forest service already has the personnel in the field, and it does not seem rational to the government to establish another agency in the same territory. On the other hand, conservationists usually perceive foresters more as exploiters than protectors of the forests, which is based on very visible logging operations, that are usually not very pleasant to see. With the forthcoming privatisation of forests and logging operations in the region, the forest services are developing more and more away from wood extraction and towards a public service, protecting the forests and controlling the logging operations.

There are two main options for solving the institutional problems: to designate the forest service as the management agency for the area or to set up a protected area administration, that supervises the work of the forest service and also other government agencies in the field. The first option requires at least partial retraining of the forestry officers and possibly inclusion of biologists and other professions into the agency, to cope with the problems outside the forests. The other option is easier in the first phase, but the problem might occur later in the interaction between agencies and in implementing the changes in the management of the forests. At this time, as all the projects are in early phases, it is not possible to make a judgement about which is better. The decisions will have to be made at the national level, although local foresters often have important standing regardless of their agency's attitude in the capital.

Water management

The institutional arrangements for water management differ widely in the region, but several water management activities such as flood control measures (regulation), drainage of agricultural land and construction of dams have been a major threat to biological and landscape diversity. This is particularly true for the wetland ecosystems, that have been altered tremendously by various measures like poldering, construction of canals, and drainage. In some places, the productivity of fish populations has dropped tremendously due to the destruction of spawning and feeding areas.

A similar situation prevails with many waterbird populations that have lost their nesting and feeding grounds.

The water management measures have often exceeded the real needs of the population or the country for flood security or new arable land, and they have thus squandered excessive resources. There is an obvious difference between countries that have unified water companies, responsible for all the water management, and those countries with a decentralised water management. The situation is particularly adverse where the water companies also have construction capacities, since the whole water management policy can be driven by the needs of construction personnel to use their machinery.

Nowadays most institutions engaged in water management realise the mistakes from the past and are changing their way of managing the waters. In this way, the large resources, budgetary and physical, under their control can be directed towards ecological restoration and other measures benefiting nature conservation. Combining flood control with protecting the natural retention zones may be far more cost-effective than construction of higher and higher dykes. Reflooding some of the wetland areas may reduce the excessive cost of maintaining the drained land and can return the productivity of the wetlands in fish, reeds and bird populations, that may provide more benefits to the local population than the industrialised agriculture itself.

In the wetland protected areas, the conservationists encounter a similar problem as in the forests: who is responsible for managing the water regime, the water authority or the park administration? The main difference is that the water authorities have fewer field personnel. For integration of water authorities into conservation projects it seems that cooperation between the agencies at the national level is of crucial importance.

Hunting and sport fishing

In most of the countries, hunting and sport fishing (angling) are managed by hunting and fishing associations and controlled by the forestry service or MoEP. The only serious threat from these activities to wildlife populations was at Karavasta Lagoon in Albania just after democratisation, with a brief period of uncontrolled invasion by Italian hunters. In some parks, hunting and fishing is prohibited, but the game species occupy larger areas than the parks.

Generally, hunting and fishing are practised more or less sustainably, with some degree of planning and control. The existence and activity of associations could even be viewed as a guarantee for the well-being of the resources they manage. Hunting and fishing is also a source of revenue for the government or the management agency through fees, and indirectly for the local tourist sector.

One of the concerns which hunting and fishing raise is the ecological expertise of the associations for management and planning, and the need for government agencies to supervise them. This problem can be tackled by regulatory measures and through working directly with the particular organisations. On the regulatory side the problem that usually occurs is that the hunters and fishermen have a disproportionately high influence in local and national politics.

Municipal infrastructure

Under-development of municipal infrastructure such as water supply, waste water treatment, solid waste management, local roads and telephones is probably the most common characteristic of all the project sites. All the projects hope to secure funds for improving these conditions and there seems to be a good case for using protected area status as leverage for attracting more national and international funding for infrastructure improvement. The Green Lungs of Poland project clearly demonstrates this potential.

The problem is that responsibility for infrastructure is divided between different levels and branches of government, including municipalities, regions, and different ministries and national

funds. Each of these have their particular procedures and ways of setting priorities, which makes the process of securing funds for an integrated upgrade of infrastructure very cumbersome, and most projects are in the very early stages of achieving it. There seem to be no comprehensive mechanisms for integrated rural development in the countries. The most advanced in this respect seems to be the Green Lungs of Poland, where environmental infrastructure has become a major priority of the National Environmental Fund: they are about to establish a development agency for the region, that should also facilitate infrastructure projects. In the Danube Delta, some infrastructure was supposed to be financed by the EBRD, but the loan has not been accepted so far by the Romanian Government.

The best approach might be to develop good infrastructure project preparation capabilities at the municipal or regional level, which can also be within the project organisation. This should be combined with the political and public exposure of the project, to assure its priority on the national scale. These two elements combined can improve access both to national and international financial sources.

Tourism

At all the sites there seem to be big expectations that tourism will be a major activity of the local population in the future. In particular, low intensity tourism is the most often stated objective in the projects. So far, significant tourism is developing at the lakes of Green Lungs, along the Black Sea coast in Strandja and more modestly in the Danube Delta. Elsewhere tourism is limited to visits (hiking, bathing) of the nearby population. However, the current forms of tourism in the project areas are more of a threat than a benefit to the conservation projects. A major breakthrough in sustainable or eco-tourism has yet to be made.

As yet few efforts have been made to develop tourism and marketing strategies for the project sites. One reason for this may be that there are no actors dedicated to promoting tourism. Some initiatives with international actors are just at the beginning. The existing tourist facilities are mostly obsolete and are not suitable for international visitors. Moreover, the emerging small-scale facilities still need significant development to reach international standards. The main markets for tourism are therefore currently domestic, but these are growing due to the greater mobility and affluence of people. The question of whether the old patterns of mass tourism will simply continue, together with the expansion of current facilities, makes it impossible to develop high quality, high value, low intensity tourism.

Health

Health has been a consideration in several projects. The idea of Green Lungs is based on the need of people from polluted areas for a resort area with clean air and water; there are similar considerations in Losinyi Ostrov with its recreational function; and in the Danube Delta, fighting endemic cholera by providing improved water supply was one of the objectives of the project. One aspect of the health sector in the project areas is the importance of healthy areas on a regional, national or international scale, and the other is the provision of public health to the local population. Obviously, the latter is a basic prerequisite for the former, putting an important emphasis on municipal infrastructure, sanitation and hygiene (especially drinking water supply, sewage treatment, solid waste collection and disposal).

Health may turn out to be one of the main attractions of an area through recreational opportunities and healthy food or even through spas and sanatoria. On the other hand, poor sanitation or even endemic diseases may deter many visitors. In the projects, there is little evidence about cooperation with health authorities or about assessment of health impacts of the protected areas. Where the health considerations were used (Green Lungs of Poland), they had an important positive impact on the decision making process.

Education

As with health, education in the areas can be looked at from the perspective of educating visitors or the local population. The protected areas have an important general educational role, especially where the frequency of visitors is high (Losinyi Ostrov). On the other hand, education of the local population in nature conservation may be critical for the long-term success of the projects.

Schooling systems offer a lot of opportunities for education of both the general public and the local population. Through setting up a visitor centre or guided programmes, excursions can be attracted to the area bringing some income to the locals and having significant impact on the children visiting. For secondary school and university students, cooperation in research and monitoring may be very interesting, and can make a substantial contribution to the project. In Lonjsko Polje, for example, the most significant research so far has been done by foreign students, who did not cost the project anything.

For local population education, it is important to work closely with the local schools, so that information about the conservation of the area becomes part of the regular programme. In Green Lungs of Poland, for example, they are organising training courses for teachers so that they can use new knowledge in their lessons. Visitor centres are also important for local population education, because they give members of that population a reflection of their own area and life, and also a sense of importance of preservation of their culture and nature.

Banking and finance

The lack of capital is one of the main characteristics of Central and Eastern Europe. Interest rates charged by the commercial banks are usually too high to finance any low- or medium-profit investment through loans. The governments are trying to offset this problem through setting up various schemes such as environmental funds, that give grants or loans at favourable rates to specific (environmental) projects. They are also trying to attract international financing from World Bank and EBRD and especially from donors.

The analysed projects all involved cooperation with governmental and quasi-governmental as well as international financing organisations, but little work with domestic or foreign private financing. This can be explained by the high price for credit on the commercial market, but also by the lack of understanding between the banking and conservation sectors. Attempts were made to set up special financing schemes for local development (a small loans fund was proposed for the Danube Delta). None of these schemes has been implemented yet, but if they are, they will require substantial financial management efforts, that will have to be provided by specialists from existing banks.

As the financial markets in the countries in transition consolidate, the scope for cooperation with commercial banks and venture investors will expand. What may also emerge are ethical investment funds or ecobanks, as they already exist in the west. Harnessing these financial resources in the right direction as they become available will be one of the main challenges for the implementation of the projects.

Industry

There are varying levels of industrial development at the sites and also different levels of industrial pollution affecting them. Many industrial facilities have been closed in recent years, causing unemployment and creating opportunities for restructuring. None of the sites have had much contact with industry. This is partly because industry is still more or less controlled by the central ministries and partly because industry seems too conflicting and too powerful. The situation will become clearer with the privatisation and corporatisation of industry, when a more distinct line will be drawn between the government and private sector. Then it will be possible to use regulatory

tools to make existing industry comply with environmental standards, and to use zoning in steering new industrial developments.

It is, however, understood that certain small- and medium-scale industries are necessary, if a reasonable livelihood for the local population is to be secured. These particularly include wood processing, agricultural product processing and clean decentralised light industries. The problem of how to clean up the pollution at sites of some existing heavy industries is usually far beyond the scope of conservation projects.

Non-renewable resources

In some sites, extraction of stone and/or different ores represents a significant element of the local economy. Traditionally, quarrying and mining have been the least desirable activities in or close to conservation areas. In the case of the Green Lungs of Poland, a proposed mining development might even have been the issue that triggered the whole process of conservation of the region. On the other hand, in Strandja quarrying and mining seem to be acceptable operations, except for the copper ore purification facility with its accumulation of slag.

The issue for conservation projects is how to strike a balance between these activities and conservation, or rather, how to secure wise use of these resources and how to control pollution from them. Again, one of the factors will be the livelihood of the local population.

4.5 Cultural values and artefacts

Virtually all of the cases considered have aspects of cultural value and artefacts which are considered part of the project (see Table 1 for a summary of the different cultural features of the projects). In some cases these relate to historical and architectural/archaeological monuments. These include the old wooden houses of Krapje Dol in Lonjsko Polje, the water supply works of Catherine the Great in Losinyi Ostrov, Moscow, the archaeological remains and the churches of Strandja Mountain, Bulgaria and various sites (particularly the Daco-Greek-Roman town of Histria) in the Danube Delta.

There is a definite awareness that it is important to preserve such places and buildings. Since tourism is considered to be one of the main income generating activities for these areas, their preservation and display is usually included in the management plans. In Losinyi Ostrov, a museum is planned at the site of the water works, and an ancient chapel over a spring is to be restored. As far as preservation of landscape is concerned, the GEF project in the Danube Delta has some funds allocated for the removal of some disused quarry machinery, which appears as a blot on the landscape near a core area.

The issue of retaining the character of architecture in many areas was raised in some projects, particularly in Lonjsko Polje. Trends in modern house design, such as size and use of materials, appear very out of character compared to the old houses, and yet the local people obviously wish to make use of the more modern designs. Sensitivity in renovation of old houses and in putting up new buildings will become increasingly necessary if the villages are not to take on the appearance of most other rural communities in Europe.

Cultural values are more difficult to pin-point and preserve, especially if tourists come in large numbers. However, the link between the current land-use practices, the way of life of the people who live there, and the conservation of the ecosystem appears to be appreciated in many of the projects. This is especially true in Lonjsko Polje, where the current agricultural practices and the keeping of rare breeds of pigs and horses are seen to be essential if the Nature Park is to remain viable. Moreover, it is surprisingly easy to create new traditions such as craft fairs and other celebrations related to protected areas.

The attention to socio-cultural aspects has been built into the Strandja Mountain project at an early stage; the work of a social anthropologist is anticipated to yield insights into the cultural values and practices which can be used for improving the conservation and rural development objectives.

In Retezat, one of the main threats to the Park is the overgrazing from increased transhumance – moving flocks to alpine pastures in summer and to the plains in winter. This is an agricultural practice which has virtually died out in Western Europe, with the result that mountain ecosystems are changing and alpine pastures lost. A decision for the park managers must be how to manage this practice sustainably, limiting the number of animals but retaining the practice to conserve the ecosystem.

In the Green Lungs of Poland, there is an attempt to take advantage of the fact that the agriculture is already using low-input and organic techniques. The clean way of life and healthy food produced is being promoted for visitors to experience in the context of farms/guesthouses. There is an attempt here again to induce cultural values supportive of sustainable development in this region of Poland.

The threats of mass tourism are generally appreciated, and the need for small-scale initiatives by individuals seeking to supplement their income through activities such as selling local produce, providing rooms and meals for guests, acting as translators and guides are generally encouraged. However, a great deal of hope is pinned upon the success of eco-tourism, but apart from the Danube Delta where the DDI has a tourism research unit, none of the studies/ plans covered included a survey of the market for tourism or an estimate of the tourism carrying capacity of the area. At present, the likely economic benefits of eco-tourism are often stated too optimistically, while the dangers of tourism are underplayed. The exception to this is in Losinyi Ostrov, where the proximity to a major centre of population makes visitor pressure one of the most critical threats.

4.6 Legislation and regulation

The legal systems in the CEE countries are undergoing the fundamental changes necessary to adapt to a market-based society. Most of the countries have in the past few years adopted new environmental laws, and now they are preparing fresh laws on nature conservation.

In all the projects, the vital importance of the legislative and regulatory base has been recognised as the key prerequisite for their implementation. The declaration of protected areas is conducted differently in different countries, but for a national park most countries require a special law. The legislative process has to and can deal with most of the crucial problems in setting up protected areas: the institutional arrangements, the financing, the involvement of different actors in day to day management of the area. So in most cases, legal declaration of a protected area has taken place before detailed management planning.

In several projects, the significance of employing international law – the conventions regulating nature conservation – was shown. Since most of the CEE countries aspire for international acceptance and are approaching the European Union, they have ratified most of these conventions and compliance with them has been used as leverage for setting up protected areas. In Albania, the Ramsar Convention was used as the main justification for the protection of the Karavasta Lagoon. In Romania, the status of Biosphere Reserve contributed largely to implementation of the Danube Delta project.

At most sites special declaration acts have been passed, while the framework nature conservation laws are still in the making. It seems that many of the experiences gained at these model projects will be used in drafting the laws and justifying them. Some of the main issues that

are common include: the administration of protected areas, the Nature Conservation Service, and the classification of protected areas according to IUCN categories.

4.7 Financing and funding

At the beginning of the reforms in the CEE an expectation was created that there will be large amounts of money from the West directed for environmental improvement and biodiversity conservation in the East. In the field of nature conservation, this expectation was enhanced by the way protected areas and the population around them were assisted by western governments. In preparation for the 1993 Lucerne Conference, all the countries prepared long lists of projects to be included in the so-called portfolio. IUCN submitted five projects, that are the subject of this study. However, the result of Lucerne was an Environmental Action Plan for the CEE that called for more institutional strengthening and policy development instead of just financing investments. The expectation that western donors would be able or willing to provide several millions of dollars per project to finance infrastructure improvements and commercial developments proved false.

Except for Retezat, each of the IUCN-sponsored projects did receive different forms and amounts of international funding for technical assistance and institutional development. First to come were rather small grants from international and western NGOs in the order of tens of thousands of ECUs. These were mainly used for small scale demonstration projects and research, and sometimes also for initial management planning. The next wave of grants came from western governments and the EU, financing mainly management plans, but also demonstration projects. In the Danube Delta, a US$3 million loan from the EBRD was declined by the Romanian Ministry of Finance, but a GEF Biodiversity Project worth US$4.5 million over five years commenced in April.

Recent analyses of general environmental financing have shown, that domestic sources are in most countries much more important in volume than foreign sources. Domestic financing of projects can take place in several ways; some of them are listed below:

- Efforts of NGOs.
- Efforts of government agencies.
- Government grants for infrastructure investments from different parts of the budgets.
- Grants or loans from the environmental funds.
- Commercial loans.
- Private investment by local population.
- Private investment by corporate investors.

It is beyond the capacity of this study to make an estimate of the current volume of domestic financing of the projects because of the complexity of different systems of financing in different countries, and also because of the poorly defined scope of the projects.

However, international funding has played an important role in the initiation and first stages of projects. The small research grants had an important impact on the recognition of the importance of the sites and on the mobilisation or support of the local promoters of the projects. The management planning, currently funded internationally, is of crucial importance for the appropriate set-up of the projects and for the transfer of international level planning and management skills. In general, international funding mainly has a catalytic role and serves to streamline or elicit domestic financial and other resources.

What still remains is the challenge of expected and planned investments in the project areas, that will have to follow the planning and institutional building stage of the projects. Expectations about this are quite high in the areas and there are several options and obstacles to securing the finance for these. The obstacles include:

- Very varying nature of investments, ranging from infrastructure to commercial developments.
- The relatively small scale of single investments.
- Complicated ownership issues in the process of privatisation and corporatisation.
- Lack of capabilities to prepare and implement the investments.

The means to overcome these obstacles include:

- Increasing the priority of the project areas within the existing government and international funding mechanisms, such as environmental funds, road budgets, water management budget, small enterprise development schemes etc.
- Streamlining the international financing through national or regional institutions or programmes that can tackle the small-scale of projects and group them together.
- Setting up development agencies, that assist project owners in project preparation and in securing finance.
- Setting up guarantee schemes, that can enable local private investors to take more favourable loans for their investments.
- Setting up equity investment operations, that can tap private capital, domestic government financing, and international financing, and combine it with the project preparation and implementation capabilities.

In the IUCN Lucerne project proposals there was no clear distinction between investment ownership and the responsibility for implementation. This may cause the agencies originally responsible for, say, infrastructure to expect somebody else to do their investment, so they push it down their own priority list. In setting out to prepare and implement investments, a clear distinction has to be made between public sector and private sector investments, and responsibilities for project ownership have to be clearly defined. This holds both for public agencies, such as municipalities, park administrations, road authorities, water authorities, forest services and regional authorities, and for private owners. Investments required for the public good should be the responsibility of public agencies, while commercially viable and self-standing projects should be owned and implemented by private owners within the criteria of the protected area. Public investments, that cannot be done by the authorities, can also be entrusted to the private sector through concessions, provided that there exists a source of revenue to recover the investment.

At every site, a different model of providing the capital for the investments will probably be found, combining several of the options above. But a relatively low investment in setting up a viable self-standing scheme can mobilise amounts of capital many times greater in the future. This is the principal idea behind the current proposal for extending the DDEMP with Dutch government financing (West-East-South programme) to establish a business advice and service centre (in collaboration with the local Chamber of Commerce and Industry) and a revolving investment fund for sustainable resource use projects.

4.8 NEAPs and other priority setting initiatives

There exist various types of strategic and priority setting initiatives in the CEE countries, including national environmental strategies, national environmental action plans (NEAPs), national biodiversity strategies, nature conservation strategies and so on. Strategies are usually broad documents, setting goals of environmental protection and/or nature conservation in the country, and they are usually adopted by the parliaments. NEAPs are of two basic types: at first, the World Bank was preparing these documents as sectoral studies supporting their projects in the countries; after the endorsement of the Environmental Action Plan for CEE, the countries are developing NEAPs as a participatory priority setting process, outlining the top priority policy, institutional and investment actions.

There is no rule as to whether biodiversity conservation should be a part of the environmental strategy and action plan or should be separate. Several countries have prepared biodiversity strategies separately from the environmental ones, considering biodiversity conservation a separate activity from pollution control. There has also been a lot of discussion as to whether the Lucerne EAP has dealt with biodiversity appropriately or not. The priority criterion for biodiversity actions there is "prevention of irreversible loss", which many see as a very conservative approach.

During last two years, the work on NEAPs has shown that biodiversity may not be of crucial importance for reducing human health risks. However, it commands substantial public support and requires relatively modest financing. Based on requests from the CEE, biodiversity will receive significant attention in Sofia, as a long-term issue following the immediate clean-up priorities addressed in Lucerne.

It is hard to compare the priority of nature conservation projects with pollution control or clean-up projects. This is probably the reason why some countries (Poland, Bulgaria) keep them in separate documents. On the other hand, in international financing, the sources for both are more or less the same, and decisions between them have to be made. The Karavasta Lagoon project, for example, was proposed by a World Bank-initiated NEAP for Albania, and the first technical assistance for the project was provided within the second phase of the NEAP study. All the projects of this study, except perhaps Retezat, have received high priority in the countries through action plans or through other mechanisms. For example, the Green Lungs of Poland is supported by a special declaration of the parliament.

The common denominators for both pollution control and nature conservation projects are their financial viability, cost effectiveness and economic justification. When the two types of projects are compared on this basis, the comparison is rather favourable for nature conservation projects. They generally fall into the same category as good housekeeping projects in pollution control, where only investment in better management is necessary. Many nature conservation projects are also clear win-win cases in the medium- to long-term. These may be some of the reasons (apart from the institutional ones) why there are more nature conservation activities in the CEE than one would expect just from the EAP, state of pollution control and the financial resources of the countries.

4.9 Timing

The timing of project implementation is generally much slower than anticipated. If the project concepts presented at the Lucerne meeting raised expectations that funds would become immediately available, these expectations have certainly been dispelled by now. The development of the projects to support both Karavasta Lagoon and Strandja Mountain has taken from the Lucerne Meeting in 1992/3 to mid-1995 to complete. Even in the big projects such as the Danube Delta, the time required for development of the project, for the negotiations with the donors and for implementation to start, was often frustratingly long.

Nevertheless the examples show that despite these delays in waiting for major funding, considerable efforts have been put in to continue conservation and promotional activity on the sites, often with significant results. The point that needs to be made here is that even while waiting for the large project, small initiatives can be taken, such as litter clean-up, visits and tours to the site, beginning an information centre and building consensus amongst the different actors. Thus time can be used as a management tool – the passage of time allows for conflicts to be resolved or diminish in their importance, and it allows for new ideas to develop which are not immediately apparent at the beginning of the process.

The concepts presented at Lucerne essentially brought together all the components that could be done to develop the sites sustainably. In that respect they present a vision for the future; however, the idea that these could all be completed in the space of a single two-, three- or even five-year project was unrealistic. Most of these projects demand the development of a management plan as the first phase, and this can realistically be done in a two- to three-year period. It is also a manageable activity within the allocations of funding agencies.

Some of the projects have commissioned and produced management plans without the help of foreign funds – the Green Lungs of Poland Strategy was funded from the Polish Ecofund, and Moscow City Government funded the management plan for Losinyi Ostrov – and this now puts them into the implementation phase.

The implementation of the management plan is an on-going process which will continue for as long as the protected area exists. It is a cyclical process, with the plan being executed, monitored and revised again and again. Such management plans should come up with a series of discrete investment opportunities which can be separately funded, rather than expecting a comprehensive project to take on everything.

In the execution of projects such as these, delays are often caused by unforeseen problems, and usually quite mundane ones. The example is given of the Danube Delta where progress was delayed by the logistic problems of the DDBRA working out of several offices in Tulcea at the beginning, and the difficulties of attracting suitable staff because of low government salaries and the lack of housing.

In Poland, the implementers of the Green Lungs project admit that the timing laid out in the Strategy was over-optimistic and that only about half has been achieved. Even this half is a remarkable achievement. However, this illustrates a general principal that such projects always take longer than you anticipate. It also illustrates the problem faced by the project developers, that they often have to fit their ideas into a three-year funding schedule. If they say that they are only going to achieve what they realistically expect to achieve, they will not get the funding; if they double it, they may get the funds but they have difficulty in meeting the unrealistic targets.

The process of institutional strengthening also takes a long time. Again in the example of the Danube Delta, the EBRD project which focused on this aspect will be followed by another which also focuses on the institutional strengthening of the DDBRA particularly in the area of public participation. One two-year project proved insufficient for this.

Further reading

Carew-Reid, J., Prescott-Allen, R., Bass, S., *et al.* 1994. *Strategies for National Sustainable Development: a Handbook for their Planning and Implementation.* IUCN, Gland, IIED and Earthscan, London. xviii + 203pp.

Davis, T. (ed.) 1993. *Towards the Wise Use of Wetlands: Report of the Ramsar Convention Wise Use Project.* Ramsar Convention Bureau, Gland. x + 180pp.

Davis, T.J. 1994. *The Ramsar Convention Manual.* Ramsar Convention Bureau, Gland, Switzerland.

Denisuik, Z., Kalemba, A., Zajac, T., Ostrowska, A., Gawlinski, S., Sienkiewcz, J., and Rejman-Czajkowska, M. 1992. *Interaction Between Agriculture and Nature Conservation in Poland.* IUCN East European Programme, Gland. xii + 162pp. *Environmental Research Series* No. 6.

Development and Implementation of the National Environmental Action Plans (NEAPs). 1995. The Regional Environmental Centre for Central and Eastern Europe, Budapest, Hungary.

Environmental Action Plan for Central and Eastern Europe. 1992. The World Bank, Washington D.C., USA. [Available also in the languages of the countries of the Central and Eastern Europe at the Ministries of Environment in each country.]

Environmental Action Programme Central and Eastern Europe. Document submitted to the Ministerial Conference, Lucerne, Switzerland, 28–30 April 1993. Environment for Europe. 307pp.

European Centre for Nature Conservation. 1995. *Pan-European Biological And Landscape Diversity Strategy.* Council of Europe, Steering Committee for the Conservation and Management of the Environment and Natural Habitats, Strasbourg.

Fésüs, I., Márkus, F., Szabó, G., Tölgyesi, I., Varga Z., and Vermes, L. 1992. *Interaction Between Agriculture and Environment in Hungary.* IUCN East European Programme, Gland. vii + 113pp. *Environmental Research Series* No. 5.

Glowka, L., Burhenne-Guilmin, F., Synge, H., McNeely, J.A., and Gündling, L. 1994. *A Guide to the Convention on Biological Diversity.* IUCN, Gland. xii + 161pp. *Environmental Policy and Law Paper* No. 30.

Klemm, C. de, and Shine, C. 1993. *Biological Diversity Conservation and the Law: Legal Mechanisms for Conserving Species and Ecosystems.* IUCN, Gland. xix + 292pp. *Environmental Policy and Law Paper* No. 29.

IUCN East European Programme. 1992. *A Guide to the Preparation of Project Proposals.* Document prepared for the Minsitry of Environment, Bulgaria. Unpublished report. 20pp.

Lindberg, K., and Hawkins, D. (Eds) 1993. *Ecotourism: a Guide for Planners and Managers.* Ecotourism Society, Alexandria, VA. 175pp.

McNeely, J.A., Thorsell, J., and Ceballos-Lascurain, H. 1992. *Guidelines: Development of National Parks and Protected Areas for Tourism.* World Tourism Organisation, Madrid. UNEP IE/PAC, Paris. ii + 53pp.

Miller, K., and Lanou, S.M. 1995. *National Biodiversity Planning: Guidelines Based on Early Experiences Around the World.* IUCN. UNEP. WRI, Washington D.C. xiii + 161pp.

Stanners, D., and Bourdeau, Ph. 1995. *Europe's Environment: the Dobris Assessment.* European Environmental Agency, Copenhagen. xxvi + 161pp.

The Contribution of Amenities to Rural Development. 1994. OECD Publications, Paris, France.

Theis, J., and Grady, H.M. 1991 *Participatory Rapid Appraisal for Community Development – A Training Manual Based on Experiences in the Middle East and North Africa.* IIED and Save the Children, London.

Wells, M., Brandon, K., and Hannah, L. 1992. *People and Parks : Linking protected Area Management with Local Communities.* The World Bank, Washington D.C., USA.

IUCN – The World Conservation Union

Founded in 1948, The World Conservation Union brings together States, government agencies and a diverse range of non-governmental organisations in a unique world partnership: over 800 members in all, spread across some 130 countries.

As a Union, IUCN seeks to influence, encourage and assist societies throughout the world to conserve the integrity and diversity of nature and to ensure that any use of natural resources is equitable and ecologically sustainable. A central secretariat coordinates the IUCN Programme and serves the Union membership, representing their views on the world stage and providing them with the strategies, services, scientific knowledge and technical support they need to achieve their goals. Through its six Commissions, IUCN draws together over 6,000 expert volunteers in project teams and action groups, focusing in particular on species and biodiversity conservation and the management of habitats and natural resources. The Union has helped many countries to prepare National Conservation Strategies, and demonstrates the application of its knowledge through the field projects it supervises. Operations are increasingly decentralised and are carried forward by an expanding network of regional and country offices, located principally in developing countries.

The World Conservation Union builds on the strengths of its members, networks and partners to enhance their capacity and to support global alliances to safeguard natural resources at local, regional and global levels.

European Programme

Established in 1987, the aims of the Programme are to promote environmentally sound planning in accordance with the aims of the World Conservation Strategy and the Report of the World Commission on Environment and Development, to participate in international conservation affairs and to promote and support the application of restoration ecology. The Programme has built up an unparalleled store of information on conservation issues in eastern, central and south-eastern Europe. Dissemination of this information is being carried forward through the EP Report and Research Series.

IUCN Communications Division
Rue Mauverney 28
CH-1196 Gland
Switzerland
Tel: ++ 41 22-999 00 01
Fax: ++ 41 22-999 00 02
E-mail: mail@hq.iucn.ch

IUCN Publication Services Unit
219c Huntingdon Road
Cambridge
CB3 0DL
UK
Tel: ++ 44 1223-277894
Fax: ++ 44 1223-277175

IUCN
The World Conservation Union