



CHAPTER NINE

ENVIRONMENT

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9.1 INTRODUCTION

The purpose of this chapter is to identify environmental issues of a strategic type, and outline projects and programmes intended to tackle them.

This discussion is to some extent based on the work of the ongoing 'Environmental Legislation and Planning Project' (ELPA) which is funded by the EC under the control of the Ministry of Environment. This project will not be completed for another year. It will be advisable to review and revise the Regional Plan when ELPA is complete, so as to ensure that the two strategies are fully consistent.

Many environmental issues covered by ELPA are discussed under other headings in the Regional Plan. For example, we discuss tourism and agriculture in the chapter on 'Economic Development'; we discuss drainage and related matters in the chapter on 'Strategic Infrastructure'; and we discuss local planning and development control plus tertiary sewerage and water supply in the chapter on 'Urban Growth'.

When specific projects are being worked out in greater detail it is desirable to prepare a 'strategic environmental evaluation'. When they are designed in depth, an 'environmental impact statement' should be prepared. This should be reported to the Environmental Ministry, whose approval should be obtained. This will be most efficient if the ministry has been involved in each project from the early days. The ELPA project will present details of the approach, and the background in European environmental legislation, with which Albania must become increasingly familiar.

9.2 DISCUSSION OF KEY TOPICS

9.2.1 River System Management

The river system in the coastal plain has been changed as a result of long-term historic events. The Buna, Drin and Kir rivers reach a confluence just south of Shkoder. Here the water reaches a high level in winter time, and obstructs the flow out of Lake Shkoder. This causes flooding, but also blocks the outflow from the sewers and drains of the urban area. This has been exacerbated by the transport of eroded material which has reduced the flow capacity of the rivers.

The Academy of Sciences originally proposed a canal from the Drin (just south of Vau I Dejes) past Bushat, joining the Buna some way north of the sea. This would be elevated above existing ground level in places by six metres, and the cost would be rather high (€ 100 million) relative to potential benefits. Whilst this concept should be studied in greater depth, it seems feasible to adopt a more modest approach.

An alternative concept would be to reduce the flow discharged into the Buna by (a) reopening the Gja der River, allowing it to flow southwards to the sea; and (b) reconnecting the main Drin to the Lower Drin, (and using it to divert some flow from the main Drin.)

The original Bushat canal project would have been supported by a related hydropower scheme (150 GWh per annum.) But a shorter canal from Vau Dejes joining the main Drin about five kilometres to the west would be a fraction of the cost and be less unsightly, whilst generating 50 GWh per annum.

The concept mentioned here would also require the removal by dredging of deposits so as to increase flow capacity of the three rivers, and reduce the flood risk accordingly.

Other proposals have been (a) to build a barrage across the Buna south of Shkoder to allow the level to the Lake to be maintained and (b) to build flood control embankments along the Buna. These ideas might be reviewed.

Arguably there is no need to keep the lake at its present level. Would there be any disadvantages if it fell by two to three metres, which was the historic position? An end to flooding of land west of Shkoder and along the Shkoder-Koplik Corridor would assist future development projects as outlined in Chapter 6. It would also assist in the unobstructed outflow of sewage and surface water from the infrastructure of the urban area.

The construction of major flood control embankments is often a rather dubious undertaking. It may be thought wiser and more cost-effective to allow less frequent flooding in undeveloped areas east of the Buna, provided the emergency flood plain contained no housing. We would therefore tend to question the need for new bunds along the Buna. On the other hand, there are other locations where existing embankments stop flooding of existing urbanization and these need to be properly maintained.

The concept here is based on the philosophy of going 'with' nature rather than engineering 'resistance' to it.

Clearly more study is needed. As regards power generation, this must be looked at in the context of national energy policy. Other thermal energy projects are under debate in Vlore. Hydropower projects in North Albania will have to demonstrate adequate economic performance in the frame of national energy policy. In particular, these power projects do not always address peak-load requirements.

9.2.2 Solid Waste

In this region (as elsewhere Albania,) the most obvious environmental failure is the ubiquitous dumping of waste. When collected, it is normally tipped on the edge of towns and burnt. The smoke blows across nearby villages in some cases. Medical waste and tipping in irrigation canals both present particular health risks.

A sanitary land-fill site is needed. The various towns and villages in the urban region should share a single site. Such a site is proposed in a location at Plezhe near Bushat, accessed from the Shkoder-Lezhe highway, as the Regional Plan map shows.

The solid waste system will also require new bins and collection vehicles, which will require garages and maintenance / fuelling points. Additionally, a crusher will be needed to recycle building waste, and a car-breaking yard is also foreseen. Sites for sorting and separation of various categories of waste into several containers is desirable.

The budget cost is intended to include such additional capital items. The operating cost, however, including fuel, maintenance and salaries, should be funded by beneficiary charges.

9.2.3 Agriculture

It is probably little exaggeration to say that in this region agriculture is in serious decline, and yet in most of Western Europe the farming community is typically regarded as the key guardian of rural environmental quality. Perhaps the greatest environmental benefit of all will flow from an economically feasible agricultural sector, if it is sufficiently well organized to deliver 'environmental protection'.

In the present context, there are two issues. The first concerns land ownership or control. Land holdings are too small and dispersed. A farm should be between 10 and 50 hectares (within a single boundary) if it is to function economically. The aim of this strategy is to regroup land holdings in this way, and the matter is addressed in the chapter on Economic Development.

The second theme concerns drainage and irrigation of land. The area has extensive networks of canals which are not maintained and operated. An agency with funding should be responsible for primary and secondary elements of the system, and individual farms should both (a) maintain tertiary canals and (b) pay for the benefits from primary and secondary canals. This will not be possible at the beginning because the agricultural industry must reach an economically viable condition first. This matter is also discussed in the chapter on Economic Development.

9.2.4 Ecological Protection and Tourism Development

Some existing zones enjoy various levels of protection under Law 8906 of 2002, and other proposals will emerge from the ELPA project. These include (a) strict control areas (scientific and natural reserves;) (b) National Parks; (c) protected landscapes and (d) areas of managed habitats. Each has a different level of protection, and the area concerned covers the coastal strip, the area between Shkoder city and Velipoje, and the land between the lake and the mountains: See Figure 9.1.

These areas are regarded as environmentally sensitive, particularly the lagoons along the coast and areas related to them. They are perceived as being under threat from unplanned and uncontrolled urbanization, the pollution it causes and the intrusion of inhabitants and visitors.

The pressure from economic development is said to be driving this. But the consequences are already reducing the attractiveness of the area to tourists, and failure to protect the environmental assets will cause the area to repel tourists. (Already the main English language guidebook tells visitors how unattractive it is and warns visitors to "Stay away!") The risk is that this will "kill the goose that lays the golden egg".

The policy conclusion is to stop all development in a "Conservation Zone" which includes and surrounds the coastal lagoons south of Lezhe and the mountains north of Shengjin. This "Nature Park", should be under a well organized protection and management regime.

South of Lezhe and east of this area should be a 'Buffer Zone'. This would include four nodal points which would provide for development under strict control. The locations would be Ishull Lezhe, Tale, Fushe Kuqe and Shllinza. Possible uses would be (a) a small hotel (less than 50 beds) per node; (b) up to 5 small 'Guest Houses' per node. Existing houses would

be able to let rooms to visitors. There would be a car park for visitors and an 'Interpretation Centre'. Local infrastructure projects for water and sewage should be provided.

The remainder of the coastal belt should be protected as agricultural land. In general, no urbanization is proposed and indeed should be prevented. Development along the new road from Lezhe to Tirana should be brought under control, (as argued in another chapter.) This has created the most repellent image for the whole subregion and yielded no real economic benefits. So far as legally possible, frontage development along the road should be demolished and replaced by a belt of forestry. Roads to Lac and Milot (leading on to Rubik, Rreshen, Qafe Mali et c) should intersect the coast road. Here could be created small well-planned economic nodes (as described in another chapter.)

The Regional Strategy presents local plans for Shengjin and Velipoje, (see Chapter Six,) which include provision of hotels and tourism service centres. The important proposal, from a tourism angle, is that no road and no building should occur between these two towns. The plan envisages only a coastal footpath and cycle track. The value of this area as a tourism asset will be wasted if development is permitted to occur.

In this chapter on 'Economic Development', we also propose a landscaped long-distance footpath and cycle route around Lake Shkoder, with nodes at Shiroke and Zogaj of the type described above.

9.2.5 Environmental Forestry

More detailed project design is needed to identify planting projects to (a) stabilize land undergoing (or threatened by) erosion; (b) support the restoration of river bunds; (c) improve the urban and rural environment so as to assist tourism and other investment generation activity, and (d) support the conservation of threatened habitats.

The plan envisages that the cost of such programmes is financed by income-generation from commercial forestry, which is discussed in the chapter on Economic Development. This includes reference to 'Community Forestry'.

9.2.6 Derelict Land Reclamation

There are considerable areas of derelict or 'brownfield' land which contain some environmental threats. In any event, the aim is to return these to a sound

environmental condition and to develop them if possible in appropriate ways (before developing 'greenfield sites').

This plan proposes five such projects, as follows.

- *Former Industrial Area in North-East Shkoder City.* This is a large area of industrial premises now largely derelict. In Chapter 8 it was identified as a zone of future business land: see Table 8.2. A budget was allocated for preparation and infrastructure.
- *Former Paper Works South of Lezhe Centre.* This is a prominent derelict site, which should be cleared and brought back into use as part of the Lezhe Central Business site: (Table 8.2.)
- *Former Phosphate Works at Lac.* This is the most heavily polluted site. The buildings should be demolished and the land stripped or capped. It may prove difficult to bring it back into use.
- *Refinery east of Vau Dejes.* This is moderately polluted land requiring demolition and removal or capping of soil. It will not be possible to reuse this area commercially.
- *Copper mine at Rubik.* This is defunct, and the ground is also very polluted.

The first two sites at Shkoder and Lezhe could be reused, and a skillful development project could generate a substantial income to offset the cost of reclamation as well as infrastructure. In the last three cases, however, this is unlikely, and this reclamation programme budget will not be self-financing overall.

A related issue concerns quarrying of hillsides (a) near Gjader; (b) on the east side of the Buna near Shkoder and (c) on the Lezhe-Shengjin road. There are also several sites at which aggregates are won from (for example) the River Mat and the Buna just south of Shkoder.

The quarries are visually very exposed and ugly. The activity may promote erosion. In any case, there may not be restoration and clean up operation after quarrying activity ends. This quarrying issue needs further consideration.

As for aggregate winning from rivers, this should be integrated into the dredging project outlined above: (Project E-2.) The solid waste project (E-3) envisages a crushing plant to recycle building waste, and this

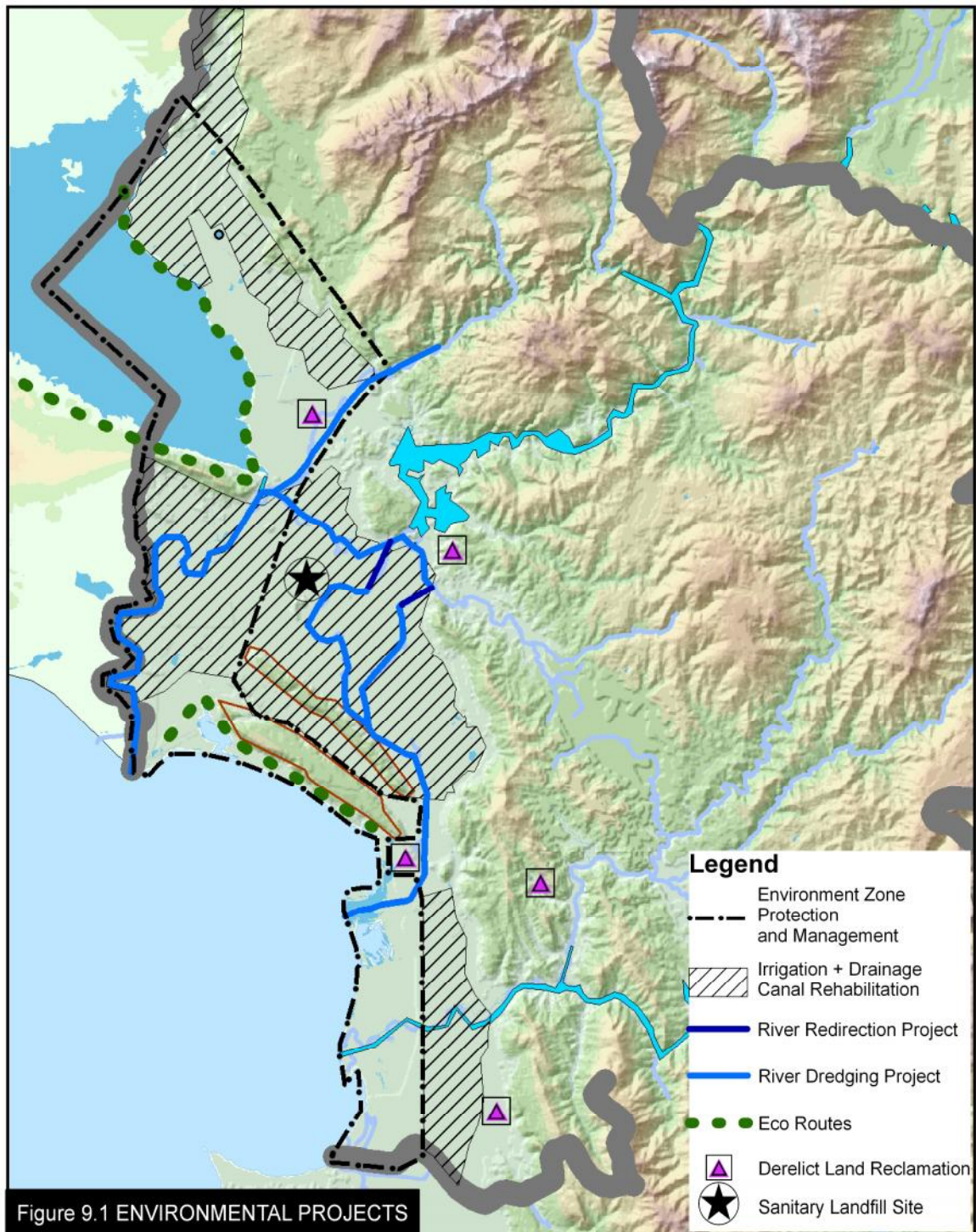
should also be integrated with the aggregate business in planning terms.

9.2.7 Control of Urban Development and Avoiding Waste of Land

This is discussed in chapter 6 on urban growth and chapter 11 on Implementation, particularly as regards local planning, density, enforcement and tertiary water

supply and sanitation.

Although we have addressed this matter in other places, this is probably the greatest single threat to the environment. Land needed as environmental or ecological reservations is often invaded by building, and land is wasted by development at extremely low density. Infrastructure is not provided (because densities make it unaffordable) and consequently



water courses and aquifers have been or will be polluted.

On major roads, frontage sites are often developed for economically marginal businesses, such as vehicle-breaking yards (or builders merchants yards), or left as derelict unfinished buildings. In many cases, land is tipped with aggregate to bring productive agricultural land up to road level, and then abandoned.

9.3 PROJECT IDENTIFICATION

9.3.1 Project E-1 Redirecting the Lezhe Drin and the Gjader Rivers

Subject to a more detailed study, the separate sections of the Gjader would be reconnected and the flow in the Main Drin would be partly directed down the Lezhe Drin. There would be extensive works to rehabilitate both rivers, such as repair of embankments. The canal (mentioned above) on the Main Drin might be justified by a new hydropower project. This is regarded as a separate topic and is identified in Chapter 7, 'Strategic Infrastructure'.

9.3.2 Project E-2 River Dredging, Restoration of Embankments and Interception of Eroded Material

The beds of all major rivers would be dredged so as to increase sufficiently their flow capacity, bunds would be repaired and sediment interception dams would be rehabilitated or built from new, (as appropriate.)

9.3.3 Project E-3 Sanitary Land Fill Site near Plezhe (Bushat)

This site would be designed to meet the needs for both Lezhe and Shkoder regions. Existing rubbish dumps would be closed and rehabilitated. The capital cost of waste collection bins and vehicles, as well as sites and equipment for sorting, crushing and recycling, are included in the project cost. We also envisage that operational costs are funded by a regional authority on the basis of beneficiary charges.

The total project should be planned now to meet demand for several decades, but the estimate here is intended to cover only phase one for ten years.

9.3.4 Project E-4 Rehabilitation of Canals and Pumping Stations

The primary and secondary canal system for land drainage and irrigation would be comprehensively cleaned and repaired. In principle, tertiary canals should be treated by farmers. But this will only happen

when farm lands are reorganized into larger areas, and the agricultural economy has begun to revive. The budget therefore covers the complete cost.

Dedicated power lines may be needed for key pumping stations especially the pump at Tale. The irrigation of land by mobile water sprays (to be supplied from the canals,) is not mentioned here. This is regarded as capital equipment aimed at the development of the agricultural economy and is covered in another chapter.

9.3.5 Project E-5 Ecological Zone Management and Projects for Local Infrastructure or Environmental Investment

This project would provide localized infrastructure and related environmental investments within the four types of protected area, such as clearance of illegal buildings; sanitation in settlement nodes near coastal lagoons or coastal conservation. It would also offer financial and other supports to allow the effective establishment of organizations to manage the protection actions, including the payment of staff. It should be possible to establish an income in the short and long terms, by disposals of property by sale or lease, which would offset the budget outgoings. The areas concerned are shown on Figure 9.1.

9.3.6 Project E-6 Environmental Forestry Programme

This project would create and implement a programme of afforestation, forest management (including control of illegal logging) and related anti-erosion measures, involving commercial forestry and environmental projects. We envisage an element of cross-subsidy from profitable forestry and so the budget in the earliest two phases would taper to zero, allowing such a system to be established.

9.3.7 Project E-7 Derelict Land Reclamation Project

This project would undertake building demolition and the removal or capping of polluted soil in five areas: see paragraph 9.2.6.) The budget cost is offset by income from the disposal of recovered land.

9.3.8 Project E-8 Studies on Environmental Projects

Several of the projects mentioned above will require considerable engineering design studies to confirm them and create the necessary contract documentation.

9.3.9 Other Environmental Initiatives

There are five other initiatives, which are identified in other chapters, but are summarized here for the sake of completeness.

- Primary and Secondary Sanitation and Water Supply Projects: see Chapter 7 on Strategic Infrastructure
- Urban Growth Management, including local plans, development control and enforcement, provision of tertiary water and sewerage systems etc: see Chapter 6 on Urban Growth.
- Tourism Development. Fisheries and Commercial Forestry: see Chapter 8 on Economic Development

- Institutional Development: see Chapter 11 on Implementation

9.4 PROJECT SUMMARY

We summarise environmental projects in Table 9.1. The budget cost estimates should be regarded as at best schematic. We have followed advice from ELPA staff on river and canal related projects, but doubtless more detailed work is needed before these estimates are regarded as reliable. We have also offset supposed cross-subsidy elements against costs for Protected Zone, Derelict Land and Forestry projects.

The total budget estimate is around € 56.5 million, or an average under € 4 million per year. The phase one/priority A budget is € 21 million.

Code	Project	Phase / Cost			
		I	II	III	Total € million
E-1	Redirecting Drin and Gjader Rivers	-	7.00	6.00	13.0
E-2	River Dredging, Interception, etc	10.00	5.00	5.00	20.0
E-3	Sanitary Land Fill (Phase One) etc	4.00	2.00	-	6.0
E-4	Rehabilitation of Canals and Pumps	3.00	0.50	-	3.5
E-5	Protected Zone Management and Investment	3.0	1.50	-	4.5
E-6	Environmental Forestry	1.0	0.5	-	1.5
E-7	Derelict Land Reclamation Programme	2.0	3.0	0.5	5.5
E-8	Various Technical Design Studies	2.0	-	-	2.0
		25.0	19.5	11.5	56.5

Table 9.1 Environment Project Budget Summary