PROLOGUE

This programme comprises an ecological, economic and social study of the Kandili area of Evvia. Its objective is the creation of a model Nature Park in the Prokopi-Drazi estate, as well as the formulation of a proposal for the management of the Nature Park and the utilisation of the area's physical resources in a framework of susstainable development. Also included are a series of actions aiming at sensitising local communities to the environmental and economic advantages which would ensue from creation of the Nature Park and at informing them about such advantages in the light of the serious crisis facing the mines which constitute the chief economic activity of the area.

We consider it our duty to express our thanks to everyone who assisted in the realisation of this programme. In particular we would like to thank the Chairman and Secretary of the Prokopi Council Messrs. Prodromos Enotiadis and Lazaros Sismanoglou, not to mention the employees of the Forestry Commission at Limni and of the Prefecture of Evvia for their willing support and encouragement, Mr Francis Noel-Baker and Mrs Barbara Noel-Baker for their valuable assistance and backing, the workers' and cultural associations of Mantoudi for their contribution to the gathering of data, all our friends from Prokopi and Dafnoussa who enthusiastically supported the idea of the Nature Park, as well as Katherine Kontostavlaki and Paulina Voulgari for their valuable aid in completing the programme and preparing the texts.

CONTENTS

<u>Σελίδα</u>

2

.

INTRODUCTION	1
Definition fo the study area and the surrounding region Aims and methodology	2 3
PROGRAMME ACTIVITIES	5
 PROPOSAL FOR MANAGEMENT OF THE KANDILI REGION 1.1 Evaluation of the ecosystems 1.1.1 Retention of naturalness 1.1.2 Completeness 1.1.3 Diversity 1.1.4 Endangered Species 1.1.5 Self-sufficiency 1.1.6 Vulnerability 1.1.7 Uniqueness 1.1.8 Educational Value 1.1.9 Possibilities for Rehabilitation 	8 8 8 8 8 8 8 8 8 8 8 8
 1.2 Aesthetic value 1.3 Evaluation of cultural and political-institutional aspects 2. Management objectives and the rationale behind them 2.1 The park master plan 2.2 The concept of the park 2.3 Park management objectives 	9 10 10 10 11 12
 3. The time-frame of the plan 4. Proposed park boundaries 5. Park zoning 5.1 Explanation and objectives 5.2 A1 zones: strict nature preserve 5.3 A2 zones: oriented protection 5.4 A3 zones: general protection 5.5 B zone : the river 5.6 C1 zone : productive agriculture 5.7 C2 zone : productive forest 5.8 C3 zone : traditional agriculture 5.9 D zone : mineral exploitation 5.10 E zone : the village of Prokopi 5.11 Natural monuments 5.12 Road system 	 13 15 16 17 18 19 21 21 22 23 23 23
 Park development: Explanation and objectives Tourism and camping 	24 24

1 1 -----F Г к. [1. [. -<u>s</u>_ -1 1 I -

Į

6.2	Programme for the development of activities of	
	naturalistic interpretation, scientific research	
	and environmental education	30 31
	6.2.1 The park visitor's centre	31
	6.2.2. The park's nature trails	33
	6.2.3 The park's educational areas/interpretation points6.2.4 The park museum	33
	6.2.5 he park arboretum/experimental botanical garden	40
	6.2.6 The park's wildlife enclosure	40
6.3	Training programme for the development of sustainable	1.1
0.0	productive activities in the territory of Mount Kandili	
	National Park	43
7.	Management Proposals and Programmes	47
7.1		47
7.2.	Management	49
	7.2.1 Administration	49
	7.2.2 Personnel	49
	7.2.3 Budget Requirements	50
	7.2.4 Training Course Programme for the Technical and	
	Administrative Management of the Mount Kandili National Park	52
EPILC	DGUE	55
MAP	WITH FEATURES OF ENVIRONMENTAL, HISTORICAL	
AND	AESTHETIC INTEREST	56
BIBLI	OGRAPHY	58
TEOU		• •
TECH	NICAL APPENDICES	6 0
	NDIX I: PHYSICAL FEATURES OF THE REGION	0.1
APPE	- Relief	61 61
	- Climate	61
	- Bioclimatic information	64
	- Geology	64
	- Hydrology	65
	- Soil characteristics	66
ADDE	NDIX II: ECOLOGICAL VALUE OF THE AREA	67
AFFE	- Flora	67
		07
	- List of plants found in the area of Mount Kandili	69
	and the Kereus Valley	73
	 Description of forest vegetation Forest fires 	73
	- Vegetation zones	74
	- Vegetation in the area of the mines	73
	- Fauna	78
		10

•

T

 List of animals found in the area of Mount 	
Kandili and the Kereus Valley	80
- The main zones and biotopes of fauna in the area	83
 Possibilities of reintroduction of species 	86
APPENDIX III: REPORT ON THE QUALITY OF THE RIVER KEREUS	89
	89 89
- Description of the river	
- Quality of the water	89
APPENDIX IV: THE AESTHETIC VALUE OF THE AREA	92
- Landscape, natural landmarks	92
- Footpaths and potential for hiking	93
APPENDIX V: HISTORICAL AND SOCIAL PARTICULARS	96
- General picture	96
- Historical background	96
 Sites of historical importance 	97
 Social origings of the dispute over the estate 	99
- Historical background to the land ownership controversy	102
APPENDIX VI: ECONOMIC PICTURE	106
- Overview	106
- The primary sector	106
- The mining sector	109
- The tertiary sector	111
 The question of land ownership 	112

Γ

Γ

Π

1 6-1

40

-

.

E

1

INTRODUCTION

This report contains a description of the programme entitled: "Creation of a Natural Park in the Area of Kandili, Evvia", which is being carried out with financial backing from the Commission of the European Communities (Contract No. 6613/87/02). The Society for Ecology and Development (S.E.D.), which is based in Athens, and the Agenzia per la Ricerca, la Documentazione e l' Educazione Ambientale (A.R.D.E.A.), based in Rome, have been commissioned to carry out the project. The study team consists of the following members:

- Giorgio Biddittu, biologist, specialist in park planning and environmental education
- Maurilio Cipparone, biologist, specialist in park planning and management
- Giorgos Douros, forest scientist and attorney
- Giorgos Effichidis, forest scientist
- Cecilia Franceschetti, naturalist, specialist in geology and environmental education
- Martinos Gaethlich, biologist and ornithologist
- Vasilis Hatzirvasanis, forest scientist, expert on mammals
- Marcello Mari, architect, specialist in land use planning
- Michalis Modinos, specialist in area studies
- Nikos Panayiotidis, chemical and sanitary engineer
- Giorgos Sfikas, artist and specialist in Greek flora
- Giannis Schizas, economist
- Dimos Tsantilis, physicist and economist

Coordination of the programme:

- Kimon Hatjibiros, physicist and ecologist.

The aim of the programme is to carry out a study of the natural, social, etc. conditions in the Kandili area, to formulate a management plan for the natural park, which will make wise use of the area's natural resources and promote employment, and finally to familiarise the local residents with the programme, at the same time raising their awareness of the need for development in the region to be compatible with environmental conservation.

Preparations and negotiations for the implementation of this programme began in October, 1986. The contract with the Commission of the European Communities was signed in August, 1987, and work on the study began in October, 1987.

Definition of the study area and the surrounding region

The study area (the Prokopi-Dafnoussa estate) lies in the northern part of the island of Evvia between the towns of Limni and Psachna Map A. The eastern section of the estate consists of a valley through which the River Kereus flows, and it is surrounded by low hills (Map .C); to the east the valley is bounded by Mounts Christodoulos, Anonymo (371 m) and Mavropoli (525 m) while to the west lie the mountains Avouros, Toufes, Skalorachi, Psili Rachi (248 m.), Lytsitsa (469 m), Livadorrachi (590 m) and Psili Rachi (393 m).

In the western part of the valley lies Mount Kandili. Within the study area are the mountains Kourvelo or Kourouvio (1,125 m), Kandili's second highest peak; Drakotouria (1,186 m), and Lagovouni (505 m). There are two more peaks which lie on the border of the estate and the neighbouring areas. Mount Stroungitsa, (1,245 m), Kandili's highest peak, marks the boundary with the neighbouring forest belonging to the Monastery at Galataki, while Mount Anonymo (908 m) constitutes the boundary with Dafnontas Forest.

Kandili's lengthy ridge has, of course, several other peaks both to the south and the north of the study area (Map B). To the north lie the mountains Soulino (850 m), Kandili (889 m), Bardakos (667 m) and Marathos (552 m), while to the south-east lie the mountains Roupakia (2.210 m), Yerakofolia (859 m), Pirgaki (1.086 m), Ochyro (758 m), Elati (841 m) and Aetos (802 m).

The Kandili mountain range comes to an abrupt end to the north-east, above the Monastery at Galataki, while to the south-east a series of relatively low mountains ends up at the pass at Agios, near Neos Pagontas, which links it with the foothills of Mount Pyxarias.

The nucleus of the study area comprises two village communities:

- The community of Prokopi (formerly Achmetaga) with 1,319 inhabitants * situated in the narrow plain on the left bank of the River Kereus and extending to the foot of the slopes of Mount Kandili, and

- the mountain community of Dafnoussa (formerly Drazi), to which belons the small settlement of Troupi, totalling 217 inhabitants.

The two communities are linked by an unpaved road in comparatively good condition, the distance between them being only 5 km. The same road serves the ganesite mines near the settlement of Troupi and following the contours of the Noel-Baker estate passes through the villages of Kalyvia, Metochi and Spathari to come out on the main road connecting Northern Evvia with Chalkis.

The focal point of this broader region, which geographically forms an almost closed basin, is the village of Mantoudi (2,913 inhabitants), where the main social and administrative services are concentrated. The nearest centres of comparable importance outside the basin are the village of Agia Anna (1,403 inhabitants) 21 km to the north-west, the harbour town of Limni (2,896 inhabitants) on the western coast, and the town of Psachna (5,499 inhabitants) 42 km to the south-east.

National Statistical Service of Greece

Mantoudi is also the centre for the local mining industry. It is situated on the main road which links the whole of northern Evvia with Chalkis, the capital of the island. The distance to Prokopi is 8 km and to Chalkis 67 km.

From Chalkis access is possible only through the narrow gorge of Kleisoura, along the winding road descending from the Agios pass between the mountains of Pyxaria (1,343 m) to the east and Kandili (1,246 m) to the west and after Kleisoura entering the Mantoudi basin at Derveni. The road then follows the left bank of the Kereus, one of the main branches of the River Boudoros, which drains the basin into the Aegean Sea. Rising in Mount Kandili, the Kereus meets just before Mantoudi with the Neleus, the other branch of the River Boudoros which comes down from Xeron Oros (991 m), the mountain whose slopes mark the northern limits of the basin.

To this broader geographical region centred on the village of Mantoudi there also belong besides Prokopi, Dafnoussa and Troupi - the communities of Fourni, Vlachia, Sarakiniko, Kerynthos, Zoodochos Pigi, Krya Vrysi, Methochi, Pili, Spathari and Kalyvia.

The region is linked to northern Evvia by the single north-south road passing throu Agia Anna. It is linked to the harbour town of Limni on the North Evvian Gulf by a road branching westwards at Strofilya and passing between the mountains of Kandili and Xeron Oros.

Aims and Methodology

The aim of the study is chiefly to formulate a comprehensive management plan for the Kandili area, one which will secure the preservation of the natural environment and at the same time foster the creation of employment.

The collection of necessary data on the natural and human environment of the area is an indispensable prerequisite for the accomplishment of this aim. Information on the physical characteristics of the area was mainly derived from existing studies and is presented in Appendix I. In Appendices II and III there are set out all the ecological data for the study area. The relevant information in this case is mainly the product of primary research carried out by members of the study team over a period of 18 monts. Appendix IV contains data concerning the aesthetic value of the area and the opportunities it presents for hiking and sightseeing (it contains both natural beauties and monuments of historical interest) as well as for environmental education and recreation.

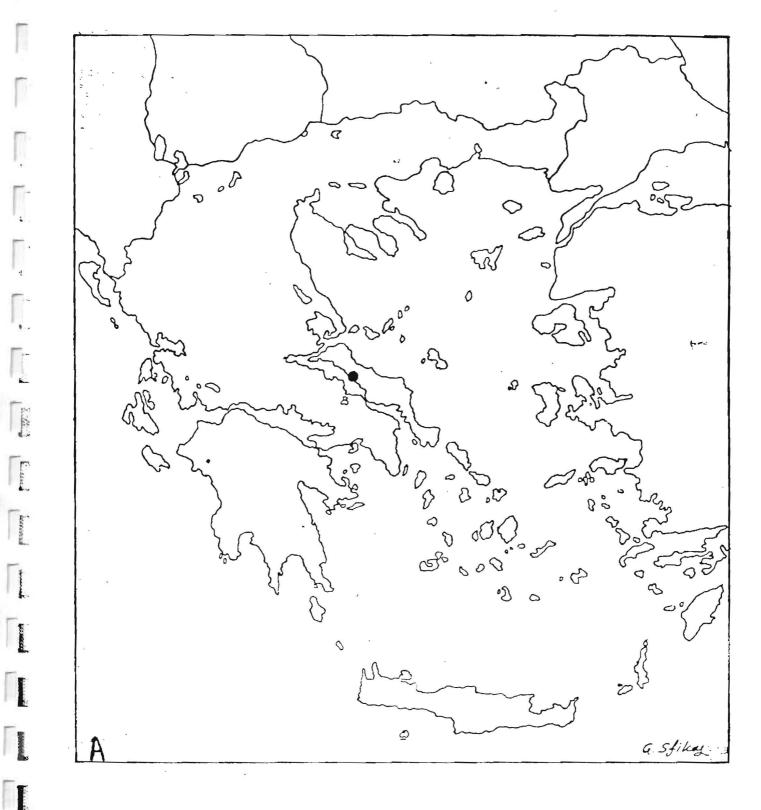
A viable management plan must base itself on social and economic realities of the area and on an identification of the most important parameters in social and economic behaviour. The degree of acceptance by residents of the activities offered by a Nature Park in the Prokopi-Drazi estate must be taken into consideration. Thus an attempt is made in Appendix V to convey a picture of the social and political situation of local residents, of their background and history as well as their attitude to social change and modernisation. The historical development of the area over the last 150 years has been decisively shaped by the Noel-Baker family's settlement there, by its influence on the local community and economy, and by the long-standing dispute over the estate, culminating in the heated clashes and legal wrangling of the most recent years. Finally in Appendix VI an overview is given of

the economic activities of the broader geographical region, with particular emphasis on the mining activity which constitutes the chief, but also a declining, source of employment. There is also a presentation of the legal particulars of the issue of the estate's ownership, which - together with expectations of the local community as regards future exploitation of the land - will be of utmost importance in the final social acceptance of, or reaction against, the Nature Park.

The basic constraints on the collection of necessary data were:

- the lack of previous studies of the area as well as the lack of basic ecological data
- the inadequancy and probable one-sidedness of social data and historical reference material
- the relative unwillingsness of local residents and organisations to make information available
- the fact that records of relevant social and economic data are dispersed through various state agencies.

The collection of the different types of data was undertaken through frequent visits to - as well as extended sojourns in - the sturdy area, where the research carried out was for the most part primary. The ecological data was collected through repeated observations at different times of the year, with members of the study team visiting and/or traversing most parts of the estate. Every kind of personal contact was needed for the collection of the sociological data, including interviews with local residents as well as with representatives of professional and cultural organisations of the broader geographical region. The necessary contacts were also made with representatives of government at the local level (local councils and local services), at provincial level (people responsible for Evvia) and at central level (government ministries in Athens).



-

Ņ

F

. 4

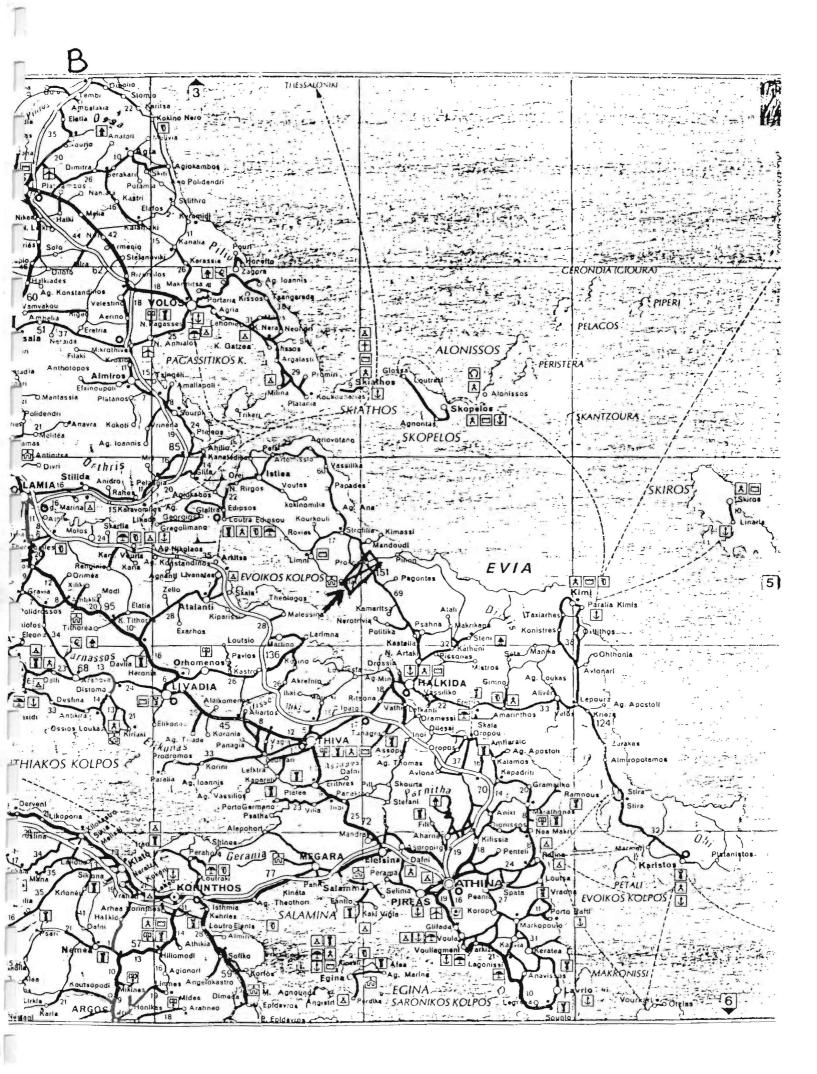
Ę

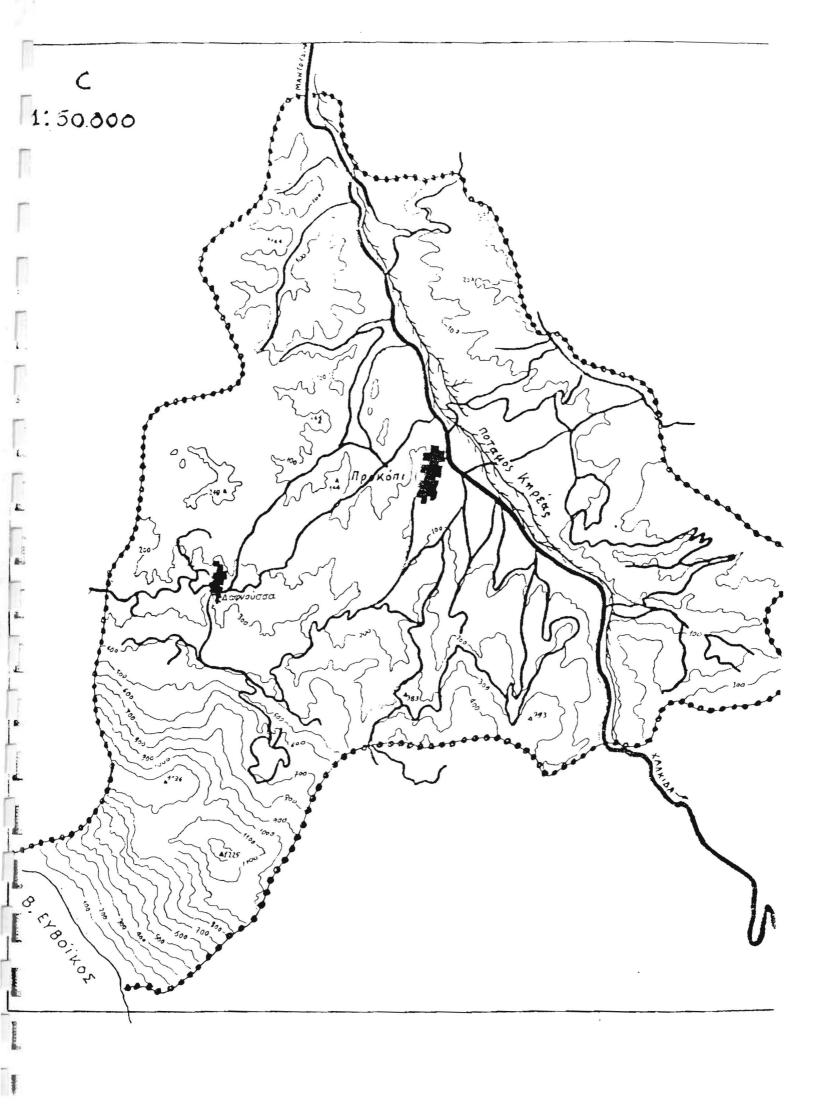
Ī.

T.

-

I





PROGRAMME ACTIVITIES

The Programme for the Creation of a Nature Park in Kandili aimed at improving conditions for optimum utilisation of physical resources while simultaneously bringing employment to an area where traditional economic activity is in a state of decline.

One prerequisite for the achievement of this aim was as comprehensive as possible an analysis of the available ecological, economic, social and historic information on the region. Given the inadequacy of existing data, primary research and a systematic search for scattered bibliographical materials were equally necessary. These activities were pursued for the entire duration of the programme, and particularly during the period from October 1987 to March 1989. The bulk of the findings are set out in the Technical Appendices (I-IV) of the present study.

On the basis of the information gathered on the region the Proposal for the Administration of the Nature Park in Kandili was worked out over the period from May to September 1989. The Proposal also includes suggestions covering administrative and economic organisation as well as the necessary training for Park employees. The text of the Proposal comprises the nucleus of the present study.

The research work and the formulation of management proposals were undertaken jointly by SED and ARDEA study groups, the former having chief responsibility for the research and the contacts with residents and the latter for the content of the proposal. Numerous joint working sessions were organised, one in Rome and the remainder in Athens or Prokopi. Frequent protracted stays in the Kandili area -- and equally frequent on-site collaboration-were idnispensable for the development of deeper understanding of both the potentialities of the area and the difficulties it posed for the organisation of a Nature Park. ARDEA's experience of similar such projects in the past, and more generally its familiarity with the nature parks of Italy, proved useful but also showed up the necessity of adjusting such expertise to the specific local conditions. The contacts and conversations with the head of the village council of Danoussa and other local personalities, were also of great importance. These dealings revealed the existence of marked interest in ideas concerning the park but also brought to light reservations concerning possible restrictions on the activities of local residents. Studying social conditions in the area also made clear the great historical significance of the conflicts with the Noel-Baker family, who took possession of the estate in 1837. These conflicts now centre on the guestion of the disputed ownership of the estate as well as on its evolution over the last 150 years, a period which coincides with that of the existence of today's independent Greek state. The Noel-Baker family is at the moment very well-disposed to the prospect of creating a nature park in Kandili and by their own account willing to that end to waive their claims on the estate. Since 1983 the property has through a series of legislative and administrative actions passed into the hands of the state. Ownership is still however contested, and a definitive resolution of the dispute through legal channels remains a distant prospect.

This perennial uncertainty regarding ownership claims, the resulting tension among the residents of the area, the frequent contacts the research group has had with the Noel-Baker family, have all conspired to place a damper on any ideas of establishing a closer

working relationship with the local community in Prokopi and Dafnoussa. The national parliamentary elections of June and November 1989 added further perplexities, since the political passions generated by them in these small local communities have not been conducive to the promotion of the Nature Park idea. In this climate of continued tension the planned visit by certain Kandili personalities, funded by SED and ARDEA, to the nature parks of Italy, was cancelled on the participants'own initiative. For the same reasons there has been a certain cutback in the planned meetings with local residents where the findings of the study were to be presented in detail for their consideration.

The main burden of promoting the idea of the Nature Park to residents has fallen on the organs of local government in the two villages concerned, on certain local organisations and on ecologically motivated individuals with some influence in the local community. The first official contact with the municipal authorities was made in October 1988, by which time the gathering of data was already well under way and the programme's Interim Report had already been prepared and submitted to the Commission of the European Communities. Some copies of the Interim Report were given to the municipal authorities with a request for comments and remarks to be made on the text. Copies of the Interim Report were also given to other interested parties at the same time, including the Noel-Baker family. In this way the research group made its appearance inthe local community with some experience already under its belt, with well worked-out positions that it was prepared to defend in detailed discussion.

There followed over the next six months a long series of public and private discussions, contacts and meetings, terminated rather abruptly by the onset of the pre-election period prior to the parliamentary elections of June 1989. The main points of the programme were presented to the village council of Prokopi in November 1988, with members of the council of Dafnoussa also present, as well as important local personalities such as the president of the Forestry Co-operative, the president of the 9th May Association (opponents of the "tsiflikas" Baker), teachers from the middle scholl of the district etc. Subsequently, in December 1988, the programme was presented to a large meeting of local residents held at Prokopi's primary school. A talk was given, with accompanying slides, on equivalent nature parks in Italy. Their method of organisation and functioning was outlined.

These meetings were characterised by a latent suspicion on the part of locals as regards the true intentions of the research group, its source of funding, etc. Many were reluctant to accept the proferred explanations of the real motives, preferring to see dark forces and dubious designs behind every action or statement. The more level-headed were mainly concerned to find out how much benefit the creation of the Nature Park would bring the residents of the area and to what extent they could avoid restrictions on hunting, grazing, woodcutting and resin-collection without losing the advantages of the Park. They were concerned at the possibility that the Nature Park could be used as a also deeply weapon in the ownership dispute, whether by locals or by the Noel-Baker family. It is also characteristic that locals' interest in the Nature Park and their resultant attitude towards it seemed to fluctuate markedly according to whether the topic was being discussed in a small group or a public meeting. In the latter case there often operated a kind of competitive vituperation, deeply populist in character, whereby participants vied with each other in formulating objections to the Nature Park and by extension to the Noel-Bakers. In these

discussions the "highest bidder" was the one who would come out in front in the battle agains foreign interests and foreign ideas. The less fanatical would come over as selling the people short. The big meeting of December 1988 was characterised by persistent fanaticism, with locals present threatening to walk out until members of the Noel-Baker family in attendance themselves left the hall. In this atmosphere little attention was paid to the question of the ecologically balanced development of the area and the experience of the Italian nature parks as outlined in the preceding talk. The subject which virtually monopolised the interest of the participants was that of the ownership dispute with the Noel-Bakers.

The attempt made by the research group to get around the political problems through developing various forms of one-to-one contact with the residents met with some success. The idea of the Nature Park was nourished and allowed to grow in people's minds in the course of friendly conversations, usually in small groups, and through a host of other contacts. Particularly successful were the talks and slide shows to the students at Mantoudi High School, where the more noteworthy features of the natural environment in Greece were described, the dangers threatening it indicated and the necessity of protecting it pointed out, so that the subject of the Nature Park in Kandili emerged as a logical conclusion. At the same time the conversations with the Noel-Baker family were continued and their positive stance to the creation of the Park confirmed. They accepted the proposal that they should waive every present or future claim to a part of the estate (at least 1,500 hectares, but this may be extended in the future to include all of the forested land) on condition that it be ceded to the Nature Park. The Noel-Baker family also accepted their mandatory non-participation in the body which would be created to manage the Park. These concessions on the part of the Noel-Bakers met with a sceptical reception when they were conveyed to the municipal authorities and to local personalities. There is however some indication that with the gradual abatement of political passions more conciliatory views will prevail and some kind of negotiations will be able to get off the ground, given that the real differences between the two sides are no longer very significant.

On completion of the research project (September 1989) the proposal for the organisation and management of the Nature Park was presented in detail to local residents. The proposal drew a positive response: those present were not essentially in disagreement with the proposed zones of activity and were favourably disposed to the prospect of ecological tourism and the other productive components of the Park. Promotion of the general idea of the Park but also the concrete organisational form of the proposed Nature Park will continue in the immediate future (after the elections of April 1990), with the organisation of a press conference and a special meeting in Athens. The whole effort will be supplemented with the publication of a special full-colour publicity leaflet which will be distributed throughout Greece by the Society for Ecology and Development.