

LACK OF ICZM IN THERMAIKOS GULF AREA

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LACK OF INTEGRATED COASTAL ZONE MANAGEMENT IN THERMAIKOS GULF AREA

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Introduction

The purpose of this study is to present the existing situation and activities in the coastal zone in Thermaikos Gulf area, to identify the responsible agencies and organizations involved in planning and management process and finally to examine cases where competition of economic activities for resource allocation cause the intervention of all these agencies-revealing lack of coordination- and brings up on the surface, the need for integrated coastal zone management.

There is not any previous work done on the same subject at least in the study area. The main volume of the material used here, was collected through interviews with people involved directly in planning and management process and local administration. Existing documentation provided from the records of several agencies and organizations was also used for the needs of this study.

This study is divided into three parts:

- I. The first part is a short description of the area, the most important local authorities and their responsibilities in planning and management field
- II. The second part is a description of the main activities in the area and some case studies with:
 - conflicts between inner sea activities (one sector e.g. fisheries problems) and
 - conflicts in the wetlands area where several economic activities from different sectors are competing each other and all together with nature conservation
- III. The third part is an assessment of the problems and deficiencies which emerged from the case studies in the second part

General description of the area

The coastal zone of Thermaikos Gulf, is within the administrative borders of four prefectures those of Thessaloniki, Pieria, Imathia and Chalkidiki. Thessaloniki prefecture though, concentrates most of the interest for the purpose of this study. Three big rivers (Axios, Loudias and Aliakmonas) and two smaller (Gallikos and Anthemountas) flow into this gulf. Also the drainage canals system used for irrigation of Thessaloniki agricultural land end up here. All this water enriches the Gulf with nutritive substances though it is a potential pollutant because it might transfer several agricultural pesticides and fertilizers residuals. Thermaikos gulf in the past was considered as one of the richest gulf in Greece in terms of fish stock. Today even though it is still one of the most productive gulfs in Greece, the fish stock has been reduced dramatically due to the pollution caused by the city of Thessaloniki sewage system and the rivers. The Gulf is divided in three parts : the Thessaloniki bay, which is adjacent to the city, the Thessaloniki Gulf from cape Karabournou to the Axios river delta and the outer Thermaikos Gulf.

Definition of Littoral in the Greek context

According to law 2344/40, "*littoral zone, is the piece of land surrounding the sea which is covered by the maximum winter waves*" "*shore is the extension of the littoral zone to the land up to a distance of 50 meters*". The purpose of the existence of the littoral zone is to assure free access to the sea from land and the opposite. The administration and management of these pieces of land, which belong exclusively to the Greek state, as well as the procedure for changes of their size (e.g. widening), the license for special commercial or industrial use, for building of harbors or other settlements are subjected to regulations set by the above mentioned law.

Used rights on public land

Public Land Company (K.E.D.) that is responsible for the management of these areas can grant the right for special use to either Public Organizations(e.g. the Ministry of Agriculture) or local municipalities or individuals or private companies (e.g. shipyards) with or without a rent. The decision for that granting is based on the suggestion of a committee formed for each case by representatives from a) the regional agency of (K.E.D.) b) the port authority of the area and c) the Directorate of Public Works of the prefecture. This committee makes all the work to find out if there are differences between old and new littoral zone boundaries. These changes could be a result of natural or human activity. After setting the new boundaries-if there are any news- then the measurements of the area for granting is based on these boundaries. The land use in those areas is well defined in the contract signed by the participants and it is always compatible with the surrounding environment. The Harbor Police is responsible for policing the littoral area.

Several activities take place at a distance from the littoral zone into the sea and from the other side into the land. These activities by themselves have their impacts on this area. Furthermore each activity has its own effects on one or more other activities and vice versa. These sectorial activities are subjected to certain regulations set by the sector authorities. They are also subjected to certain limitations from national, regional and local planning authorities. Lack of coordination between all these authorities, at all levels of administration, when a problem arises in this area, is the main problem in the coastal zone area.

Local Authorities

Ministry of Macedonia-Thrace

Local Authorities, which are directly or indirectly involved in planning and management process concerning areas close to littoral zone as well as their responsibilities are described below.

It is responsible together with the Departments of other Ministries-except those of The Ministry of Defense and Justice because their legislation cannot be other than national-for the formulation and approval of programs concerning North Greece (The regions of Macedonia and Thrace).

The Central Macedonia Regional Authority

The General Secretary of the Regional Authority who is appointed by the Central Government, through the Directorate of Environment and spatial planning is responsible for the approval of :

1. the general master plan of the municipalities in the region
2. the environmental impact assessment :
 - of small scale (up to 300 person) hotels and camping sites with the consignment of the local Department of the Tourist Organization
 - of sewage treatment plants serving population of less than 20,000 people or similar projects which have been approved at the first stage by the Ministry of the Environment
 - of small scale harbors with an area less than a hectare or for similar projects which have been approved at the first stage by the Ministry of the Environment

The Regional Authority is also responsible for the first stage approval for the location of :

3. fish farming projects with capacity of less than 200 tones /year and shellfish farming projects with a capacity of less than 150 tones /year
4. harbors with area of less than 1 hectare
5. shipyards
6. sewage treatment plants serving population of less than 20,000 persons
7. small scale hotels and camping sites etc

In cases however, where the projects are located in areas that are under protection as natural resources or in areas that sustain sensitive ecosystems covered by national or EU programs, the environmental impact assessment approval as well as the first stage approval for location is a responsibility of the Ministry of the Environment.

The Organization of Planning and Environmental Protection of Thessaloniki

This is under the authority of the Ministry of the Environment, is responsible for Spatial Planning and the Environmental Protection of the city and the wide surrounding the city area. The above Organization with the 1561/85 law provided the guidelines for the future balanced economic and social development of this area and the location of several activities so that they don't cause any harm to the Environment. All public agencies and authorities in the area are obliged to adjust their programs according to the guidelines provided by this law. The 1561/86 law, among others, designated the areas which would accept the future residential and industrial development, the appropriate locations for the establishment of harmful activities as skin processing plants, chemical industries etc. It also defined the high productivity agricultural land and the forests that should be protected.

The 1561/86 law provided for the establishment of a wholesale Auction Fish Market in N. Mihaniona site, a project that is already operating there, the building of shellfish sanitation projects (Angelohori and Halastra area) and the stock enhancement of rivers and lakes in the area. Finally it set the guidelines for controlled development of tourism on the coastal zone, the development of summer house areas in a way to ensure free access of the public to the shore.

Thessaloniki Prefecture

The secretary and the council of Thessaloniki Prefecture, is since 1994, directly elected by the citizens in the prefecture. Before that year, the Secretary and the council of the prefecture was appointed by the central government. The Directorates that are directly involved in the study area and their responsibilities are:

Directorate of Environmental Protection, among others responsible for:

- the approval of environmental impact assessment studies for small scale projects that are not subjected to approval by the Regional Authority
- implementation of programs for environmental protection
- fining the violators of the environmental regulations
- setting qualitative standards for air and waters as well as controlling their quality
- proposal formulation for the designation of environmentally protected areas and guidelines for management and development of these areas

Directorate of Agricultural Development, among others responsible for protection of agriculture and wetlands.

Directorate of Fisheries among others responsible for:

- controlling the sea water quality and defining the production zones for fishing and shellfish
- culture in Thermaikos and Strymonikos Gulfs
- caring for the development of sea and lake fisheries and the protection of the stocks
- renting specified areas in the sea for exclusive use by shellfish cooperatives.

Prefectoral Committee for Spatial Planning and the Environment. The participants in this committee are civil servants from Prefecture Directorates of Agricultural Development, Land Improvement, Veterinary, Fisheries, the regional Forests Directorate and the Topographical Service which belongs to the Ministry of Agriculture. Before 1994, when the Secretary of the prefecture was appointed by the government all the above departments were divisions of the Ministry of Agriculture.

The judgement of this committee on matters, of Spatial planning, location of several activities within the borders of the Prefecture is heavily weighted by the Prefecture Committee when an operation license is to be given for a certain activity.

Municipalities

Municipalities have only a little power to exercise within the limits of their administrative borders. Among others they are responsible for:

- the formulation and submission for approval of the General Master Plan of their area.
- the protection and management of local natural resources and areas
- the control of local environmental pollution (air, water, soil, etc.) and the fining of the violators
- collection of rents for municipal land and sea areas in front of municipal lands

Inter municipal Organizations

Before the last unification under the 2539/97 law, adjacent municipalities which could provide a unit with common problems and plans had formed the so called "Development Organizations", which were responsible to propose and implement developmental plans for

the area. Later these Organizations were transformed into the "Area Councils" producing the "Local Development Plans". These councils, through the development plans, recorded the existing data and the situation in the area and provided the directives for development of the area. Both of the above organizations were abolished in 1998, when 2539/97 law was implemented. This law named also "Kapodistrias" law, provides for compulsory unification of adjacent municipalities, so that they form bigger entities. This would help for more effective planning and management in wider areas that face similar problems and have similar development perspectives.

The role of all local organizations is very limited. In most of the cases they are responsible for the implementation of urban planning and environmental regulations that come from central organizations (Ministries) or for controlling the functioning of projects that have been approved by central organizations and penalizing the violators.

Other Agencies involved in the coastal zone area

Apart from these organizations there are several other Ministries or Departments of Ministries which can influence in one way or another activities in the coastal zone. There is also the Thessaloniki Estate Organization belonging to the Public Land Company. In many cases these Agencies must participate and give their consent to the establishment of a new project or activity. For example, when someone applies for renting an area in the sea for shellfish culture, his application along with all required documents for this investment should be send to 18 different agencies which must agree upon the realization of this project.

An important agency in the coastal zone area, is the Port Police authority which is responsible for policing the coastal zone and the territorial water area imposing fines to violators. Port Police is responsible also for:

- the surveillance of harbor establishments
- controlling the sand withdrawals from the shore
- the surveillance of the coastal zone for illegal building activity

In all the above cases this authority can impose fines to the violators which in cases of illegal construction work that could cause serious distortions on the seashore, these fines might be as high as 10,000,000 drachmas.

Conflicts between activities in the area (case studies)

In the Gulf area there are several activities which in many cases are competing each other for space and/or resource allocation. This competition might take place within the same sector e.g. in the fishing sector with different fishing gears. There are also cases with conflicting activities from different sectors as for example agriculture v.s. mussel aquaculture. When these activities take place within the borders of a protected wetlands area then they need to conform with the regulations for nature conservation.

This part of the study describes cases where coastal fisheries are competing trawler fisheries and allocation of exclusive rights to certain shellfish cooperatives generates opposition. In this part, there will be also a presentation of the evolution of legal framework concerning protection of wetlands and lagoons in the area, and the mussel aquaculture development in this wetlands area. The shipyards relocation question and the subsidence problem in Kalohori will also been examined here. Finally there will be a short presentation of Eleousa Hydro power Station case involving competition between local and central government authorities.

The main sectorial activities in the area of Thermaikos Gulf are the following

Fishing There are 86 trawlers and seiners in Thessaloniki prefecture area, participating with 50-60% of the local total fish production although they account for only 4,5% of the local fishing fleet. There are 954 coastal fishing boats in Thessaloniki Prefecture area. Almost half of them that is 500 are shellfish fishing boats producing 2,500 tons annually, accounting for an income of 2 billion drachmas.

Sports fishing There are many people in the area who own their own boats and fish for their own enjoyment. There are several conflicts between sport fishing and professional fishing.

Thinia Thinio is a traditional way of fishing in Greece, where a place in the sea close to the shore is fenced with nets, forming a kind of labyrinth inside where the fish is trapped and caught. There are about 40 units in the area.

Bait fishing It is a relative new activity in the area which is still not covered by any law. A committee is working on the formulation of a draft Presidential Decree (P.D) but there is not any result until now.

Fish and shellfish farming Due to the water quality and a number of other reasons such as defense limitations, recreational areas, the opposition by the local communities, there are not any fish farming units into the sea. There are only four eel farming establishments on the land. However there is an important and dynamic mussel culture activity mainly concentrated to the area close to the rivers Deltas accounting for 88% of the total mussels production in Greece.

Fishing processing industry There are 18 fish and 22 mussel processing industries in the area.

Shipyards They are about 10 traditional units which built and repair fishing and small scale commercial boats scattered on the shores mainly concentrated between the east end of Thessaloniki city and the airport. Some of them are located west of the city harbor.

Fish Auction Markets There is one central market in N.Mihaniona, where all fish from the area around the city, from other places from Greece or even imported fish is sold.

Harbor facilities There is the central harbor in the city of Thessaloniki which accepts all the commercial navy and passenger vessels and four smaller fishing harbors in different places on the coast of the area.

Agriculture There is a significant agricultural activity in most of the areas within the Gulf. Rice production in river deltas area accounts for 60-70% of the Greek national production. There is also a significant production of cotton, corn, vegetables etc. In the area between Axios river and the city of Thessaloniki the percentage participation of each culture on the total area is: rice 44%, corn 23% and cotton 15%. In the same area almost 96% of the fields are irrigated with water from the rivers.

Industrial Development The main industrial activity in the area is concentrated beyond the west part of the city, between Sindos and Kalohori. Sindos industrial zone accommodates the major part of industrial activity in the area. Many of those industries are heavy industries (e.g. skin processing and chemical industries, animal slaughterhouses) and in many cases they have caused pollution problems in the area.

Tourism and recreation There is not significant touristic development in this area, due to the fact that the seashore here is not the one representative Greek seashore and also because Chalkidiki area with wonderful beaches is close enough to the city so that it absorbs the main volume of tourists.

Competition among coastal fishermen and trawlers fishermen for space and resources

Early in 1960's, the owners of trawlers and small coastal boat fishery were competing on the basis who has the right to fish in the Gulf area. Both of them were accusing each other as who causes the most harm on the fish stock in the area. This fighting took a long time and there were several interventions by local MP's and public agencies e.g the Directorate of Fisheries in Thessaloniki to find solutions to the problem. This Directorate currently is a department of Thessaloniki Prefecture. Until 1968, it was a local Department of the Ministry of Industry with the name "Technical Inspectorate of Fisheries of Thessaloniki" although it was under the control of Thessaloniki prefecture, serving as a counselor of the prefecture, because the Secretary of the prefecture until 1994 was appointed by the central government. After that, it became a Department of the Ministry of Agriculture keeping the same relationship with the prefecture.

In 1966, the No917 Kings Edict was signed, with the proposals from the local Fisheries Inspectorates, the prefectures, the Fisheries Committee and the State Council,. With this Edict, trawlers were excluded from fishing in designated areas in the Gulf in different time periods. It was a "Regulation for trawler fishing", covering the whole Greek state, having specific restrictions for different areas in Greece. Several Gulfs in Greece were protected with the provisions of this Edict, among them Thermaikos Gulf. With this edict, trawlers were allowed to fish 2 miles away from the shore through the whole gulf and 3 miles away from the rivers deltas. They were not allowed to fish from April to October to the inner gulf part from the line formed by the points (Epanomi cape-Pinios river). The above edict designated also the size of the net mesh for trawlers. There were not any real limitations concerning seiners and coastal boat fishing by that time.

Coastal boat owners continued to complain, that trawlers were still destroying the stock in the Gulf. The local Fisheries Inspectorate kept records of the fishing activity and productivity and made estimations for the fish stock, submitted reports on the existing situation in the area, organized meetings with the interested parties and sent its proposals along with the proposals from the interested parties through the Thessaloniki Prefecture to the Directorate of Fisheries at the Ministry of Agriculture. As a result of this, with the proposal of the Fisheries Committee and the State Council, the No 189 Presidential Decree in 1978 came out as " Regulation for fishing in Thessaloniki Gulf and Thermaikos Gulf". This was the first integrated regulation covering the total fishing activity with all kind of fishing gears.

This Presidential Decree is still in force, although some parts of it are supposed to change due to the adoption of the 1626/94 E.U Regulation from Greece. This regulation among others proposes trawler fishing at a minimum distance 3 miles from the shore and a mesh size of 20 mm. This is the first introduction of an E.U. regulation concerning coastal fisheries and challenges the authority of the Greek government to be in the future the only one who can impose regulations concerning coastal fishing in the Greek region. This is within the framework of E.U. Common Fisheries Policy, which also provides that in cases where national and European policies are competing each other the strictest policy is applied. Thus in the above case, EU 1626/94 regulation allows fishing at a minimum distance of 3 miles away from the shore unless the sea depth is more than 50 meters. In such a water depth there is not any distance limit. Greek 189/78 P.D however, provides for a minimum distance of 2 miles from the shore in any case. That means that Greek legislation prevails and the 50 meters alternative is cancelled when this depth is within the limit of 2 miles. The combination of both E.U and Greek legislation has produced a regulation for Greek trawlers that is stricter than the

1626/94 E.U Regulation which applies in other member states. Due to strong opposition by the trawler owners, the above regulation is still inert because the Greek Ministry of Agriculture succeeded in postponing the application of this regulation.

Allocation of exclusive use rights on space and commercialization on shellfish stocks in the gulf

Shellfish fishing is another activity in the gulf. In the decade of 80's, there was a excessive demand for shellfish and warty venus. In 1982, two fishermen cooperatives those of Halastra and Krinis asked from Theessaloniki Prefecture to be given the exclusive right for shellfish (*Ostrea edulis*) fishing by dredge in Thermaikos Gulf. Even though there were more cooperatives in the area, the exclusive right was given to those two cooperatives because the prefecture believed that this was the best solution to control and protect the stock. The Prefecture asked for the formulation of a "Management Body" with members from the administrative committees of those cooperatives. This body had the authority to define the maximum collected quantity by each member, to make all the negotiations with Italian and Spanish importers and to pay 10% of the sales to the prefecture as a rent. Anyone of the fishermen in the area, provided with a legal fishing license, had the right to collect shellfish given that his yield would be sold through the "Management Body". The other cooperatives, that were excluded from this process pleaded that it was unconstitutional and they appealed to the court with no positive results. The ministry of Agriculture also considered this process as unconstitutional. After that, some members of Halastra cooperative and other fishermen from the area, that were not members of this cooperative, formed a new cooperative in Halastra area accusing the "Management Body" for "not clear actions". For others, that was a result of different political interests between these people. This new cooperation tried to participate into the "Management Body" but it failed again. Following that, in 1985, the Federation of Thessaloniki Cooperatives appealed to the prefecture asking for the assignment of the management for shellfish fishing in the gulf area. This proposal was also rejected by the prefecture.

Due to the increasing demand of warty venus, during the same time period, more and more coastal boat fishing owners, started to switch from this gear into collection of warty venus using diving equipment. The demand was so big that even young people from other occupations joined this new activity. For coordination reasons they formed two cooperatives covering two different areas. In 1993 these cooperatives submitted an application to the Local Directorate of Fisheries, asking from the prefecture, to obtain the exclusive right for collecting warty venus in the area of the gulf, defined by the Epanomi cape and Loudias river delta. The Council of the prefecture decided that the above cooperatives could have this right with the following provisions among others:

- renting would be valid for one year
- both cooperatives should have to pay 3,5 million drachmas as a rent for that time period
- cooperatives should allow members and not members who were legal professionals to fish in the area with the obligation to sell all of their catch through the cooperative
- the maximum daily quantity should be no more than 60 kg/per boat

The final account of this experiment (exclusive fishing right) was the over exploitation and the dramatic decrease of the stock of shellfish. Due to the lack of any management plan and the lack of real control and policing, production has been diminished and many fishermen have already abandoned this activity judging that it is not any more profitable. The experience however through all these years and the proposals from the responsible Directorate of

Fisheries in Thessaloniki, resulted in the formation of the 1998 Presidential Decree for Shellfish Fishing. This Decree defines the standards of the fishing gears, the safety standards for fishermen, the seasonal limitations, and the minimum size of the shellfish. Furthermore it provides for severe fines to the violators and recognizes the local Directorate of Fisheries responsible to control size, quantity and quality of the exported and imported shellfish.

Others new activities in the sea zone

Sports fishing is a relative new, growing activity in the area of the gulf. There are more than 10,000 sport fishing boats registered at Thessaloniki Central Port Police Authority. This is a source of income for several related business as shipyards, fishing equipment stores, bait sellers e.t.c. This relative new wide sector, including sport fishing and all the interconnected activities is translated into some thousands of people and consequently into significant political power. In many cases they are competing professional fishermen using fishing gears similar to those used by the professionals and sometimes even more powerful. They have succeeded in fishing legally in the gulf with a night lamp whereas professional fishermen are not allowed to fish with night lamp in the gulf at all. They are not subjected to any serious control by the Port Police authorities either because they do not have the means to control so many vessels or in cases where sport fishermen have been caught to fish illegally, they are not fined after the intervention of local politicians. Having this rather exceptional treatment by the authorities they have caused the justifiable complaints by the professionals who are competing to make their living from the sea.

Bait collection : Due to the development of sports fishing sector, a new activity appeared in the littoral zone and shallow sea water. This new activity is bait collection. Because it is a new activity, there is not any legislative framework to define its limitations. As a result of this, there is not any management plan, there is no provision for tools that will be used for this activity and there is not possibility for control and fining. With all these shortcomings and the continuously increasing demand for bait it is possible to have a serious reduction of bait stock in the area.

Currently there are about 100 persons engaged in this activity and they have come either from the fishing sector or from other irrelevant professions, just because they found it profitable. These people, in coordination with the local Directorate of Fisheries succeeded in the formulation of a committee by the Ministry of Agriculture, targeting to the production of a draft of a Presidential Decree, with all the provisions for managing bait collection. This committee, in order to formulate its proposal shall:

- record all the relative bibliography and scientific data
- record all the empirical data
- include the aspects of the local Fisheries Departments, of the local Port Authorities, of the people that are currently engaged with this activity
- consider the social aspects and the existing situation concerning collection and distribution
- record the relative European Union and International Directives and Regulations

The procedure to be followed for the formulation of a Presidential Decree (which is more or less the same for any P.D in Greece) is the following: the first draft of the P.D should be widely accepted by the authorities and the interested parties, it should be approved by the Fisheries Council, the General Secretary of the Ministry of Agriculture, the Deputy Minister responsible for Fisheries, the Minister of Agriculture and the State Council. After that it will be signed by the President of the Greek Democracy and it will be a state law. This procedure

though, takes usually a long time and there is always the risk for irreversible stock reduction when finally this Decree will be ready for implementation.

Conservation and Production

There is a number of areas characterized as of great environmental value and sensitivity, protected by RAMSAR Treaty. These areas are the Deltas of Axios and Aliakmonas and the Lagoons of Kalohori, Epanomi and Angelohori. The river deltas in the area are also covered by the Barcelona International Treaty as "especially protected areas". The deltas of Axios, Loudias have also been proposed by the Ministry of the environment, as areas under the net NATURA 2000. Finally the whole area is protected according to the 79/409 E.U. guideline "for the protection of wild birds". Even though they are protected areas, (e.g. Deltas protected by Ramsar Treaty, law 191 signed by Greece back in 1974), it took a long time for the Greek state to set the specifications concerning the boundaries of the protected area and their division into zones with different degree of protection. Only during the last year, in July of 1998, the No 14974/3291 Common Ministerial Decision (K.Y.A.) set those specifications for the Delta areas.

Evolution of the legal frame concerning area wetlands, lagoons and estuaries and their management

This Common Ministerial Decision (K.Y.A.) was based on the results of a study carried out by a private consulting firm, working for the Minister of the Environment. This study included the aspects and the proposals of local agencies having interest in the area and the K.Y.A. was contingent, upon the issue of a Presidential Decree (P.D) in a two year period. This delay (1974-1998) however, has already caused several problems, with activities taking place in the area without the necessary provisions to ensure compatibility with the surrounding environment. e.g. the out of control development of mussel culture.

The last draft of the Presidential Decree formulated in 1999, was also a proposal from a private consulting firm. This firm, was hired by the Ministry of the Environment to carry out a study for the area and end up with its proposals based on the provisions on the last K.Y.A. and law 1650/86 which was the basic law for "Environmental Protection". The area is called "National Park of Axios river Wetlands" extended in almost 200 million sq. m and has been divided into different zones is based on the required degree of protection for each of these zones:

1. Area (ΑΠ), for highest protection of nature at river deltas
2. Area (ΠΔ) for protection of nature at river deltas
3. Area (ΠΑ) for protection of nature in the area of Kitros, in Pieria Prefecture
4. Area (Β) for protection of nature in solid land areas
5. Area (Γ) land dedicated to agriculture in the periphery of the core area under protection

Activities included or excluded in the above areas, are described in detail in this draft P.D.

The implementation of this P.D is assigned to a "Management Body" along with the formulation and implementation of a management plan and a regulation for the operation of this "National Park of Axios river Wetlands". These actions by the above Body should be taken with respect to the:

- a) existing National and E U legislation concerning the protection of the environment in the area

- b) policies for sustainable management in of area
- c) coordinated action of all involved agencies
- d) increase of sensitivity of residents and all involved agencies so that they become active participants in the process for area development
- e) attraction and development of viable tourism in the area

To achieve these targets, the above Body among others shall:

- produce and submit for approval by the Ministry of the Environment a three year management plan along with annual action programs. The Ministry of Agriculture should give its consent for this plan before the approval
- be responsible for the implementation of programs, the elaboration of studies (technical, economic, market etc) useful for the management of the area
- organize meetings and promote the cooperation with other agencies
- take all the necessary actions for the surveillance and protection of the area

One of the most important points in this draft P.D is the suggestion for accomplishment of sectoral management studies. The studies suggested are among others

- the setting of boundaries, signing and fencing of the protection zones and ecologically important sites
- the viability of mussel culture, processing, and distribution
- the management of animal breeding activity
- the waste management in the area
- the river water management
- the management of transferred material in the river beds
- the reforestation of the river routes and deltas

With the accomplishment of these studies, the Management Body will have a complete picture of the situation and the suggested actions that should be taken for a rational development of the area with respect to the sustainability and conservation of the nature. This might be a unique chance for the implementation of an "Integrated Coastal Zone Management" in the area.

The above "Management Body" has financial and administrative autonomy but it is under the surveillance of the Ministry of the Environment. In Draft P.D it is suggested that the administration of the Body will be assigned to an Administrative Council. The members of the Administrative Council will be one person from the following agencies:

- a) the Directorate of Environmental Planning of the Ministry of the Environment
- b) the Directorate of Environment of the Regional authority
- c) the three prefectures involved (appointed either from the Directorate of Environment or Fisheries from each prefecture)
- d) the Land Improvement Organization of Thessaloniki
- e) the Directorate of Forestry
- f) the local municipalities. The three prefectures will propose one representative each and the Secretary of the Regional authority will make the final choice
- g) the local fishermen-mussel culture cooperatives
- h) the local agricultural cooperatives
- i) the local environmental organizations

The draft P.D was given to all the interested parties to comment on this, and there was a meeting organized by the Ministry of the Environment, for this purpose. Participants in this meeting were representatives from the above agencies that will form the Administrative

Council of the Body. There were only minor suggestions for amendments of the draft mainly by the animal breeding representatives and the farmers. The main problem in this meeting was the competition and opposition that emerged between agencies, departments within each agency and the cooperatives. Each of them is trying to have its own representative in the council and it is expected that a general consensus will be very difficult to be achieved.

The case of mussel aquaculture

Mussel culture, is the most important sector of aquaculture in the area. Thermaikos Gulf concentrates 88% of the total Greek mussel culture activity and production and that makes this activity very important not only at local but also at national level. Mussel culture in the gulf is dispersed among three prefectures.(Thessaloniki-Pieria-Imathia)

There are two different culture systems:

- one where mussels are produced stuck on wooden or metal piles merged into the water in depths between 2,5-4 meters. This is the oldest system and the most common one here. It was first introduced in 1955. It is the most productive system with an average yield of 15-40 tones/1,000 sq. m. and in some cases it might reach 60-80 tones. The surface of each unit of mussel culture has an average of 1,000 sq. m.
- -the long line floating system located in water depths between 6-18 meters. This is the most commonly used system in other areas in Greece and it was introduced here in 1995.It's annual yield is much less than the previous one, that is 10 tones/1,000 sq. m.

Long line floating units, given that they were introduced lately, are located in deep waters and they are rather extensive culture, they do not cause any serious problems in terms of management and compatibility with the environment. On the other hand wooden pile units, concentrated in more closed and limited areas, being an intensive culture, without any management plan, and control (necessary distance between each other) have caused serious problems (malnutrition of the mussels-suffocation) which led to loss of production. The years that they didn't face similar problems they had to cope with the problem of overproduction leading to lower prices.

About 1,000 people are employed (strictly with mussel culture-not processing) in Thessaloniki area. Most of them are at the same time working to the agriculture. There are 11 processing industries which absorb most of the area production and 70-80% of the total product is exported in other countries like Italy and Spain.

The historical perspective of mussel culture

Since 1955, when the first wooden pile mussel culture unit was established in the area, up to 1986 the approval of an application for such an establishment was a rather easy procedure. This method of culture was first introduced from Italy and France, but it was not accompanied by the relative "know how". Cultivators also were not informed on the following evolution of this method and they remained stuck on the traditional culture scheme.

In 1988, the Department of Fisheries of Thessaloniki, proposed a management plan for the establishment of an "Shellfish Culture Park". This park was supposed to include 23 long line floating units of 15,000 sq. m. each and 44 wooden pile units of 1,800 sq. m. each. This proposal was formulated to cover the existing activity, to accommodate the recently introduced long line culture system and to ensure the best and continuous supply of mussels

for the market. The proposal was also based on estimations and results from scientific studies which showed that the designated area was appropriate to accommodate not only the existing activity but also the future demand for new units. The Ministry of Macedonia-Thrace signed this proposal and in 1991 the first long line unit was established in an area rented to the investor.

However, after 2 years, in 1993 the Ministry of the Environment in Athens decided that the procedure followed for the establishment of this park was not in accordance with the existing law 1650/86-clause 24, which describes the legal procedure for the issue of a Presidential Decree. According to this procedure the Minister of Macedonia-Thrace was not authorized to sign such a law.

The Ministry of the Environment, assigned to its regional Department in Thessaloniki the task to produce a draft P.D which would lead to a Presidential Decree for the definition of a "Zone for shellfish production". The Regional authority formed a committee including two persons from the Regional Directorate of the Environment, two persons from the Directorate of Fisheries and one person from Thessaloniki Public Estate Company. This committee worked according to the provision of 1650/86 law, carried out a study and produced a draft Presidential Decree. It proposed the designation of an area north west of Thessaloniki bay as a "Shellfish Production Zone". The members of the Committee being civil servants did not have any extra payment for this work. The Ministry of the Environment replied saying that the new procedure was again not valid because this task should be undertaken by some private consulting firm.

In the meantime, there was an ongoing procedure by the Ministry of the Environment to define the borders of the protected by Ramsar Treaty, around the Deltas of Axios, Aliakmon, Loudias and Gallikos rivers. The Ministry, based on a study from a consulting firm, started to discuss several prohibitions and limitations concerning the kind of activities that would be compatible with the environment in the area. Among others, for mussel culture, it was proposed to exclude all the wooden pile units because they were in depths less than 6 m and to allow only the long line floating units in depths more than 6m. This process took a long time to finish. It first started in 1986 and the final result, the Common Ministerial Decision (K.Y.A.), was signed in July of 1998. With the intervention of Thessaloniki Fisheries Department, it was finally being accepted to allow for wooden pile units in the area with the prerequisite that they should go through an Environmental Impact Assessment procedure, to prove that they are viable and compatible with the environment, so that they would be provided with the necessary license. The Environmental Impact Assessment however, requires a lot of paperwork, the consensus of 13 different Public Agencies which might have different interests in these areas, and it takes a long time (in many cases more than a year) to be approved by the Ministry of the Environment, which takes the final decision. All this, makes the existing and potential mussel cultivators to be very reluctant and to postpone their involvement into this procedure. As a result of this most of the units are still without a license.

The local Directorate of Fisheries in coordination with the relative Directorates of the adjacent prefectures, supported mussel cultivators because its people believed that:

- wooden pile culture was a traditional method
- most of the cultivators in the area were interested in this method
- it was a rather easy method with big production capacity
- some times is the most effective method to fight mussel diseases as association fauna
- cultivators need small scale fishing ports to accommodate their boats

- auxiliary inland settlements could be in places that wouldn't disturb the protected area
- access roads could be in designated places and they wouldn't cause any disturbances

The Common Ministerial Decision (K.Y.A.) of 1998 for Deltas area, defined the compatible uses and activities in the area and set up a Committee where all responsible Organizations and institutions would participate and be responsible for the implementation of this piece of Legislation, up to the time that the final Presidential Decree (P.D) would be realized. However this Committee did not produced any significant results (e.g. proposals for improvements or amendments of the law-and fining of the violators).The role of K.Y.A., due to time consuming process for the production of a P.D, is to prevent any negative activities and set an initially accepted framework, in which, some actions that are in progress to continue, given that they are compatible with its guidelines.

The majority of local mussel cultivators as it happens with all "commons " cases tend to exploit as much as they can in the present time without any respect for the future. They tend to introduce illegally as many units as they can so that they can get the maximum production. This attitude is partly a result of the continuously increasing demand for mussels. Loose policing in the area and lack of strict regulation concerning mussel distribution in the market, induce more newcomers to deal with this kind of cultivation and enter the sector. Cultivators, have to pay some kind of rent to use the sea area. This rent, until 1995 was paid to the state but ever since then it is paid directly to the municipalities in the area. Illegal units are not registered and they don't have to pay any rent. That makes illegal units more competitive once they are free of the rent cost.

The only negative effect for illegal mussel units is that cultivators have not access to E.U subsidies. The result of this situation described above, was the uncontrolled increase in number and occupied area of the mussel culture units. Local municipalities due to political pressure and because they are collecting the rents for the occupation of sea fields do not actually react against such an evolution. The Committee of Thessaloniki Prefecture, because of political pressure doesn't actually take any measures against the violators. The result of this is that, despite the provision of the Common Ministerial Decision for controlled development of this cultivation and the obligation for Environmental Impact Assessments this activity is continuously increasing. There was a real booming during the last six years 1994-99 where the number of the units has been tripled and the area of this cultivation has been increased by more than ten times. This, beyond any control extension, caused accumulation of large quantities of mud (as a mussel metabolism product). Also the mussel units acted as water current blockades. The above evolution, in combination with lack of winds and high temperatures in the water, has caused serious problems in the area e.g. red tides.

The extension of mussel culture took the place of benthic molluscs and shrimp stocks which decreased dramatically in the area. The fishing act, provides the designation of a buffer zone around mussel culture. However, that was left on the discretion of the Prefecture, which for unknown reasons did not activated this possibility. Fishermen, are allowed to fish in the area, but they always do it after taking the consensus of the cultivators to avoid conflicts.

The problem of the unlimited expansion of mussel culture can be solved :

- a) With the formation of a "management plan" which will be a product of an extensive biological and oceanographic study that will take into account all data for the area e.g. the existing units, the water (salinity, dissolved oxygen, temperature etc.), the climatological conditions in the area and so on. This "management plan" will set the limits beyond which,

more cultivation activity will not be sustainable. This management plan will also set the borders for spatial distribution of the units. All Organizations and institutions having interests in the area will agree upon these borders so that every potential investor will know exactly where it is allowed to have a new unit-if of course the area can sustain additional activity. The first attempt for such a management plan was made by the Division of Fisheries in Thessaloniki in 1988 but it was rejected by the Ministry of the Environment. This year, ten years after the first attempt, the Prefecture of Thessaloniki signed an agreement with the National Center for Sea Research, which will undertake a study for the above area targeting to record the existent situation and propose a "management plan". Such a plan will release potential investors from going through the complicated and time consuming process for pre approval.

- b) With the implementation of the existing laws and severe fining of all the violators without any chance to avoid it.

Other activities in Halastra area

In Halastra area, which concentrates the biggest part of mussels culture in the study area, almost all of the cultivators have constructed, on the shore and in some cases into the sea, illegal huts to store their tools or their boats. These huts, despite the fact they are illegal are also against the aesthetics. The municipality of Halastra trying to solve the above problem took the initiative to apply through the EU PESCA program for financing the:

- construction of a small fishing port
- construction of new uniform shelters, concentrated at a certain place, for the mussel cultivators to replace the old ones
- construction of small restaurants to attract ecotourists because the area is close to Axios Delta

The above program was approved for financing but when the municipality asked for consent from several organizations that have interests in the area, the Greek Navy denied to give its consent because the area was designated as appropriate for Navy landing purposes.

According to a member of the previous municipal council, this municipality faces a serious problem from the extended use of pesticides in agriculture. The residues from these pesticides end up into the underground waters and through the draining canals into the rivers and the sea. In many cases farmers that use pesticides are at the same time mussel cultivators and they have to bear the negative side effects from agricultural activity on their mussel. During the period of heavy use of pesticides, people in the area noticed mass deaths of birds and allergies for human beings that some times resulted in hospitalization. Drinking water was found to contain arsenic at high concentrations. Farmers believe, being uninformed, that they will have higher yield by using more pesticides. That makes production of a "management plan" for agriculture a necessary condition for the future development of the area. One of the negative results from this pollution was the reduction of the population of birds, frogs and other little animals that were fed with mosquitoes. Mosquitoes population increased rapidly and in 1995-96 the situation was so bad that people in the area could hardly stay out during the night time because they were attacked by thousands of mosquitoes.

Local Area Council from Halastra, Kimina and Malgara municipalities adopted a method imported by Germany and sprayed the area with a bacillus appropriate to exterminate young mosquitoes. However this program didn't have the expected results and one of the reasons that it didn't cover a large area.

The next step of this attempt was to contact the adjacent municipalities Koufalia and today municipality of Ehedorou. They also succeeded in having the Prefecture of Thessaloniki to participate in the program and finance it. In that case they used a different way-that is to spray the whole area by airplanes with a light pesticide. This method was proved to be more effective despite the potential negative side effects and it is still applied during the summer time.

Halastra municipality, a few years ago based on a Town council decision, proposed relocation of all animal breeding activities from the town borders in an area far from the town where breeders had to pay a low rent. Most of the breeders complied with this decision but later on some others established illegal units close to the banks of Axios river in grounds owned by the municipality. The town council then, in order to develop this area close to the river banks and in order to encourage ecotourism decided to apply for this area (1,800,000 m²) to be under the provisions of law 2078/92 which was financing the area exclusion from grazing and the promotion of multi species self growing flora. The application of this decision however was a difficult process because illegal breeders reacted violently. After long time the municipality succeeded in expelling them from the area, fencing the area and having for some time a guard. However, after all this illegal breeders continue to enter the area and in some cases they attacked members of WWF who came to promote a program for the protection of some rare river species of birds.

The question of shore occupation the case of the shipyards

Close to the east end of the city of Thessaloniki there is a number of small shipyards where ships of less than 50 meters long are pulled there and their owners can make all the required repairs. Fishing vessels, sport fishing vessels, yachts, even public vessels e.g. owned by the local port authorities, are being served by these shipyards. At the same place, there is a quite significant ship building activity for all the above kinds of vessels.

The first shipyards in this area were established in 1967. By that time the owners of these establishments rent or bought the fields (agricultural land privately owned by that time) adjacent to the littoral zone. They never got a license from the authorities for this activity because this area was not designated as industrial use land although a piece of land adjacent to that area had been characterized as industrial zone. As a result of this strange situation, there were always appeals to the courts by residents of the area to expel this activity from there. They had had their reservations for degradation of the area close to their homes. Given that the existing legislation didn't cover the shipyard owners, residents and some times competitors, were taking them to courts. The owners of the shipyards had always to use certificates from the Directorate of Industry of Thessaloniki Prefecture, to prove that they were active in order to avoid condemnation. Given that they serve public authorities e.g. repairs of port authority and navy vessels, they had always the unofficial backing by these authorities.

They are obliged, because they use littoral zone and part of the sea illegally, to pay a fine to the Public Estate Company of Thessaloniki according to the No 11/29 and 619/65 Kings Edicts. They pay all the required municipal taxes, but the municipal authority doesn't provide them with water and doesn't collect their wastes. They are not allowed to build any concrete buildings and they shelter their tools and themselves in metal or wooden sheds. This is a hilarious situation where public authorities at one hand accept these annual fine payments which in a way legalize the activity and on the other hand they don't give a final solution to a

long lasting problem. Shipyard owners, being all the time under a pending expulsion cannot proceed with the necessary investments to improve their business.

They disagree with a possible relocation, and have proposed to the authorities, to characterize the area where they are now, as a zone appropriate for this kind of development. This area, according to the shipyard owners, has the necessary characteristics, (an 80-100 m. wide piece of land close to the sea, with a sea depth of 4-5m in front). For many years now, a large scale cereal industry operates on a piece of land adjacent to them, which has already been characterized as industrial zone. They also proposed to undertake all the necessary actions and go through a strict environmental impact assessment process which will ensure compatibility with the surrounding environment. After all this, they will be able to get the necessary licenses, to proceed with the required investments and to improve their services provided to their customers. Furthermore they believe that the area will be upgraded and an old traditional profession will be kept alive for the future generations.

The Directorate of Industry and the Directorate of Fisheries in Thessaloniki Prefecture, support the development of this activity in the area but the Directorate of Environment denies to give its consent considering this operation as one of those polluting the Environment. However the Greek Ministry of the Environment characterizes the small scale shipyard units as "an activity not causing great nuisance". Recently the Organization for Spatial Planning and Environmental Protection of Thessaloniki asked from all the involved authorities to submit their proposals for the above case. It is expected that any decision from this Organization will be accepted by all the other authorities.

Another vessel repair activity is located just on the west side of Thessaloniki central harbor. Back in 1968 these small units had had access to the sea but later there was an artificial extension of the land into the sea so they couldn't pull up vessels to repair them. Ever since then they were limited only to provide maintenance service to big and small commercial vessels that sailed into Thessaloniki harbor. The owners of all these establishments for many years were asking from the authorities to designate an area that will accommodate this activity. They were also asking to be given licenses so that they could operate legally. They proposed several alternative sites, close to the central harbor of the city, but they were not accepted by the authorities. The responsible authorities involved in that case are: the Ministry of Environment, the Ministry of Commercial Navy, the Regional Authority of Central Macedonia, the Prefecture of Thessaloniki, the Organization of Planning and Environmental Protection of Thessaloniki, the Port Authority of Thessaloniki.

These authorities made different proposals concerning possible sites for the location of this activity. A study made for the Ministry of the Environment suggested an area close to Gallikos river on the west side of Kalohori. This site was rejected by Thessaloniki Organization for Planning and Environmental Protection because it is within the borders of the protected wetland area. The above Organization proposed a small scale vessel repair zone within the Thessaloniki harbor area and a large scale similar zone-if it was to proceed with such a proposal-out of Thermaikos gulf area. An unofficial proposal by Thessaloniki prefecture was a site southwest of Kalohori area which is again within the borders of wetlands.

The shipyard owners on the harbor area, given that they have no more access to the sea, consider their relocation as a necessary condition for their future development. It is clear that there is a disagreement between the shipyard owners in the two areas. With all these different

proposals from different agencies-with no discreet authority-involved in that case, but also the different interests by the two interested groups, one serious problem concerning the coastal zone in the gulf and the economic development of the area has not yet been resolved.

The Kalohori case: erosion problem

The subsidence

Kalohori is a town on the west side of Thessaloniki that is the industrial area, close to the sea. In the ancient times the area was part of the sea but the rivers accumulated enormous quantities of soil so that they formed this part of land. According to the ex-mayor of Kalohori " after the second world war the local Thessaloniki authorities start to pump out water from the area for the needs of the population of the city. This pumping was more intensive year after year because the population and the needs for water were constantly increasing. The first signs of subsidence appeared in 1955 and the municipal authorities protested and tried to slow down the water pumping. The Water Company of Thessaloniki, which was under the authority of the Ministry of Macedonia-Thrace, continued the drillings in the area resulting to further subsidence. The ground water level reached a depth of 40-45 meters from 20 that it was at the beginning. Two textile factories in the area contributed to this evolution pumping 8,000 cubic meters each, every day. As a result of this subsidence, there were several floods from the sea. In 1969 the sea reached the center of the town. By that time the responsible Department of the Ministry of Public Works built a small dam to protect the town. However water pumping was going on, resulting to further subsidence and a bigger dam in 1976-77 lining to 3,200 cubic meters with a height of 3 meters over the sea level. Due to the subsidence and this construction work the lagoon of Kalohori was formed there. The subsidence went on despite the protests of the people, their appeals to the Court and the political interventions of local representatives. In 1984 the dam on the sea was strengthened. People through their municipal authority proceeded in protests through newspaper articles, organized assemblies, threatened to seize the wells if the water pumping continued. Finally, in 1995, the Water Company of Thessaloniki decided to quit its activity under the engagement of the local authorities to allow for supplementary pumping only during July and September and whenever it was necessary. The water company also took the responsibility to carry out a research every year, to record the sinking which goes on until today with 3-4 cm every year."

Similar subsidence cases have been realized throughout the whole Greek state. According to (Vima newspaper 28/11/99) with the title "*which areas in Greece will become Venice*", in central Greece (Thessalia) extreme water pumping for irrigation has caused subsidence in many areas resulting to invasion of sea water and increase in salt content of drinkable water. Scientists have warned the administration that water pumping should be reduced by 40-47% otherwise subsidence will go on in the future time. In Attica-close to Athens city subsidence is so intense that in areas between Moshato and Kallithea it reached the depth of 15 meters. The sea in these areas, has invaded land in a distance of 3 kilometers and the underground water presents increasing content in salt. Western Greece, Peloponese and even some islands as Crete (Messara valley) also face serious problems from the subsidence.

The Lagoon

Kalohori area, due to the rapid industrial development is heavily polluted by residuals from oil refineries, textile factories, ammonia etc. Several industries today continue to dump their untreated residuals into the lagoon polluting the water. On the other hand, the municipality of Kalohori was using a place at the east border of the lagoon for residential waste dumping.

Today, this site accepts the waste from three municipalities which have been united in one with the provision of new "KAPODISTRIAS" law that promotes the unification of adjacent municipalities. The new municipality which came up from the unification of Kalohori, Sindos and Ionia, named "Municipality of Ehedorou" has already applied and it has got the approval for the construction of a waste transfer station close to the waste treatment plant of Thessaloniki. From there the waste will be transferred to the central landfill. This transfer station is supposed to accommodate also the waste from the adjacent municipalities (Halastra-Kimina--Malgara-Koufalia). This was a necessary condition imposed by the Prefecture of Thessaloniki to approve the Environmental Impact Assessment for this project. However, until the day that this transfer station operates, the municipality of Ehedorou will continue to dump its waste besides the lagoon, contributing inevitably to the degradation of its water quality. Despite the fact that this lagoon has been polluted it turned out to be an important shelter for rare birds protected by the European Union Law 79/409. The Common Ministerial Decision of 1998 designated this lake as "high degree protection area".

The International Fair Organization of Thessaloniki

Part of this lake is property of the International Fair Organization in Thessaloniki. In 1968 a study was carried out to form the new Master Plan of Thessaloniki city. The purpose of this study was to propose an area that would accept some activities from the center of the city. This study finally ended up to propose as the most appropriate area, Kalohori. It proposed among others the relocation of :

- the International Fair of Thessaloniki
- the wholesale meat market.
- the building of new University campus
- new athletic settlements

The administration of the International Fair of Thessaloniki, based on the results of this study asked for granting an area of 2,500,000 sq.m. This area was partly private property but 800,000 sq.m. of this was property of Kalohori Municipality. Despite the fact that local people resisted to these plans finally the land was expropriated and given to the International Fair Organization. The municipal land was partly a lagoon and partly a refuse dumping area. The Organization administration, started the necessary geological studies but after a while it realized that nobody else from the potential investors was really interested for such a relocation.

That made Fair people to stop all of their activities in the area. In 1975 the new central government, decided that the International Fair of Thessaloniki should remain in the center of the city and improve the existing facilities. That change of the plans, triggered appeals from the private owners of the expropriated land in Kalohori resulting to the recovery of this land. However the appeal from the Municipality didn't have the same success. This piece of land was lately proposed to accommodate a transportation center and the Organization tried to fence the area. However, the local people resisted to such an evolution and this discouraged the Fair people to continue. Today, with the provision of the Ministerial Decision of 1998, by law, none of the above activities are allowed in the area.

The horseracing field

A piece of land adjacent to this lagoon is property of the General Secretariat of Sports. In 1987-88, the Central Government of Greece decided to establish a horse race field in the wide area of Thessaloniki. The results of the study made for this purpose, pointed that the most

appropriate area was a piece of land east of the Kalohori town. According to the ex-mayor, the local municipality consented on such an evolution, believing that it would be a developmental project which would create new jobs for local people and it would exclude the defined area from accepting more industrial activities. The municipality also demanded that:

- The stables would be built at the farthest end of the project
- between the stables and the town there would be an athletic park with soccer and basketball fields
- a ring road would take the motor traffic out of the town
- the municipality would have a percentage on the profits of the project

The initial positive attitude of the local municipality for development of these areas by the International Fair Organization and the General Secretariat of Athletics, is reflected in Kalohori General Master Plan which was approved by the Ministry of the Environment in 1989 and later with minor changes in 1995. This plan among others provides for: "the establishment of an athletic and horse race field and the establishment of an area for an exhibition center south of the town".

In the Common Ministerial Decision issued in 1998 (Ministry of the Environment, Development, Agriculture, Commercial Navy and Macedonia-Thrace) which defines the borders of the environmentally sensitive and protected areas and the zones with different degree of protection, the area south of Kalohori town has been characterized a Zone B area. Zone B is provided for development of activities among others "...outdoor sports, except those that are noisy or related to motor users, horse racing etc." This piece of Legislation which is a representative law, trying to accommodate all the activities compatible with the environment, in this coastal area, one of a few attempts for Integrated Planning in a wide coastal zone is in contradiction with the General Master plan of the area and the municipal plans for Kalohori development.

The case of the Hydroelectric Power Station in Eleousa

The case of the Hydroelectric Power Station in Eleousa although it is not a case in the narrow coastal zone, is representative of the attempt of local authorities for planning and development that was cancelled by Organizations controlled by the Central Government.

The Development Organization of Axios-Loudias rivers, was an inter-municipal organization covering the area between the two rivers Axios and Loudias. The main occupation of the people in this area is agriculture and its development was a result of the dam and the irrigation network that constructed by the end of 1958. The area is also located close to main roads connecting West Greece with Thessaloniki and South Greece with North Greece and former Yugoslavian Republic. It is also located close to archeological sites Vergina and ancient Pella

Examining the possibilities for a balanced development of the area, the above Organization proposed a comprehensive development plan for the area based on the following:

- The conversion of the existing Axios river dam to a hydro power station producing electricity which could be sold to the Public Electricity Organization
- The formulation of an environmental impact assessment study for the protection of Axios river ecosystems
- The extension and improvement of the existing dam and irrigation network

- the elaboration of a study for the development of eco-tourism activity in the area of Axios river
- The improvement of sewage system for sewer control

The targets of this proposal were:

- the local and national development
- the positive contribution to the national energy balance
- the local employment
- the environmental protection through the promotion of alternative energy source use

The above Development Organization, started collecting data for the water supply of Axios river and contacted about it, the Public Electricity Organization (DEH). A group of people from this Organization, visited the place agreeing upon that the construction of a power station there was feasible. They also admitted that their Organization didn't plan any similar project and nothing was included into their 10year development plans. After this meeting the Local Development Organization started to look for resources to finance the project. They applied, with the consignment of the Central Macedonian Regional authorities, to the National Economy Ministry to include the project within the 2nd Coherent Fund (1994-99) proposals. At the same time they asked from DEH the typical agreement for the project. However, after a long time period the above Organization rejected the proposal stating that it was within their (1993-98) plans to build this power plant. After this event the Local Development Organization reapplied for approval from the Thessaloniki Prefecture Committee. There the project was approved and submitted for approval to the Region of Central Macedonia and there it stuck.

The Secretary of the Region of Central Macedonia is approved by the Central Government, and the Public Electricity Organization belongs to the Ministry of Energy which is also a governmental institution. When the Public Electricity Organization applied for pre approval by the Region of Central Macedonia this approval was given. However Local Authorities of Axios-Loudias area objected this procedure based on some facts as:

- according to the Common Ministerial Decision 69269/5387/25-10-90 for the above pre approval the consignment of Thessaloniki Planning Organization is a necessary condition
- This consignment was never given to DEH
- According to the 2244/94 law the pre approval for such a power station is to be given by the Ministry of the Environment
- There is not the necessary license for water use and management. The Axios river water was exclusively used for irrigation
- The DEH proposal never included the appropriate engagements for actions and measures for the protection of the sensitive ecosystem of Axios river and the rivers Deltas in the area

After that, municipalities contacted a local representative who happened to be by that time Minister of Agriculture, who addressed a letter to the Minister of Energy to intervene and approve the project. The letter mailing continued between the municipalities, the Ministry of Energy, the Public Electricity Organization and several other participants. At some time the municipalities addressed a letter to the Prime Minister asking for his intervention but it didn't work either.

Today, six years after the first discussion, from unofficial information, the Public Electricity Company intends to propose a scheme of exploitation of the Energy by a cooperative of itself, local municipalities and Thessaloniki Prefecture. On the other hand local municipalities with

Thessaloniki Prefecture formed a Development Company intending to exploit this project and to apply for financial support by Sander's Budget.

Sindos Municipality

Sindos is the town adjacent to the Industrial Zone of Thessaloniki. Actually the fields used for the establishment of this zone were expropriated properties of Sindos residents. The area was designated to function as the industrial zone of Thessaloniki back in the 60's decade. There are two zones active at the time zone A and zone B. The industrial residuals from both zones after a first degree of treatment from the source end up to the waste treatment plant of the Industrial Zone which cannot accept the whole load from all the factories. Thus a part of this load is released untreated through the draining canals, already overloaded by the agricultural residues and they altogether end up at the sea. Due to the fact that the land is lower than the sea level and in many cases the sea is coming into the draining canal forming swamps with bad odors close to the town.

Sindos town council decided to construct an auxiliary draining canal close to the old one which takes part of the load of the old one helping thus to the faster evaporation and absorption by the ground of all the residuals which finally end up to the underground waters.

The above problem is expected to be solved with the connection of Sindos municipality and the industrial zone sewage with the central waste treatment plant of Thessaloniki. However this will take some more years until this plant is ready to accept all this load.

Comments

From the brief description of the above cases, it is evident that at least in the area of Thermaikos gulf there is lack of Integrated Coastal Zone Management. A necessary condition however, for ICZM application is the existence of Integrated Planning. Integrated Planning in the area but also in the whole Greek state was a relatively unknown concept until a few years ago. The first attempt for introduction of Integrated Planning in the area is law 1561/86. With this law, not only the city of Thessaloniki but a wide area surrounding this city, was covered by an integrated program which set the guidelines for the future economic and social development with respect to the environmental protection. Until then, the city and all surroundings municipalities, guided their development through general master plans covering a narrow area within their administrative boundaries. These general master plans, in many cases, were competing and/or contradicting each other. They were not effective because each municipality was planning for itself and these plans were not serving the broader area as e.g. prefecture, so that all these particular plans to be compatible with such a broad development plan.

After the introduction of law 1561/86, all these municipal general master plans should be compatible with the guidelines of this wide plan. In all cases of new establishments that are of some importance for the economy or the environment, Thessaloniki Organization for Spatial Planning and Environmental Protection should give its consent for the final approval. Given that this Organization is under the control of the Ministry of the Environment, its opinion is of great importance for any new development. The general master plans of all municipalities, should first take the approval of this Organization before they are finally approved by the Ministry of the Environment and become applicable.

However, even these wider plans in many cases, failed to anticipate future development. The general master plan of Kalohori municipality which was approved by Thessaloniki Organization and the Ministry of the Environment, provided for the development of a horseracing field and the Exhibition center in an area which was protected by Ramsar treaty and this kind of activities would possibly be excluded from there.

Another serious problem is the unjustified delays concerning decision making process and policy formulation. The most evident example to prove this, is the delay for the Greek Government to designate the boundaries of Ramsar area, although this treaty was signed in 1974. Part of the problem with the uncontrolled development of mussel culture in the area was a result of this delay. The case with the shipyard settlements is another example of such a delay. For many years the problem exists, but no solution has been yet given. There is a legal-illegal activity, where authorities have not provided the shipyard owners with the necessary operation licenses but at the same time they do not take any measures to expel these activities from the area. On the opposite they accept an annual fine (a kind of rent) by the owners which in a way legalize their existence. In the meantime the surrounding area changes. There is an increasing residential and commercial development and the owners of those residential and commercial properties, might acquire the power needed to exercise political pressure, to expel the shipyards from the area in the future.

In such a case, it could be too late for relocation if all alternative sites have been occupied by other activities. Delays there are also in the case of bait collection. When finally the Presidential Decree is ready for implementation the bait stock might be diminished seriously.

In general, responsible public agencies are reluctant to take immediate action when a problem first appears e.g. Kalohori subsidence, illegal mussel culture, shipyards. They start to take action when the problem becomes very serious (e.g. the latest study for a management plan for mussel culture) and when recovery is a very difficult process or in some times the situation is irreversible (e.g. Stop water pumping in Kalohori). This is a result, partly of the general behavioral rigidity of public agencies and of political considerations by elected bodies e.g. Ministries, Prefecture councils, municipal councils.

Law implementation and fining failure, is another big problem which characterizes the whole Greek state at all levels of administration. There is a huge production of legislative work but implementation in most of the cases fails. This is due either to the small number of personnel of the policing bodies invoking for inadequate training and lack of means e.g. speedy cars, boats, electronic equipment etc. or to the political interventions targeting to avoid fining for violators.

In cases where interests of municipal authorities are competing interests of higher level authorities or of agencies directly related to the central government, the lower level authorities are the losers. In Kalohori case, municipal authorities were for many years fighting Thessaloniki Water Authority (subordinated to the Ministry of Macedonia-Thrace and serving the needs for water of Thessaloniki-one million residents). Even if it was evident that municipal authorities were right, the solution was given only after an extensive subsidence caused several problems. In the same area National Exhibition Organization (subordinated to the Ministry of Industry), made its own choice to cancel the development of the land expropriated for its own interest. If this Organization decided to go on with this development it is rather impossible that municipality could stop this process. In the case of Eleousa

Hydroelectric Power Station, the local intermunicipal organization was defeated by the Public Electricity Organization directly related to the Ministry of Industry.

Another factor for Planning and Management failure is the lack of collective action. Cooperatives in many cases, are created to fulfil rather personal or political aspirations of the leaders in the community than to pursue real interests of their members e.g. the two Halastra cooperatives. They do not provide information to their members, they don't set any regulations and limitations beyond which each member will have to bear the consequences of his actions e.g. mussel culture cooperatives do not take any action when their members extend and introduce new illegal units, causing problems not only to their neighbors but also to themselves in the long run. Many mussel producers as well as people in other occupations(e.g. shellfish fishermen) in many cases do not pay any respect to the environment and the sustainability of the resources. This happens because in many cases this occupation is supplementary to another main occupation. e.g. they might make most of their living from agriculture and they just have mussels to supplement their annual income. In such a case, they try to get as much as they can in the present (introducing more and more new units) and they don't care for the negative impacts that their actions will have in the future. Farmers who are at the same time mussel producers, use huge quantities of fertilizers and pesticides to increase their agricultural product and they don't realize that all of these residuals end up into the sea causing problems to their mussels.

Local agencies have been involved in cases of resource management. In this case, the Directorate of Fisheries in Thessaloniki is the agency that is involved in resource management in the sea area. This management however was related to sectorial subjects e.g. mussels, fish etc., with respect to stock protection. It was not part of an integrated plan for management of interrelated activities in the coastal zone area. This agency proposed the creation of a shellfish park so that the production of mussels to be under control. It was directly involved in the process leading to the formulation of several regulations concerning fishing in the gulf area with different gears with respect to the conservation of the fish stock. It was also involved into the process for the production of Presidential Decrees for shellfish and baits. However, given that this authority is under the administration of the Secretary of the Prefecture, who today is elected and is vulnerable in political pressure from local interested groups, there are several cases where proposals based on the principle of stock conservation, were rejected. For many years the Directorate of Fisheries was proposing the formulation of a management plan for mussels. Finally, only a few months ago the Prefecture Council asked for a study which would produce such a management plan. Today however, with the designation of the boundaries for the protected wetlands area, and the uncontrolled expansion of the mussel units the formulation of such a management plan will be much more difficult than it was a few years ago. Furthermore, If similar management plans do not exist for other sectors in the area then individual sectorial management plans are possible to fail. For example in the area of Halastra, the lack of a management plan for agriculture facilitates the excess use of fertilizers and pesticides that end up in the sea causing several problems to the shellfish culture. Such a fact would cancel all positive results from the implementation of a mussel culture management plan. The absence of coordination between several agencies responsible for planning and management in the coastal zone area, is a source of failures in that area.

The only case of a "potential" integrated coastal zone management is the implementation of the Presidential Decree for the protection of the wetlands area. This P.D at one hand designates exactly the zones and the included or excluded activities in these zones and on the other hand provides the responsible Committee with the possibility to carry out several

studies targeting to produce management plans for all these activities. If this process is completed, then the above Committee will have all the necessary data to proceed with an integrated management plan that will guarantee the sustainable development of the area.

However such a successful evolution will be achieved only if the committee is allowed to act away from political or other interventions, to formulate the plan and then to be provided with all necessary means to implement this. From previous experience in similar cases it seems that this is very difficult to be achieved. However, the above P.D- although delayed-was a result of the need for compliance with International treaties and agreements signed by the central government. This compliance might be the motive for a successful formulation and application of an integrated coastal zone management plan in the area.

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List of interviewed persons

- Mr. Pandelidis G., Ex-mayor of Kalohori municipality
- Mr. Arvanitidis G., Ex-mayor of Sindos Municipality
- Mr. Mitskakis, Ex-mayor of Halkidona municipality
- Mr. Voudouris K., Member of town council of Halastra
- Mrs Salogiannou K., Directorate of Fisheries in Thesssaloniki
- Mr. Banakakis S., Public Estate Company-Thessaloniki
- Mrs. Pantelidou D., Municipal Development Organization of Ehedorou
- Mr. Siomadis S., Municipal Development Organization of Ehedorou
- Mr. Tzikas I., Vice President of Organization for Spatial Planning and Environmental Protection of Thessaloniki
- Mr. Vardoulakis M., President of the Union of shipyards owners on west side of the city
- Mrs Chomata P., Shipyard owner on the east side of the city