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Spatial planning for Aquaculture: a Special National Framework for resolving local conflicts

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A. Marine spatial planning

The problem of intense development pressures has been recognized as a specific characteristic of coastal areas since the 70s (Camhis M.- Cocossis H. (1982)). It was addressed during the next decades, theoretically and practically, with varying results. In the meantime, human activities were constantly intensified and occupied marine areas. Space demand was growing in shallow waters and offshore for the expansion of traditional activities but mainly of new ones (DEFRA, 2007). The location of large scale wind farms has been one of the main components that triggered the need to balance the many and varying sea-use interests. Sea use conflicts and potential threats to the marine environment multiplied, asking for spatial intervention and management (Cicin-Sain & Knecht 1998).

The need for an integrated marine spatial planning became imperative in the 90s. Initially, the interest on international and national level was in designating marine protected areas. More recently, attention has been placed on the question of conflicting sea uses and on the imperative to combine the development of multiple activities with the protection of the marine environment. To this day, there is still no integrated spatial plan for marine areas at national level. Of course, there is an extensive legal and policy framework, especially on environmental protection and on

sectoral issues, for the issuing of which EU has been the main driving force (Douvere F., Ehler Ch. (2006).

The complexity of marine spatial management revealed the need for more comprehensive approaches, aiming at preventing fragmentation and promoting the efficient use of space, while giving private parties the scope to develop their own initiatives, within certain constraints (op. cit). To this end, several European countries have already worked on elaborating spatial plans for sea areas. The United Kingdom prepared a Marine Bill in order to provide a strategic approach to the use of marine space and the interactions between its uses. The Bill would also deliver an efficient and transparent marine licensing system and provide for new mechanisms for marine nature conservation (DEFRA, 2007). Germany, the Netherlands and Belgium have prepared draft sea use plans and zoning proposals in the North Sea for the purpose of identifying and resolving conflicts between different land uses. All these plans focused mainly on raw materials extraction (sand, gravel, oil), on offshore energy production and on the designation of marine protected areas.

Some of them also put a lot of interest into managing the marine fisheries, but they pay less attention to the aquaculture sector. The Integrated Management Plan for the North Sea states that, “fish farming in the North Sea seems unlikely in the coming years”, while “there is concrete interest in mussel farming” (p.61). The Plan recognizes the usefulness and necessity of mariculture in the North Sea and the need to assess the choice of location and use of space, in part to prevent fragmentation. The German Federal Spatial Planning Act has been amended to extend spatial planning to the Exclusive Economic Zone, but in the Marine Spatial Plans for the German EEZ in the North and Baltic Seas fisheries are not represented (Jay St. (2010). Only Belgium is particularly concerned with the development of mussel farming, which is obvious for cultural reasons (Maes et al. GAUFRE, 2005).

The Greek Special Spatial Framework for Aquaculture appears in the aforementioned context, i.e. at a time when other countries are oriented towards integrated marine spatial plans. The limitations of the sectoral approaches are acknowledged by the parties involved to the elaboration of the plan. Besides, the Special Framework for the Coastal areas of the country that was elaborated and approved by the National

Council on Spatial Planning and the competent minister in 2003 has never been endorsed. Under these conditions, the focus on this single sector has been judged as necessary, given the specific conditions under which the aquaculture sector has developed. The production magnitude and the spatial extension of the activity are also two factors determining the decision to conduct a specific plan for aquaculture. Besides, the Aquaculture Framework constitutes a part of an entire program on the formulation of the national policy on spatial planning, forwarded by the former Ministry for the Environment, Spatial Planning, and Public Works. In the context of this program a number of spatial plans have been elaborated and endorsed during the last years. Among them, there are the General (National) Framework on Spatial Planning and Sustainable Development and three sectoral spatial plans on important economic activities: Renewable Energy Resources, Industry and Tourism.

B. The development of the aquaculture sector in Greece

During the last 25 years, Greece has registered a spectacular growth of the aquaculture sector. The advantages of its coasts especially favoured marine fish aquaculture that developed into one of the most productive economic sectors in the country (Study for the elaboration of the Special Spatial Framework for Aquaculture, 2009-2010). Greece historically dominated production of sea bass and sea bream in the Mediterranean and on EU level. Nowadays about 300 farms of marine fish aquaculture are in operation, occupying 780 Ha of conceded sea areas and employing 10.000 people. Mussel cultivation is also an economic activity of national interest, with more than 600 farms registering an annual production of 22.000 tons. Fresh water aquaculture, even of lesser importance on national scale, plays an important role in terms of regional and local development, since it takes place in remote areas and accompanies open air and environmental training activities. 110 small units actually exist, totalizing an annual production of 3.200 tons.

The sector's development took place in absence of a regulatory framework on spatial planning of productive activities. The spatial management of aquaculture was based on a licensing system, where the EIA permits were central. This project –by- project approach exacerbated by the sector –by-sector responsibilities for the location of productive activities in the marine and coastal zones, has proved to be ineffective, especially because a spatial policy, providing principles and guidance for the issuing

of permits, was not available. The National Spatial Plan which would trace the basic guidelines for the spatial organization of the activity was put into force only recently (2008). The 12 Regional Spatial Plans that date back to 2003 have not offered proper solutions to the crucial issue of site selection for the farms. As a general rule, references made to the aquaculture activity were extremely limited, not only regarding the location guidance but also the description of the current situation. As a general rule, the Plans proposed the elaboration of additional, more specific, studies for the spatial organization of the aquaculture farms in specific zones.

The shortcomings of the regional plans were closely linked to the fact that spatial planners were unfamiliar to the sector's importance and spatial needs. This, combined with public resistance against the location of farms, led to plans which were not focused enough to aquaculture activities. Under these conditions, the site selection was made by the operators and important concentrations were formed in areas that have been proved to be favourable for aquaculture. As other land uses developed, conflicts over the use of the coastal area became usual in many parts of the country and public resistance was common place in second home areas. The location of the farms became difficult even in remote areas, because according to the Greek Law, it is possible to build a house on every land parcel with a surface of 4000 sq. m. Aquaculture development is often resisted, partly as a result of past bitter experience but mainly because the farms location is seen as an impediment to future tourist or second home development. In fact, a great deal of the aquaculture sector's present difficulties is explained by the chronic weaknesses of the Greek spatial planning system. In addition, the sectoral policy is not yet explicit, but it emanates from pieces of law, regulating various matters of the sector.

In this context of absence of statutory plans and adoption of ad hoc solutions and actions, the intervention of the State Council was decisive for the set up of a core planning statute on aquaculture. The reason for this was the fact that the Council's rulings have overturned many administrative acts regarding individual location permits, on the grounds that they were not granted in accordance to the provisions of formal spatial plans. The Council doesn't accept the permit-by-permit approach that is common place in many European countries and demands the prior production and approval of statutory spatial plans, before permits or consents are considered and

granted. Appeals using this argument, lodged with the Council by a variety of interested parties (individuals, NGO's, local authorities etc.), are usually upheld. Under these conditions in which potentially all permits could be revoked, the Federation of Greek Maricultures has keenly supported the elaboration of the preliminary study for the plan. The study was commissioned to private consultants, but the final plan was conducted by the two competent ministries. Actually, the two competent ministries work in concert, in order to harmonize the sectoral needs and behaviours with spatial policies and environmental protection.

The Special Spatial Framework for Aquaculture is in progress, since the public participation process was completed at the end of May 2011. 768 responses have been registered during the consultation. The main part of them concerned views on the activity itself, i.e. if aquaculture should persist and develop, especially in some areas of the country. A less part of the responses asked for amendments of the Special Spatial Framework. But the general impression created by the statistics of the consultation is that there is a split in the middle position (yes or not) in relation to aquaculture. The main conclusion is that even if there is a positive attitude towards aquaculture as a growth sector, there is also a strong concern because of the activity's environmental impacts (those that are mainly stressed are the lack of inspections and practices followed in the past by the aquaculture operators).

It's the first attempt of marine spatial planning in the country, with the exception of the designation of protected zones, with varying degrees of protection in land and sea areas. They were natural areas incorporated in the E.U. network "NATURA 2000" and its implementation, and were given the status of national marine parks. On the other hand, land planning systems managed by local authorities (General Town Plans and Plans for Spatial and Urban Organization of Open Towns) developed during the last decade. They include activities that take place on the land but have also significant impacts on the marine environment and vice versa. Although, they rarely address the issue of aquaculture farms' location. Until now the sectors management fell within the responsibilities of central administration and regional secretariat agencies. Given the general context towards aquaculture activities, one of the main challenges of the plan is the need to balance a top-down planning approach, reflecting governmental policies and priorities with a bottom-up consensus of stakeholders.

C. Scope and Content of the Framework

The Plan regulates the spatial organization (management, control and development) of aquaculture in both fresh and marine waters. It covers cultivation of any organism, animals and plants which live in the water. It also applies to land- based production. The main part reports to marine finfish aquaculture but it also embraces provisions on shellfish cultivation, as well as on other types of aquaculture that take place in the country (fresh water production, fish farming in lagoons etc).

As a sectoral plan, its main goal is to register, make explicit and serve the basic spatial needs of aquaculture units in a way that their operation does not disturb in any way the function and development of other activities or irreversibly damages the environment. It has to provide greater certainty to developers concerning potentially acceptable locations, not only for aquaculture farms, but also for other activities that locate in the vicinity of the latter. Since the plan will be implemented as a legally-binding process, there will be increased difficulties in the effort to balance the desire for certainty with flexibility to incorporate changes in the farming species and technology.

The lack of familiarity with the sector's spatial behaviour and needs which was identified as one of the main factors disturbing the development of the activity dictated, among others, an instructive role for the plan. At this prospect, a first part of the plan is devoted to the identification of the main aquaculture types with greater interest for the country and the description of the necessary facilities. The plan distinguishes 4 aquaculture types, in response to their needs for spatial regulation: aquaculture of marine species, of crustaceans and aquaculture in fresh water and in lagoons. It is mainly oriented towards addressing issues related to marine fish aquaculture, since the need for spatial arrangement is more urgent for this type of farming. The plan cites the accompanying facilities on the continental shelf and defines those that may be located in the public domain coastal strip.

D. The spatial organization of aquaculture activity

The plan proposes the development of a system for the location of fish farms, based on a zoning principle. However, it recognizes the need for individual location in

special cases. It comprises an opportunity map, which shows where the activity can develop within the current legislative and regulatory framework. The areas represented on the map are areas that have been proved suitable for the development of aquaculture.

The system's main provisions regarding sea areas for the location of the farms are the following:

- Areas Suitable for the development of aquaculture
- Allocated Zones organized and managed by a special authority, similar to industrial estates
- Informal zones in places with existing concentrations
- Individual location: a) within Suitable Zones b) outside the provided zones. Individual locations are also permitted for experimental farms and small parks accompanying agrotouristic units.

The Suitable Areas (SA) are broader, roughly defined sea areas that form spatial units with uniform characteristics. In principle all kind of organized zones or individual farm locations shall be within those areas. For the designation of the Suitable Zones a series of data and criteria has been used, deriving from:

- a) A Strategic Plan with guidelines for the development of marine aquaculture in Greece, commissioned by the Ministry for Spatial Planning in the year 2000.
- b) A number of studies on Allocated Zones for aquaculture, commissioned in the context of the Operational Programme "Fisheries 2000-2006".
- c) The rich empirical knowledge and abilities acquired by the already existing and successfully operating aquaculture units in many areas in the country
- d) The evaluation of a series of criteria carried out by the consultants.

In conformity with this evaluation, the Suitable Zones are divided in 4 different categories according to the development degree, the preservation of the environmental quality, the proximity or good connection with urban areas and consumption centres, and the neighbouring with competitive or disrupting activities. The category A embraces areas heavily occupied, that may have attained saturation. The category B comprises areas already developed, but where the carrying capacity is not overrun and new units might be located. Environmentally sensitive areas and remote areas that

have a good potential for aquaculture development represent the two other categories. The measures adopted for the management of each one of the 4 types of zones depend on their specific characteristics and vary from the restriction of new farms installation to the financial encouragement of the location or relocation of farms towards some areas.

The Allocated Zones are sea areas, organized and operated in a way similar to industrial estates. That means that the zones are precisely defined areas, studied and approved under a specific legislative body and operated by a management authority formed for the specific zone. Their development is confined to private initiative and their designation presupposes an application from the management authority of the zone. The existence of this authority, formed by the aquaculture operators and/or other legal persons (public or private) is the first precondition for the start of the development procedure.

The Allocated Zones can be designated exclusively within the Suitable Zones. Their formation is binding in areas where more than 5 aquaculture farms exist, totalizing a surface superior to 100.000 m². As already mentioned a number of studies for the identification of the zones have already been commissioned in the context of the Operational Programme “Fisheries”. The results of these studies are integrated in the Plan in the form of a list of zones already identified. The list is not exclusive but rather indicative and necessitates to be reviewed in the light of: a) a recent ministerial decision on the carrying capacity of the sea areas used for aquaculture, b) the findings of the working group of the plan and c) the results of the public consultation.

Informal Zones are identified in places with existing concentrations of farms and may be preserved as such for a transitional phase of 5 years. During this period they have to follow the procedures for their designation as Allocated Zones. Clustering of small installations occupying a surface inferior to 100.000 m² may preserve the status of Informal Zones. New licenses are granted in the vicinity of Informal Zones. The purpose for this is that the threshold of the 100.000 m² will be crossed and the Informal Zones will have to be granted the status of the Allocated Zones. Individual locations are possible in Suitable Areas: they may be located in remote and secluded areas, in border areas, in the vicinity of small islands, for geopolitical reasons or for

reasons related to regional development, in island groups with characteristics that do not favour the operation of aquaculture zones. Outside the Suitable Areas individual locations are accepted only exceptionally.

The Plan also expresses the basic principles and directions for aquaculture farms spatial development and defines the necessary conditions for the site selection. It indicates the necessary procedures for the designation of the different zones and cites the necessary and accompanying continental facilities of the farms, while setting criteria for their location. The Plan also includes provisions relatively to the interaction of aquaculture with other activities and provides for the distances from incompatible land uses. It proposes amendments to other pieces of law, in order to facilitate the achievement of its goals and objectives and it sets an action programme for its implementation.

E. Conclusions

Greece is elaborating a sectoral spatial framework for aquaculture at a period when other European countries forward more comprehensive approaches to marine spatial planning. The endorsement of a specific plan has been judged as the only way to address the problems encountered by the activity during its spatial development. Public resistance stirred up by house agents and people that look at fish farming expansion as undermining the prospect of tourism and second homes development, influence local stakeholders and local authorities. The result is increasing difficulties for aquaculture operators in renewing licences and permits and, moreover, selecting sites for establishing of new farms.

Under these conditions, a national framework that is asked to solve local conflicts has a difficult mission to accomplish. It is not only a tool that will offer more transparency at the licensing process and certainty to aquaculture developers. It will be implemented as a legally-binding process embracing not only principles and guidance but also concrete tools that will be integrated in local spatial planning. In this sense, it is really difficult to balance a top-down planning approach reflecting governmental policies with a bottom-up consensus of stakeholders. And the fact that it encounters resistance, even in few areas of the country, makes it crucial because it will put the determination of the government at stake.

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