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**MANAGEMENT OF RENEWABLE RESOURCES:
INSTITUTIONS, REGIONAL DIFFERENCES AND
CONFLICT AVOIDANCE RELATED TO
ENVIRONMENTAL POLICIES AND ILLUSTRATED
BY MARINE RESOURCE MANAGEMENT.**

SUMMARY FINAL REPORT

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I. OBJECTIVES

The broad aims of the Project were to explore the cause-effect relationship between :

- 1) institutions designed to protect the environment and regulate its exploitation,
- 2) socio-cultural institutions including knowledge, organisation and modes of utilisation in the local areas and regions involved, and
- 3) the renewable resources of the relevant environments.

The goal has been to examine general tools for a sustainable development planning and management which can be effective in preventing dysfunctions, conflicts and socio-political instability at the local, national and transnational levels. Particular attention has been paid to the study of institutions as tools in problem solving and conflict prevention with special regard to marine resources. The broad scope of the Project was chosen in order to make the theoretical conclusions applicable to the study of a type of environmental protection measure which by its nature must encompass a large geographical area, i.e. cutting across many established socio-cultural 'borders'. The ambition has been to improve the theoretical, and policy-relevant understanding of the determination of conflicts relating to fisheries regulation. The balance between common and particular causes of conflict is important for the assessment of the applicability of common versus specific adapted management measures.

The purpose was twofold:

- to inform decision-makers at all relevant levels on strategies for future development within the field of utilising the environment, with special regard to means of conflict prevention or conflict minimising and to the principle of subsidiarity and its future potentials
- to contribute to international scholarly debates on environmental resource management.

II. METHODOLOGY

Common to the first year's case studies was the holistic description of resource use and the collection of qualitative data obtained through structured interviews in the field, observation and participation in the activity under study and through available written sources. Identification of actors involved and of conflicts relating to resource extraction also took place in phase I.

In the second year's case studies the analytical and comparative approach was applied to the material collected so far. Special attention was paid to analyses of institutions and to user group responses to external and internal management systems. Also, additional material was collected during phase II.

The comparative analysis at the European level took place in the third year. To reach this level a comparative analysis of the sub projects has taken place. The criteria used for comparison have been

- vertical and horizontal differences between relevant sectors
- common and particular causes of conflicts
- the applicability of common versus specific, adapted management measures
- possible correlations between the level of decision-making and conflicts relating to resource management
- institutions as management tools and agents in problem solving

To answer these criteria for comparisons, supplementary fieldwork and interviews have been carried out in support of the overall project.

Quantitative data obtained through surveys and from available written sources have been applied - mainly in the form of statistical diagrams - to allow for typologies and quantitative estimations of the structure of the industry and the recent developments within the industry.

Workshop I - which took place 6 months after the Project started - established in details the methodology and criteria for data collection and evaluation according to the general objectives. To further aid communication, a small technical directory was made (names and descriptions of various gear, fishing techniques etc.) for use within the group.

Workshop II - which took place approximately 14 months after the Project started evaluated the results of first project year. On this basis project overlaps and topics of common interest were singled out and 4 'groups' (2-3 persons each) were formed to start closer comparative cross national/regional investigations. Next to this, it was agreed upon to start a Working Paper Series.

Workshop III - which took place 19 months after the Project started - had its main emphasis on methodological considerations in studies and comparisons of regions. First results of cross-regional comparisons were presented. Also plans for publishing a book on Project results were outlined.

Workshop IV - which took place 24 months after the Project started contained plans for drafting of the final report and discussions on Project key concepts like legitimacy, sustainability, institutional design, different concepts of knowledge and world views. Finally, the kind and form of statistics needed for cross regional comparisons were defined.

Workshop V - which took place two months before Project termination examined preparation of the final report, the coordination of sub project results in relation to each other and to the overall project. The discussion was especially concentrated on key project concepts (see Workshop IV) which were corner stones in drafting recommendations of how to maintain social equity while ensuring efficient and sustainable use of renewable resources. In addition, the sort of management strategies which do not compromise moral legitimacy in the eyes of the user groups, thereby both reducing costs of control measures and ensuring voluntary cooperation were considered. The preparations for the drafting of a book for publication was made in detail.

Common to all the workshops has been that in addition to individual presentations of results achieved so far, and plans and goals, the results have been closely examined and continuously fed into to Work Programme and the overall project goals and obligations.

III. MAIN RESULTS

The research has been divided into three main groups: fishery case studies, coastal zone management, and theoretical studies. Whereas the first project year resulted in material collection and descriptions, the second project year was devoted to analyses of collected material with supplementary data collection and start of cross-regional/cross-national comparisons. In the final stage of the project also cross-regional/cross-national comparisons have been made.

III.1. Fishery case studies have been completed in selected regions in Greece, Spain, France and Denmark. Common to the industry in all areas under study was, from a technical point of view, the relative small scale of the industry. The fishermen's rhetoric of independence and egalitarianism is shared from South to North. The scepticism towards biological recommendations regarding state of exploited stocks was generally shared as is the scepticism towards external managing bodies.

The differences within the studied areas in the Mediterranean as well as between these areas and Denmark, were, however, marked. With regard to target species, desired size of species, gear, organisation of fishery and of crew etc., there is a large variability among the industries in these areas, which does not per se explain any of the differences. The comparative analyses showed that the lack of common agreement among fishermen in the studied areas on preference of regulations, of surveillance, on methods of conflict solution etc., was not only due to differences in fleet structure and technology. Decisive factors were found in social practices, cultural settings and in the history of the relevant organisations.

These case studies have also focused on systems of knowledge in relation to state of fish stocks. The scientific approach by biologists has been compared to the operationally based knowledge of fishermen. Here again one finds the same structural divide between Mediterranean and North Sea/Baltic fishermen. On general issues there is accordance, but within the specific fisheries the differences are large. In the Mediterranean we find a more general agreement that the fish stocks are in a state of crisis and that the reasons for the crisis are mainly to be found outside that particular fishery. Pollution is considered a main reason, but also market conditions and harmful fishing practices by other fishing techniques than the ones applied by the interviewees appear as explanations. Catalonia distinguishes itself somewhat from the other Mediterranean countries, as the depletion of fishing resources is not perceived as one of the causes for the crisis per se; rather it is associated with factors other than the resources, e.g. decline of market prices, and import from EU- as well as non-EU countries. In the Northern Waters the present crisis in the fishing industries is blamed on factors outside the fishing sector. Pollution is considered to be of some influence, but management policies and stock fluctuations are considered the two main reasons for the present crisis.

III.2. Coastal Zone Management (CZM) studies from Ireland and Norway fall into two groups:

- *Analyses of the relationship between the competing uses of coastal resources and the institutional frameworks that shape the governing of such resources.*

Planning and management of coastal resources in Ireland has progressed in a sectorial way with no specific national policy or provision for the coastal zone. Responsibility for managing coastal resources is spread over numerous government departments and agencies at national, regional and local level; this has over time given rise to severe conflicts over rights to resource extraction.

The analysis of various recent conflicts and conflict resolution finds that despite lack of co-ordination at national level, at local level there is scope for successful CZM initiatives which can help to resolve conflicts (although impartiality, an essential part of the process, may be difficult to attain). The conflicts which most threaten the harvesting of the resource are largely due to introductions of new technologies and new pressures on the resource over short time periods. The analysis states that regulatory structures tend to emerge in response to new developments rather than being in place in anticipation of possible developments. The analysis concluded that the genuine involvement of local communities and user groups is vital to the success of any strategy for the effective use of Integrated Coastal Management (ICM).

- *Analyses of the transition from traditional coastal resource management structures to modern systems and emerging new trends including community perceptions of evolving institutional frameworks.*

The analysis focused on the institutional development in fisheries, mainly the introduction and modification of Individual Vessel Quotas (IVQ) in Norwegian fisheries, as well as the embryonic institutional processes resulting from new integrative activities in the coastal zone. Some of the crucial dynamics identified were :

- A crisis situation is the best starting point for stimulating any institutional change. If, as in the Norwegian case, there are other occupational options at the community level, institutional changes appear less threatening, thus paving the way for dialogues between parties and bodies involved.

- Any institutional reform in the exploitation of marine resources must take into account the household factor, i.e. the changes in institutional rules that are spurred or permitted by changing relations within the household as both an economic and an emotional enterprise.

III.3. Theoretical studies of the research history of resource management institutions and classification of conflicts have been integrated in sub projects as well as in the overall project. This has been in order to allow for methodological considerations and to raise the profile of this project within the current discussions of the scientific community.

IV. SCIENTIFIC INTEREST AND POLICY RELEVANCE

(i) scientific interest and novelty

The project has made a comparative investigation and analysis of the relationships between different levels of management systems and renewable resources in different parts of Europe through a multidisciplinary approach.

The project built on 'the state of the art' in the disciplines concerned. Here, all recent research trends point to the need for taking up forms of resource management systems in relation to the socio-cultural order of the societies concerned.

A scientific benefit has been to demonstrate that a multi-disciplinary approach facilitates the development of research methods and management strategies which integrate the diverse objectives and preconditions that have to be taken into account in the sustainable development of renewable resource utilisation.

(ii) policy relevance

In response to the goal of European integration, the scientific novelty of the Project also be of truly policy relevance. It addressed the potential conflicts involved in carrying out similar policy objectives (that is: sustainable development of renewable resources) in regions of different economic, socio-cultural and environmental characteristics.

The Project contribute to the development of:

- Efficient and sustainable use of renewable resources without compromising social equity.
- Management systems that do not compromise moral legitimacy in the eyes of user-groups, and which would thereby greatly reduce the cost of control measures and ensure voluntary cooperation.
- Increase the information flow between present and potential EU Member States about different local experiences with regard to similar policy objectives.