DISTINGUISHING BETWEEN INSTITUTIONAL AND ENVIRONMENTAL EFFECTIVENESS IN INTERNATIONAL ENVIRONMENTAL AGREEMENTS: THE CASE OF THE MEDITERRANEAN ACTION PLAN

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Abstract

This article critiques regime-centric approaches to the study of the effectiveness of international environmental agreements and illustrates the argument with the example of the Mediterranean Action Plan. Traditional regime theoretic approaches are grounded in what Robert Cox calls problem-solving theory, taking existing analytical frameworks as the boundaries of academic investigation. This article adopts a critical, ecocentric approach that goes beyond conventional institutional approaches and introduces the notion of environmental rather than political benefit. Such analysis demonstrates that the Mediterranean Action Plan may be a political success but that this political achievement is not complemented by environmental improvement.

This article argues that conventional regime-centric approaches to the study of agreement effectiveness are based on rather narrow definitions of effectiveness that do not find their source in environmental concerns and illustrates this argument with reference to one particular agreement, the Mediterranean Action Plan. Such traditional approaches are grounded in what Cox terms 'problem-solving theory' whilst a new concept of environmental effectiveness is put forward here that goes beyond conventional, institutional approaches and introduces a notion of environmental benefit.

In the existing literature, the motivations for studying effectiveness are predominantly directed at studying the effect of an agreement or its diplomatic history rather than its potential for environmental improvement (Bernauer, 1995; Haas et al. 1993; Levy 1993; Young; 1994). This institutional school of thought sees effectiveness as an issue of institutional performance and not environmental improvement. Its writers are mainly regime theorists of various persuasions and as such focus on the vital importance of international institutions/agreements, or regimes as they call it, as a form of international order. They use what I call institutional effectiveness as a standard of regime strength or weakness and thus for them an effective regime must necessarily enjoy a high level of cooperation as a measure of institutional performance. The issue of how adequately this cooperation deals with the problem in question takes a secondary position (i.e. cooperation is the focus of study, not the capacity of the agreement to deal with the problem giving rise to it). Only a few authors looking at environmental effectiveness such as the Norwegian regime theorists (Underdal, 1992; Wettestad & Andresen, 1991; Wettestad, 1995) and some international environmental law specialists (Susskind, 1993), have considered the environmental problem necessitating

the agreement. However, their concerns are still formulated within an institutional framework and mostly concerned with the performance of a regime or agreement. This limitation results in environmental degradation being considered from an angle focusing on institutional frameworks *vis-à-vis* environmental degradation rather than on the eradication or improvement of an environmental problem.

Such narrow focus is best explained by the methodological constraints within which regime theory operates. Regime theorists assume that an institution with active and cooperative members will incite change. This change will then result in an improvement compared to the pre-institutional state of being and therefore the institutional performance of an agreement will directly impact on its environmental benefit (Haas et al. 1993). Although change might, for example, only result in a rise of awareness of the environmental problem in question, this is a success for the regime theorist since an improvement on the pre-regime situation has occurred. This means that the standard by which environmental effectiveness is measured is not set in relation to the problem to be regulated by the regime but rather by its ability to bring about some change. I argue that this standard is inappropriate because change in itself is not sufficient measurement of environmental effectiveness and does not provide adequate evidence for a well-functioning institution that results in environmental improvement.

Therefore these methodological constraints of regime theory prevent it from offering a useful definition of either the concept or the actuality of effectiveness. Naturally, well functioning institutions are vital for international environmental agreements to be successful and therefore the research and findings of regime theorists are valuable but have to be placed in a wider context. It has to be placed in a different analytical framework, which is not methodologically constrained by focusing on the regime itself and strikes a careful balance between the study of structure and agency rather than relying mainly on analysing actor behaviour.

This article will demonstrate the importance of incorporating a concept of environmental effectiveness into the analysis of international environmental agreements by using the Mediterranean Action Plan as an illustrative case study. The Mediterranean Action Plan (MAP) is a regional environmental agreement that was negotiated between the Mediterranean states in the mid-1970s as a response to the increasing pollution in the Mediterranean Sea.[1] It has been described as a successful agreement by several authors (Haas, 1990; Raftopoulos, 1993) and therefore provides a good case study for an analysis of the concept of effectiveness.

The new concept of effectiveness

The main limitation of regime theoretical analysis is its focus on actor behaviour and on the definition of actors' interests in the negotiating situation as the crucial objects of study. The agreement, or regime, is perceived as a closed system that need not be placed in the

context in which it operates. This approach neglects the social environment in which the regime is formed and of which it is part. Furthermore, there is no discussion of the capacity, or lack of capacity, of the regime to regulate or solve the environmental problem in question. Regime theoretical analysis thus largely disregards notions of environmental effectiveness.

This paper offers a new framework for analysis by suggesting macro-level analysis of the concept of effectiveness. This refocusing overcomes one of the major omissions of traditional effectiveness debates (i.e. the failure to use the environmental problem and its social and structural origins as a standard against which to pitch effectiveness). The limitation of closed-system analysis is overcome by placing the agreement in question in its social, political, economic, technological, scientific and temporal context.

So far, effectiveness has largely been defined as a well-working institution whose performance can achieve change in its members' behaviour. This emphasis has led to a prioritising of the analysis of agreement implementation rather than agreement formation. In turn, this has meant that effectiveness has come to refer to changes actually achieved by the agreement in question – whether good or bad. In contrast, the prescription of remedies in the first place has been neglected in analytical terms which means that environmental amelioration as a concept does not form a major part of analysis. The distinction between institutional and environmental effectiveness is made most obvious in this context: Institutional effectiveness is mostly concerned with the performance of the institution in question while environmental effectiveness as a concept makes the eradication or prevention of environmental degradation its priority. Neither of the two types of effectiveness are exclusive in their approach and therefore the distinction between the two can only be made heuristically. In this sense, institutional effectiveness is concerned with feasibility whilst environmental effectiveness takes a holistic approach and is idealistic in the sense that it concentrates on necessity rather than feasibility.

A holistic definition of effectiveness (both the concept and actuality) has to place the agreement in a wider social context that makes the institution in question part of a web of social, political, economic and environmental relations. It studies the effectiveness of international environmental agreements not from a problem-solving theory aspect but takes recourse to critical theory in Cox's sense by not accepting existing institutions and social/power relationships as the boundaries of investigation. Such a critical perspective introduces notions of environmental benefit into IR analysis. In order to do this, four determinants of the effectiveness of international environmental agreements have been established that are directly relevant to defining and determining effectiveness. These determinants refer to *conditions* of effectiveness and not to *sources* of effectiveness (i.e. there is no prior assumption that effectiveness can be achieved for each and every environmental agreement). These determinants of effectiveness are regulatory and economic structures, science as well as time, and will now be discussed with extensive reference to MAP in order to demonstrate their importance. These four determinants are the key areas where the conditions for environmentally effective agreements can be found.

Regulatory structures

This determinant of effectiveness is the traditional concern of regime theoretical approaches. Therefore it has been researched comprehensively in many respects because it has been regarded as the main source of effectiveness.[2] However, the study of regulatory structures or institutional details of an agreement do not necessarily reflect on the environmental potential of an agreement. There is a feasibility as opposed to necessity focus in traditional analysis. The focus of analysis is what is administratively feasible rather than what is environmentally necessary. There are three basic reasons for this.

First, policy makers operate within very rigid and narrow administrative structures and are subjected to a high degree of specialisation in the division of labour. This means that they do not have a clear picture of the whole process of environmental degradation and its relationship with society and are not aware of where exactly their work is leading and what impact it has. Second, policy-makers in international environmental policy-making are usually government officials and thus represent a government which in turn represents the people of the respective state and their social, political and economic interests. They do not represent the environment since their very *raison d'être* is social, not environmental. Third, policy-making operates within administrative time frames which means that environmental rhythms have to be subordinated to administrative feasibilities. Policy-makers target policy measures that are institutionally feasible but do not relate this back to what is environmentally necessary.

These three points are supported by the case history of the regulatory section of the Mediterranean Action Plan, the Barcelona Convention. The original Barcelona Convention consists of five protocols on dumping from ships and aircraft (1976), on cooperation in combating pollution by oil and other harmful substances in cases of emergency (1976), on pollution from land-based sources (1980), on specially protected areas (1982), on pollution resulting from offshore activities (1994). In 1995, the Convention was replaced by a new, amended version which is modelled on the recommendations of the 1992 Rio Conference on the Environment and Development. In addition, the protocol on Specially Protected Areas was replaced by a protocol on Biodiversity, again based on the Rio format. The last protocol (on hazardous waste) was signed in 1996.

The Convention defines and explains key terms such as the exact area of the Mediterranean Sea and lists the key pollution issues that need to be addressed. However, these issues are only listed and not regulated in the Convention as is customary for the Convention-plus-Protocol approach. These are the issues highlighted by the Convention: pollution caused by dumping from ships and aircraft, pollution from ships, pollution resulting from exploration and exploitation of the continental shelf and the seabed and its subsoil, as well as pollution from land-based sources.

The protocol for the prevention of pollution of the Mediterranean Sea by dumping from ships and aircraft (1976/1978) prohibits the dumping of listed substances[3] and requires the issuing of a permit by the competent national authority for another list of substances.[4] All

other dumping of wastes requires a general permit from the national authorities. This protocol applies to ships and aircraft of the respective signatory state as well as ships and aircraft in its territory but it does not apply to ships and aircraft owned or operated by a state party and used only on government non-commercial service.

The protocol on cooperation in combating pollution by oil and other harmful substances in cases of emergency (1976/78) prescribes cooperation in the Mediterranean region in case of oil or other emergencies in order to reduce or eliminate any damage caused by an incident. Any other state likely to be affected by such an incident and the United Nations Environment Programme (UNEP) will have to be notified in case of an emergency oil spill. In addition, a regional activity centre to deal with such emergencies was established in Malta.

These three legal documents, the beginning of the Barcelona Convention, reflect environmental concern in the Mediterranean region in the 1970s as pollution from land-based sources, the development dimension, and pollution resulting from offshore activities were insufficiently researched to be put on the agenda for the first protocols (Boxer, 1983). The emphasis was thus on hydrocarbon pollution and on mobile sources.

The choice of the two protocols can only be described as arbitrary since there is existing international law on ship-source pollution. The 1972 London Dumping Convention and the International Convention for the Prevention of Pollution from Ships 1973 as amended in 1978 (Marpol 73/78) regulate all forms of marine pollution except dumping and the latter even gives the Mediterranean special area status (i.e. *no* tanker or non-tanker vessel discharges are permitted) (Peters, 1990: 41). However, not all Mediterranean states are parties to the London Dumping Convention or Marpol[5] and therefore separate protocols in a Mediterranean context were considered appropriate rather than increasing pressure on the non-members to sign up to these commitments. Marpol was not reproduced in a Barcelona Convention protocol because it is directed at the shipping community whereas the Barcelona Convention is directed at its member states.[6] However, a number of Mediterranean states are also important actors in the shipping community.

The second protocol on combating emergency spills and the need for cooperation does not contain any provisions on the release of substances into the marine environment, so only accidents are covered. Since the first protocol deals with dumping, it seems that both accidents and discharges are covered. However, there is a difference between dumping and discharging which means that only one of the two is covered. For example, in the case of oil, discharges occur routinely as part of the loading or unloading procedure. In order to avoid or reduce the amount of petroleum discharges, special tanker equipment and port reception facilities are necessary. Since oil pollution was the main concern of MAP's designers in the 1970s the lack of coverage of oil discharges is an omission with consequences for the effectiveness of these protocols. A regime theoretical approach to effectiveness would not note the lack of discharge regulations because it focuses on regime formation and cooperation rather than on the marine pollution context in which the regime was negotiated. So, this diversity of focus illustrates the limitation of regime analysis at the empirical level

even in a case involving institutional effectiveness. This point highlights that analysis concentrating on participation in or composition of the regime or the implementation of the agreement will miss out on the omission of sources of pollutants in the regulatory effort. The reason for this is a lack of focus on environmental benefit.

To summarise, the first two protocols of the Barcelona Convention lack a consistent approach to discharges into the marine environment from mobile sources. There are no provisions for routine discharges of any substance, only for dumping. In addition, the lack of clearly defined time limits relating to implementation of the measures prescribed in the protocols is another shortcoming in the analysis of environmental effectiveness. However, the most severe problem with the first two protocols of the Barcelona Convention is that they do not convincingly tackle the problem of mobile source pollution since there is no consistent abolition of the release of deleterious substances into the Mediterranean Sea.

The third protocol, the protocol for the protection of the Mediterranean Sea against pollution from land-based sources was signed in 1980 and entered into force in 1983. It regulates discharges from direct or coastal outfalls and from rivers or other watercourses or runoffs and of atmospheric pollution. There are no emission limits but the provision is that parties should progressively adopt guidelines on emission limits.[7]

The choice of substances to be regulated by this protocol is based on the European Community (EC) legislation and on similar regulations issued by the Paris Commission for the Northeast Atlantic (Pastor, 1991: 114). The signatory states agree to develop standards or criteria to deal with pipeline outfall specifications, coastal water quality, the control/replacement of installations causing substantial pollution and emission standards for substances in annex I and II. Although the protocol contains lists of substances that are to be controlled, as to how and when this will be done and how much control is necessary is not addressed. Equally, although a review mechanism is suggested to tighten up this protocol, this has not resulted in any amendments to the protocol despite the protocol stipulating regular reviews. Again, from an institutional effectiveness point of view this is an effective protocol with a high degree of cooperation as demonstrated by regular reviews. This is a good case of what regime theorists would refer to as a success since a change as opposed to the pre-agreement situation has occurred. However, there is no actual environmental benefit. No time limits on emissions of listed pollutants have been imposed, no phase-outs are required. So, both regulation of mobile as well as land-based sources lack a set of standards. This protocol completes the inventory of pollutant sources.

The protocol concerning Mediterranean specially protected areas was signed in 1982 and entered into force in 1986. The protocol can be seen as a special case since there are no provisions for it in the Convention. It encourages parties to establish national parks and protect historical and archaeological sites. It remains unclear why this essentially unilateral or bilateral process of setting up a specially protected area needs to be regulated by an international agreement and what the environmental aim behind it could be. Therefore the environmental benefit of this protocol is doubtful.

The protocol for the protection of the Mediterranean Sea against pollution resulting from offshore activities was signed in October 1994 by 9 members to the Convention. It has not been ratified yet. The protocol requires the authorisation of offshore activities by the competent national authorities. However, a full environmental impact assessment will only be necessary if the proposed activity definitely has harmful effects on the environment. The planned installations should be monitored for safety and environmental effects which means that data on its performance can be made available easily. However, operators are subject to strict and limited liability. The protocol includes lists of noxious substances and materials the disposal of which in the protocol area is either prohibited or subject to a special permit. In addition, the disposal of sewage, hazardous waste, oily substances and rubbish from offshore installations is prohibited. Although this protocol regulates the discharges emanating from offshore installations quite strictly, it does not prescribe stringent measures on the operation of offshore installations.

The long negotiating time of this protocol (nearly 10 years) is a clear indication that the subject of the protocol is a delicate matter. The oil industry was heavily involved in the negotiations. Again, a protocol has emerged that neither introduces clearly defined standards nor makes an organised effort to regulate offshore activities. Therefore it is not of any significant environmental benefit although it introduces concepts such as environmental impact assessment. However, these environmental concepts are not applied in a context in which they could lead to environmental improvement.

In 1995, the Barcelona Convention was amended to reflect the developments that had taken place on the global level since the 1992 Rio United Nations Conference on Environment and Development (UNCED) and renamed Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean Sea against Pollution and its protocols. In addition, the protocol for prevention of pollution of the Mediterranean Sea by dumping from ships and aircraft was amended to include incineration at sea. The protocol concerning Mediterranean Specially Protected Areas was replaced by the protocol concerning Specially Protected Areas and Biological Diversity in the Mediterranean. This new version takes account of the UNCED Biodiversity protocol.

The second Barcelona Convention recommends the introduction of the precautionary principle, the polluter pays principle and environmental impact assessment as well as time limits on environmental regulation. In general, it lists priority fields of activities for the environment and development in the Mediterranean Basin, which are based on the recommendations of Agenda 21. The new protocol concerning Specially Protected Areas and Biological Diversity in the Mediterranean includes a list of specially protected areas of Mediterranean interest (SPAMI) (Scovazzi, 1996: 95-98).

On the one hand, it could be argued that the Barcelona Convention had exhausted its capacities and these changes can keep up the regional environmental effort in the Mediterranean area by keeping the institutional cooperation alive. On the other, the establishment of a new Convention and protocols is a lengthy administrative process which will take years until ratification and implementation. If the energy of this effort had been

spent on the implementation of actual policy programmes and refinement of existing protocols, this would have been more environmentally effective given the time dimensions involved. Moreover, the recommendations of the Rio process are vague and are not likely to lead to any concrete policy action in the Mediterranean region. Therefore the environmental benefit of the adoption of the new convention and sustainable development action plan is negligible, at least in the short term given that the Mediterranean region did not lack an institutional framework but rather a realisation and tightening of policies.

Such issues are not addressed by institutional thinkers. In their view, a new agreement confirms institutional commitments and the will to achieve order. The focus is not on environmental benefit. The introduction of a new convention system rather than an improvement of policy measures within the MAP system shows that environmental concern is not the driving force behind these institutions. Rather, cooperation and institutional solidification is seen as a success. This relates to the divergence between feasibility and necessity. Since the Mediterranean is a politically, economically and socially diverse and even unstable region, cooperation is seen as a success and the only feasible success. Environmental improvement is a necessity but not a feasibility. Since it is not feasible, it is discarded and cooperation treated as a success. From an institutional point of view, it is difficult to object to this interpretation of success/effectiveness. However, from a combined social-environmental perspective which sees the functioning of society as part of the global ecosystem on which society is dependent for survival, an analysis of purely social considerations of feasibility is clearly insufficient.

Economic structures

Economic structures are strong determinants of both the contents of an agreement and the social environment in which it is negotiated. Economic structures determine the organisation of human need fulfilment, be it basic or luxury needs. The most important aspect of economic organisation is the production of goods and services. Economic factors, as regime theorists have recognised too, are decisive in shaping an international environmental agreement because environmental regulation usually imposes a cost on society and economic activity; a cost that was hitherto externalised and not part of the economic process as seen by society.

As economic structures determine social organisation and therefore the composition of society, they are the underlying organisational principle of the relationship between environment and society (Redclift, 1987 and 1992; Daly, 1992). The organisation of the economy ignores the finite nature of energy sources on the planet. This means that existing energy is transformed into matter that cannot be reused (waste), thus slowly using up the energy matter available on the planet. Only if the mode of production can be changed to incorporate knowledge about the nature of environmental systems will the harmony between environment and society be restored. The policy planning component of MAP aims to study

and improve the relationship between economic progress and environmental degradation and identify long-term trends. With the identification of long-term environmentally degrading trends, it would be possible to devise environmental policies that combine economic and environmental concerns.

The policy planning component of MAP, established in 1977, reaches beyond marine pollution issues and extends to regional development and environmental problems in general. It was generally agreed during the setting up of the policy planning component that the state of the marine environment could not merely be improved by studying individual emission sources but that issues of social and economic planning were directly related to the problem. A two-pronged approach best reflected the necessities of the region: a study-oriented programme and an action programme (Raftopoulos, 1993: 22). The policy action programme should facilitate policy formulation amongst other issues by implementing the findings of the study plan (the Blue Plan). Therefore the two sections of the policy planning programme are meant to complement each other.

Moreover, several policy-oriented conferences have taken place that highlight policy priority issues. The Genoa Declaration, which is an issue of coastal management, was adopted at the Fourth Ordinary Meeting of the Contracting Parties in 1985. It lists ten priority targets for the decade 1985-1995, all of which aim to reduce discharges from mobile and land-based sources.[8] These policy recommendations have been much quoted but have not been incorporated in the legal, or regulatory, component of MAP. Likewise, the 1990 Nicosia Charter on Euro-Mediterranean cooperation is based on policy recommendations. It brings together the Commission of the European Communities and 12 MAP member states, based on the idea of involving the World Bank and the European Investment Bank as sponsors for a Mediterranean sustainable development programme.

The Nicosia Charter is an attempt to achieve policy targets by bypassing conventional channels of action and involve outside funding agencies. Since there is an implementation problem within MAP due to insufficient linkage between its components, the use of outside agencies shows a good understanding of the workings of the global political economy and their impact on both environmental and economic policy. However, there are environmental problems associated with the sustainable development discourse of which the Nicosia Charter is part. These problems will be briefly summarised in the conclusion to this section but cannot be reproduced in detail as they are not the focus of this article and excellent critiques exist elsewhere (Redclift, 1987; Chatterjee & Finger, 1994).

The Blue Plan (i.e. the study-oriented part of the policy planning component) was endorsed in 1977 and is a comprehensive study of the economic activities in the Mediterranean Basin and their effect on the environment. It is a collection of data of social and economic trends which are used as scenarios for future developments. This is supposed to give an idea of future trends and acts as indicator for long-term planning. Its predictions are based on developments in the past 30 years and they have been used for computer trend analysis for the next 30 years.

The Blue Plan, like the Nicosia Charter, is written in the same ideological terms as *Our Common Future* (the Brundtland report). This means it is based on the belief that economic growth can continue indefinitely as long as industry avoids massively polluting activities and adopts clean or best available technologies.

The Priority Actions Programme

The Priority Actions Programme (PAP), the applied part of the policy planning component, also came into being in 1977 with a perspective to act immediately in demonstration and pilot projects (Raftopoulos, 1993: 27/28). However, it only became operative much later because of problems in establishing the institutional framework, disagreement about content and financial problems. PAP's priority is the "contribution to the reduction of existing socio-economic inequalities among Mediterranean states" rather than the elimination of environmental degradation (Chircop, 1992: 23). The areas targeted are integrated planning and management of coastal zones. Although these priority areas were identified, there was no clear idea as to what exactly should be done and where the funding should come from. The United Nations Development Programme (UNDP) offered its support but a project plan only came into being in 1981 with the financial help of some member states that had specific programmes in mind. Because of the funding shortage, outside funding, such as from the Environmental Program for the Mediterranean by the World Bank, was used (World Bank, 1990). However, this programme was only started in the late 1980s, which makes the name *Priority* Action Programme a misnomer with the priority actions not happening until 16 years after their conception.

The 1995 amendments to MAP have resulted in an espousal of the policy recommendations of Agenda 21 and regular meetings by the newly established Mediterranean Commission for Sustainable Development. Again, these are not formulated in the terminology of concrete policy proposals but rather present a set of guidelines for general direction of action. This is a general problem of Agenda 21 and the concept of sustainable development that has not been improved upon by transplanting it on the regional level.

So, in terms of economic organisation of the Mediterranean region and how it relates to the working of the Mediterranean Action Plan, there are two main points to make. First, despite a good flow of policy recommendations and trend observation data, the material collected and published is not actually used for policy formulation and implementation. This means that the cooperation between the different components of MAP, as will become even more obvious in the following section on science, is insufficient. This results in a lack of institutional and environmental effectiveness. However, traditional approaches to agreement effectiveness focusing on the output of policy recommendations rather than on their usage and aim to achieve environmental improvement, will consider the policy planning component effective.

The second point focuses on the ideology of the policy planning component. The value base underlying this component of MAP is firmly grounded in the belief that economic growth and environmental improvement are fully compatible. This is also the belief of the sustainable development discourse as documented by publications such as the Brundtland report or the 1992 Rio Summit. However, as the section on time will demonstrate more clearly, this belief is at least debatable.

Science

The role of science as a determinant of effectiveness is crucial. Since policy makers are dependent on scientific advice to evaluate the state of an environmental problem and possible solutions to it, it is paramount to analyse the role of science in international environmental agreements. A very good study of the role of the scientific community in the making of the Mediterranean Action Plan focuses on the role of expert advice (Haas, 1990). However, the relationship between science and scientist also needs to be studied in order to understand the social role of science. This analysis will demonstrate that science is not an objective body of knowledge providing neutral answers about environmental phenomena.

The scientific component of MAP is called MEDPOL. There was practically no marine science base in the region when the Mediterranean Sea problem became institutionalised in the 1970s. It was a fundamental aspect of the institution to develop scientific capabilities, especially in the South (Haas, 1989). In addition, the science base that existed or was developed needed to be standardised in order to use the same measurement techniques and in order to develop a compatible system of analysis throughout the region, since there were vast differences in systems and methods of pollution measurement. MEDPOL is the assessment component of MAP and was agreed upon in 1975 when MAP was established. Its purpose is to generate data on the state of the marine environment as so little was known in the early stages of MAP (Jeftic & Saliba, 1987: 199). At first it was funded solely by UNEP and other UN agencies.

Boxer argues that lack of trust in scientific decisions often leads to declining public confidence in scientific solutions to environmental problems. However, he argues, this is not the case in the Mediterranean (Boxer, 1983: 274). There was substantial physical evidence of the degradation of the sea in the form of debris, oil films, sewage or smell but no scientific consensus was established on where the pollution originated from and what to do about it. So, one of the first tasks of MAP was to develop and unite the scientific community and establish a basic consensus.

In the early stages, the first phase of MEDPOL (1976-1980) was mainly concerned with the establishment of research centres and the training of scientists. By 1976, 13 projects had been agreed upon but only two of these were actually completed (Haas, 1990: 100). Haas argues that none of the studies on biogeochemistry of selected pollutants in the open

sea, on the role of sedimentation, on atmospheric pathways and on marine modelling were completed because

> France blocked funding for studies that would generate data that might undercut its position at ongoing meetings on the Land-Based Sources Protocol regarding which pollutants should be covered and the pathways by which they are transmitted (1990: 101).

This point makes it clear that the source of funding of scientific activities has a major influence on the outcome of research programmes as France was a major source of funds for MEDPOL programmes. This point calls into question the so-called objectivity of science since it becomes obvious that the provision or withholding of funds for research has a substantial impact on research agendas and therefore the highlighting of research priorities. MEDPOL phase I had the task to more or less establish an inventory of pollution problems in the Mediterranean Sea. However, the completion of this task was subjected to political considerations and these had to be accommodated with scientific concerns.

MEDPOL phase II was a long-term phase that ran from 1981 to 1995 and aimed to provide further information on possible reviews and implementation of existing protocols and on future ones as well as to provide regular assessments on sea water quality. There are 12 study areas with more than a hundred institutions involved.[9] MEDPOL phase III cannot be commented on yet as it was only adopted in 1996 and no comprehensive data have been evaluated to date.

This research agenda indicates that UNEP prioritises the improvement of the protocol on land-based sources and also the standardisation of research projects. However, this can only happen with the cooperation of the member states and better links between scientists and policy-makers. Very often the objectivity of scientists as policy advisers is doubted in science policy studies but this does not seem to be a major issue in MEDPOL. Science by MEDPOL delivers results which are not acted on regardless of the status of the findings.

It is relatively unimportant how well MEDPOL fulfils its aims and how politicised it is, since it does not make a strong impact on the policy level. Most of MAP's science-related policies are 'imported' from other agreements such as the lists of substances to be regulated by the Land-Based Sources (LBS) protocol but also the discourse relating to the amended Convention. Therefore it can be argued that an analysis that concentrates on the content of MEDPOL and neglects its actual role in policy-making cannot capture its role in achieving effectiveness. In order to improve the environmental effectiveness of MAP, MEDPOL needs to target its research towards improving environmental effectiveness *and* enhance its influence on the policy level. At the moment it is closer to performing the former role than the latter, despite the political influences in scientific agenda-setting.

The MAP scientific adviser believes that environmental consciousness can only develop with the establishment of a scientific base and this scientific base can only develop through a monitoring programme as a training stage. According to Mee, development of

scientific capacity can only be achieved through the building of monitoring bases (Jeftic, 1990: 69). This will be the beginning of environmental research and will lead to the training of scientists. Once this research capacity has been established, routine work will be done by junior members of staff and senior scientists can focus on more innovative research. Jeftic uses Mee for arguing that this is the only way research activity in scientifically developing states can take off the ground and UNEP follows this line by funding the establishment of monitoring stations in developing Mediterranean states. The stronger the scientific basis, the more likely it is to have an impact on policy-making, following the epistemic community approach. Unfortunately, practice does not seem to confirm this view.

Although research projects tended to be completed in phase II and a lot of monitoring technology was transferred to scientifically less developed states, this may have resulted in publications and technical reports but not in any action in policy terms and certainly not in prioritising environmental issues on the policy agenda or relating them to development issues. Originally, MEDPOL had several aims: first and foremost the production of scientific knowledge for other components of MAP but *inter alia* the putting on the agenda of the environmental issue and the establishment of a definite environmental policy. Since MEDPOL was not connected to the other components in a useful way, it is difficult to assess the validity and relevance of its findings and this would also be fruitless. The focus has to be on institutional failure. There is no way internal failings of MEDPOL can be assessed as it was never put to the test. On the other hand, it can be argued that the neglect of MEDPOL led to the institutional failure of MAP. Although the UNEP/MAP Coordinating Unit is very eager, it has failed to establish a well working institutional framework, presumably due to the lack of interest of its members. However, an analytical approach focusing on institutional effectiveness would not pick up this institutional failure as it would be outside its focus. This institutional failure has direct bearings on environmental performance since the institution is not equipped with the tools to deal with environmental degradation.

Time

The determinant of time is a more abstract concept than the preceding points. It is a relatively under-researched and therefore new area to study in the context of environmental regulation. Time is not just a measurement according to which we plan our schedules. It is such an exceedingly important issue because of the irreversibility of environmental degradation and also because it dominates every society and individual's life as all organisation is ultimately based on temporal issues. The prevailing concept of time is a linear one which means that the passing of time is seen as a movement into the future, a sequence of events that are all unique, a movement forward. However, there are other concepts of time which receive less attention. Time is also a cyclical event as in the passing of seasons and these cycles are not necessarily compatible with a linear social organisation. Time is also rhythmic and a distinction can be made between linear, mechanistic systems and cyclical,

organic systems. Mechanistic systems are human-made and draw on Newtonian concepts and assumptions of dividing an object into parts that can be studied individually and then be reconstituted as a whole. This means that individual parts of a system can be replaced easily. Mechanistic systems are best described by the phenomenon of the throw-away society which replaces individual parts but does not reuse them (i.e. creates waste). Organic systems, on the other hand, are based on the recycling of resources and emphasise re-use and renewal, thus creating a constant energy cycle. The phenomenon of the rain cloud dropping its water into the ocean only to have the water evaporate and then form new rain clouds is a good example of an organic process. Environmental processes are largely organic whilst social and economic processes are usually mechanistic. These two rhythms are often not compatible and the disturbance of organic rhythms by mechanical rhythms is what is generally described as environmental degradation or pollution (Adam, 1990).

For example, the pollution of the Mediterranean Sea interrupts the food chain because the fauna and flora living in the sea become unfit for consumption either by other animals or by humans. Ignorance or the lack of other food sources lead to the passing on of the pollutants which then cause disease or malformation in humans of the region or other areas to which seafood is exported. The pollution of the Mediterranean Sea also leads to the death or extinction of certain species with the result that food sources for other species vanish and the natural balance of the waters is overturned. Therefore, vast areas in certain parts of the Mediterranean are declared 'dead' (i.e. are lacking in sufficient oxygen to host life). The disappearance of the *posidonia* sea grass in the Eastern Mediterranean has fundamental consequences for all social and biological activity in the region. They are considered to be the 'lungs' of the Mediterranean Sea and are choked to death by heavy metal and insecticide run-offs, oil spills and fishing as well as tourism (Luke, 1991: 11).

There are two rhythmicity consequences relating to the degradation of the Mediterranean Sea. On the one hand, the poisoning of the food chain leads to a break-up of the food chain and to health consequences for the participants in the food chain. Therefore their use and transformation of energy is minimised. On the other hand, marine pollution leads to the creation of marine wastelands which cannot fulfil their rhythmic function any more (i.e. have reached the limits of the finite entropic ecosystem).

One of the major problems of the Mediterranean Action Plan is that the agreement and the policy makers behind it do not demonstrate any awareness of the irreversibility of environmental degradation. MAP is used as a forum in which a climate favourable for cooperation is created but the environmental aim of this cooperation becomes a side-issue, a next step. Thus MAP operates within time frames that do not account for the irreversible nature of environmental damage such as marine pollution, soil erosion or toxic discharges.

Likewise, environmental benefit is subordinated to social feasibility (i.e. environmental rhythms are dominated by social rhythms). An environmentally effective MAP is not politically feasible and therefore policy-makers concentrate on cooperation and compromise because they are feasible and realistic. So this social constraint dominates the relationship between environment and society in the Mediterranean region. However,

holistically it is rather the other way around as our social systems rely on environmental systems for survival. Therefore environmental systems are disturbed and this leads to environmental degradation.

The disturbed rhythmic interaction between organic and mechanistic systems needs to be stressed. This incompatibility has resulted in mechanistic systems wreaking havoc in the environment. The gap between environmental and economic rhythms seems to be unbridgeable at this moment in time. After all, our whole society is organised along mechanistic principles, making rhythmicity a problem of economic and social organisation. The link between time and effectiveness has not been made explicit by existing texts on effectiveness because it is outside the research focus of regime theoretical methodology. In institutional terms, concept of time and the incompatibility of social and environmental rhythms are not prominent because institutional effectiveness is only concerned with actor behaviour and closed-system analysis, which focus on bureaucratic feasibilities rather than rhythmic necessities.

Conclusion

This article has demonstrated that a distinction between institutional and environmental effectiveness is necessary in order to understand fully the concept of effectiveness. Furthermore, it has highlighted the constraints of regime-centric analysis of effectiveness by demonstrating the limited focus of this methodology.

The exact problems of MAP in terms of effectiveness can be summarised as follows. During the 1970s, in the early stages of MAP, immediate policy action focused on the most visible and aesthetically disturbing pollutant (i.e. oil). Little was known about the actual state of pollution in the Mediterranean and therefore the emphasis was placed on knowledge generation in MAP, both with MEDPOL and with policy planning.

The phenomenon of oil pollution was clearly visible even to the layperson. Tar balls were found on beaches and in the open sea and affected human and livestock health alike. Since the Mediterranean Sea is one of the busiest oil shipping areas in the world proportionally,[10] the origins of oil pollution were also assumed to be clear. This explains the focus on oil pollution in the first two protocols of the Barcelona Convention. However, the ignorance about the origins of pollution had to be researched and this process was initiated with the establishment of MEDPOL.

The structure of MAP tackles the issue of regional marine pollution on three levels: the generation of knowledge, legal commitment and socio-economic trend observation. It was planned that these different levels interact and complement each other, especially the research component feeding into the policy planning and legal components and policy planning feeding into the legal component. However, in practice this has not happened to the extent envisaged and necessary.

As discussed in relation to science and effectiveness, MEDPOL funding was not adequate and the linkage between research and research application was not well developed. The literature suggests several reasons for this shortage. Jeftic (1990: 68) argues that the development of a scientific basis in the region is a precondition for its research to have any impact on policy-making. MEDPOL did contribute substantially to the development of marine scientific capabilities in areas without prior experience but this does not seem to have led to major successes. Haas (1990: 101), on the other hand, sees the issue to be more closely connected to agenda-setting and funding, using the example of France blocking research funding for studies that might reveal the importance of other pollutants than those tabled by France during the negotiations of the protocol on land-based sources. Boxer (1983: 298) in contrast argues that marine pollution is just not a high priority issue and therefore there is no interest in generating data that will then have to be acted on with huge financial implications in order to keep the tourist, fisheries and related industries in business. All three viewpoints suggest that financial considerations play a large part in MEDPOL's achievements or lack of achievement.

However, presupposing that this problem could be fixed, this does not mean that MAP would suddenly become effective. In order to achieve this, the science base would have to be vetted to find out if it is targeted towards environmental effectiveness or towards institutional effectiveness. The same applies to the policy planning programmes. On the one hand, funding is a major problem, on the other, lack of funding seems to be related to low priority status and agenda-setting.

Since the MAP of the 1980s and 1990s is mainly funded by its member states, albeit indirectly, the lack of funding mirrors its perceived lack of importance. As only information gathered by MEDPOL and PAP can change that perception, there seems to be a vicious circle. Bringing in outside funding is an option to break this circle and this is what is happening with EC and World Bank initiatives. However, these are recent phenomena and there are other problems related to this.

The Mediterranean Action Plan operates on the basis of an enabling and awareness-raising agreement. It operates with basically no concept of temporal dimensions, neither on the institutional nor on the environmental level. Although the LBS protocol imposes time limits for the phasing out of the emission into the marine environment of a list of pollutants, this does not even come close to the achievement of feasibility-related effectiveness since, overall, the MAP policy-making community does not use time and deadlines as policy tools. Emphasis is laid on cooperation and the achievement of a consensus rather than a concrete deadline by which targets have to be achieved. On the one hand, this does not matter as the above discussion shows, since concrete time plans would still be based on administrative concerns and thus not address environmental necessities. On the other hand, the integration and institutionalisation of environmental policy-making by at least making it part of concrete administrative structures shows that a process of environmental awareness has taken place, although still at the infancy stage.

The case of the Mediterranean Action Plan shows that the traditional concern of study in relation to agreement effectiveness in IR (i.e. the institutional performance of a regime) is not far-reaching enough. It is not just the actions and the behaviour of international actors trying to cooperate on an issue that need to be studied but even more so how they will do it. Hence it is not sufficient to try and explain this behaviour if such research does not lead to analysis of how international problems can be dealt with more effectively. This is true of social problems but becomes paramount in relation to environmental problems.

Notes

1. MAP was created in 1975 at an inter-ministerial conference and its legal framework, which is the Barcelona Convention, was established in 1976 simultaneously with the first two protocols. The Barcelona Convention forms the legal part of MAP and is complemented by a research component (MEDPOL) and policy planning programmes (Blue Plan and Priority Actions Programme). The institutional arrangements are administered by UNEP which has established the MAP Secretariat in Athens.

2. Regime theorists such as Young refer to sources of effectiveness rather than conditions of effectiveness. Therefore they assume that effectiveness can be achieved for any agreement if the sources are 'tapped'.

3. Organohalogen or organosilicon compounds, mercury, cadmium, persistent plastic, hydrocarbons, radioactive materials and acid compounds.

4. Heavy metals, cyanides, pesticides and synthetic organic chemicals.

5. Non-members of the London Dumping Convention are Albania, Algeria, Cyprus, Egypt, Israel, Malta, Syria and Turkey. Marpol has not yet been signed by Albania, Algeria, Libya, Malta, Monaco, Morocco, Syria and Turkey.

6. I am indebted to the MAP legal adviser for this point who clarified this issue in a personal communication in Athens, 7th December 1995.

7. Substances in annex I (i.e. those to be eliminated) are selected on the basis of their toxicity, persistence and bioaccumulation. They include organohalogen compounds, organophosphorus compounds, organotin compounds, mercury compounds, cadmium compounds, used lubricating oils, persistent synthetic materials, radioactive substances and substances that have carcinogenic, teratogenic or mutagenic effects. Substances in annex II, which are to be strictly limited, include various heavy metals, biocides, organosilicon compounds, crude oils, cyanides, non-biodegradable detergents, pathogenic micro-organisms, thermal discharges and so forth.

8. These are: establishment of reception facilities for ship discharges; sewage plants for all cities (more than 100,000 inhabitants) and appropriate treatment plants for all towns with over 10,000 inhabitants; environmental impact assessment for all new activities; cooperation on environmental safety of maritime traffic; protection of endangered marine species; concrete measures on pollution reduction; identification and protection of at least

100 coastal historic sites of common interest; as well as 50 new marine and coastal sites of Mediterranean interest; effective measures on soil erosion, forest fires and desertification; and substantial reduction in air pollution.(*The Siren News* from UNEP's Regional Seas Programme, No. 30, Feb. 1986, p. 34).

9. The 12 areas are the development of sampling and reporting standards, the development of a scientific basis for emission standards, epidemiological studies, criteria for application of the LBS protocol, research on oceanographic processes, research on properties of the substances covered by the Land-based sources protocol, on eutrophication, on ecosystem change, on the effects of thermal discharges, biogeochemical cycles of specific pollutants and on pollutant transfer processes.(Jeftic & Saliba, 1987, p.204).

10. Twenty per cent of oil transit is through the Mediterranean Sea (UNEP, 1992, *The Mediterranean Action Plan - saving our common heritage*, Athens, p. 5).

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