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STRATEGIC ACTION PROGRAMME (SAP) TO ADDRESS POLLUTION FROM LAND-BASED ACTIVITIES

INTEGRATING THE STRATEGIC ACTION PROGRAMME (SAP) TO ADDRESS POLLUTION FROM LAND-BASED ACTIVITIES INTO THE SOCIO-ECONOMIC POLICIES AND PRACTICES OF SUSTAINABLE DEVELOPMENT IN THE MEDITERRANEAN REGION

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1. SUMMARY

Sustainable development entails the integration of environmental protection into the social and economic processes of development. This issue is of paramount importance to the Mediterranean Action Plan since they have introduced a regional programme for tackling and eliminating the range of Mediterranean pollution problems stemming from land-based sources by the year 2025; referred to as the Strategic Action Programme (SAP). If the Mediterranean countries fail to undertake the necessary measures to integrate the environmental protection measures called upon by the SAP into their social and economic development processes, then the efficiency and sustainability of the countries' development processes will be affected. In turn, this might jeopardize the successful and timely attainment of the SAP's environmental goals and targets. It is in this context that the MAP secretariat is seeking to:

1. Assess the strengths and limitations of the Strategic Action Programme as a contributor to sustainable development; and
2. Identify any key areas of crucial importance to the success of the SAP, for which further new initiatives may be desirable.

The findings and conclusions reached from this study can be summarized as follows:

- The Mediterranean region reveals a region with sharp economical contrasts between the developed north and the developing south. This is manifested in a number of areas including economic growth and trade liberalization, tourism, foreign direct investment, and public development aid.
- The Mediterranean region faces two major contradictions: one of a socio-economic nature and the other of an ecological character; both of which are linked to unprecedented demographic pressures; and influence to a great extent the state of urban and rural development, including urban sprawl, industry, tourism, trade, transport, and energy, in a fragile region composed of countries having extremely different situations on the social levels.
- The strategic Action Programme came as the Mediterranean countries' response to the state of degradation of the critical marine ecosystems.
- In order to test whether a policy, programme, or plan is or is not sustainable development, we use the Brundtland and Rio definitions from which we derive two basic tests; to satisfy intra-generational equity and to satisfy inter-generational equity.
- The key to testing for intra-generational equity is by assessing all significant impacts from a proposed policy, programme or plan to any affected group of people, and by implementing necessary mitigation measures to the satisfaction of all concerned.
- The key to testing for inter-generational equity is by applying the principle of conservation of capital. If the capital, natural or human-made, which future generations inherit, is equal to or greater than the current capital stock, then the development is sustainable or equitable inter-generationally.
- The Strategic Action Programme (SAP) is based on a time-limited weak sustainability condition, which regards the natural environmental capital as potentially replaceable with human-made capital stock, but for a limited time only (until 2025). During this time, it is required that the natural capital be valued in relation to the economic or social capital that it replaces in order to ensure that when it is converted into some other form, there is no loss of capital passed on to future generations.

- Based on our sustainability assessment, it is concluded that neither inter-generational equity, nor intra-generational equity is satisfied by the current provisions of the Strategic Action Programme.
- On the intra-generational level, it is recommended to:
 - Devise a process to obtain consent and approval of transboundary stakeholders for actions taken within the framework of the National Action Plans (NAP) concerning adverse effects of hot spots on transboundary marine pollution .
- On the inter-generational level, it is recommended to:
 - Conduct regular risk assessments of serious or irreversible damage on the critical marine ecosystems factors for the Mediterranean Sea on a regular basis.
 - Investigate the appropriate conditions when a shift into a differentiated approach may become feasible for all Mediterranean countries.
 - Carry out socio-economic appraisals of coastal development programmes targeted by the national action plans to demonstrate that the total capital (man-made and natural) is conserved:
 - to the satisfaction of present generations; and
 - for the benefit of future generations
 - Integrate the NAP actions into the countries' social and economic development programmes based on a differentiated time frame that takes into account:
 - the risks on marine ecosystems; and
 - the state of socio-economic development for the country in question
 - Update the national action plans and their timetables, on a regular basis, with the participation of local and transboundary stakeholders, based on:
 - the most recent results of risk assessments; and
 - the most recent results of the socio-economic appraisals

2. INTRODUCTION

2.1 Background

With the increased awareness of the economic, social, health, and cultural values of the marine environment of the Mediterranean Sea area, the riparian states of the Mediterranean Sea agreed in 1975 to launch an Action Plan for the Protection and Development of the Mediterranean Basin. This plan was referred to as the “Mediterranean Action Plan” (MAP). It was culminated in 1976 by the signing of the Convention for the Protection of the Mediterranean Sea against Pollution, also known as the Barcelona Convention.

In 1992, the “United Nations Conference on Environment and Development” (UNCED), held in Rio, laid down the principles and plan of actions for sustainable development. This event provided MAP with an opportunity to incorporate the concept of sustainability and preservation of Mediterranean coastal areas for the benefit of present and future generations into the objectives of the MAP. Accordingly, the Mediterranean countries, also known as the contracting parties, agreed in 1995 to revise the Barcelona Convention in order to extend its scope of action to the coastal zones, and to introduce the concept of sustainable development in their plans and programmes. Hence, the Phase II of MAP was adopted. In 1996, the Barcelona Convention was revised, and the Protocol for the Protection of the Mediterranean Sea against Pollution from Land-Based Sources and Activities; referred to as the “LBS Protocol” was signed. The contracting parties agreed in Article 5 of the Protocol to elaborate and implement regional and national plans of action and programmes for the protection of the Mediterranean Sea containing measures and timetables for their implementation; hence, the inception of the “Strategic Action Programme” or the “SAP” (MAP, 1998).

The year 1996 also witnessed the setting-up by the contracting parties of the Mediterranean Commission for Sustainable Development (MCSD) as the interface Mediterranean counterpart for the United Nation’s Commission for Sustainable Development (CSD). As part of its terms of reference, the MCSD conducted a “Strategic Review for Sustainable Development in the Mediterranean Region” (MCSD, 2001a). In its conclusions, the “Strategic Review” predicted a population growth from 410 million in 1994 to 550 million in 2025; intensification of agriculture with the consequent depletion of water resources and soil erosion; energy consuming industrialization, which employs polluting technologies and competes for space with urban development and major transport infrastructures; rapidly developing tourism which brings in revenue by exploiting the attractions of the natural and historical heritage; and fast international changes manifested in multilateral trade liberalization and Euro-Mediterranean partnership agreements. All of these aspects are expected to influence the marine environment with detrimental effects on the sustainable development of the Mediterranean region.

2.2 Objective of Study

Sustainable development entails the integration of environmental protection into the social and economic processes of development. This is, particularly relevant to the environmental protection programmes reached within the framework of Mediterranean Action Plan. It is in this context that the MAP secretariat is seeking to:

3. Assess the strengths and limitations of the Strategic Action Programme as a contributor to sustainable development; and
4. Identify any key areas of crucial importance to the success of the SAP, for which further new initiatives may be desirable.

The output of this study is expected to assist the MAP secretariat in:

1. Verifying the effectiveness of the proposed environmental priority actions and targets of the SAP in achieving sustainable development; and
2. Planning for future roles that may be considered by MEDPOL for promoting sustainable development in the region in line with the plan of implementation adopted by the "World Summit on Sustainable Development" (WCSD, 2002).

The rationale behind MAP's interest in the SAP's contribution to sustainable development stems from the fact that if the Mediterranean countries fail to undertake the necessary measures to integrate the environmental protection measures called upon by the SAP, then the efficiency and sustainability of the countries' social and economic development processes will be impacted. In turn, this might jeopardize the successful and timely attainment of the SAP's environmental goals and targets.

2.3 Scope of Study

In order to assess the strengths and limitations of the SAP as a contributor to sustainable development; and to identify any other key areas for which further initiatives may be desirable, it is necessary to first describe the current situation in the social and economic spheres of development, and the associated environmental impacts, which the SAP is expected to address. This is presented in Section Three of the report. In Section Four, we discuss the Mediterranean countries' response to the pressures exercised on the environment, and we summarize the scope and structure of the Strategic Action Programme. In Section Five, we examine the fundamental principles and approach to testing for sustainable development. We also explain the relationship between the three pillars of sustainable development: economic growth, social equity, and environmental protection. This brings us into Section Six, in which we assess the SAP in terms of its contributions to sustainable development, and we identify new initiatives that MAP may consider for addressing specific limitations in the SAP which may further promote sustainable development in the Mediterranean region.

3. MACRO-ECONOMIC AND SOCIAL ASPECTS OF DEVELOPMENT IN THE MEDITERRANEAN REGION

3.1 General

In order to assess the strengths and limitations of the SAP as a contributor to sustainable development, and to identify any other key areas for which further initiatives may be desirable, it is necessary to first describe the current situation in the economic and social spheres of development, and explore their environmental impacts, which the SAP is attempting to address. In this section, we first describe the macro-economic aspects followed by the social aspects of development in the Mediterranean region.

3.2 Macro-Economic Aspects

The Mediterranean region reveals a region with sharp economical contrasts between the developed north and the developing south. This is manifested in a number of areas including economic growth and trade liberalization, tourism, foreign direct investment, and public development aid, as discussed below:

- *Economic Growth and Trade liberalization:* Most southern Mediterranean countries face the realities of weak growth in favor of the northern European countries (Blue Plan/UNEP, 2001). Within the context of trade liberalization linked to WTO agreements, and bilateral trade agreements, trade balances deteriorated in most southern Mediterranean countries in favor of the northern European countries, which recorded a trade surplus with partner countries. In this current context, most Mediterranean countries have a long way to go prior to realizing a liberalization scenario, whereby foreign trade and investment substitute for public development aid and protectionist trade policies (ESCWA, 2001).
- *Tourism:* All Mediterranean countries have seen substantial growth in the tourism sector, as the world's primary tourist destination with over 150 million international and domestic visitors per year. This number is expected to double by 2025 (UNEP/MAP, 1999). Most tourists originate from northern Europe, and about one half seek destinations on the southern shores of the Mediterranean. Tourism is seen as vital to most countries in the region as a source of hard currency and an essential development tool for the southern-rim countries. In fact, in an effort to balance foreign trade deficits, southern Mediterranean countries are promoting tourism to levels far exceeding the carrying capacity of the supporting environments; a matter that entails the risk of overload-based depreciation of the tourist capital in the future.
- *Direct Foreign Investment* in most Mediterranean countries has remained at very low levels in comparison with global levels. In 1997, four Mediterranean members of the EU and Israel received in excess of 35 billion US dollars in direct foreign investment, in comparison with 3.6 billion for the other countries combined (MCSD, 2001a).
- *Public Development Aid* shrank considerably in a number of Mediterranean countries, thus following the global trend, falling in the late 1990's to below 1% of the beneficiary country's GDP (MCSD, 2001a).

3.3 Social Aspects

The Mediterranean region faces two major contradictions: one of a socio-economic nature and the other of an ecological character; both of which are linked to unprecedented demographic pressures, and influence to a great extent the state of urban and rural development in a fragile region composed of countries having extremely different situations on the social levels. In this section, we describe the social aspects of development and their environmental impacts on urban and rural area, industry, tourism, trade, transport, and energy sectors, described below:

3.3.1 Urban Development

Within the space of half a century, the population of the Mediterranean countries more than doubled from 210 to 430 million inhabitants. It is forecast to reach 550 million inhabitants by 2025. This is accompanied by a rise in the level of urbanization, mainly in the southern and eastern rim countries, which is expected to increase from 274 million in 2000 to 379 million in 2025 (Blue Plan, 2001a).

Although urban outspread is progressing legally in northern cities, spontaneous peripheral districts are becoming densified and verticalized in southern rim countries. These are deficient in terms of public services, water supply and drainage networks (Chaline, 2001). The direct impact of these districts is the reduction in agricultural space, with the irreversible consumption of good agricultural land. The extension of built-up areas is also leading to new mobility concerns with private vehicles which are contributing to the pollution of the air and the atmosphere, in addition to time budget losses related to traveling, which can amount to between 10% and 30% (Chaline, 2001).

The rise in the levels of urbanization will put great pressures on the scarce resources and ever-less productive ecosystems of the southern rim countries as the proportion of young population will far exceed its counterpart in the ageing north. Impacts will include greater demands for food, industrial goods, energy, housing, water supply, wastewater treatment, and solid waste disposal. This, in turn, is reflecting on the social situation in these countries as a result of the breakdown in traditional social systems within towns, and the deterioration of rural areas, which are causing people to concentrate in the outskirts of major urban centers. Under this burden, urban centers are losing their identity and the ability to play their essential role of integrating and helping in the socialization of new arrivals. Governments are failing to produce a significant inventory of social housing. Public authorities are incapable of controlling land usage (Chaline, 2001). This is creating the conditions for the emergence of acute conflict situations, which influence the stability of the entire southern political system.

3.3.2 Rural Development and Agriculture

The rural Mediterranean is characterized by its complexity, but also by its contrast between the coastal plains which do not exceed 5% of the total territory, and the hilly and mountainous ranges. Northern rural areas are characterized by their diversified economies in areas such as tourism, industries, trade services, new technologies which are often accompanied by social benefits. This enables the rural areas to rid itself from the sole dependence on agriculture. In contrast, in the south, agriculture is the dominant activity. It represents more than 15% of the GDP in many countries. It is considered of major economic importance, and the most important source of employment. Agricultural activities impact rural economies directly except where coastal tourism is present (Blue Plan, 2001b).

The developed northern countries of Europe have modernized their agricultural practices through structural policies that promote intensive agriculture. In contrast, the developing south, which is facing population pressure, is experiencing an intensification of irrigated agriculture in an arid context less favorable to the north.

Problems of environmental nature facing rural areas in the north and south include desertification, loss of biodiversity, soil erosion, and deforestation. Another problem is the soil and water pollution from the utilization of fertilizers and pesticides and the over-exploitation of water resources by uncontrolled mechanization. Agriculture is responsible for the use of over 80% of water resources in the south and east and 60% in the north. This is resulting in the depletion of fossilized groundwater and the salination of groundwater aquifers (Blue Plan, 2001b).

Problems of socio-economic nature include rural migration to urban centers, mainly in the developing south, due to low agricultural labor productivity, and the presence of high income urban employment. This leads to poor urban development, loss of good agricultural lands

and visual impacts on landscape. Rural migration also results in the collapse of the social system in heavily burdened urban centers. This problem is very obvious in southern and eastern Mediterranean countries where irrigation/agricultural infrastructure are lacking.

3.3.3 Industrial Development

The industrial system of the Mediterranean Basin consists of plants located in different countries for different historical, political, economical, and environmental reasons, often dependant on raw materials and human resource availability (UNIDO, 1998).

The developed north is undergoing a decline in heavy industries to the benefit of the developing south. While the north is encouraging the development of a new generation of industries in bio-technologies, electronics, or new materials, with lesser impact on the environment, the south is undergoing a rapid industrial development, particularly in relation to infrastructure development (e.g. cement plants). This move will affect the levels of atmospheric and marine water pollution and will accelerate the exploitation of natural resources and the destruction of the local ecosystems. Presently, industries based in the north operate under strict environmental command and control legislation; a clear economical disadvantage to industries located to the south, where environmental legislative requirements are often relaxed in favor of achieving rapid industrial development. Consequently, cleaner production technologies, which are common in the industrialized, north are visibly absent from the developing south where outdated technologies, and old machinery and equipment are frequently found (UNIDO, 1998).

Rapid industrialization is also impacting labor distribution, with related social consequences in countries where enforcement of social welfare is quite poor. Industrial growth will also have a direct impact on future energy consumption in the region. It is forecast that electricity consumption will double from present levels in the northern countries, while increasing four-fold in the developing south.

3.3.4 Tourism

The Mediterranean region attracts one third of the worlds' tourists. Currently, 80% of international regional tourists are monopolized by the traditional tourist countries in northern Europe. However, as tourists become more aware of the value of ecological and cultural tourism, more will be expected to seek destinations to the south, where wilder hinterlands and virgin coastlines, intertwined with cultural heritage sites of historical significance can be found (UNEP/MAP, 1998).

Although tourism depends on the quality of environment and countryside, it is all too often a factor in their deterioration, especially on coastlines. Furthermore, with the high number of tourists visiting the Mediterranean coast, tourism causes heavy consumption of natural resources (especially water, soil, and energy) and produces large amounts of wastes. This fact is of detrimental effect on the Mediterranean countries considering that tourism is concentrated mostly over a short period (July and August), which burdens the infrastructure; leads to large amount of amenities; and an increase in the problems of water management in the most critical period of the year. Tourism also has considerable negative impacts on the cultural heritage and social relationships resulting in the reluctance in many areas to accept tourism, which results in tourists' dissatisfaction and a reduction in the productivity of the tourism industry.

3.3.5 Trade

Liberalization of trade regimes is an important issue in the Mediterranean region being promoted by the European-Mediterranean Free Trade Zone association agreements and the Arab League's concept of an "Arab Free Trade Area". Historically, however, intra-Arab trade has been at relatively low levels, averaging 7 to 10% of total Arab foreign trade (UNDP, 2002). Promotion of free trade has potential social and economic impacts for the region.

Where imports rise, adverse short and medium term social effects are likely as a result of decreased productive capacity and reduced employment. In sectors where exports rise, negative effects on human health and environment are possible including increased production which will outpace regulatory reforms, and the capacity for monitoring and enforcement. This in turn will be perceived as hampering economic growth as thus acting against national interest (DFID, 2003).

The reduction of trade barriers is expected to put a variety of pressures on different aspects of agriculture. Where crops are produced for export, local price rises may be experienced. The economic incentives to increase production may increase the use of fertilizers, pesticides, and water, with adverse environmental effects. As a result, marginal lands requiring excessive irrigation or fertilizer application could be taken out of production; a positive environmental impact, whilst a negative impact could result if farmers increase fertilizer inputs to try to maintain output (DFID, 2003).

In manufacturing, production may also increase for some sectors where export markets exist and the countries have a clear competitive advantage (e.g. low labor costs, etc.). This will put the regional environmental resources (water, energy, etc.) under severe pressures, with significant implications for sustainable development (MCSD, 2001b).

3.3.6 Transport

This includes land, sea, and air modes of transport of passengers and merchandise. In comparison with the north European countries, all modes of transport and their networks in the southern and eastern Mediterranean countries are relatively weak or under-developed, particularly the public transport system. This is due in part to the low GDP, in conjunction with relatively weak tourism and trade sectors. Most eastern and southern rim countries have low vehicle fleet. However, the number of vehicles in the region is expected to rise from the current 60 million vehicles, largely concentrated in the north, to 175 million by 2025 (Blue Plan, 1996). This increase will have significant impacts on air pollution, noise and use of natural energy resources. In that respect, it should be noted that land transport remains the dominant mode of transport in the entire region, particularly in the private sector.

3.3.7 Energy

Most Mediterranean countries are presently dependent for their energy needs on Petroleum products, with diminishing dependence on coal and nuclear energy sources due to environmental concerns. Natural gas is becoming the main source of energy due to its abundance in the southern and eastern rim countries (with the exception of a large gas field in Italy). Renewable energy has very little marginal presence. Energy is mainly consumed in urban areas, and in the industrial, trade, and transport sectors. Energy consumption is generally tied with the structure of national economy and living style. Energy consumption increased from 100 million tons equivalent of oil in 1950 to 690 million tons equivalent in 1990 (Blue Plan, 1993). Consumption of northern countries constituted 90% of the total in the sixties. Today, it is less than 80%, and closing the gap gradually.

The environmental impacts of energy installations include gaseous and particulate emissions to the atmosphere, greenhouse gases (particularly carbon dioxide), with their global warming effect, and/or ozone depleting chemicals (CFCs) from industrial facilities. Global warming will impact the Mediterranean basin; in particular the marine environment, rainfall patterns, soil erosion and all supporting activities such as agriculture, fishing, and tourism.

3.4 Cross-sectoral Aspects

Based on the foregoing, it is quite evident that the Mediterranean basin is facing heavy pressures as a result of land-based human activities, most of which are concentrated in the coastal areas. These activities combine and interact amongst each other, as shown in Table 3.1, while impacting peoples' lives and polluting the receiving marine environment.

Table 3.1: The interaction between the various land-based human activities

Sector or Activity	Urbanization	Agriculture	Industry	Tourism	Trade	Transport	Energy
• Urbanization		x	x	x	x	x	x
• Agriculture	x		x	x	x	x	x
• Industry	x	x		x	x	x	x
• Tourism	x	x	x		x	x	x
• Trade	x	x	x	x		x	x
• Transport	x	x	x	x	x		x
• Energy	x	x	x	x	x	x	

As can be seen, one cannot isolate the impacts of one sector from another when it comes to identifying the cumulative and cross-sectoral impacts on the marine environment. Urban centres, for example, interfere with agricultural activities; affect industrial production; are impacted by tourism and trade; depend on transport modes for moving their goods and people; and are major energy consumers. Similar analysis can be made for the other remaining activities; and all have some sort of impact or another on the receiving environment. To complicate matters further, other factors that influence the cross-sectoral impacts come also into play. These include differences in institutional, regulatory, political, historical, and cultural situations between mainly the developed north and the developing south. The culmination of these factors and their impacts tend to explain the current state of affairs, and exposes the scale of risks facing the Mediterranean region in its pursuit for sustainable development.

4. THE ENVIRONMENTAL DIMENSION AND THE MEDITERRANEAN COUNTRIES' RESPONSE

4.1 General

In the previous section, we presented a brief overview of the economic and social spheres of development in the Mediterranean region, and the resulting social and environmental impacts. It is in response to these same developmental impacts that, in 1975, the riparian States of the Mediterranean Sea agreed to launch an Action Plan for the Protection and Development of the Mediterranean Basin (MAP). The historical background was presented in Section Two. In brief, approximately 23 years after the inception of the MAP; the signing of the Barcelona Convention; the adoption of MAP Phase II; the revision of the Barcelona Convention and its protocols, including the signing of the LBS Protocol; and the setting-up of the Mediterranean Commission for Sustainable Development (MCSD) that an environmental action plan was adopted by the Contracting Parties to the Barcelona Convention in Tunis in November 1997. It is referred to as the Strategic Action Programme (SAP). In this section, we present details of the SAP; its scope; principles; and underlying targets, activities, and priority actions. The aim is to introduce the various aspects of the SAP needed to assess its contribution to sustainable development.

4.2 The Strategic Action Programme

The Strategic Action Programme was adopted by the contracting parties in response to the danger posed to the marine environment living resources and human health by pollution from land-based sources and activities.

The SAP is based on the preliminary findings of a once-prepared, transboundary diagnostic analysis (TDA) that represents a regional synthesis of actions regarding the protection of the marine environment from land-based activities. Seven major environmental problems were identified from a review of the results of the work of the MAP over the last 24 years, and from work of related programs and reviews undertaken in the context of this activity (MAP, 1998). These problems are:

- Degradation of coastal and marine ecosystems
- Unsustainable exploitation of coastal and marine resources
- Loss of habitats supporting living resources
- Decline in biodiversity, loss of endangered species and introduction of non-indigenous species
- Inadequate protection of coastal zone and marine environment and increased hazards and risks
- Worsened human related conditions
- Inadequate implementation of existing regional and national legislation

Five main root causes were identified as resulting in the identified problems. These are:

- *Legal*: Inadequate legal and institutional framework
- *Management*: Inadequate planning and management at all levels
- *Human*: Insufficient human and institutional capacity
- *Stakeholders*: Insufficient involvement of stakeholders
- *Financial*: Inadequate financial mechanisms and support

4.2.1 Scope of the SAP

The Strategic Action Programme is an initiative derived from the terms of the LBS Protocol with a timetabled approach to tackling and eliminating the range of Mediterranean pollution problems stemming from land-based sources. It works towards the phasing out of inputs of substances into the Mediterranean Sea which are toxic, persistent and liable to bio-accumulate. It also targets the region's 109 identified pollution hot spots and 51 sensitive areas.

The Strategic Action Programme is consistent with the the Global Programme of Action (Washington, 1995) which focuses on substances known to be toxic; persistent organic pollutants; substances that bioaccumulate; wastewater treatment and management.

By adopting the SAP, the MAP countries have made a commitment to safely dispose of sewage from urban centres; to reduce pollution from industries via cleaner production; and to promote sustainable agriculture, as well as target air pollutants.

SAP is set out to have National Action Plans up and running by 2005 to help countries fulfill their pollution clean-up objectives. And although it has set common objectives for all countries, however, SAP allows for a differentiated approach in the timing of targets for its plan of activities based on the individual country's economic capacity to adapt and reconvert existing installations and need for development.

The SAP's pollution clean-up objectives tackle inadequate national legislation and institutional and enforcement structures at national and local levels, by focusing on sustainable and integrated environmental management capacity building.

The Contracting Parties agreed that every two years, the Strategic Action Programme may be reviewed for a possible revision of target dates and activities, if necessary. This will be based on a systematic reporting system whereby, every two years, reports are submitted to the meeting of the Contracting Parties of measures taken and results achieved on levels and trends of loads, state of treatment and disposal of wastes, and state of the Mediterranean environment.

4.2.2 SAP Principles

As stated earlier, the SAP requires that the Contracting Parties protect the environment and contribute to the sustainable development of the Mediterranean Sea area by:

- a) Applying the precautionary principle
- b) Applying the polluter pays principle
- c) Undertaking environmental impact assessments for proposed activities which are likely to have an adverse impact on the environment
- d) According priority to integrated pollution control
- e) Committing themselves to promote the integrated management of the coastal zones
- f) Implementing the convention and the LBS Protocol, whereby they shall:
 - Elaborate and implement, individually or jointly, national and regional action plans and programmes
 - Adopt priorities and timetables according to Annex 1 of the Protocol
 - Consider the Best Available Techniques (BAT) and the Best Environmental Practices (BEP), including clean production technologies
 - Undertake relevant preventive measures to reduce the risk of accidental pollution

- g) Ensuring that the public is given appropriate access to information on the environmental state and on activities or measures adversely affecting or likely to affect the environment.
- h) Ensuring routine and standardized reporting of toxic emissions to air, water, and land by polluting facilities.

4.2.3 Targets, Activities and Priority Actions

The SAP includes targets and activities for selected areas and categories of pollutants, and provides details of accompanying activities and provision of assistance. Priority actions were selected by taking into account the following factors:

- Significance of degradation of the marine environment
- Significance of perturbation of the biological diversity
- The land-based origin of causes
- The transboundary nature of causes and impacts

Actions and targets in the SAP are prioritized in accordance with the Global Programme of Action (Washington, 1995). These are grouped in three main areas, and subdivided into a number of categories within each area:

- a) Urban environment, including:
 - i- Municipal sewage
 - ii- Urban solid waste
 - iii- Air pollution
- b) Industrial Development
 - i- Toxic, persistent organic pollutants and heavy metals
 - ii- Other heavy metals
 - iii- Organo-halogen compounds
 - iv- Radioactive substances
 - v- Nutrients and suspended solids
 - vi- Hazardous wastes
- c) Physical alterations and destruction of habitats, with activities targeted on the national and regional levels.

The accompanying activities directly addressing pollution include:

- i- Monitoring and evaluation in relation to the implementation of the SAP
- ii- Capacity building including provision of external support according to available sources, promotion and facilitation of programmes of assistance nationally and regionally
- iii- Public participation
- iv- Reporting, feedback information and readjustments
- v- Preparation of national action plans

5. FUNDAMENTAL PRINCIPLES AND APPROACH TO TESTING FOR SUSTAINABLE DEVELOPMENT

5.1 General

In order to assess the strengths and limitations of the Strategic Action Programme as a contributor to sustainable development; we adopt an approach for sustainability assessment based on a set of criteria derived specifically from the applicable Rio Declaration Principles. These principles were adopted in the Rio Conference for Environment and Development in 1992, and are listed in Annex A. In this section, we explain first the fundamental principles of sustainable development. We then discuss the methodology which will form the basis for developing the assessment criteria.

5.2 Fundamental Principles of Sustainable Development

In order to test whether a policy, programme, or plan is or is not sustainable development, it is important that the concept be defined with some precision. In that respect, it should be stated that great efforts have been made to formulate a precise, operational definition for sustainable development; although, a consensus on a single definition has never been reached. To this date, "sustainable development" is an expression open to widely differing interpretations, which is greatly influenced by political forces and international struggles (Palmer et al., 1997).

The phrase "sustainable development" first came to notice in 1980 by the World Conservation Strategy "Living Resource Conservation for Sustainable Development", (IUCN/UNEP/WWF, 1980). In 1987, it gained wide recognition following the report of the World Commission on Environment and Development (WCED, 1987) "Our Common Future"; chaired by Gro Harlem Brundtland. According to the Brundtland report, sustainable development is *meeting the needs of the present without compromising the ability of future generations to meet their own needs*. This definition encapsulates the principle of "inter-generational equity" which may be regarded as one of the fundamental pillars of the sustainable development concept, and the principle "intra-generational equity", or equity within development itself. Both principles were reiterated in Principle 3 of the 1992 Rio Declaration on Environment and Development (UNCED, 1992a) *to equitably meet developmental needs of present and future generations*. Between the Brundtland report and the Rio Declaration, the twin principles of inter-generational and intra-generational equity offer an operational definition of sustainable development whereby intra-generational equity is a necessary condition for development, and inter-generational equity is a necessary condition of sustainability (George 2001).

The principles of intra-generational and inter-generational equity were also captured by the 1992 alternative definition of sustainable development introduced by the joint publication of the World Conservation Union, the United Nations Environment Programme, and the World Wide Fund for Nature in their report "Caring for the Earth" (IUCN/UNEP/WWF, 1991). Sustainable development is *improving the quality of human life while living within the carrying capacity of supporting ecosystems*. In this definition, sustainable development is both "people-centered" in that its aim is to improve the quality of human life and "conservation-based" in that it is conditioned by the need to respect nature's capacity to provide resources and life-supporting services. However, the Brundtland report's principle of inter-generational equity itself embraces environmental conservation, even more strongly than carrying capacity. Inter-generational equity infers that whatever the carrying capacities of ecosystems might be, "they should not be exceeded". This point is of critical importance since carrying capacity is often even more difficult to measure than equity; "we usually only discover its limits after we have exceeded them" (Harrison 1992). In the two hundred years since Thomas Malthus introduced the concept, the capacity of ecosystems to support human life has changed dramatically, as a result of changing technology. Carrying capacity continues to change just as rapidly, with the advent and take-up of some technologies that increase it

and others that decrease it. It is a moving target, which can be useful for planning development activities, particularly when they involve choices between relevant technologies. Of course, where it is measurable, it can also be useful as a way of interpreting the principle of inter-generational equity. However, its variability makes it rather less useful as a general test for sustainable development in comparison with inter-generational equity (George 1999).

In conclusion, sustainable development entails (a) letting people themselves decide what is important for their quality of life and what constitutes an improvement in it, hence, intra-generational equity, and (b) conservation of capital needed to support life for future generations, thus, inter-generational equity. These twin principles implicitly encapsulate the environmental and quality of life factors in them. Accordingly, they are regarded as necessary and sufficient conditions for sustainable development (George 1999). And although several other principles have a role to play in their interpretation, criteria for sustainable development can be based solely on them, as explained in the following subsection.

5.3 Approaches to Testing for Sustainable Development

Using the Brundtland and Rio definitions of sustainable development, only two tests are needed for whether or not a proposed policy, programme or plan is sustainable development; is it equitable for present generation, and is it equitable for future generations? These, however, are very general questions, and need a certain amount of expansion in order to clarify what is or is not equitable.

5.3.1 Intra-generational Equity

The key to testing for intra-generational equity is by assessing all significant impacts from a proposed policy, programme or plan to any affected group of people, and by implementing necessary mitigation measures to the satisfaction of all concerned. As part of this process, it is expected that results of such an assessment are subjected to the views of the local public, who in turn would make its own decision on what is or is not equitable in accordance with Rio Principle 10; *States shall facilitate and encourage public awareness and participation by making information widely available*. On the regional and global levels, intra-generational equity requires, in accordance with Rio Principle 2 that states should *have the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction*. Principle 19 goes further to address localized transboundary impacts, whereby States are expected to provide *prior and timely notification and relevant information to potentially affected States on activities that may have a significant adverse transboundary environmental effect...* Intra-generational equity requires that such impacts be fully assessed, with the participation of the public (or their representatives) in the affected country.

5.3.2 Inter-generational Equity

As explained previously, the principle of inter-generational equity is best restated as the principle of conservation of capital. If the capital, natural or human-made, which future generations inherit, is equal to or greater than the current capital stock, then the development is sustainable or equitable inter-generationally. The distinction between the conservation of natural and human capitals leads us into two contrasting positions upheld by two groups of advocates of sustainable development. The first is the “weak sustainability” position, which regards the natural environmental capital as potentially replaceable with human-made capital stock. According to this view, new technological products can in some cases replace natural environmental goods, so that the overall level of capital in the system is retained at a constant or growing level. At the other extreme, the “strong sustainability” position holds that human-made capital stocks and natural environment capital stocks are not interchangeable. This position advocates global inter-generational equity and sees severe limits to the

anticipated “technical fixes” or to the capacity of mankind to find new solutions to emerging problems.

Hence, in order to test for inter-generational equity, two fundamental questions must be answered (George 1999):

1. Should we conserve the natural environmental capital (strong sustainability), or can we convert it into some other form of capital (weak sustainability)?
2. In case the weak sustainability condition is applicable, how can we value the natural capital in order to ensure that the human capital that will replace it is of equal or greater value?

Strong Sustainability Condition: In order to answer the first question, we invoke Rio Principle 15, the precautionary principle, which states that *where there are threats of serious or irreversible damage; lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation*. Hence, to satisfy the precautionary principle, it is necessary to identify any potentially critical ecosystem factors that may be affected, and to assess the risk of serious or irreversible damage arising from any impact on them. Where a high degree of uncertainty remains, the precautionary principle requires that strong sustainability be given preference. This in turn requires that impacts be fully mitigated whereby the residual adverse unmitigated impact is reduced to zero. This is implied by Principle 15, which states that *degradation should be prevented*. In other words, the strong sustainability condition, which implies that *loss of natural capital is not permissible*, can be interpreted, as *development programmes impacting the Mediterranean marine environment should be halted*. But, by halting the opportunities for development for *all* Mediterranean countries, we violate the principle of intra-generational equity, as can be inferred from Rio Principle 7; *developed countries acknowledge the responsibility that they bear in the international pursuit of sustainable development in view of the pressures their societies place on the global environment...* This principle refers to the fact that the Mediterranean marine environment requiring preservation is shared between different countries; some have developed further than others, and have depleted this natural resource to differing extents throughout the course of their development. Intra-generational equity, in accordance with Rio Principle 7, can be satisfied in various ways. The simplest is to assume that countries, which had benefited from the marine resources should go no further in their depletion of the remaining natural environmental capital, while developing countries deplete it to the level reached by the developed countries. Alternatively, developed countries should rehabilitate the marine environment in lieu of that being depleted, and even attempt to regenerate the natural capital which had been consumed (if possible). Another option would be to offer countries which did not benefit in the past sufficient incentives to dissuade them from further development which harms the marine environment. The terms of any of these transactions are based on the polluter pays principle (Rio Principle 16) which states that *the polluter should bear the cost of pollution with due regard to public interest*. Typically, the value of the environmental good is whatever the polluted is willing to accept in return for the loss of the natural capital incurred by the polluter; with the polluter and polluted represented by the developed and developing Mediterranean countries, respectively.

But, regardless of the option applied for satisfying Rio Principle 7, it is quite evident that development programmes and plans carried out by the various Mediterranean countries are not sustainable indefinitely, when considered with due regard to the state of the marine environment in the Mediterranean Sea. In fact, if development plans are not halted now, they will have to be halted at some point in the future, which hopefully will occur before the marine environment has been depleted completely, or is on the brink of a total collapse. Then, the question is *if the current development programmes are not halted immediately, and if major ecological damage to the marine environment is to be avoided, then when should these development activities be halted, and what will be permissible in the meantime?* This brings us again to the concept of carrying capacity introduced by the IUCN/UNEP/WWF (1991) definition of sustainable development. This concept offers the possibility of

postponing action to halt environmental degradation until the carrying capacity of the marine environment is in immediate danger of being exceeded. And, although the strong sustainability condition should ideally be applied by all countries, inter-generational equity can still be achieved by applying the weak sustainability condition instead, *for a limited time only*. Intra-generational equity then dictates that developing countries, which have not utilized their fair proportion of the marine environment and/or put it to human use, should be allowed to develop similarly to those countries which have benefited in the past, but based on a time-limited reduction regulated by the carrying capacity of the Mediterranean Sea.

Time-Limited Weak Sustainability Condition: To satisfy inter-generational equity under the time-limited weak sustainability condition, it is required that the natural capital be valued in relation to the economic or social capital that it replaces in accordance with Rio Principle 16 *national authorities should endeavor to promote the internalization of environmental costs...* The purpose of placing a value on the natural capital is to ensure that when it is converted into some other form, there is no loss of capital passed on to future generations. In this case, we may presume that Mediterranean societies have granted their countries time-limited development rights in the social and economic development spheres on the expense of their own Mediterranean marine environment. Therefore, it is them who have the final say in what its value is, to them (intra-generational equity), and what its value will be to their own descendants (inter-generational equity). Environmental economics offers numerous techniques for placing an economic value on environmental effects for macro-economic decision making (Winpenny, 1991). These can be based on generalized market transactions that may be real (e.g. health costs of pollution) or imaginary (e.g. market research into what people might be willing to pay for an environmental benefit or accept for its loss, if the benefit were actually traded). Sustainable development infers that when the benefit derived from the natural capital accrues to the public as a whole, present and future generations must draw at least as much benefit from the replacement capital as they would have from the original natural capital. One way to achieve this objective is by integrating environmental protection measures into the socio-economic aspects of development in accordance with Rio Principle 4 which states that *in order to achieve sustainable development, environmental protection shall constitute an integral part of the development process and cannot be considered in isolation from it*. Integration according to Clive George (as quoted by Ravetz, 2000) is “the art of planning the interactions, in such a way as to achieve development that is sustainable. The goal is a set of realizable objectives which are compatible with each other and complement each other, to create sustainable development”. In that respect, economic growth, social equity, and environmental protection constitute the three pillars of sustainable development, each of which has its own requirements, as explained below:

- **Economic Pillar:** The economic component of sustainability requires that societies pursue economic growth paths that generate an increase in true income while maintaining their basic stock of capital. Capital in that sense includes man-made, human and natural capital. Economic sustainability requires internalizing all costs, including the societal and environmental costs associated with the production and disposition of goods, thereby implementing the full cost principle.
- **Social Pillar:** The social component of sustainable development is built on the premise that equity and an understanding of the human community’s interdependence are basic requirements of an acceptable quality of life, which is, ultimately, the aim of development. For a development path to be sustainable over a long period, wealth, resources and opportunity must be shared in such a manner that all citizens have access to minimum standards of security, human rights, and social benefits, such as food, health, education, shelter, and opportunities for self-development. The social dimension demands also the active political participation of all social sectors and the accountability of governments to the broader. It requires drawing on local populations’ knowledge and experience and strengthening social groups’ capacity to shape and manage their own lives.

- *Environmental Pillar:* The environmental component of sustainable development is based on maintaining the long-term integrity, and therefore productivity, of the planet's life-support systems and environmental infrastructure. Environmental sustainability requires the use of environmental goods in such a way as not to diminish the productivity of nature or the overall contribution of environmental goods and services to human well-being (David, 1996).

The World Conference on Sustainable Development (WCSD, 2002), in its plan of implementation, implicitly promoted the integration of the three components of sustainable development, as interdependent and mutually reinforcing pillars. These were reflected in the overarching objectives of the plan, as essential requirements for sustainable development:

- Poverty eradication (*social component*);
- Changing unsustainable patterns of production and consumption (*economic component*); and
- Protecting and managing the natural resource base of economic and social development (*environmental component*).

In conclusion, we accept for the present time, a time-limited weak sustainability condition, applicable to *some* Mediterranean countries (if not all) based on their socio-economic developmental needs; hence the differentiated approach and intra-generational equity. We also accept that the strong sustainability condition will come into effect at some time in the future depending on the carrying capacity of the Mediterranean Sea.

In the following section, we make use of the approach and methodology explained in this section to develop specific criteria for testing the Strategic Action Programme for sustainable development.

6. SUSTAINABILITY ASSESSMENT OF THE STRATEGIC ACTION PROGRAMME - CONTRIBUTIONS, LIMITATIONS AND NEW INITIATIVES

6.1 General

Based on the methodology and approach developed in the previous section, we proceed in this section to introduce specific criteria against which the SAP can be tested for intra-generational and inter-generational equity. We then present our findings and conclusions concerning the strengths and limitations of the SAP as a contributor to sustainable development; and we identify key areas for which new initiatives may be desirable to further promote sustainable development in the Mediterranean region.

6.2 Introducing Sustainable Development Criteria for the SAP

The purpose of introducing criteria for sustainable development is to clarify the decisions which have to be made in addressing the limitations of the SAP to the sustainable development of the Mediterranean region. Based on the approach presented in the previous section, we present in this section two flow diagrams describing the step-wise approach in the sustainability assessment for both intra-generational and inter-generational equity. Figure 6.1 shows the flow diagram pertaining to intra-generational equity. Figure 6.2 presents the corresponding flow diagram for inter-generational equity. Table 6.1 lists criteria derived from the flow diagrams of Figures 6.1 and 6.2.

Twelve criteria have been derived for the assessment; five dealing with intra-generational equity and seven related to inter-generational equity. In this section, we apply the criteria listed in Table 6.1 to the Strategic Action Programme in an attempt to identify the contributions and limitations of the SAP for the sustainable development of the Mediterranean region. The findings from this assessment will form the basis for new initiatives to further promote sustainable development in the Mediterranean region.

6.3 Application of the Criteria to the SAP, Contributions and Limitations

In order for the Strategic Action Programme to satisfy the right to developmental needs for present generation (intra-generational equity) and the right for environmental needs for future generations (inter-generational equity) in accordance with Rio Principle 3, all the criteria listed in Table 6.1 must be met. Hence, for the SAP to be classed as sustainable development that satisfies the two equity principles, it must pass all the tests presented in Table 6.1. The results of our assessment of the SAP are presented in this section.

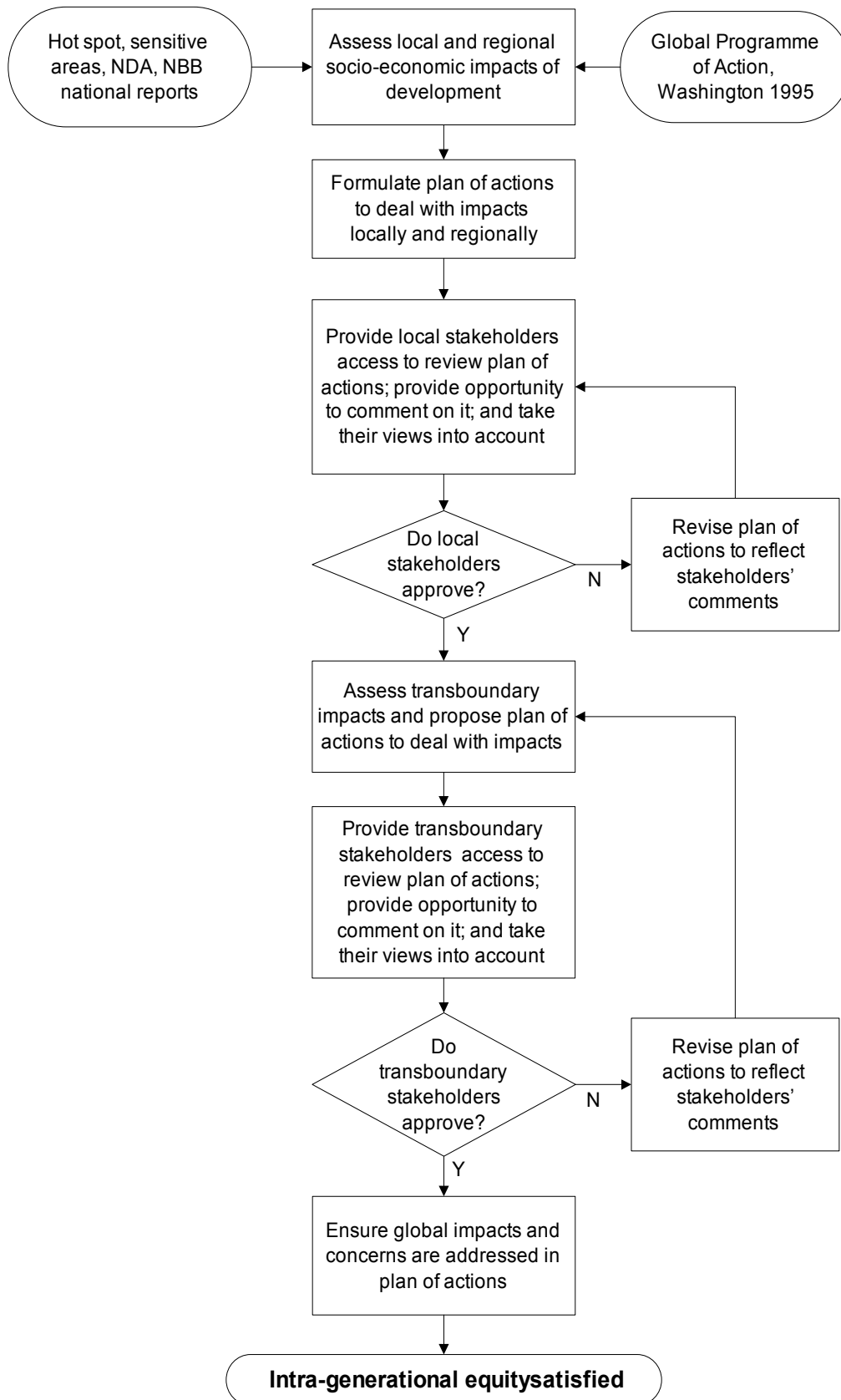


Figure 6.1: Flow diagram for testing for intra-generational equity

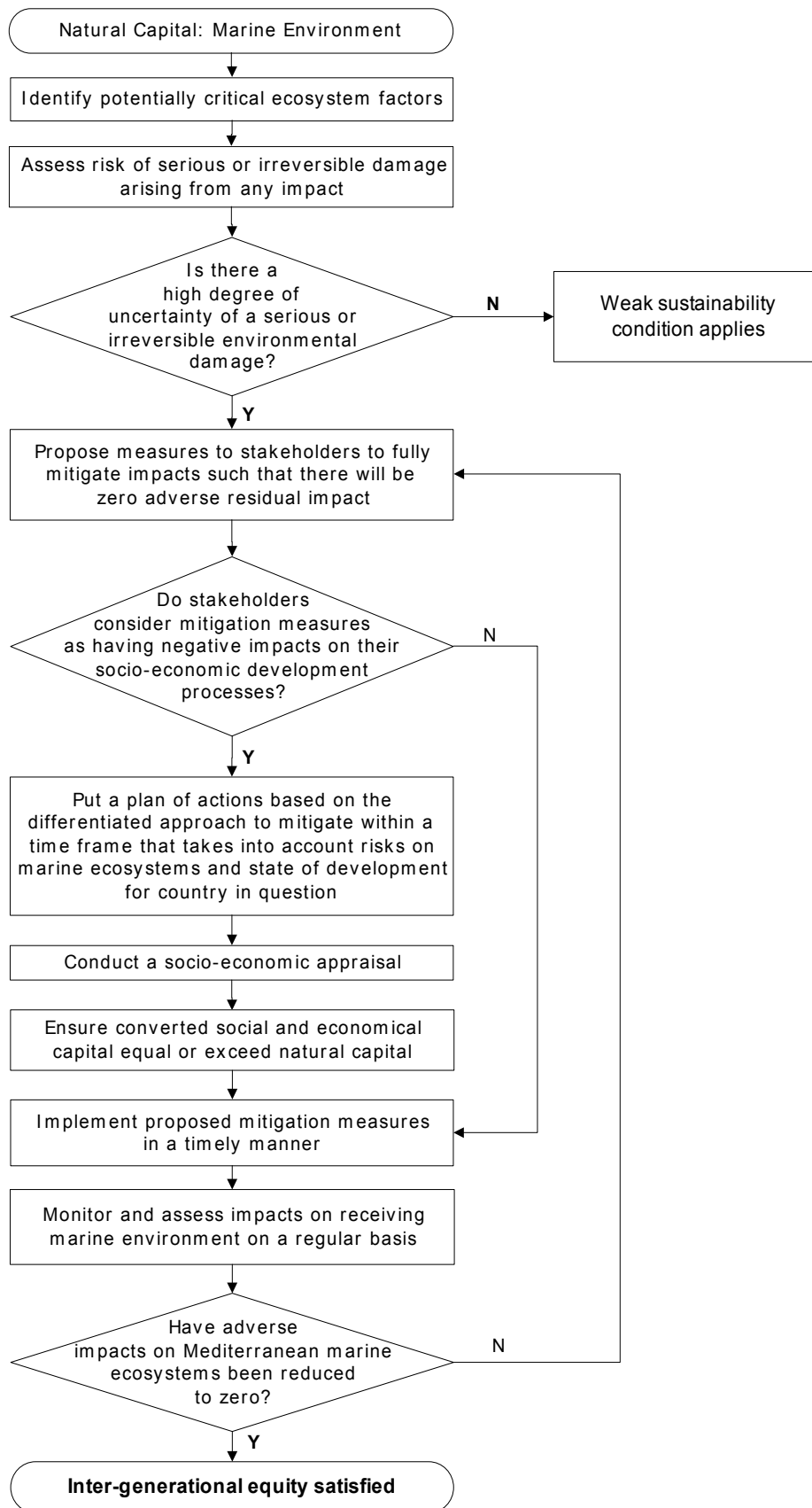


Figure 6.2: Flow diagram for testing for inter-generational equity

Table 6.1: Criteria developed for assessing the SAP for sustainable Development

PRINCIPLE	CRITERION NUMBER	CRITERION
INTRA-GENERATIONAL EQUITY	1	Local and regional developmental impacts on the marine environment of the Mediterranean Sea are assessed, and plan for actions is formulated
	2	Stakeholders benefiting from the marine environment review plan of actions; comment on it; and their views are taken into account
	3	Local transboundary impacts on the marine environment are assessed, and plan of actions to deal with these impacts is developed
	4	Stakeholders affected by transboundary impacts have the opportunity to participate in the formulation of national action plans
	5	Global impacts are considered and global concerns are addressed in the plan of actions
INTER-GENERATIONAL EQUITY	6	Potentially critical ecosystem factors on the marine environment are identified
	7	Risks of serious or irreversible damage on marine ecosystems arising from impacts of land-based activities are evaluated on a regular basis using risk assessment techniques. Results of the risk assessments are reflected in the mitigation measures of the SAP
	8	If the risk of serious or irreversible damage is significant on the marine ecosystems, then proposals are made to fully mitigate such that there will be zero adverse residual impact
	9	If stakeholders are of the view that the mitigation measures have significant socio-economic implications, then the differentiated approach is adopted in devising a national action plan to mitigate within a timeframe that takes into account risks on marine ecosystems <i>and</i> state of socio-economic development for the country in question
	10	Socio-economic appraisals are carried out for the coastal development programmes, and these demonstrate that the total capital is conserved to the satisfaction of present generations and for the benefit of future generations
	11	National action plans are integrated into the social and economic development programmes for the coastal regions
	12	A process is in place for stakeholders (local and transboundary) to regularly review, comment, and have their views reflected in the scope and timing of activities in the national action plan

6.3.1 Assessment for Intra-generational Equity

Five criteria were developed for assessing intra-generational equity. Following, we apply each of the five criteria to the SAP, referencing where applicable the pertinent Rio Principle number. We also discuss relevant contributions and limitations of the SAP to sustainable development.

Criterion 1: Local and regional developmental impacts on the marine environment of the Mediterranean Sea are assessed, and plan for actions is formulated

The Strategic Action Programme was adopted by the contracting parties in response to the danger posed to the marine environment's living resources and human health by pollution from land-based sources and activities. In that sense, the SAP aims to provide a healthy and productive life to Mediterranean people in harmony with nature (Rio Principle 1).

The basis of the SAP is a regionally prepared transboundary diagnostic analysis and an updated list of priority pollution hot spots and sensitive areas on the Mediterranean coastline. Based on these studies and from a review of the results of the work of the Mediterranean Action Plan and other related programmes over the past 20 years, major types of problems; their transboundary elements; main roots causes; and types of needed actions were identified (Principle 2). This analysis formed the basis for developing a set of targets and activities, on the national and regional levels, aiming to resolve each transboundary priority problem.

SAP is set out to have National Action Plans up and running by 2005 to help Mediterranean countries fulfill their pollution clean-up objectives. These action plans are based on national diagnostic analysis and national baseline budget of pollutants discharged to the Mediterranean Sea, and address the targets detailed in the SAP.

Targets in the SAP are grouped into three main areas. Activities within each area are subdivided into a number of categories. The main areas for activities are urban environment, industrial development, and physical alterations and destruction of habitats. In addition, a number of accompanying activities directly addressing pollution are foreseen in the SAP including monitoring and evaluation in relation to implementation, capacity building, and public participation. Based on our analysis of all listed activities, nationally and regionally, and in all areas, it is concluded that these can be grouped in three classes; those contributing to regulatory requirements; guidance and information; and infrastructure. Approximately 44 percent of listed activities deal with legal and institutional requirements; 53 percent are related to technical guidance and information; while 3 percent address infrastructure-type of projects. Activities dealing with legal and institutional issues promote the adoption of environmental legislation and environmental standards (Principle 11) in addition to internalization of environment costs and use of economic instruments (Principle 16). Activities related to technical guidance and information and those directly dealing with capacity building aim to eliminate unsustainable patterns of production and consumption (Principle 8); to improve scientific understanding; enhance development adaptation; and transfer of technology (Principle 9). Activities which promote infrastructure-type of projects are foreseen once the environmental impacts are assessed (Principle 17).

However, our review of the SAP activities has shown that there are no legal requirements to address the issue of liability and compensation for the victims of pollution and other environmental damage (Principle 13).

Criterion 2: Stakeholders benefiting from the marine environment review plan of actions; comment on it; and their views are taken into account

Stakeholders are divided between those on the local and national levels. Local stakeholders are involved in the development of action plans for each administrative region, which form the basis of national action plans. Local stakeholders include local governmental authorities,

NGO's, industries, trade unions, scientific, academic, and technical bodies, media, and local politicians. Stakeholders are provided with the opportunity to comment on the action plans through consultations, information campaigns, publications, and exchange of information. They can influence the proposed actions by selecting specific areas where actions are needed and/or modifying the list of priorities as stipulated for in Rio Principle 10.

On the regional level, stakeholders consist of the contracting parties themselves. They adopted the SAP during the Barcelona Convention meeting which convened in Tunis between 18 and 21 November 1997. Their approval was preceded by a review and revision process of the SAP by government designated experts (Principle 10).

Criterion 3: *Local transboundary impacts on the marine environment are assessed, and plan of actions to deal with these impacts is developed*

The basis for preparation of the Strategic Action Programme is a regionally prepared transboundary diagnostic analysis. *Transboundary effects*, defined as impacts affecting areas beyond the jurisdiction of local pollution hot spots, were investigated as part of the preparation of the SAP to indicate possible effects of specific hot spots transferred to other areas. This analysis constituted the basis for the set of national and regional targets and activities aiming to resolve each transboundary priority problem in accordance with Rio Principle 2, which stipulates that states have the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other states or areas beyond the limits of national jurisdiction.

However, in our review of the activities of the SAP, we found that the plan of actions dealing specifically with transboundary impacts does not address the issue of relocation and transfer to other states of any activities and substances that cause severe environmental degradation or are found to be harmful to human health (Principle 14), nor is there any reference in any of the activities to the need to notify other states of emergencies that are likely to produce sudden harmful effects on the environment (Principle 18).

Criterion 4: *Stakeholders affected by transboundary impacts have the opportunity to participate in the formulation of national action plans*

The Strategic Action Programme does not provide for a process or mechanism through which transboundary stakeholders can participate and present their comments and views on measures adopted within the framework of neighboring countries' national action plans, which are intended to reduce the significant adverse effects of hot spots on transboundary marine pollution. Rio Principle 19 stipulates that states are expected to provide prior and timely notification and relevant information to potentially affected States on activities that may have a significant adverse transboundary environmental effect. At the present time, MEDPOL undertakes the role of a mediator between the Mediterranean States and acts as an independent body to deal with concerns raised when the activities of one State affects the environment of its neighbor.

Criterion 5: *Global impacts are considered and global concerns are addressed in the plan of actions*

The scope of the SAP is consistent with the scope and contents of the Global Programme of Action (Washington, 1995) which focuses on:

- Substances known to be toxic
- Persistent organic pollutants (POP)
- Substances that bioaccumulate
- Wastewater treatment
- Wastewater management

Actions and targets in the SAP are prioritized in accordance with the actions and targets of the Global Programme of Action. This ensures that global and regional targets are in

concert, fulfilling Rio Principle 2 that requires that activities do not cause damage to the environment of other states.

6.3.2 Assessment for Inter-generational Equity

Seven criteria were developed for testing for inter-generational equity. Following, we apply each of the seven criteria to the SAP, referencing where applicable the Rio Principle number. We also discuss relevant contributions and limitations of the SAP to sustainable development.

Criterion 6: Potentially critical ecosystem factors on the marine environment are identified

The Strategic Action Programme to address pollution from land-based activities is based on the Global Programme of Action (Washington, 1995). Consequently the SAP deals with the same ecosystem factors. Potentially critical ecosystem factors on the marine environment identified in the Global Programme of Action are:

- Productive capacity of the Sea
- Biodiversity of the Sea
- Marine living resources

Criterion 7: Risks of serious or irreversible damage on marine ecosystems arising from impacts of land-based activities are evaluated on a regular basis using risk assessment techniques. Results of the risk assessments are reflected in the mitigation measures of the SAP

The risk of serious or irreversible environmental damage for the critical marine ecosystem factors of the Mediterranean Sea was *not* assessed prior to the preparation of the SAP. The basis of the SAP is a transboundary diagnostic analysis (TDA). This analysis did not involve the performance of an actual risk assessment on the critical marine ecosystem factors arising from the impact of land-based activities; rather, the TDA consisted of a regional overview and perspective of the main problems, their root causes, and the areas of proposed action at a regional level. The TDA was performed for the first time in 1997, and again in 2003 based on the request of Global Environmental Facility (GEF) as a pre-requisite for the continuous funding of the MAP.

Furthermore, there are no clear processes within MAP to conduct and timely risk assessments on a regular basis for the evolving impacts of land-based activities on the critical marine ecosystem factors for the Mediterranean Sea. Collected monitoring data and resulting reports are not utilized for that purpose. Accordingly, any revisions/updates on the activities and their timetables in the national action plans may not necessarily be based on the level of risk on the marine ecosystems.

In that respect, it should be noted that MEDPOL Phase IV, which will extend from 2006 to 2013, proposes the application of the ecosystem-based approach to environmental protection including pollution control called for in the SAP.

Criterion 8: If the risk of serious or irreversible damage is significant on the marine ecosystems, then proposals are made to fully mitigate such that there will be zero adverse residual impact

Although an actual risk assessment of the impacts of land-based activities on the critical ecosystem factors of the Mediterranean Sea was not performed to determine whether the risk is serious or irreversible (Principle 15), however, when examining the response of the riparian States of the Mediterranean Sea starting in 1975 to the threat posed by pollution to the marine environment; its ecological equilibrium; resources; and legitimate uses, it is concluded that the Mediterranean countries have considered that significant risks on the marine environment do indeed exist, which warrants *full* mitigation in order to reduce residual adverse impacts to zero. Accordingly, they envisaged that national and regional action plans and programmes with target dates extending till the year 2025 (as stipulated in the SAP) will

be prepared. However, and as noted above, due to the fact that a risk assessment was not conducted prior to the preparation of the SAP, the target dates for the proposed actions cannot be substantiated based on the level of risk on the critical marine ecosystem factors.

Criterion 9: *If stakeholders are of the view that the mitigation measures have significant socio-economic implications, then the differentiated approach is adopted in devising a national action plan to mitigate within a timeframe that takes into account risks on marine ecosystems and state of socio-economic development for the country in question*

The following quote comes from the "Objectives" section of the Strategic Action Programme:

The SAP is addressed to all contracting Parties and proposes common objectives. However, it is evident that the implementation of the proposed activities should take into account the state of the environment of each country. The timing for targets for activities may also be different for different countries, taking into account, e.g. of the capacity to adapt and reconvert existing installations, the economic capacity and the need for development

Although, the SAP calls for the differentiated approach in the activities and timetables for the plans of actions, however, this objective is not currently in force as can be inferred from the SAP with its uniform priorities and timetables which call for full mitigation for all countries by the year 2025. Recently, MAP undertook a study to assess the possibility of applying the differentiated burden sharing approach among the Mediterranean countries by varying the timing and scope of some of the required actions. The study concluded that on the basis of the number of countries benefiting from a burden sharing policy shift within the Barcelona Convention, the egalitarian rule is presently the most preferred one. Nevertheless, it is not clear what mechanism is in place to assess the right conditions whereby a shift into a differentiated approach may become appropriate, which would incorporate into the action plans the risks on marine ecosystems and/or the status of the socio-economic development processes for each of the Mediterranean countries.

In that respect, we note that the differentiated approach is a major requirement for satisfying intra-generational equity under the time-limited weak sustainability condition. In that sense, one may regard the actions taken by the Mediterranean EU countries to fund investment projects aiming at reducing the amounts of pollutants discharged to the Sea from land based sources situated on the southern and eastern shores of the Mediterranean as actions that satisfy Rio Principle 6 which addresses the needs of developing countries in the field of environment and development.

Criterion 10: *Socio-economic appraisals are carried out for the coastal development programmes, and these demonstrate that the total capital is conserved to the satisfaction of present generations and for the benefit of future generations*

The plan for actions and targets of the SAP allow for social and economic development processes to continue polluting the Mediterranean Sea until 2025, when full mitigation is anticipated. However, the SAP does not call for the performance of socio-economic appraisals, and does not specify any mechanism, through these appraisals, to ensure that the social and economic capital (tourism, transport, trade, industrial infrastructure, etc.) which society acquires during this period exceeds in value the depleted natural capital or marine resources of the Mediterranean Sea for present and future generations. As noted previously, the principle of intra-generational equity (Principle 3) and the polluter pays principle (Principle 16) demand that the public as a whole must draw at least as much benefit from the replacement capital as it did from the original natural capital. To the extent that society as a whole has granted rights over their own environment, it is they who have the final say in what its value is, to them, and what its value will be to their own descendants.

Criterion 11: *National action plans are integrated into the social and economic development programmes for the coastal regions*

It is envisaged that the selected activities or mitigation measures in the national action plans will be based upon the existing activities in the social and economic development programmes and plans; both on the local level and on the national levels (in addition to actions needed to reduce the impacts of hot spots which evolved from past developments). However, the SAP does not describe the process by which the NAP activities are integrated along with these development programmes such that they correspond in scope and timing to the actual timetable of these programmes (Rio Principle 4). In effect, the SAP dictates the rate at which pollution reduction and control will occur and specifies the pollutants that will be dealt with. However, the timing of these activities may not necessarily match the progress being made in the social and economic development spheres for each Mediterranean country.

Criterion 12: *A process is in place for stakeholders (local and transboundary) to regularly review, comment, and have their views reflected in the scope and timing of activities in the national action plan*

As noted previously, stakeholders are involved in the development of the sectoral plans for each administrative region by reviewing the impacts of all existing development programmes, and by prioritizing the mitigation actions as part of these plans. The sectoral plans are then transformed into national action plans. However, there are no clear mechanisms within the SAP for *local* stakeholders to participate in updating the action plans, and voicing their views and concerns on the scope and timing of the mitigation actions (Rio Principle 10) in response to the risks posed on their marine ecosystems and/or the socio-economic conditions. This also applies to *transboundary* stakeholders concerning actions dealing with transboundary impacts from polluting hot spots. In principle, activities and target dates may be revised for reasons completely irrelevant to the risks imposed on the marine environment or the state of development in the Mediterranean countries. And even though the Contracting Parties have agreed to meet every two years to discuss measures taken and results achieved on levels and trends of loads; state of treatment and disposal of wastes; and state of the Mediterranean environment; and every five years, to conduct a national and regional review for the status of implementation of the NAPs, including barriers and needs, however, there are no formal scientific processes which make use of the collected environmental monitoring data and the socio-economic development information for revising the activities and target dates in the SAP and/or NAPs.

6.4 Assessment Summary

In conclusion, we present our summary of the sustainability assessment, which we conducted in the previous section for the Strategic Action Programme. Summary findings for the intra-generation equity criteria (listed in Table 6.1) are presented in Table 6.3a. Summary findings for the inter-generational equity criteria are presented in Table 6.3b. The summary tables include a brief explanation of the nature of non-conformance for each criterion, and an evaluation rating for the level of nonconformance, which is devised in line with the evaluation criteria and ratings presented in Table 6.2.

Table 6.2: Evaluation Criteria for ranking SAP for sustainable development

Evaluation Criteria	Rating
SAP criteria fulfills the requirements for sustainable development	A
SAP criteria misses some aspects, which are not of crucial importance to sustainable development	B
SAP criteria misses some aspects, which are of crucial importance to sustainable development	C
SAP criteria completely overlooks some aspects for sustainable development	D

Based on the foregoing, it is concluded that neither inter-generational equity, nor intra-generational equity is satisfied by the current provisions of the Strategic Action Programme. On the intra-generational level, and as can be seen from Table 6.3a, the major issue of concern is the fact that the SAP does not provide for a process or mechanism for transboundary stakeholders' participation in relation to pollution caused by transboundary impacts originating at hot spots located in neighboring countries.

Table 6.3a: Results of the sustainability assessment for the Strategic Action Programme; Intra-generational equity

Criteria Number	Details of Non-Conformance	Rating	
INTRA-GENERATIONAL EQUITY	1	SAP activities do not specify any legal requirements to address the issue of liability and compensation for the victims of pollution and other environmental damage.	B
	2	Criterion satisfies requirements for sustainable development.	A
	3	SAP activities do not address the issue of relocation and transfer to other States of any activities and substances that cause severe environmental degradation or are found to be harmful to human health, nor is there any reference in any of the activities to the need to notify other states of emergencies that are likely to produce sudden harmful effects on the environment.	B
	4	SAP does not provide for a process or mechanism for transboundary stakeholders to participate in the process of formulating actions to deal with adverse effects of hot spots on transboundary marine pollution.	C
	5	Criterion satisfies requirements for sustainable development.	A

On the inter-generational level, and as can be inferred from Table 6.3b, five major limitations to sustainable development are identified in the SAP. First, the SAP is not supported by a process to assess regularly the risks posed by the evolving land-based activities on the critical marine ecosystem factors. This process is of crucial importance to the sustainability of the SAP since it provides the basis for (i) substantiating the target dates and activities for the pollution-cleanup objectives and (ii) elaborating tailor-made action programmes for the individual Mediterranean countries that can be integrated into their national social and economic development programmes, while ensuring that the development process will minimize the risk of irreversible environmental damage on the Mediterranean marine environment and satisfy intra-generational equity; hence fulfilling the differentiated or burden sharing principle; the second major limitation identified in the SAP.

The third major limitation identified in our analysis deals with the fact that the SAP is implemented in the absence of any socio-economic appraisal of the national development processes which provides an indication of the benefits gained in the social and economic spheres in comparison to the losses incurred in the natural environment due to the additional pressures exercised by such developments on the critical marine ecosystem factors until full mitigation is accomplished in 2025. Performing socio-economic appraisals, regularly, is very crucial to the sustainability of the SAP in order to ensure that present generation is satisfied with the social and economic development processes, and future generations will draw at least as much benefit from the replacement capital as they would

have from the original natural capital. SAP foresees a need to conserve total capital (man-made and human) for at least the year 2025 when the SAP will be completed.

The fourth issue is related to integrating the national action plans (NAP) into the social and economic development processes and programmes of the coastal regions. Integrating the mitigation activities of the national action plans is necessary so that they would correspond in scope and timing to the actual scope and timetable of the social and economic development programmes; in effect contributing to true sustainable development in its three spheres; economic, social and environmental.

Lastly and the fifth issue is related to the fact that there are no clear mechanisms within the SAP for local and transboundary stakeholders to participate in updating the action plans and their timetables in the future. Furthermore, there are no scientific processes in place for utilizing available data and collected information for revising the activities and target dates in the SAP and/or NAPs.

In conclusion, new initiatives are necessary in the intra-generational and inter-generational equity domains in order for the SAP to contribute to the sustainable development of the Mediterranean region. These are included in the following section.

Table 6.3b: Results of the sustainability assessment for the Strategic Action Programme; Inter-generational equity

Criteria Number	Details of Non-Conformance	Rating	
INTER-GENERATIONAL EQUITY	6	Criterion satisfies requirements for sustainable development.	A
	7	The risk of serious or irreversible environmental damage for the critical marine ecosystem factors of the Mediterranean Sea was not assessed prior to the preparation of the SAP. Furthermore, there are no processes in place to assess these risks on a regular basis such that they reflected in the activities and timetables of the national action plans.	C
	8	Criteria satisfies requirements for sustainable develop.	A
	9	The differentiated approach is not currently applied in the SAP. Studies have shown that right conditions do not exist yet. However, there is no clear mechanism to determine when a shift from an egalitarian into a differentiated approach should be pursued which incorporates into the action plans the actual risks on the marine environment and the socio-economic status of development for the individual Mediterranean countries.	C
	10	SAP does not call for the performance of socio-economic appraisals; and does not specify any mechanism to ensure that the social and economic capital which society acquires before full mitigation in 2025 exceeds in value the depleted natural capital or marine resources of the Mediterranean Sea for present and future generations.	D

Criteria Number	Details of Non-Conformance (cont...)	Rating
11	The SAP calls for national action plans to be formulated based on existing development plans and programmes. However, the SAP does not describe the process by which the NAP activities are integrated within these development programmes, including scope and timing, while applying the differentiated approach.	C
12	Local stakeholders are involved in the development of the NAPs. However, there are no clear mechanisms within the SAP, for these same stakeholders to participate in updating the action plans and their timetables in the future. The same applies to transboundary stakeholders. Furthermore, there are no scientific processes in place for utilizing available data and collected information for revising the activities and target dates in the SAP and/or NAPs.	C

6.5 Initiatives for Promoting Sustainable Development Through the Strategic Action Programme

In this section, we propose a number of initiatives that MAP may consider for addressing the above noted limitations in the SAP, in order to further promote sustainable development of the Mediterranean region. These initiatives are grouped, based on the summary Tables 6.3a and 6.3b, into actions required to achieve intra-generational equity, and activities critical for satisfying inter-generational equity.

6.5.1 Achieving Intra-generational Equity

Two initiatives are proposed for achieving intra-generational equity for the SAP:

- Providing for a process through which transboundary stakeholders can participate and present their comments and views on measures adopted within the framework of neighboring countries' national action plans, which are intended to reduce the significant adverse effects of hot spots on transboundary marine pollution. This task may be accomplished as part of the regional meetings convened by MEDPOL and attended specifically by representatives of the Contracting Parties. In that respect, it is necessary to identify and agree on transboundary issues for which scientific evidence exists as to their adverse impacts on neighboring countries' marine environment.
- Ensuring that there are some provisions, within the framework of MAP, to address the issues of (i) liability and compensation for the victims of pollution and other environmental damage; (ii) relocation and transfer to other states of any activities and substances that cause severe environmental degradation or are found to be harmful to human health; and (iii) notification of other states of emergencies that are likely to produce sudden harmful effects on the environment.

6.5.2 Achieving Inter-generational Equity

Five initiatives are proposed for achieving inter-generational equity in the SAP:

- Introducing a process for regularly assessing the risks of the evolving impacts of land-based activities on the critical marine ecosystem factors for the Mediterranean Sea. Collected monitoring data and resulting reports should be utilized for that purpose. A database of existing land-based activities should be developed and updated regularly. The assessment should be repeated at equal time intervals in order to update the national action plans regularly. This process should be undertaken until the SAP is completed in 2025.
- Developing a process for assessing the appropriate conditions when a shift into a differentiated approach may become feasible for all Mediterranean countries. In principle, MEDPOL should specify when such an assessment needs to be initiated; for example when more concrete data are available. Once the differentiated approach is adopted, another process should be introduced with details as to how the national action plans for each country should be updated in order to incorporate the risks on marine ecosystems and the status of the socio-economic development processes. Updating of the NAPs should include the breadth of the priority actions and their timetables.
- Performing socio-economic appraisals on the existing and proposed social and economic coastal development programmes for the individual Mediterranean countries. The purpose of this appraisal is to ensure that social and economic capital (tourism, transport, trade, industrial infrastructure, etc.) which society acquires until the completion of SAP in 2025 exceeds in value the depleted natural capital or marine resources of the Mediterranean Sea for present and future generations. These appraisals should be undertaken by environmental economists; on a regular basis; and for each of the

Mediterranean countries. As a result of these appraisals, MEDPOL would advise and attempt to influence the Mediterranean countries to seek alternative plans in case the total capital is not conserved.

- Integrating the national action plans along with the provisions of the social and economic development programmes for the coastal regions. The objective is to coordinate the scope and timing of the priority actions envisaged in the national action plans in line with the activities foreseen in the social and economic development programmes. In principle, MEDPOL should seek to assist the Mediterranean countries, along with other international agencies; develop national sustainable development strategies (NSDS), with special emphasis on development in the coastal regions which takes into account the differentiated approach.
- Providing for local and transboundary stakeholders to participate in the updating of the action plans, and for presenting their views and concerns on the scope and timing of the mitigation measures in response to the risks posed on their marine ecosystems and/or the socio-economic conditions. Again, this can be achieved as part of the regional meetings attended by the Contracting Parties and convened by MEDPOL, and through local public participation meetings and seminars.

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ANNEX I

The Rio Declaration on Environment and Development

Preamble

The United Nations Conference on Environment and Development,

Having met at Rio de Janeiro from 3 to 14 June 1992,

Reaffirming the Declaration of the United Nations Conference on the Human Environment, adopted at Stockholm on 16 June 1972, and seeking to build upon it,

With the goal of establishing a new and equitable global partnership through the creation of new levels of cooperation among States, key sectors of societies and people,

Working towards international agreements which respect the interests of all and protect the integrity of the global environmental and developmental system, recognizing the integral and interdependent nature of the Earth, our home, Proclaims that:

Principle 1 [applicable]*

Human beings are at the centre of concerns for sustainable development. They are entitled to a healthy and productive life in harmony with nature.

Principle 2 [applicable]

States have, in accordance with the Charter of the United Nations and the principles of international law, the sovereign right to exploit their own resources pursuant to their own environmental and developmental policies, and the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction.

Principle 3 [applicable]

The right to development must be fulfilled so as to equitably meet developmental and environmental needs of present and future generations.

Principle 4 [applicable]

In order to achieve sustainable development, environmental protection shall constitute an integral part of the development process and cannot be considered in isolation from it.

Principle 5 [not applicable]

All States and all people shall cooperate in the essential task of eradicating poverty as an indispensable requirement for sustainable development, in order to decrease the disparities in standards of living and better meet the needs of the majority of the people of the world.

Principle 6 [applicable]

The special situation and needs of developing countries, particularly the least developed and those most environmentally vulnerable, shall be given special priority. International actions in the field of environment and development should also address the interests and needs of all countries.

Principle 7 [applicable]

States shall cooperate in a spirit of global partnership to conserve, protect and restore the health and integrity of the Earth's ecosystem. In view of the different contributions to global environmental degradation, States have common but differentiated responsibilities. The developed countries acknowledge the responsibility that they bear in the international pursuit of sustainable development in view of the pressures their societies place on the global environment and of the technologies and financial resources they command.

* The words in brackets [applicable] or [not applicable] denote whether the principle in question is relevant to the criterion derived for testing the SAP for sustainable development

Principle 8 [applicable]

To achieve sustainable development and a higher quality of life for all people, States should reduce and eliminate unsustainable patterns of production and consumption and promote appropriate demographic policies.

Principle 9 [applicable]

States should cooperate to strengthen endogenous capacity-building for sustainable development by improving scientific understanding through exchanges of scientific and technological knowledge, and by enhancing the development, adaptation, diffusion and transfer of technologies, including new and innovative technologies.

Principle 10 [applicable]

Environmental issues are best handled with the participation of all concerned citizens, at the relevant level. At the national level, each individual shall have appropriate access to information concerning the environment that is held by public authorities, including information on hazardous materials and activities in their communities, and the opportunity to participate in decision-making processes. States shall facilitate and encourage public awareness and participation by making information widely available. Effective access to judicial and administrative proceedings, including redress and remedy, shall be provided.

Principle 11 [applicable]

States shall enact effective environmental legislation. Environmental standards, management objectives and priorities should reflect the environmental and developmental context to which they apply. Standards applied by some countries may be inappropriate and of unwarranted economic and social cost to other countries, in particular developing countries.

Principle 12 [not applicable]

States should cooperate to promote a supportive and open international economic system that would lead to economic growth and sustainable development in all countries, to better address the problems of environmental degradation. Trade policy measures for environmental purposes should not constitute a means of arbitrary or unjustifiable discrimination or a disguised restriction on international trade. Unilateral actions to deal with environmental challenges outside the jurisdiction of the importing country should be avoided. Environmental measures addressing transboundary or global environmental problems should, as far as possible, be based on an international consensus.

Principle 13 [applicable]

States shall develop national law regarding liability and compensation for the victims of pollution and other environmental damage. States shall also cooperate in an expeditious and more determined manner to develop further international law regarding liability and compensation for adverse effects of environmental damage caused by activities within their jurisdiction or control to areas beyond their jurisdiction.

Principle 14 [applicable]

States should effectively cooperate to discourage or prevent the relocation and transfer to other States of any activities and substances that cause severe environmental degradation or are found to be harmful to human health.

Principle 15 [applicable]

In order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.

Principle 16 [applicable]

National authorities should endeavour to promote the internalization of environmental costs and the use of economic instruments, taking into account the approach that the polluter should, in principle, bear the cost of pollution, with due regard to the public interest and without distorting international trade and investment.

Principle 17 [applicable]

Environmental impact assessment, as a national instrument, shall be undertaken for proposed activities that are likely to have a significant adverse impact on the environment and are subject to a decision of a competent national authority.

Principle 18 [applicable]

States shall immediately notify other States of any natural disasters or other emergencies that are likely to produce sudden harmful effects on the environment of those States. Every effort shall be made by the international community to help States so afflicted.

Principle 19 [applicable]

States shall provide prior and timely notification and relevant information to potentially affected States on activities that may have a significant adverse transboundary environmental effect and shall consult with those States at an early stage and in good faith.

Principle 20 [not applicable]

Women have a vital role in environmental management and development. Their full participation is therefore essential to achieve sustainable development.

Principle 21 [not applicable]

The creativity, ideals and courage of the youth of the world should be mobilized to forge a global partnership in order to achieve sustainable development and ensure a better future for all.

Principle 22 [not applicable]

Indigenous people and their communities, and other local communities, have a vital role in environmental management and development because of their knowledge and traditional practices. States should recognize and duly support their identity, culture and interests and enable their effective participation in the achievement of sustainable development.

Principle 23 [not applicable]

The environment and natural resources of people under oppression, domination and occupation shall be protected.

Principle 24 [not applicable]

Warfare is inherently destructive of sustainable development. States shall therefore respect international law providing protection for the environment in times of armed conflict and cooperate in its further development, as necessary.

Principle 25 [not applicable]

Peace, development and environmental protection are interdependent and indivisible.

Principle 26 [not applicable]

States shall resolve all their environmental disputes peacefully and by appropriate means in accordance with the Charter of the United Nations.

Principle 27 [not applicable]

States and people shall cooperate in good faith and in a spirit of partnership in the fulfillment of the principles embodied in this Declaration and in the further development of international law in the field of sustainable development.

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