

STRATEGIC ACTION PROGRAMME (SAP)

FOR

THE CASPIAN SEA

**Caspian Environment Programme
As approved at the Tehran Steering Committee Meeting
of November 5, 2003**

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Disclaimer:

A number of the studies, researches and preparatory works from which the Strategic Action Programme benefited were conducted in the context of support provided *inter alia* by the International Partners to the Caspian Environment Programme.

The findings and the conclusions of the document however are those of the adopting parties and do not necessarily reflect the policies or opinions of the International Partners including the European Commission, The Global Environment Facility, The World Bank, UNEP, UNDP and UNOPS.

List of Abbreviations

Aarhus:	UN/ECF Convention on Access to Information, Public Participation in Decision Making and Access to Justice in Environmental Matters (Aarhus)
CCA:	Causal Chain Analysis
CEP:	Caspian Environment Programme
CHM:	Clearing House Mechanism
CIS:	Commonwealth of Independent States
CITES:	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CLC:	Civil Liability Convention
CMS:	Convention on the Conservation of Migratory Species of Wild Animals
CRTC:	Caspian Regional Thematic Centre
EIA:	Environment Impact Assessment
EQO:	Environmental Quality Objective
EQS:	Environment Quality Standard
ESI:	Environment Status Indicator
Espoo:	Convention on Environmental Impact Assessment in a Transboundary Context (Espoo)
EU/Tacis: Framework Convention	European Union/Technical Assistance for CIS The Framework Convention for the Caspian Marine Environment
GEF:	Global Environment Facility
GIS:	Geographical Information System
HDI:	Human Development Index
IA:	Institutional Arrangement
I.R. Iran:	Islamic Republic of Iran
ML:	Mnemiopsis Leidyi
MPPI:	Major Perceived Problem and Issue
NEAP:	National Environmental Action Plan
NCAP:	National Caspian Action Plan
NCS:	National Coordination Structure
NGO:	Non Governmental Organization
NFP:	National Focal Point
PCU:	Programme Coordination Unit
PI:	Process Indicator
PIP:	Priority Investment Project
POPs:	Persistent Organic Pollutants
PPS	Public Participation Strategy
SAP:	Strategic Action Programme
SPACS	Special Protected Area of the Caspian Sea
SRI:	Stress Reduction Indicator
TDA:	Transboundary Diagnostic Analysis
Tehran Convention	The Framework Convention for the Caspian Marine Environment
UNDP:	United Nations Development Programme
UNEP:	United Nations Environment Programme

Strategic Action Programme for the Caspian Sea

Section 1: Introduction

The Caspian Environment Programme (CEP) represents a partnership between the five littoral states namely Azerbaijan, Islamic Republic of Iran, Kazakhstan, Russian Federation and Turkmenistan and the International Partners namely the EU, UNDP, UNEP, and the World Bank. The overall goal of the CEP is environmentally sustainable development and management of the Caspian environment, including living resources and water quality, so as to obtain the utmost long term benefits for the human population of the region, while protecting human health, ecological integrity and the region's economic and environmental sustainability for future generations.

The goals of CEP during its first phase (1995-2002) included 1) development of a regional coordination mechanism to achieve sustainable development and management of the Caspian environment 2) completion of a Transboundary Diagnostic Analysis (TDA) of priority environmental issues to guide the prioritization of environmental actions and 3) formulation and endorsement of a Strategic Action Programme (SAP) and adoption of National Caspian Action Plans (NCAPs).

During the second phase of the CEP (2003-2007), the main objectives included 1) beginning implementation of the SAP in the priority areas of Biodiversity, Fisheries, Invasive Species, Coastal Development, and Persistent Toxic Substances; 2) continued development of regional coordination mechanisms to support implementation of the SAP and to update the TDA, SAP and NCAPs; 3) strengthening the environmental legal and policy frameworks operating at the regional and the national levels, with special attention to signature, ratification and entry into force of the Framework Convention for the Caspian Marine Environment; 4) implementation of small-scale investments, coastal community sustainable development projects and public awareness activities supported by a small grants programme. Actions to support these objectives have been carried by the Caspian states, in part with support of international projects such as the GEF Project "Towards a Convention and Action Programme for the protection of the Caspian Sea Environment (CEPSAP) Project" (ongoing), and the EuropeAid (Tacis) projects "Sustainable Development of Caspian Coastal Communities," (completed), "Sustainable Management of Caspian Fisheries" (completed), and "Caspian Water Quality Monitoring and Hotspot Action Plan" (to begin implementation late 2006).

The February 2006 Steering Committee Meeting (SCM) held in Almaty acknowledged the need for an updating of the CEP TDA, SAP and NCAPs, to examine and reflect changes in the environment as well as progress under the CEP during the second phase. The Almaty SCM requested that the PCU undertake the updating in order for at least preliminary results to be available for consideration and possible action by the December 2006 SCM (Moscow). While completion of the TDA updating is expecting to require several more months, preliminary findings have been sufficient to confirm the consistency of the four priority regional concern areas identified in the first SAP:

- **unsustainable use of bioresources;**
- **threats to biodiversity, including those from invasive species;**
- **marine and coastal pollution; and**
- **unsustainable coastal area development.**

The updating process included three regional meetings and a number of supplementary studies inter alia an assessment of the implementation of the SAP since 2002. The Updated SAP, which will inter-changeably be referred to as SAP hereinafter, is a regional policy framework document that lays down the principles of environmental management and cooperation; notes the challenges to the sustainable integrated management of the Caspian Sea environment; sets the regionally agreed Environmental Quality Objectives (EQOs) for the four areas of environmental concern in a transboundary context and proceeds to define a set of targets,, interventions and indicators to meet these objectives. The SAP also highlights the financial resource and the institutional structure required for the implementation of the priority actions for the next 5+5 years (approximately 2007-2017).

The Updated SAP. is designed for voluntary adherence by the Caspian States and its contents are supported by and in accordance with the NCAPs, with appropriate support from the International Partners. Such voluntary adherence will promote cooperative and coherent action for safeguarding the fragile environment of the Caspian Sea and for advancing the sustainable and equitable use of the Caspian bioresources.

Implementation of the Updated SAP is the responsibility of the Caspian States independently as component of their NCAP, and collectively as part of the Caspian Environment Programme. The Steering Committee of the Caspian Environment Programme with the assistance of the Programme Coordination Unit has the responsibility of monitoring and reporting on SAP implementation progress.

This document is the first updating of the SAP prepared under the Caspian Environment Programme. The revision process reviewed the implementation of all SAP interventions at the national and regional level, including target dates and indicators. Details of the implementation in each country of the National Caspian Action Plans and the SAP during the second phase of the CEP are contained in separate reports, annexed to this updated SAP.

The updating of the SAP was undertaken following a review of the Caspian TDA from which a number of new additional interventions have emerged. A review of the countries' obligations under the Convention and draft protocols currently under development identified a further set of interventions which have been added to the SAP.

The updated SAP was endorsed by the CEP Steering Committee meeting in December 2006 and brought to the attention of the First Conference of the Parties to the Tehran Convention (March 2007) with the reference to the provision of Art. 18.2 of the Tehran Convention requesting the Contracting Parties to cooperate in the formulation of the Convention Action Plan.

The updating process helped to define a long-term over-arching vision for the Caspian Sea which is a clear representation of the characteristics desired for the future environment. The long term vision is a political objective to be achieved within a twenty year time-frame and is designed to inspire the peoples of the Caspian and their leaders.

The Caspian vision is a clean and productive Caspian Se enjoying responsible stewardship for sustainable long term use

1.1 The need for and purpose of the SAP

The SAP sets the agenda for enhanced regional environmental cooperation among the littoral states over the next ten years, approximately 2007 – 2017, in two distinct five-year periods. To improve environmental stewardship and protect the ecosystems of the Caspian, the SAP outlines five regional Environmental Quality Objectives (EQOs) to be addressed, and identifies environmental interventions to be taken in order to meet those EQOs at the national and regional level (See Section 3). The SAP builds upon and complements the NCAPs and creates clear objectives and targets for priority investment action considerations for the international community.

1.2 The geographic scope of the SAP

The immediate geographic scope of the SAP is the Caspian Sea and the coastal areas up to 100 km inland. This delimitation however does not exclude identification and prioritization of interventions that address environmental stressors and challenges beyond this 100 km zone. In a number of the SAP interventions reference is made to the concept of the near Caspian basin, which incorporates the lower Volga basin below Volgograd, the major coastal rivers of Dagestan and northern part of the Azerbaijan Republic, the Kura basin in the territory of Azerbaijan below Mingachaur reservoir, the basins of the coastal rivers in Iran, and the rivers in the territories of Turkmenistan and Kazakhstan.

1.3 Principles of environmental management and cooperation

The five littoral states share a common desire for the sustainable management of the natural resources and biodiversity of the Caspian for the benefit of present and future generations, and recognize their role and responsibility in conserving the global value of the biodiversity resources. The littoral states have considered and taken into account, where appropriate, the following principles and values when developing this document.

1.3.1 The principle of **sustainable development** shall be applied such that there is a prudent and rational utilization of living resources and the preservation of the rights of future generations to a viable environment.

1.3.2 The **precautionary principle** shall be applied, such that measures shall be taken when there are reasonable grounds for concern that any activity may increase the potential hazards to human health, harm living resources or marine ecosystems, damage amenities, or interfere with other legitimate uses of the Caspian Sea, even when there is no conclusive evidence of a causal relationship between the activity and the effects; and by virtue of which, greater caution is required when information, including scientific information, is uncertain, unreliable or inadequate.

1.3.3 The **polluter pays principle** shall be applied, such that the cost of preventing and eliminating pollution, including clean-up costs, shall be paid by the polluter.

1.3.4 The principle of **anticipatory action** shall be applied, such that contingency planning, environmental impact assessment and strategic impact assessment (involving the assessment of the environmental and social consequences of governmental policies, programmes and plans) shall be undertaken in the future development in the region.

1.3.5 The principle of **preventative action** shall be applied, such that timely action shall be taken to alert the responsible and relevant authorities of likely impacts and to address the actual or potential causes of adverse impacts on the environment, before they occur. Many adverse impacts are irreversible or, if they can be reversed, the cost of remedial action is higher than the costs associated with prevention.

1.3.6 **Environmental and health considerations** shall be included into all relevant policies and sectoral plans and programmes, including, *inter alia*, urban planning, industrial development, oil and gas exploitation, fisheries, aquaculture and tourism.

1.3.7 Use of **clean technology** shall be promoted when replacing or phasing-out high waste and waste-generating technologies.

1.3.8 Development planning and environmental planning processes should be integrated to the maximum extent. The use of **economic instruments** that foster sustainable development shall be promoted through, *inter alia*, the implementation of economic incentives for introducing environmentally friendly technologies, activities and practices; the phasing-out of subsidies which encourage the continuation of non-environmentally friendly technologies, activities and practices; and the application of user fees, taxes and tariffs.

1.3.9 The principle of **accessibility of information** shall be applied, such that information on the pollution of the marine environment of the Caspian Sea held by a littoral state shall be provided by that state to all littoral states, where relevant and in the maximum possible amount.

1.3.10 The principle of **public participation and transparency** shall be applied, such that all stakeholders, including communities, individuals and concerned organizations shall be given the opportunity to participate, at the appropriate level, in decision-making and management processes that affect the Caspian Sea. This includes providing access to information concerning the environment that is held by public authorities and effective access to judicial and administrative proceedings to enable all stakeholders to exercise their rights effectively. Public authorities shall widely disseminate information on the work proposed and undertaken to protect and rehabilitate the Caspian Sea.

Section 2: The challenge: Sustainable integrated management of the Caspian environment

The extensive work carried under the first phase of the CEP has led to the identification of four priority regional environmental concern areas, namely: unsustainable use of bioresources; threats to biodiversity, including those from invasive species; pollution, including human health impacts; and unsustainable coastal area development including impacts of climate change. The observed impacts are degrading the environment and in the longer term reducing the range of economic and development options available to the states. Common regional root causes of these areas of concern include poor law enforcement and compliance, inadequate development planning, undeveloped civil society and public awareness and inadequate pricing policies.

2.1 Priority Regional Environmental Concern Areas

2.1.1 Unsustainable use of Bioresources

Catches of sturgeons, herrings, sprats and some other commercial fish have continued to decline in recent years. Official data from the Caspian countries indicate that the sturgeon catches have dropped from an average 13 thousands tons a year in the period from 1950-1960 (peaking in the 1970s to 28 thousands tons a year) to 3 thousands tons in 1996-1999 and to less one thousand tons in 2004-2005. Sturgeon catch fell resulting in calls for export bans. Factors contributing to the fishery decline include poaching, the impact of dams, loss of habitats, and perhaps pollution. A major factor impacting both fisheries and biodiversity has been the invasion by the ctenophore *Mnemiopsis leidy*. The direct and indirect impact of this invasive species have led to changes in Caspian food chain threatening the Caspian kilkas (sardines), which is one of the major fishing resource and a food for many other commercially important fish species. Kilka catches declined from 400 thousands tons in 1970s to 115 thousands tons in 2001 and to 64 thousands tons in 2005. The decline in the sturgeon, kilka and other species catches directly effect human livelihoods and food for the local people.

2.1.2. Threats to biodiversity, including those from invasive species.

The Caspian biodiversity is low across all phyla compared to other seas, but, due to its historic isolation, endemism is high. Approximately 40% of the species found in the Caspian are endemic and therefore any threat may lead to a potentially high loss of global biodiversity. Quantifiable data on the status of the biodiversity of the Caspian sea is scarce. In recent years no systematic monitoring of biodiversity (except in connection with fishery productivity and oil company monitoring) has been undertaken by the Caspian states. Even population number and temporal distribution of main commercial fishing species such as sturgeons, kilkas, and Caspian seals are still in dispute. The aerial surveys of 2005 and 2006 supported by the CEP note a continuous decline in Seals population and a considerable difference with the existing official survey figures, which are much higher. These gaps in knowledge are in itself a major threat. Other threats include habitat erosion, fragmentation, and degradation (observed, but not quantified), unsustainable use of key species, pollution and invasive species. Of these invasive species is probably the most damaging and acute threat. Invasion of *Mnemiopsis leidy* may irrevocably change the whole Caspian ecosystem, starting from the composition of the zooplanktonic species. The presence of persistent organic pollutants, in particular DDT is also a major source of concern especially on the point of its accumulation in the long-living species – mollusks, seals, and sturgeons.

2.1.3 Marine and Coastal Pollution

Data on the overall environmental quality of the Caspian region are generally not systematic or comprehensive, although efforts are being made to initiate a more comprehensive and integrated monitoring system in the region. In the former USSR water and sediment quality measurements were taken on a regular basis and with good coverage, however, its break up made the monitoring fragmented and irregular. In the immediate years following the break up the flux of pollutants through rivers into the Caspian changed with a drastic reduction in industrial and agricultural activity in the four CIS states. The economic recovery of the recent years is changing the environmental quality situation although this can not yet be substantiated with reliable data and information. A review of those reliable data that do exist, including data from sediment and ecotoxicological surveys undertaken as part of CEP during its two phases up to 2006, do indicate highly stressed environment in certain hot-spots, but there are not sufficient data to support the idea that the assessment of a highly stressed environment can also be applied to the entire Caspian ecosystem. The new pollution data set created under the sediment contaminant survey in 2005 Caspian Sea supports

rather the trend of a decline in the environmental quality. Levels of certain chlorinated agrochemicals, in particular DDT, Lindane and Endosulfans, are a major cause for concern in the Caspian. Although a banned substance, DDT and its breakdown products have been detected at high levels in CEP sediment analyses indicating continued use of the chemical. DDT was also detected at relatively high levels in the tissues of seal and fish in autopsies undertaken by CEP in 2002, but since then no analysis has been carried out. The new sediment contaminant data on Kura and Volga rivers estuaries made available in 2005 have indicated rather elevated levels of PCBs which corresponds with the results obtained from Ecotox study. Higher PCBs levels have also been found in the upstream Kura river sediment close to Mingechar Reservoir. Some heavy metals (Cadmium, Chromium, Nickel, Copper and Arsenic) are found at comparatively high levels throughout the Caspian sediments, but the distribution suggests the source is due to the nature of regional geology rather than pollution. Elevated levels of mercury, lead and chromium indicate local pollution sources superimposed over the regional signature. Hydrocarbons are also an area of concern where there has been oil and gas production. Pollution threats include contaminants sequestered in the major impoundments; continued and increased use of banned agrochemicals; increased industrial activities, potential widespread hydrocarbon pollution, with the anticipated expansion of oil and gas development and transportation; and, acute damage from oil and hazardous substance spillage particularly from substandard vessels currently are using in the region. Available data do not support the generally held view that nutrient loading is a regional problem, although a large size anomalous algal bloom (AAB) was recorded in the Southern Caspian in 2005 near the Iranian coast in South west Caspian. There is a lack of information about pollution in groundwater and its interaction with the Caspian Sea.

2.1.4 Unsustainable coastal area development

The coastal landscapes, habitats, amenities and infrastructure are being damaged by a variety of natural and man-made factors. Natural factors include water level fluctuations, wind induced or storm-induced surges and earthquakes. Man-made causes, include desertification/deforestation, regulation of rivers, urbanization and industrial development, inadequate agricultural/aquaculture planning and development, poor groundwater management, inadequate recreational development, and land-based and sea-based pollution. Climate change is influencing and often exacerbating the impacts of the natural and man factors resulting in considerable social and economic damages in the coastal areas. Close to 40 percent of the Caspian coastal area is impacted and it is estimated that of this area, about 69 percent has undergone desertification in various ways. Unsustainable coastal area development combined with pollution, and the decline in fisheries has produced undesired human health impacts. Understanding of the concepts of integrated coastal zone and coastal land use planning are critical to addressing these issues.

2.2 Environmental Management Challenges

2.2.1 Legal and regulatory

All the littoral states have comprehensive laws on environmental protection and on the use of natural resources, supported by provisions in their constitutions. During the last few years this legislation has been strengthened through additional laws and regulations and modifications. A desk study undertaken as part of the transboundary diagnostic analysis in 2001 and complemented by a review in 2006 has identified a number of remaining deficiencies, in national laws and regulations relating to priority regional environmental concern areas. The studies stress the need for stronger enforcement of and compliance with the existing laws and regulations which in themselves are sufficiently stringent. In spite of the undetermined legal status of the Caspian Sea the littoral states have continued to recognize the need to take joint and separate actions to protect the Caspian Sea environment and to protect, preserve, restore and utilize its resources in a sustainable and rational manner. In November 2003 the five Caspian Littoral States signed the “Framework Convention for the Protection of the Marine Environment of the Caspian Sea”, also known as Tehran Convention. The objective of the Convention is “the protection of the Caspian Sea environment from all sources of pollution, including the protection, preservation, restoration and sustainable and rational use of the living resources of the Caspian Sea”. Entering into force on 12 August 2006, the Tehran Convention is the first legally binding agreement signed by all five Caspian littoral states and serves as an overarching legal instrument laying down the general requirements and the institutional mechanism for environmental protection in the region. Being a Framework Convention it is envisaged that concrete obligations of the parties will be formulated through the adoption of a number of additional binding instruments in the form of protocols. At the First Meeting of the State Signatories (Tehran, July 2004), the Caspian government representatives agreed to initiate the development of the first draft protocols for priority areas of concern, namely: i) Protocol on Environmental Impact Assessment in Transboundary Context, ii) Protocol on Pollution from Land-Based Sources, iii) Protocol on Biodiversity Conservation. The same meeting agreed to finalize the ongoing negotiations on the draft Protocol concerning Regional Cooperation in Cases of Emergency to the Governments, later renamed to Protocol Concerning Regional Preparedness, Response and Cooperation in Combating Oil Pollution Incidents”. These protocols are in advanced stages of formulation and development. The State Signatories to the Tehran Convention have also requested that consideration is given to the possibility of developing additional protocol on fisheries. Littoral states are participating in many major international environmental conventions.

2.2.2 Institutional

From early 90's the political, legal and economic regimes of the Caspian states have undergone radical transformations and this transition created, and to some extent still continue to create enormous challenges. In spite of commendable work, the necessary investment and in most states, the monitoring and enforcement activities are not yet fully carried out. Some of the responsible institutions still lack the adequate capacity, resources, mandate and expertise. At times, the responsibilities are shared across a range of organizations, with inevitable consequences of inconsistent or conflicting policies and measures. Institutional deficiencies can bring about ineffective spatial planning, environmentally aggressive subsidies, insufficient control procedures, inadequate EIA practices, and aggressive agricultural and development policies, all of which have been identified as root causes in the concern areas. The littoral states are engaged in programmes to streamline policies, build capacity in the institutions and reform the relevant sectors, but the impacts of these reforms are slow to materialize and are still to be felt. The entering into force of the Tehran Convention activated the Convention's provisions related to the institutional arrangements for the implementation of the Convention. The implementation of the Convention is to be governed by a Conference of the Parties and serviced by a Convention Secretariat. The Convention allows for various sub-bodies and institutions to be put in place as and when the need arises. Such sub-bodies could be, for instance, put in place with the mandate to oversee the implementation of the Convention and its Protocols and to secure the best scientific advice. The Tehran Convention also obligates each Contracting Party to designate a National Authority to coordinate the implementation of the Convention in its territory and under its jurisdiction. While deciding on the final institutional arrangements for the Convention consideration is also given to the close links between the CEP and the Convention process which were underlined already back in 2004 in the Decisions and Recommendations of the CEP Steering Committee meeting where a request was made to develop proposals for further improving and strengthening the collaborative arrangements between the two processes.

2.2.3 Economic and financial

The Caspian Sea contains considerable oil and gas deposits and is rich in Bioresources. The sea also offers remarkable opportunities for transport between the littoral countries as well as between Europe and south and south-east Asia. The Caspian has also good potential for eco-tourism. During the 2002-2006 period the region witnessed a relative improvement in its financial and economic status as indicated by increase in per capita GNP and HDR in all the countries. This welcome change was mostly due to global rise in oil prices, increased oil and gas exploitation in the region as well as the relative stabilization of the national economies. However the Caspian region as a whole is still not a major economic center. Unemployment rates are generally high, and considerably higher among the women and the internally displaced population and, consequently, for many years to come the littoral governments will need to give higher priority to job creation, health, and education than to environment protection. Individuals too will be less concerned with safeguarding the environment when they are unemployed and faced with finding adequate food, shelter, education and healthcare for their families. For most part governmental accountability needs to improve and the civil society to be strengthened. Environmental and natural resources are overseen by a host of ministries and local governments. Despite the relative economic improvement and the associated increase in environmental budgets in most countries the government agencies often do not have sufficient resources to conduct the necessary monitoring and enforcement activities to protect the regional environment. Integration of the development planning process and environmental protect still remains to be fully achieved. The countries are not using economic incentives as much as possible in the region in order to promote environmental protection. Limited donor based financial contributions to the region is also a major constraint.

2.2.4 Information

The region suffers from severe limitations in available data and information both to decision makers and to informed members of the society. Considerable research and monitoring has been carried out in the past, but the data is often not comparable across the region, it is often insufficient, inaccurate or non-harmonized and not freely exchanged and shared among the responsible institutions. The researches conducted in the region under umbrella of CEP in last years contributed into overall knowledge of the Caspian environment and demonstrated ability of countries to cooperate in data and information exchange. However the lack of strong country commitment has not allowed sustainability to be reached in this issue. The lack of data often promotes regulatory capture and self interest. Further, if and when national legislation requires open access to information, it is often constrained by poor dissemination, non-user friendly formats and insufficient media attention to the environmental issues or lack of information technology for information exchange. This sub-optimal availability of information can result in uncoordinated and unsubstantiated policies and measures at regional level.

Section 3: SAP development and prioritization

The revisited TDA confirmed the eight Major Perceived Problems and Issues identified in the initial TDA, but also revealed several new issues that had not previously been fully recognized, such as human health, groundwater protection, and regional natural disaster planning and mitigation. It was determined that these areas of concern, and their root causes, could be most effectively and appropriately addressed through the aims of the five Environmental Quality Objectives (EQOs). Four of these EQOs correlate to the four concern areas, plus one EQO addressing the cross-sectoral issue of strengthening the involvement of all stakeholders. The five EQOs are:

- Conservation and sustainable use of bioresources
- Conservation of Caspian biodiversity
- Improved water quality of the Caspian
- Sustainable development of the coastal zones
- Strengthened stakeholder participation in Caspian environment stewardship

Each EQO consists of a number of targets that are comprised of inter-related interventions that address the root causes of the concern areas. For the regional level interventions, the littoral states and the international partners shall work collectively to take the required steps to fulfill the intervention. The national level supporting interventions will be the responsibility of the littoral countries. The EQOs, their targets and interventions are listed below. The timings of the interventions in order to meet their targets are also listed, whether within the time span of five or ten years. Interventions have only been included in the first five year period if they are supported by a majority of the NCAPs, that is if the national level support is included within the NCAP, and they have been identified as priority interventions. The countries have classified each intervention as having either high (H) or medium (M) priority. In addition, in Annex 2 of this document are listed the interventions and their corresponding indicators.

EQO I: Conservation and sustainable use of bioresources
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EQO Indicator: Commercial fish stocks are maintained at sustainable levels with reference to the base year (1998)
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Target 1: Sustainable use of commercial fisheries resources

- 1.1 Promote the development and implementation of a regional Fisheries protocol under the Tehran Convention. (H) 1-5 years.
- 1.2 Further strengthen the regional cooperation under the fisheries protocol for fisheries management, including the development of a regional integrated fisheries management strategy, regional standards of fisheries harvest practices of commercial species, and the establishment of a quota system based on regular joint stock assessments. (H) 1-5 years.
- 1.3 Improve compliance, enforcement and monitoring mechanisms and develop enforcement mechanisms and economic instruments for protection of the sturgeon fishery and to reduce illegal catch and trade in accordance with CITES Paris Declaration. (H) 1-5 years.

Target 2: Rehabilitate stocks of migratory (sturgeon, inconnu, herring) commercially valuable fish species

- 2.1 Conduct activities to identify, protect, restore and manage natural spawning grounds for sturgeon and other commercially valuable anadromous species, inter alia, within the framework of a regional integrated fisheries management strategy. (M) 1-5 years.
- 2.2 Increase sturgeon hatchery efficiency and capacity through improvement of bio-techniques and fry growth technology as well as enhancing scales of their production. (H) 5-10 years.
- 2.3 Strengthen regional cooperation including scientific exchanges on improving hatchery efficiency and the creation of a gene bank for anadromous fish. (H) 1-10 years
- 2.4 Increase aqua-culture of sturgeon and other commercially valuable species. (H) 1-5 years.

Target 3: Improve livelihoods in coastal communities to reduce dependency on unsustainable fishing practices

- 3.1 Promote more selective fishing methods and small-scale aquaculture. (MH) 5-10 years.
- 3.2 Promote alternative income sources and the adoption sustainable livelihoods in fishing communities. (H) 5-10 years

Target 4: Rehabilitate stocks of Caspian seal

- 4.1 Conduct scientifically based surveys on the number and health of Caspian seal stocks. (H) 1-5 years.
- 4.2 Strengthen regional cooperation in Caspian seal research activities. (H) 1-5 years
- 4.3 Draft and adopt regional management plan on Caspian Seal. (H) 1-5 years

<p>EQO II: Conservation of Biodiversity</p> <p>EQO Indicator: Arrest biodiversity erosion due to anthropogenic impacts</p>
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Target 1: Increased regional collaboration to achieve strengthened protection for biodiversity

- 1.1 Draft and adopt a Biodiversity Protocol to the Tehran Convention. (H) 1-5 years
- 1.2 Establish a regional biodiversity monitoring system. (M) 1-5 years.
- 1.3 Develop an international research programme on Caspian biodiversity related issues. (H) 1-5 years.
- 1.4 Ensure biodiversity issues and impacts are taken into account in all EIA and planning applications. (H) 1-5 years.

Target 2: Ensure all key threatened species are maintained or restored to viable levels

- 2.1 Identify and assess key threatened species status. (M) 1-5 years.
- 2.2 Ensure adequate legal protection for key threatened species. (H) 1-5 years.
- 2.3 Provide improved in-situ and ex-situ protection for key threatened species. (H) 5-10 years.
- 2.4 Create a gene bank of key threatened species. (M) 5-10 years.

Target 3: Control of non-native (alien) species and management of impact of existing invasive species

- 3.1 Regional commitment to the control of alien Species in Biodiversity Protocol and other appropriate regional agreements. (H) 1-5 years.
- 3.2 Development of regional procedures for the introduction and management of alien species and control of invasive species in the Caspian. (H) 1-5 years.
- 3.3 Investigation of possible biological control measures to reduce the impact of Mnemiopsis on the ecosystem of the Caspian and reach regional agreement on the appropriate measures. (H) 1-5 years.
- 3.4 Construction of one ballast water reception/treatment facility to control passage of invasive species via shipping routes. (H) 1-5 years.

Target 4: Ensure all key coastal and marine habitats are represented in the list of Special Protected Areas of the Caspian Sea (SPACS)

- 4.1 Create new and expand existing protected areas (including where necessary transboundary areas) to cover all special Caspian coastal and marine habitats. (H) 1-5 years.

- 4.2 Improve effectiveness of management of Caspian protected coastal areas complying with existing legislation. (H) 5-10 years.
- 4.3 Creation of a regional communication network between SPACS. (M) 5-10 years.
- 4.4 Development of ecosystem management plans for the major rivers in the near Caspian basin as per paragraph 1.3. (H) 1-5 years.

Target 5: Identify and restore priority coastal habitats

- 5.1 Develop and apply a standardized methodology for the assessment of the environmental health of coastal habitats. (M) 5-10 years.
- 5.2 Design, implement and monitor coastal habitat restoration projects. (M) 5-10 years.

Target 6: Identify and restore priority marine habitats

- 6.1 Develop and apply a standardized methodology for assessing the health of marine habitats. (M) 5-10 years.
- 6.2 Design, implement and monitor priority marine habitat restoration projects. (M) 5-10 years.

<p>EQO III: <u>Improve the water quality of the Caspian</u></p> <p>EQO Indicator: A measurable decline in levels of the main contaminant groups in the water, sediment and biota.</p>

Target 1: Development of regional strategies for pollution reduction

- 1.1 Develop and adopt a protocol to the Tehran Convention for land-based sources of pollution. (H) 1-5 years.
- 1.2 Undertake a comprehensive land-based source assessment and develop a regional action plan to remediate areas of pollution concern identified. (H) 1-5 years.
- 1.3 Reduce pollution from existing and decommissioned onshore and offshore oil and gas installations causing significant pollution. (H) 5-10 years
- 1.4 Draft and adopt a protocol to the Tehran Convention on dumping at sea by vessels. (M) 1-5 years.
- 1.5 Establish ship waste reception/treatment facilities in all major ports. (M) 5-10 years.
- 1.6 Regional POPs/PTS Programme developed, agreed and implemented. The work is to be coordinated with POPs enabling activities in Stockholm Convention signatory states. (H) 5-10 years.
- 1.7 Develop and initiate implementations of the regional marine litter control and mitigation strategy. (H) 1-5 years.

Target 2: Strengthen pollution prevention, monitoring and control measures in the littoral states

- 2.1 Develop at a regional level proposals for strengthening discharge licensing, compliance monitoring and enforcement of pollution control. (H) 1-5 years.
- 2.2 Develop recommendations for harmonization of pollution discharge and emission, and water quality standards. (H) 1-5 years.
- 2.3 Develop and introduce economic instruments to encourage reduced pollution loads. (H) 1-5 years.
- 2.4 Reduce untreated discharges from coastal municipal sources. (M) 5-10 years.
- 2.5 Undertake a survey of coastal zone to identify and characterize major contaminated land sites and develop strategy to tackle areas of pollution concern. (H) 1-5 years.

2.6 Implement pilot projects to demonstrate the most cost effective reclamation technologies for a range of contaminants. (H) 5-10 years.

Target 3: Implement a regionally coordinated water quality monitoring programme

3.1 Develop and implement a regional water quality monitoring programme focused on critical contaminants and hotspots. (H) 1-5 years.

3.2 Provide report on contaminant levels in Caspian every three years, and make proposals for remedial actions. (H) 1-5 years.

3.3 Develop and implement a research programme into the phenomena of Anomalous Algal Blooms in the Caspian. (M) 1-5 years

3.4 Establish a regional monitoring programme for recreational waters. (M) 1-5 years

Target 4: Disaster prevention and response

4.1 Finalize and approve national oil spill contingency plans and harmonize with mutual aid industry plans. (H) 1-5 years.

4.2 Draft and adopt a Protocol to the Tehran Convention Concerning Regional Preparedness, Response and Co-operation in combating oil pollution incidents. (H) 1-5 years.

4.3 Develop and implement under a Memorandum of Understanding the Regional Oil Spill Preparedness and Cooperation Plan. (H) 1-5 years.

4.4 Update sensitive areas mapping of the Caspian for inclusion in the national and regional plans. (H) 1-5 years.

4.5 Development of regional contingency plan for spills of hazardous substances other than oil. (H) 1-5 years.

4.6 Undertake risk assessment for oil and hazardous substances spillage from shipping, pipelines, offshore and onshore production and storage facilities. (H) 1-5 years.

4.7 Promote the development of regional agreements for liability and compensation in the event of oil and other hazardous substance spills. (H) 1-5 years.

4.8 Develop regional agreement on minimum standards of maintenance of existing Caspian tanker fleet. (M) 5-10 years.

4.9 Development of a Natural Disaster Preparedness and Mitigation Plan for the Caspian Sea. (M) 1-5 years

EQO IV: Sustainable development of the coastal zones

EQO IV Indicator: Measurable and sustained increase in human development indices in the Caspian coastal areas

Target 1: Sustainable use and management of coastal areas through integrated coastal area management

1.1 Strengthen, as needed, national regulation on coastal area planning and management. (M) 1-5 years.

1.2 Strengthen technical capacity at local and municipal government level for coastal planning and introduce economic instruments to promote rational land use. (M) 1-5 years.

1.3 Develop regional databases including GIS for coastal planning and management. (M) 1-5 years.

1.4 Develop regional guidelines for pilot integrated coastal area management planning and undertake a pilot project in each Caspian state. (M) 1-5 years.

- 1.5 Development of eco tourism pilot projects based on existing and successful models from other regions. (M) 1-5 years.

Target 2: Combat the desertification and deforestation process

- 2.1 Where necessary, strengthen legislation to combat desertification and deforestation. (H) 1-5 years.
- 2.2 Apply remote sensing and GIS techniques to monitor trends in desertification and deforestation in the Caspian region. (H) 1-5 years.
- 2.3 In critical desertification and deforestation areas, develop and implement pilot projects designed to address root causes. (M) 5-10 years.
- 2.4 In threatened coastal forest areas introduce economic instruments and alternatives to reduce wood consumption, including use of wood fuel. (H) 5-10 years.
- 2.5 In threatened desert areas conduct targeted awareness campaigns on sustainable grazing practices. (H) 5-10 years.

Target 3: Develop and initiate implementation of strategies for managing groundwater

- 3.1 Assess the current knowledge about the occurrence, flow and quality, including pollution, of groundwater, including its interaction with the Caspian Sea; and devise a programme for coordinated groundwater monitoring. (H) 1-5 years.
- 3.2 Carry out a review of legal and institutional framework for managing groundwater; and make adjustments to reflect current needs, as necessary. (H) 1-5 years.
- 3.3 Design a regional programme of groundwater management measures, as necessary. (H) 1-5 years.
- 3.4 Implement demonstration of sound groundwater management. (H) 1-5 years.

Target 4: Develop and initiate implementation of strategies for management of Sea level rises

- 4.1 Undertake an assessment of coastal vulnerability to sea level rises and potential economic losses. (H) 1-5 years.
- 4.2 Development of a set of sea level fluctuation scenarios accounting for climate change over the next fifty years. Undertake an assessment of coastal vulnerability to sea level rises and potential economic losses. (H) 5-10 years.
- 4.3 Development of regional guidelines for adaptive management for sea level fluctuation and climate change. (H) 1-5 years.

Target 5: Promote environmentally sound agricultural practices in the Caspian region

- 5.1 Establish and promote best practice recommendations for the use of agro chemicals, including application times and rates, handling, storage and disposal. (M) 1-5 years.
- 5.2 Demonstrate through pilot projects environmentally sound agricultural practices such as soil conservation, creation of surface and groundwater protection zones, use of natural fertilizers and use of pest resistant crop strains. (M) 5-10 years.
- 5.3 Combat eutrophication in sensitive coastal zones by controlling soil and water contamination from agriculture and other nutrient sources. (M) 5-10 years.

EQO V: Strengthen civil society participation in Caspian environmental stewardship

EQO Indicator: Enhanced involvement of stakeholders in the NCAPs and SAP implementation

Target 1: Increased participation of public in coastal communities as well as stakeholders of Caspian countries in management of Caspian environment

- 1.1 Establish a Caspian NGO Forum to provide support and guidance for improving civil society involvement and strengthening of environmental NGO Networks. (H) 1-5 years
- 1.2 Implementation of the endorsed Caspian Public Participation Strategy through its incorporation in the National Caspian Action Programmes (NCAPs). (H) 1-5 years
- 1.3 Create a press bureau to improve country, regional and international awareness of the Caspian environmental issues and encourage the media to participate in the dissemination of information. (H) 1-5 years
- 1.4 Provide regular training to journalists in order to strengthen environmental journalism and improve media coverage of environmental issues. (H) 1-5 years
- 1.5 Create a Caspian Environment Information/Communication/Education Centers to provide information to public on Caspian environmental issues. (H) 1-10 years
- 1.6 Development of academic curriculum materials focusing on Caspian environmental issues and promotion of academic partnerships at school and university levels. (H) 1-5 years
- 1.7 University level curricula developed for ecology and environmental science in conjunction with international institutions featuring Caspian issues. (H) 1-5 years
- 1.8 Establish media and film festivals in conjunction with NGO Forum, on Caspian ecology to focus on the links between human behavior and natural ecosystem functions. (H) 1-5 years
- 1.9 Set up a fund for micro-grants addressing coastal community development schemes and local environmental issues, in partnership with the private sector and international donor community. (H) 1-5 years
- 1.10 Establishment of “Caspian Day” and develop specific awareness raising for specific target groups. (H) 1-5 years
- 1.11 Set up “Friends of Caspian” programme with annual competition for local, national and international companies of facility that has achieved the most concrete gains in protection of the Caspian environment in the previous year, in at least two levels (national and international) on the territory of coastal region. (H) 1-5 years

Target 2: Increase local, regional and governmental authorities understanding the importance of environmental issues and increase their involvement in project implementation

- 2.1 Develop awareness training programmes on environmental issues for local authorities, and national ministries, through Caspian Environment Information/Communication/Education Centers emphasizing the environmental evaluation techniques. (H) 1-5 years
- 2.2 Implement national EIA procedures for all appropriate Caspian project developments, including provisions for public participation, and encourage all littoral countries to sign ESPOO Convention. (H) 1-5 years
- 2.3 Hold biennial mayoral conferences sponsored by national and international partners to foster networking among coastal local authorities and enhance their participation in implementing Caspian environmental policies. (H) 1-5 years
- 2.4 Development of training programmes for land/property agents, construction firms, regional, district and national level planning agencies on importance of coastal sustainable development practices with concrete examples of sustainable development projects. (H) 1-5 years
- 2.5 Development of training programmes for regional and municipal authorities on modern techniques for waste water and municipal waste treatment. (H) 1-5 years

2.6 Create targeted awareness building campaigns for ministerial authorities and regional administration involved in inter alia: agriculture, fisheries, transportation natural resource management. (H) 1-5 years

Target 3: Develop active partnerships between Caspian NGO Forum, local and multinational enterprises and other stakeholders in the region

3.1 Promote environmental partnerships between NGO, government and private sector to address specific Caspian issues by implementation of Caspian Public Participation Strategy. (H) 1-5 years

3.2 Develop Stakeholder Dialogue Groups at national level and exchange experience at regional level to improve dialogue opportunities for stakeholder groups who may be in conflict natural resource management. (H) 1-5 years

3.3 Develop a programme to encourage implementation of cleaner technologies by local industries corresponding to ISO 14000. (H) 1-5 years

3.4 Provide a basic ecology training course for local coastal enterprises and targeted populations emphasizing win-win scenarios and sound environmental stewardship. (H) 1-5 years

Section 4: SAP implementation

4.1 National Caspian Action Plans (NCAPs)

In preparing and updating the SAP, the CEP assembled the NCAP teams of experts from all five states with the purpose of defining the priority regional environmental concern areas to be addressed and agreeing the corresponding Environmental Quality Objectives. Through a series of regional meetings the targets and interventions needed to meet these EQOs were articulated and this intense national involvement has resulted in a SAP, which contains regional interventions which are supported to a great extent by national interventions contained in the NCAPs. Without this commitment to implement the national supporting interventions the SAP's regional interventions have no foundations and their implementation is undermined.

The NCAPs, as revised and updated, are the main foundation of the SAP. The preparation of the NCAPs and their revisit by the littoral states is based on an assessment of the priority national concern areas, which include, where they are in concordance, regional concerns identified in the TDA. Each country has developed objectives, targets, proposed interventions, and drawn up a resource mobilization strategy to address their objectives. They entered into a thorough inter-sectoral dialogue as an integral part of a national endorsement process. The NCAPs represent an awareness of and commitment to enhanced environmental stewardship by the littoral states. Whilst the NCAPs feed into the SAP, they are also cohesive, independent documents which detail national objectives, targets and interventions to be achieved. They have been prepared and revisited along common guidelines while taking note of the planning and implementations specificities of each littoral country. Once full government endorsement has been granted the NCAP and will move forward independently of the SAP process.

It is critical that all states continue to make further steps towards improved environmental stewardship at the national levels, with the confidence that even the smallest action can lead to large improvements when taken collectively.

4.2 Policy Coordination

The littoral states have ensured and will continue to ensure that the NCAP and SAP content, policy and measures, are coordinated and consistent with those developed across the sectoral ministries. The NCAP consultation process leading to endorsement was designed to ensure all key government stakeholders were consulted as early as possible to ensure integration. In preparing and revising the NCAPs the littoral states were and are required to refer to existing development and environment plans, including the National Environmental Action Plan (NEAP) and National Biodiversity Strategic Action Plan and it has been stressed that each littoral state should ensure that its body of laws and regulations is fully coordinated and supportive of environmental policies developed through the SAP.

4.3 Resource mobilization

In 2002 the cost of the implementation of the SAP in its first five year period was estimated to require a total of approximately \$170 million. Noting the considerable depreciation in the value of US Dollar the estimated cost could easily surpass \$ 200 million even taking into consideration that a number of the suggested interventions in the original SAP have now fully implemented and their costs will need to be deducted.. In the original SAP the potential assistance from the international donor community and the private sector over this period was estimated at \$20 million of which some \$ 15 million materialized. International grant sources could be further tapped; however, any success will undoubtedly be tied to the Caspian states demonstrating the commitment and implementation of their NCAPs. International financial institutions should be approached for loans with the full involvement of both technical environmental institutions and financial, economic and planning authorities to ensure that the requests meet the strict financial criteria and are nationally guaranteed. An Investment Forum in Baku in 2003 sought to mobilize resources for a number of defined investment ideas and proposals. Further initiatives to mobilize international and regional resources could be explored including development of Strategic partnership(s).

Even given the above initiatives, there remains a significant funding gap, which will principally need to be filled by the littoral states. This may be done through further integration of development and environment planning processes; assigning higher value to environmental consideration in the region and allocation of substantially enhanced national financial resources to environmental issues in general and to the Caspian in particular. The most doable, cost effective and upstream measures dealing with fisheries development, biodiversity protection, pollution monitoring and control, and sustainable development of coastal areas should be given higher implementation priority. Regional and supporting national policy measures and initiatives, including regional agreements and Memoranda of Understanding that would contribute to the creation of an environment conducive to implementation of other measures, such as investment activities and environmental sensitization initiatives, should be assigned highest priority. Environmentally oriented economic measures, environmentally oriented budgets, and private sector partnership for environmental protection should be promoted throughout the region.

4.4 Institutional Arrangements

With the full ratification of the Tehran Convention and the establishment of the Convention Secretariat the implementation arrangement of the SAP will need to be reviewed to take account of the need to engage the Secretariat. Essentially however and once agreed at Ministerial level, implementation of the SAP is the responsibility of the governments of the littoral states. At the national level the CEP National Coordination Structures (NCSs) will be responsible for coordination of NCAP and SAP implementation activities under the leadership of the CEP National Focal Points.

Section 5: The Future of the Strategic Action Programme

The SAP is officially launched and updated with its adoption by the CEP Steering Committee and verification by the CEP National Focal Points of the littoral states. Active promotion of the SAP by the littoral states and the PCU at national, regional and international fora is critical in gaining the broad support it needs for successful implementation. Key stakeholders are to be targeted through public meetings, media campaigns and briefings and consultations. Ultimately, the littoral states responsibility is to create and maintain the necessary momentum for SAP implementation. The littoral states and the CEP International Partners will maintain their close dialogue on how best to support implementation of the SAP and strenuous efforts will be made to attract new international donors to CEP. Private sector will be approached with the aim of obtaining coincidental, parallel funding. At the end of its first year a detailed SAP financial gap analysis will be undertaken at regional and national levels, and a donor conference convened.

Annex 1: Caspian Strategic Action Programme Development: A Chronology

November 1997- May 1998. The Concept Paper for the first phase of the CEP was prepared and approved at the CEP Steering Committee Meeting at Ramsar, I.R. Iran. It was based on the Preliminary TDA formulated in 1997/1998; the joint missions by the UNDP, UNEP, the World Bank to the five countries in 1995 and 1997 and the significant input from the EU/Tacis after their mission in 1996. The Concept paper proposed the overall goal of the CEP to be the promotion of 'the sustainable development and management of the Caspian environment over the long term'. The document identified three Environmental Challenges namely a) sea level rise b) pollution threat including oil products from oilfields and transportation, and c) biodiversity and depletion of bio-resources. It therefore aimed at i) understanding and learning to live with the water level fluctuations; ii) abatement of existing and prevention of new types of pollution and deterioration of the Caspian environment and its bio-resources, iii) recovery and rehabilitation of the degraded elements of environment including biological diversity and iv) long term sustainability of environmental quality and bioresources. These challenges and goals laid the basic principles for future work on the SAP. The CEP Project Brief and Project Documents subsequently developed in 1998/1999 incorporated these as major elements and issues.

July 2000. The First Regional TDA/NCAPs/SAP Meeting was held in Baku. The meeting identified eight Caspian Major Perceived Problems and Issues (MPPIs). These were i) decline in certain fisheries stocks including Sturgeon, ii) threats to biodiversity iii) overall decline in environmental quality, iv) damage to coastal infrastructure and amenities, v) degradation of coastal landscapes and damage to coastal habitats, vi) and decline in human health, vii) introduced species and viii) contamination from offshore oil and gas activities. The last two MPPIs were at the time considered as 'emerging' MPPIs. The meeting continued to identify the list of threats to the Caspian environment. The PCU and the CRTCs were requested by the meeting to collect needed information on the MPPIs to ascertain their relevance and significance.

December 2000. The Second Regional TDA/NCAPs/SAP Meeting was held in Baku. It initiated the preliminary Causal Chain Analysis (CCA) of the MPPIs to identify Primary, Secondary and Root Causes of the MPPIs, and began the dialogue on the identification of Prioritized Interventions (PIs) to deal with the Root Causes. The meeting outlined the NCAP Terms of Reference for the countries and tasked them to initiate the NCAP development process. It requested each country to have its own National TDA Forum to review the relevance and significance of MPPIs, CCA and PIs for the country in question. The meeting also identified additional supporting studies and activities to gather and analyze data and information required to verify the links between the MPPIs and the Root Causes. These were undertaken over 2000 and 2001 and included, *inter alia*, over 30 national and regional studies and a number of cruises and marine expeditions.

April-May 2001. Five National TDA Meetings were held, one in each of the five countries. These provided the preliminary inputs to the NCAPs and also inputted to the TDA. These were seen as the main vehicle to reflect the national concerns into the TDA.

July 2001. The Third Regional TDA/NCAPs/SAP Meeting was held in Baku. The meeting reviewed the TDA progress including the National TDAs and the TDA supporting studies and activities findings. An Outline for the TDA structure was discussed and approved. The dialogue on CCA and PIs continued. The concept of a Stakeholders Analysis was introduced and the countries were requested to input into it. The meeting was presented, discussed and approved five Environmental Quality Objectives (EQOs) for the TDA. These closely reflected the initial Concept Paper and Project Document. They were i) sustainable economic uses of the Caspian and its hinterland, ii) balanced Caspian environment including biodiversity conservation, iii) high quality Caspian Sea surface and groundwater, iv) sustainable mixed use of the Caspian coastal environment and v) enhancing the quality of human life. For each EQO a set of Targets and Indicators was identified and the Prioritized Interventions were reviewed and listed against EQOs.

July 2001-November 2001. The first TDA draft was produced under stewardship of PCU by an international consulting firm in September 2001. The draft was revised following a technical review at PCU. The second draft was shared with the region for review and comments.

September 2001. The first regional meeting of the Biodiversity Strategy Action Plan (BSAP) was held in Atyrau. The meeting outlined the BSAP structure and identified the roadmap for its production and integration into the SAP. FFI was recruited to produce BSAP draft in consultation with regional stakeholders.

November 2001. The Fourth TDA/NCAPs/SAP meeting was held in Baku. In addition to the regional technical experts and representatives of the governments and international partners, a number of internationally renowned experts participated. The TDA draft was thoroughly reviewed and revised. MPPIs, EQOs, Targets, Indicators and Prioritized Interventions were reviewed, revised, changed and reworded for purposes of additional clarity and

analytical value. A rough costing of the Interventions was attempted. Preliminary SAP Interventions were extracted from the list of Prioritized Interventions.

December 2001. EU/Tacis completed and published its input to the CEP TDA.

December 2001-May 2002. Five draft National NCAPs produced. In each country a national team of experts was recruited to produce the draft under the leadership of a national planner/strategist with necessary support from PCU. NCAPs provided the national MPPIs, the Prioritized Interventions and the interlinking analytical structure. They also identified the challenges to the implementation of the NCAPs and the suggested resource mobilization strategies.

January - April 2002. The Concept Paper for CEP II developed. Concurrently EU/Tacis initiated a process to develop a framework for its partnership with CEP II. A consensus emerged to focus on a number of environmental transboundary concern areas including fisheries and bioresources development, biodiversity protection, pollution control and sustainable development of degraded coastal areas.

February 2002. A regional BSAP/NCAPs meeting was held in Baku. The first BSAP draft was presented, discussed and reviewed. The major findings of the NCAPs were also presented and discussed. At same time a structural linkage was established between the NCAP process on one hand, the Priority Investment Projects (PIP) identification process on the other hand. The NCAP teams and the World Bank Local Consultants were requested to fully cooperate to ensure that the NCAPs included a listing of PIPs.

May 2002. A meeting of the regional technical experts was held in Baku to once again review the TDA draft in particular the SAP Preliminary List of Interventions. Final TDA was released in July 2002.

June 2002. Under the stewardship of PCU two international experts were recruited to produce the first SAP draft on the basis of the TDA and the NCAPs. The draft was shared with the region and the CEP International Partners for review and comments. Concurrently the NCAPs were subjected to national review through National Forums in all the five countries.

July 2002. A BSAP/SAP Meeting was held in Baku. The SAP first draft including the MPPIs, EQOs, Targets Indicators, Interventions were thoroughly reviewed, changed and improved. BSAP was discussed as an integral component of the SAP. Following the meeting the SAP and BSAP were redrafted and shared with the region for comments.

July 2002. A meeting of the CEP Institutional Structure for CEP II was held in Tehran. The meeting was immediately followed by the 7th Meeting of the Framework Convention for the Protection of Marine Environment of the Caspian. These meetings resulted in a regional agreement of the general institutional arrangements for the CEP II and the final text of the draft Convention.

August 2002. The second SAP meeting was held. The SAP draft including the text, the institutional arrangements and the EQOs were reviewed. A Gap Analysis was performed to ensure that the root causes identified in the CCA were addressed in the listing of the Prioritized Interventions. EQOs, Targets, Indicators and Interventions were once again reviewed and revised. BSAP related EQO(s) were also revisited. In line with the TDA and the Concept Paper four areas of concerns that were need to be addressed were identified as fisheries and bioresources development, biodiversity protection, pollution control and sustainable development of degraded coastal areas.

October 2002. Review of SAP draft by Steering Committee.

December 2002. Written comments received by SC members on SAP draft.

February 2003. National SAP consultation meetings held in each Caspian state to determine whether the SAP 1-5 year activities are supported by the pre-requisite baseline activities in the National Caspian Action Plans; if the countries allocate high or medium priorities to these 1-5 year activities; and a cost estimate of SAP implementation in the first five years at the national and regional levels and what level of funding has been earmarked in the NCAPs.

March 2003. Presentation of the final draft of the SAP and final comments from the Steering Committee.

November 2003. Adopted at Tehran Steering Committee Meeting.

February 2006: First Regional meeting of the TDA/NCAPs/SAP Revisit process is held in Baku to determine TDA/NCAPs/SAP Revisit roadmap and reconfirm regional agreement on the earlier agreed EQOs for SAP.

February- July: Information gap fill studies commissioned in the littoral countries. NCAP Revisit works initiated in all five countries.

July 2006 : Second meeting of the TDA/NCAPs/SAP Revisit process is held in Baku to review the SAP original targets, interventions and indicators in view of the perceived changes in the environmental, social and economic situations in the region and taking note of the SAP/NCAP national implementation assessments reports.

August 2006: TDA Revisit Technical Meeting held in Tehran.

October 2006: Third meeting of the TDA/NCAPs/SAP Revisit process is held in Tehran to finalize the SAP Update.

December 2006: SAP updated presented to the CEP SCM for endorsement as guidance document.

ANNEX 2: INTERVENTIONS AND THE CORRESPONDING INDICATORS

EQO I: CONSERVATION AND SUSTAINABLE USE OF BIORESOURCES

EQI INDICATOR: COMMERCIAL FISH STOCKS ARE MAINTAINED AT SUSTAINABLE LEVELS WITH REFERENCE TO THE BASE YEAR (1998)

<i>Target</i>	<i>Intervention</i>	<i>Indicator</i>	<i>Indicator type</i>	<i>Time-frame</i>
1 Sustainable use of commercial fisheries resources.	1.1 Promote the development and implementation of a regional Fisheries protocol under the Tehran Convention	a) Developed and implemented a regional Fisheries protocol.	PI	1-5 years
		b) An effective, operational regional fisheries body	PI	1-5 years
	1.2 Further strengthen the regional cooperation under the fisheries protocol for fisheries management, including the development of a regional integrated fisheries management strategy, regional standards of fisheries harvest practices of commercial species, and the establishment of a quota system based on regular joint stock assessments.	a) Relevant regional standards of fisheries harvest practices developed and adopted by the national governments.	PI	1-5 years
		b) Integrated regional fisheries management strategy document developed and adopted	PI	1-5 years
		c) Institutional dialogue between regional fisheries agencies documented	PI	1-5 years
		d) Annual quotas set based on the results of regular joint stock assessments	PI	1-5 years
	1.3 Improve compliance, enforcement and monitoring mechanisms and develop enforcement mechanisms and economic instruments for protection of the sturgeon fishery and to reduce illegal catch and trade in accordance with CITES Paris Declaration	a) Establishment of a system of regional fisheries inspection	PI	1-5 years
		b) Reduction in the level of illegal catch and trade measured and verified by CITES	SRI	1-5 years
		c) Establishment of legal and economic instruments to strengthen mechanisms to reduce illegal catch and trade.	PI	1-5 years
	2 Rehabilitate stocks of migratory (sturgeon, inconnu, herring) commercially valuable fish species.	2.1 Conduct activities to identify, protect, restore and manage natural spawning grounds for sturgeon and other commercially valuable anadromous species, inter alia, within the framework of a regional integrated fisheries management strategy.	a) Production of a periodic Caspian-wide inventory of natural spawning grounds.	PI
b) Agreement of restoration plans for natural spawning grounds, including financial plans for their management			PI	1-5 years
c) At least 50% of key spawning grounds restored, protected and maintained, i.e., in the Kura, Sefidrud, Anzali Wetlands, Ural and Volga.			SRI	5-10 years

Indicator Types:

PI Process Indicator
SRI Stress Reduction Indicator
ESI Environmental Status Indicator

ANNEX 2: INTERVENTIONS AND THE CORRESPONDING INDICATORS

EQO I: CONSERVATION AND SUSTAINABLE USE OF BIORESOURCES

<i>Target</i>	<i>Intervention</i>	<i>Indicator</i>	<i>Indicator type</i>	<i>Time-frame</i>
	2.2 Increase sturgeon hatchery efficiency and capacity through improvement of bio-techniques and fry growth technology as well as enhancing scales of their production.	d) Increase in numbers of fish using spawning grounds.	ESI	5-10 years
		a) Double amount of sturgeon fingerlings released from hatcheries from baseline year of 1998.	SRI	5-10 years
		b) Increase of fingerling survival rate from 2002 rate of 2.5%.	SRI	5-10 years
		c) Hatchery capacity built to maintain Brood stocks.	SRI	5-10 years
	2.3 Strengthen regional cooperation including scientific exchanges on improving hatchery efficiency and the creation of a gene bank for anadromous fish.	a) Regional gene bank established.	SRI	5-10 years
		b) Hatcheries cooperation network created and knowledge transfer improved.	PI	1-5 years
	2.4 Increase aqua-culture of sturgeon and other commercially valuable species	a) Doubling of aqua-culture production from baseline year of 2002	SRI	5-10 years
3 Improve livelihoods in coastal communities to reduce dependency on unsustainable fishing practices	3.1 Promote more selective fishing methods and small-scale aquaculture.	a) Policies and incentives introduced to encourage use of selective fishing methods	PI	1-5 years
		b) Policies and incentives introduced to encourage small scale aquaculture.	PI	5-10 years
		c) At least one functioning coastal community small-scale aquaculture scheme in each of the Caspian states.	SRI	5-10 years
	3.2 Promote alternative income sources and the adoption sustainable livelihoods in fishing communities.	a) Programmes in place to promote alternative livelihoods in all coastal fishing communities. Community revenue from unsustainable fishing reduced to less than 50% of the total.	SRI	5-10 years
		b) Improved livelihoods in coastal fishing communities as measured by increased household incomes	SRI	5-10 years

Indicator Types:

PI Process Indicator
SRI Stress Reduction Indicator
ESI Environmental Status Indicator

ANNEX 2: INTERVENTIONS AND THE CORRESPONDING INDICATORS

EQO I: CONSERVATION AND SUSTAINABLE USE OF BIORESOURCES

<i>Target</i>	<i>Intervention</i>	<i>Indicator</i>	<i>Indicator type</i>	<i>Time-frame</i>
4 Rehabilitate stocks of Caspian seal	4.1 Conduct scientifically based surveys on the number and health of Caspian seal stocks	a) Regionally published and agreed reports on the status of the Caspian seal population	PI	1-5 years
	4.2 Strengthen regional cooperation in Caspian seal research activities	a) International conferences on the Caspian seal attended by all five Caspian states	PI	1-5 years
		b) Documented evidence of joint surveys	PI	1-5 years
	4.3 Draft and adopt regional management plan for the Caspian Seal	a) Regionally adopted Caspian Seal management plan	PI	1-5 years

Indicator Types:

PI Process Indicator
 SRI Stress Reduction Indicator
 ESI Environmental Status Indicator

ANNEX 2: INTERVENTIONS AND THE CORRESPONDING INDICATORS

EQO II: CONSERVATION OF BIODIVERSITY

EQO INDICATOR: ARREST BIODIVERSITY EROSION DUE TO ANTHROPOGENIC IMPACTS

<i>Target</i>	<i>Intervention</i>	<i>Indicator</i>	<i>Indicator type</i>	<i>Time-frame</i>	
1 Increased regional collaboration to achieve strengthened protection for biodiversity.	1.1 Draft and adopt a Biodiversity Protocol to the Tehran Convention	a) Regionally adopted Biodiversity Protocol to the Tehran Convention.	PI	1-5 years	
	1.2 Establish a regional biodiversity monitoring system.	a) Development and agreement of a regional biodiversity monitoring plan for marine habitats, species and sites which are threatened.	PI	1-5 years	
		b) Establishment of a network of equipped biology laboratories staffed with trained personnel	SRI	5-10 years	
		c) Production of regional bi-annual reports on status of biodiversity of the Caspian.	ESI	5-10 years	
	1.3 Develop an international research programme on Caspian biodiversity related issues.	a) A bi-annual international scientific conference of the health of the Caspian ecosystem	PI	1-5 years	
		b) Creation of a regional 'clearing house mechanism' (CHM) for Caspian biodiversity.	PI	1-5 years	
		c) 50% increase in a number of international publications on Caspian biodiversity related issues measured against a 2002 baseline	PI	1-5 years	
	1.4 Ensure biodiversity issues and impacts are taken into account in all EIA and planning applications.	a) Increased reference to biodiversity as a key issue in marine and coastal planning /land use decision making documents.	PI	1-5 years	
	2 Ensure all key threatened species are maintained or restored to viable levels.	2.1 Identify and assess key threatened species status.	a) A regional Red Book published containing a list of threatened key Caspian species and their status.	PI	1-5 years
		2.2 Ensure adequate legal protection for key threatened species.	a) Development of new or strengthening of existing national & regional legislation for the protection of key threatened species.	PI	1-5 years

Indicator Types:

PI Process Indicator
 SRI Stress Reduction Indicator
 ESI Environmental Status Indicator

ANNEX 2: INTERVENTIONS AND THE CORRESPONDING INDICATORS

EQO II: CONSERVATION OF BIODIVERSITY

<i>Target</i>	<i>Intervention</i>	<i>Indicator</i>	<i>Indicator type</i>	<i>Time-frame</i>
		b) Improved enforcement of legislation for the protection of threatened species, with 50% increase in prosecution cases won and decisions carried out from a baseline of 2002.	SRI	1-5 years
	2.3 Provide improved in-situ and ex-situ protection for key threatened species.	a) A halt or slow down the decreasing trend of population numbers of key threatened species from a baseline of 2002.	RSI	5-10 years
		b) Expansion of the ranges of key threatened species from a baseline of 2002.	SRI	5-10 years
		c) Improved record of re-introduction of native species and restoration of their habitats.	SRI	5-10 years
	2.4 Create a gene bank of key threatened species.	a) DNA of key threatened species deposited in gene bank.	PI	5-10 years

Indicator Types:

PI Process Indicator
 SRI Stress Reduction Indicator
 ESI Environmental Status Indicator

ANNEX 2: INTERVENTIONS AND THE CORRESPONDING INDICATORS

EQO II: CONSERVATION OF BIODIVERSITY

Target	Intervention	Indicator	Indicator type	Time-frame
3 Control of non-native (alien) species and management of impact of existing invasive species.	3.1 Regional commitment to the control of alien Species in Biodiversity Protocol and other appropriate regional agreements.	a) The issue of alien and invasive species is included in the Biodiversity Protocol to the Tehran Convention	PI	1-5 years
	3.2 Development of regional procedures for the introduction and management of alien species and control of invasive species in the Caspian.	a) Agreement and implementation of regional guidelines for the purposeful introduction of alien species,	PI	1-5 years
		b) Conducting a transboundary EIA for introduced species.	PI	1-5 years
	3.3 Investigation of possible biological control measures to reduce the impact of <i>Mnemiopsis</i> on the ecosystem of the Caspian and reach regional agreement on the appropriate measures.	a) Develop and implement a regional management plan to decrease <i>Mnemiopsis</i> biomass to an acceptable level.	SRI	1-5 years
	3.4 Construction of one ballast water reception/treatment facility to control passage of invasive species via shipping routes.	a) A feasibility study of the development of ballast water reception/treatment facilities at shipping routes to/from the Caspian Sea	SRI	1-5 years
		b) Decision on construction and construction of the facility.	SRI	1-5 years
	4 Ensure all key coastal and marine habitats are represented in the list of Special Protected Areas of the Caspian Sea (SPACS).	4.1 Create new and expand existing protected areas (including where necessary transboundary areas) to cover all special Caspian coastal and marine habitats	a) Expanded area of special habitats under protection measured from 2002 baseline	SRI
4.2 Improve effectiveness of management of Caspian protected coastal areas complying with existing legislation.		a) 50% increase in number of well trained protected area wardens measured from 2002 baseline	PI	5-10 years
		b) Development of SPACS management plans incorporating modern protected area management techniques.	SRI	1-5 years
		c) Evidence of increased local community involvement in SPACS management decision making and implementation.	SRI	1-5 years

Indicator Types:

PI Process Indicator
 SRI Stress Reduction Indicator
 ESI Environmental Status Indicator

ANNEX 2: INTERVENTIONS AND THE CORRESPONDING INDICATORS

EQO II: CONSERVATION OF BIODIVERSITY

<i>Target</i>	<i>Intervention</i>	<i>Indicator</i>	<i>Indicator type</i>	<i>Time-frame</i>
	4.3 Creation of a regional communication network between SPACS	a) Improved regional communication among protected areas managers as evidenced by regional meetings/conferences, newsletters, annual reports etc.	PI	1-5 years
	4.4 Development of ecosystem management plans for the major rivers in the near Caspian basin as per paragraph 1.3.	a) New ecosystem management plans agreed including improved minimum flows for environmental needs.	PI	5-10 years
5 Identify and restore priority coastal habitats.	5.1 Develop and apply a standardized methodology for the assessment of the environmental health of coastal habitats.	a) An ecosystem health map of the region's coastal habitats based on standardized assessment methodology.	PI	5-10 years
	5.2 Design, implement and monitor coastal habitat restoration projects.	a) Agreed and financed prioritized action plan for restoration of coastal habitats.	PI	5-10 years
		b) Restored and protected priority coastal habitats in all five littoral states.	SRI	5-10 years
6 Identify and restore priority marine habitats.	6.1 Develop and apply a standardized methodology for assessing the health of marine habitats.	a) An ecosystem health map of the Caspian's marine habitats based on standardized assessment methodology.	PI	5-10 years
	6.2 Design, implement and monitor priority marine habitat restoration projects.	a) Agreed and financed prioritized action plan for restoration of marine habitats.	PI	5-10 years
		b) Restored and protected marine habitats in all five littoral states.	SRI	5-10 years

Indicator Types:

PI Process Indicator
SRI Stress Reduction Indicator
ESI Environmental Status Indicator

ANNEX 2: INTERVENTIONS AND THE CORRESPONDING INDICATORS

EQO III: IMPROVE THE WATER QUALITY OF THE CASPIAN

EQO INDICATOR: A MEASURABLE DECLINE IN LEVELS OF MAIN CONTAMINANT GROUPS IN THE WATERS, SEDIMENT AND BIOTA

<i>Target</i>	<i>Intervention</i>	<i>Indicator</i>	<i>Indicator type</i>	<i>Time-Frame</i>
1 Development of regional strategies for pollution reduction	1.1 Develop and adopt a protocol to the Tehran Convention for land-based sources of pollution	a) Adopted protocol on land-based sources of pollution.	PI	1-5 years
	1.2 Undertake a comprehensive land-based source assessment and develop a regional action plan to remediate areas of pollution concern identified.	a) Land-based source assessment (point and diffuse sources) leading to prioritized listing of areas of pollution concern.	PI	1-5 years
		b) Development of an agreed action plan and prioritized investment programme.	PI	1-5 years
		c) Reduction in the pollution load by 20%.	SRI	5-10 years
		d) Established a regional clean production center	PI	5-10 years
	1.3 Reduce pollution from existing and decommissioned onshore and offshore oil and gas installations causing significant pollution.	a) Hydrocarbon pollution from existing and decommissioned facilities reduced by 50% from the baseline of 2002.	SRI	5-10 years
	1.4 Draft and adopt a protocol to the Tehran Convention on dumping at sea by vessels.	a) Adopted protocol on dumping at sea.	PI	1-5 years
	1.5 Establish ship waste reception/treatment facilities in all major ports.	a) Functional waste reception/treatment facilities installed in all major ports with standardized management practices and enforcement.	SRI	5-10 years
	1.6 Regional POPs/PTS Programme developed, agreed and implemented. The work is to be coordinated with POPs enabling activities in Stockholm Convention signatory states.	a) Endorsed regional plan, with national and international funding agreed.	PI	1-5 years
b) Reduction in POPs/PTS pollution loading by 50% from the baseline of 2002.		SRI	5-10 years	
1.7 Develop and initiate implementations of the regional marine litter control and mitigation strategy.	a) Approved and initiated strategy	PI	1-5 years	
2 Strengthen pollution prevention, monitoring and control measures in the littoral states.	2.1 Develop at a regional level proposals for strengthening discharge licensing, compliance monitoring and enforcement of pollution.	a) Regional proposals addressing the need for enhanced management capacity of licensing, compliance monitoring and enforcement of pollution discharges agreed and enforced.	PI	1-5 years

Indicator Types:

PI Process Indicator
 SRI Stress Reduction Indicator
 ESI Environmental Status Indicator

ANNEX 2: INTERVENTIONS AND THE CORRESPONDING INDICATORS

EQO III: IMPROVE THE WATER QUALITY OF THE CASPIAN

<i>Target</i>	<i>Intervention</i>	<i>Indicator</i>	<i>Indicator type</i>	<i>Time-Frame</i>
	2.2 Develop recommendations for harmonization of pollution discharge and emission, and water quality standards.	a) Harmonized regional pollution discharge standards and water quality standards adopted.	PI	1-5 years
	2.3 Develop and introduce economic instruments to encourage reduced pollution loads.	a) Regional economic instruments introduced and contributing to a reduction in pollution loading of 10%	SRI	5-10 years
	2.4 Reduce untreated discharges from coastal municipal sources	a) Install screening and primary treatment in all settlements with a population greater than 10,000	SRI	5-10 years
	2.5 Undertake a survey of coastal zone to identify and characterize major contaminated land sites and develop strategy to tackle areas of pollution concern.	a) Coastal survey completed, with major contaminants listed and remediation strategy agreed	PI	1-5 years
	2.6 Implement pilot projects to demonstrate the most cost effective reclamation technologies for a range of contaminants.	a) Functioning contaminants reclamation pilot projects in all five littoral countries.	SRI	5-10 years
3 Implement a regionally coordinated water quality monitoring programme.	3.1 Develop and implement a regional water quality monitoring programme focused on critical contaminants and hotspots.	a) Implemented regional monitoring programme to focus on certain contaminants and hotspots, with information exchange among relevant bodies, standardized monitoring protocols, including baseline contaminant levels.	SRI	1- 5 years
	3.2 Provide report on contaminant levels in Caspian every three years, and make proposals for remedial actions.	a) Production of standardized reports on regional contaminant levels with concrete, realistic and cost effective proposals for remedial action to reduce impacts where needed, based on baseline contaminant levels.	PI	1-5 years
	3.3 Develop and implement a research programme into the phenomena of Anomalous Algal Blooms in the Caspian	a) Guideline on actions needed to address root causes of Anomalous Algal Blooms in the coastal and off-shore waters of the Caspian	PI	1-5 years

Indicator Types:

PI Process Indicator
 SRI Stress Reduction Indicator
 ESI Environmental Status Indicator

ANNEX 2: INTERVENTIONS AND THE CORRESPONDING INDICATORS

EQO III: IMPROVE THE WATER QUALITY OF THE CASPIAN

<i>Target</i>	<i>Intervention</i>	<i>Indicator</i>	<i>Indicator type</i>	<i>Time-Frame</i>
	3.4 Establish a regional monitoring programme for recreational waters.	a) Establish a blue flag labeling and award programme for Caspian beaches and recreational waters with results published nationally and internationally	PI	1-5 years
4 Disaster prevention and response.	4.1 Finalize and approve national oil spill contingency plans and harmonize with mutual aid industry plans.	a) Operational national oil spill contingency plans, harmonized with the industry mutual aid plans.	PI	1-5 years
	4.2 Draft and adopt a Protocol to the Tehran Convention Concerning Regional Preparedness, Response and Co-operation in combating oil pollution incidents	a) Protocol adopted	PI	1-5 years
	4.3 Develop and implement under a Memorandum of Understanding the Regional Oil Spill Preparedness and Cooperation Plan.	a) First regional exercises to test Regional Cooperation Plan	PI	1-5 years
	4.4 Update sensitive areas mapping of the Caspian for inclusion in the national and regional plans.	a) Sensitive areas mapped and information made available on Internet to relevant local, national, regional and international bodies.	PI	1-5 years
	4.5 Development of regional contingency plan for spills of hazardous substances other than oil	a) Contingency plan developed and adopted	PI	1-5 years
	4.6 Undertake risk assessment for oil and hazardous substances spillage from shipping, pipelines, offshore and onshore production and storage facilities.	a) National and regional plans amended to take account of the results of risk assessment	PI	1-5 years
		b) Risk assessment includes full information about annual ship movements	PI	1-5 years
	4.7 Promote the development of regional agreements for liability and compensation in the event of oil and other hazardous substance spills.	a) Draft agreements developed with input from oil industry, relevant ministries, and international organizations and adopted by the littoral states.	PI	1-5 years
	4.8 Develop regional agreement on minimum standards of maintenance of existing tanker fleet.	a) Endorsed agreement.	SRI	5 -10 years
4.9 Development of a Natural Disaster Preparedness and Mitigation Plan for the Caspian Sea	a) Development of a relief plan for victims of earthquakes and Tsunamis.	PI	1-5 years	
	b) Flood evacuation plans developed for susceptible coastal areas	PI	1-5 years	

Indicator Types:

PI Process Indicator
 SRI Stress Reduction Indicator
 ESI Environmental Status Indicator

ANNEX 2: INTERVENTIONS AND THE CORRESPONDING INDICATORS

EQO III: IMPROVE THE WATER QUALITY OF THE CASPIAN

Indicator Types:

PI	Process Indicator
SRI	Stress Reduction Indicator
ESI	Environmental Status Indicator

ANNEX 2: INTERVENTIONS AND THE CORRESPONDING INDICATORS

EQO IV: SUSTAINABLE DEVELOPMENT OF COASTAL ZONES

EQO INDICATOR: MEASURABLE AND SUSTAINED INCREASE IN HUMAN DEVELOPMENT INDICIES IN THE CASPIAN COASTAL AREAS

<i>Target</i>	<i>Intervention</i>	<i>Indicator</i>	<i>Indicator type</i>	<i>Time-frame</i>
1 Sustainable use and management of coastal areas through integrated coastal area management.	1.1 Strengthen, as needed, national regulation on coastal area planning and management.	a) Have in place improved, cost effective and environmentally conscious national regulations on coastal area planning and management.	PI	1-5 years
	1.2 Strengthen technical capacity at local and municipal government level for coastal planning and introduce economic instruments to promote rational land use.	a) Increased number of trained and skilled local and municipal staff.	PI	1-5 years
		b) Developed and implemented economic instruments aiming at efficient and wise land use in coastal areas.	PI	1-5 years
	1.3 Develop regional databases including GIS for coastal planning and management.	a) Functional regional GIS database for use by coastal planning authorities.	PI	1-5 years
	1.4 Develop regional guidelines for pilot integrated coastal area management planning and undertake a pilot project in each Caspian state.	a) Results from pilot projects published and regional guidelines on integrated coastal area management planning for the Caspian adopted.	SRI & PI	1-5 years
1.5 Development of eco tourism pilot projects based on existing and successful models from other regions	a) Five small scale eco-tourism project in Caspian that feature information exchange and are open to the public.	SRI	1-5 years	
2 Combat the desertification and deforestation process.	2.1 Where necessary, strengthen legislation to combat desertification and deforestation	a) Improved deforestation and desertification control legislation in place in all five littoral states	PI	1-5 years
	2.2 Apply remote sensing and GIS techniques to monitor trends in desertification and deforestation in the Caspian region.	a) GIS Database established and regional reports and reviews produced on bi-annual basis.	PI	1-5 years
	2.3 In critical desertification and deforestation areas, develop and implement pilot projects designed to address root causes.	a) Results from pilot projects published and used to develop guidelines for protection of coastal forest and desert areas.	PI	5-10 years
	2.4 In threatened coastal forest areas introduce economic instruments and alternatives to reduce wood consumption, including use of wood fuel.	a) A 40% reduction in wood fuel consumption in coastal forest areas from the 2002 baseline.	SRI	5-10 years

Indicator Types:

PI Process Indicator
 SRI Stress Reduction Indicator
 ESI Environmental Status Indicator

ANNEX 2: INTERVENTIONS AND THE CORRESPONDING INDICATORS

EQO IV: SUSTAINABLE DEVELOPMENT OF COASTAL ZONES

<i>Target</i>	<i>Intervention</i>	<i>Indicator</i>	<i>Indicator type</i>	<i>Time-frame</i>
		b) A 40% reduction in rate of coastal area deforestation	SRI	5-10 years
	2.5 In threatened desert areas conduct targeted awareness campaigns on sustainable grazing practices.	a) A 40% reduction in over grazing in coastal areas from the 1990 baseline.	SRI	5-10 years
3 Develop and initiate implementation of strategies for managing groundwater	3.1 Assess the current knowledge about the occurrence, flow and quality, including pollution, of groundwater, including its interaction with the Caspian Sea; and devise a programme for coordinated groundwater monitoring	a) GIS datasets and maps developed	PI	1-5 years
		b) Monitoring programme approved and implemented	PI	1-5 years
	3.2 Carry out a review of legal and institutional framework for managing groundwater; and make adjustments to reflect current needs, as necessary	a) Recommended adjustments to the legal and institutional framework adopted.	PI	1-5 years
	3.3 Design a regional programme of groundwater management measures, as necessary.	a) Endorsement by competent authorities in the littoral states.	PI	1-5 years
	3.4 Implement demonstration of sound groundwater management	a) Completion of pilot projects	SRI	1-5 years
4 Develop and initiate implementation of strategies for management of Sea level rises.	4.1 Undertake an assessment of coastal vulnerability to sea level rises and potential economic losses.	a) Caspian report on vulnerability to sea level rises.	PI	1-5 years
	4.2 Development of a set of sea level fluctuation scenarios accounting for climate change over the next fifty years.	a) Agreed set of sea level fluctuations planning scenarios.	PI	1-5 years
	4.3 Development of regional guidelines for adaptive management for sea level fluctuation and climate change.	a) Guidelines adopted.	PI	1-5 years
5 Promote environmentally sound agricultural practices in the Caspian region.	5.1 Establish and promote best practice recommendations for the use of agro chemicals, including application times and rates, handling, storage and disposal.	a) Recommendations developed and disseminated throughout region to relevant stakeholders.	PI	1-5 years
	5.2 Demonstrate through pilot projects environmentally sound agricultural practices such as soil conservation, creation of surface and groundwater protection zones, use of natural fertilizers and use of pest resistant crop strains.	a) Functioning environmental conservation demonstration projects addressing agricultural sector in all five littoral countries.	SRI	5-10 years
	5.3 Combat eutrophication in sensitive coastal zones by controlling soil and water contamination from agriculture and other nutrient sources.	a) Reduction in nutrient loading by 30% in critical areas from a 2002 baseline.	SRI	5-10 years

Indicator Types:

PI Process Indicator
 SRI Stress Reduction Indicator
 ESI Environmental Status Indicator

ANNEX 2: INTERVENTIONS AND THE CORRESPONDING INDICATORS

EQO V: STRENGTHEN CIVIL SOCIETY PARTICIPATION IN CASPIAN ENVIRONMENTAL STEWARDSHIP

EQI INDICATOR: ENHANCED INVOLVEMENT OF STAKEHOLDERS IN THE NCAP AND SAP IMPLEMENTATION

<i>Target</i>	<i>Intervention</i>	<i>Indicator</i>	<i>Indicator type</i>	<i>Time-frame</i>
1 Increased participation of public in coastal communities as well as stakeholders of Caspian countries in management of Caspian environment	1.1 Establish a Caspian NGO Forum to provide support and guidance for improving civil society involvement and strengthening of environmental NGO Networks	a) NGO Forum with participation of national and international NGOs throughout the Caspian region	PI	1- 5 years
	1.2 Implementation of the endorsed Caspian Public Participation Strategy through its incorporation in the National Caspian Action Programmes (NCAPs)	a) Increased public awareness on environmental issues	PI	1-5 years
		b) Increased participation of public in different steps of decision making, policy formulation, implementation and monitoring of activities to be undertaken for the Caspian Sea	PI	1-5 years
	1.3 Create a press bureau to improve country, regional and international awareness of the Caspian environmental issues and encourage the media to participate in the dissemination of information	a) Functioning of press bureau and increased number and quality of articles published on the Caspian environment in all national languages	PI	1-5 years
		b) Established networks between media and civil society groups	PI	1-5 years
	1.4 Provide regular training to journalists in order to strengthen environmental journalism and improve media coverage of environmental issues	a) Number of environmental sections in major newspapers and environmental TV/radio programs in major networks is produced	PI	1-5 years
	1.5 Create a Caspian Environment Information/Communication/Education Centers to provide information to public on Caspian environmental issues	a) Functioning Caspian Environment Information/Communication/Education Centers	PI	1-10 years
		b) Developed Web-pages in all national languages	PI	1-10 years
	1.6 Development of academic curriculum materials focusing on Caspian environmental issues and promotion of academic partnerships at school and university levels	a) New elements included in primary, secondary and tertiary schools in coastal communities in the region	PI	1-5 years
	1.7 University level curricula developed for ecology and environmental science in conjunction with international institutions featuring Caspian issues	a) Exchange of academic programs and conferences in all Caspian countries focusing on Caspian ecology	PI	1-5 years

Indicator Types:

PI Process Indicator
 SRI Stress Reduction Indicator
 ESI Environmental Status Indicator

ANNEX 2: INTERVENTIONS AND THE CORRESPONDING INDICATORS

EQO V: STRENGTHEN CIVIL SOCIETY PARTICIPATION IN CASPIAN ENVIRONMENTAL STEWARDSHIP

<i>Target</i>	<i>Intervention</i>	<i>Indicator</i>	<i>Indicator type</i>	<i>Time-frame</i>
		b) Increase in number of academic partnerships recorded in Caspian universities & institutions	PI	1-5 years
	1.8 Establish media and film festivals in conjunction with NGO Forum, on Caspian ecology to focus on the links between human behavior and natural ecosystem functions	a) Five documentaries in national languages is selected from competition and aired on television stations of coastal communities	PI	1-5 years
	1.9 Set up a fund for micro-grants addressing coastal community development schemes and local environmental issues, in partnership with the private sector and international donor community	a) Number of awarded micro-grants to develop coastal community schemes	PI	1-5 years
	1.10 Establishment of "Caspian Day" and develop specific awareness raising for specific target groups	a) Number of newspaper articles, environmental contests, posters, brochures, informational materials and media coverage	PI	1-5 years
	1.11 Set up "Friends of Caspian" programme with annual competition for local, national and international companies of facility that has achieved the most concrete gains in protection of the Caspian environment in the previous year, in at least two levels (national and international) on the territory of coastal region.	b) Number of applicants for "Friends of Caspian" over the first five years of operation	SRI	1-5 years

Indicator Types:

PI Process Indicator
SRI Stress Reduction Indicator
ESI Environmental Status Indicator

ANNEX 2: INTERVENTIONS AND THE CORRESPONDING INDICATORS

EQO V: STRENGTHEN CIVIL SOCIETY PARTICIPATION IN CASPIAN ENVIRONMENTAL STEWARDSHIP

<i>Target</i>	<i>Intervention</i>	<i>Indicator</i>	<i>Indicator type</i>	<i>Time-frame</i>
2 Increase local, regional and governmental authorities understanding the importance of environmental issues and increase their involvement in project implementation	2.1 Develop awareness training programmes on environmental issues for local authorities, and national ministries, through Caspian Environment Information/Communication/Education Centers emphasizing the environmental evaluation techniques.	a) Number of organized environmental training programmes for local authorities, and national ministries.	PI	1-5 years
	2.2 Implement national EIA procedures for all appropriate Caspian project developments, including provisions for public participation, and encourage all littoral countries to sign ESPOO Convention.	a) Application of EIA in development of transboundary projects decisions making process and increased number of public meetings.	PI	1-5 years
		b) Inclusion in EIA procedures specific guidelines addressing Caspian environment concerns	PI	1-5 years
	2.3 Hold biennial mayoral conferences sponsored by national and international partners to foster networking among coastal local authorities and enhance their participation in implementing Caspian environmental policies	a) Regular [biennial] mayoral conferences held and environmentally focused networks established	PI	1-5 years
	2.4 Development of training programmes for land/property agents, construction firms, regional, district and national level planning agencies on importance of coastal sustainable development practices with concrete examples of sustainable development projects.	a) Training materials in national languages is distributed	PI	1-5 years
		b) Workshops on sustainable development strategies is organized	PI	1-5 years
	2.5 Development of training programmes for regional and municipal authorities on modern techniques for waste water and municipal waste treatment	a) Training materials in national languages is distributed	PI	1-5 years
		b) Workshops on modern municipal waste treatment techniques is organized	PI	1-5 years
	2.6 Create targeted awareness building campaigns for ministerial authorities and regional administration involved in inter alia: agriculture, fisheries, transportation natural resource management	a) Informational materials are distributed to Ministries and regional administrations.	PI	1-5 years

Indicator Types:

PI Process Indicator
 SRI Stress Reduction Indicator
 ESI Environmental Status Indicator

ANNEX 2: INTERVENTIONS AND THE CORRESPONDING INDICATORS

EQO V: STRENGTHEN CIVIL SOCIETY PARTICIPATION IN CASPIAN ENVIRONMENTAL STEWARDSHIP

<i>Target</i>	<i>Intervention</i>	<i>Indicator</i>	<i>Indicator type</i>	<i>Time-frame</i>
3 Develop active partnerships between Caspian NGO Forum, local and multinational enterprises and other stakeholders in the region	3.1 Promote environmental partnerships between NGO, government and private sector to address specific Caspian issues by implementation of Caspian Public Participation Strategy.	a) Enhanced activities of multiple stakeholder group partnerships to address Caspian environmental issues	PI	1-5 years
		b) Number of Memorandum of Understandings signed between stakeholders	PI	1-5 years
	3.2 Develop Stakeholder Dialogue Groups at national level and exchange experience at regional level to improve dialogue opportunities for stakeholder groups who may be in conflict natural resource management	a) Regular meetings are organized and facilitated 2-3 times per year to encourage discussions and exchange of information	PI	1-5 years
	3.3 Develop a programme to encourage implementation of cleaner technologies by local industries corresponding to ISO 14000	a) A significant increase in number of coastal industries installing new, cleaner technologies (to be assessed in conjunction with EQO III intervention 1.4).	PI/SRI	1-5 years
	3.4 Provide a basic ecology training course for local coastal enterprises and targeted populations emphasizing win-win scenarios and sound environmental stewardship	a) Delivery of number of training courses to enterprises of all sizes.	PI	1-5 years
		b) Number of win-win scenarios developed by local projects	PI	1-5 years

Indicator Types:

PI Process Indicator
 SRI Stress Reduction Indicator
 ESI Environmental Status Indicator