

Annex A.I : Incremental Cost Analysis : Breakdown by Objectives and Outcomes
(figures in USD 1,000 and for five years unless otherwise stipulated)

Objective I: Commence implementation of SAP in the areas of biodiversity, invasive species and PTS	
<p>Outcome A: Quantitative assessment of habitat loss, verification of critically threatened areas and the design and establishment of a standardized monitoring methodology programme.</p>	<p>Cost</p> <p><u>Baseline total:</u> <u>\$ 46 m</u></p> <p><u>Azerbaijan:</u> \$ 14.7 m</p> <p><u>I.R. Iran:</u> \$ 8.9 m</p> <p><u>Kazakhstan:</u> \$ 20* m</p> <p><u>Russia:</u> \$ 2.1**m</p> <p><u>Turkmenistan:</u> \$.3 plus \$ 149 ***</p> <p>* The figure is inclusive of all activities dealing with sustainable and integrated coastal zone management.</p> <p>** The figure does not include activities and projects related to Volga. It however covers activities related to Outcome B and C.</p> <p>*** Turkmenistan NCAP includes \$ 149 millions towards coastal zone planning and refurbishment and modernization of industries and services</p>
<p><u>Domestic benefits:</u></p> <p>Baseline: Present state of information on marine and coastal biodiversity and its development is poor and inadequate. Staff not sufficiently trained, motivated and equipped</p> <p>Alternative: A better knowledge combined with trained and capacitated staff will enable rational management of biodiversity and Bioresources. Quantification and verification of the critical habitats will enable environmentalists and communities to lobby for enhanced resources an attention to the issue at national and local coastal level.</p>	
<p><u>Global Benefits:</u></p> <p>Baseline: No region wide biodiversity data base or sensitivity maps in existence. Very little regional dialogue /networking.</p> <p>Alternative: Coastal and marine habitats quantitatively assessed, inventoried and mapped to form a Caspian wide biodiversity data base inter alia as a component of a Regional Oil Spill response Plan. Guidelines developed for protection and rehabilitation of environmentally sensitive habitats and a regional monitoring programme developed. Regional dialogue on biodiversity assessment established and strengthened. Outcome to ease pressure on threatened Caspian biodiversity and Bioresources.</p>	<p><u>Increment total:</u> <u>\$ 4.511m</u></p> <p>- Committed co-funding by littoral countries: \$ 2.746m</p> <p>- CEP/GEF: \$.665m</p> <p>- EU/Tacis: \$ 1.100m</p> <p><u>Alternative:</u> <u>\$ 50.511 m</u></p>
<p>Outcome B: Preliminary implementation of the BSAP focusing on compliance issues, protection and conservation action plans and targeted public awareness campaign.</p>	<p><u>Baseline total:</u> <u>\$ 14.3m</u></p> <p><u>Azerbaijan:</u> see Outcome A</p> <p><u>I.R.Iran:</u> see Outcome A</p> <p><u>Kazakhstan:</u> \$ 4.3</p>

<p><u>Domestic Benefits:</u></p> <p>Baseline: During first phase a BSAP developed. Also TDA identified poor monitoring & compliance with often stringent norms and standards as major issue .</p> <p>Alternative: Implementations of BSAP in each of the Caspian littoral countries will strengthen national bio-monitoring structures and capacities. National compliance issues will come under focus with the objective of enhancing effectiveness. Roots of stress on biodiversity will be addressed. Baseline investment complemented by targeted international assistance will alleviate pressure on critical habitats including watersheds, forest, wetlands and rivers.</p>	<p><u>Russia:</u> see Outcome A <u>Turkmenistan:</u> \$ 10</p> <p><u>Increment total:</u> <u>\$ 6.38</u></p> <p>-Committed co-funding by littoral countries: \$ 5.14 m -CEP/GEF: \$. 520m -BTC: \$.720m -World Bank: \$. 700m(Biodiversity in Turkmenistan) -World Bank : \$ 6m (Kura project in Azerbaijan)</p> <p>The WB projects are both in preparation and are not included as co-funding .Furthermore the WB project in TK will be funded from GEF . Their inclusion here is only for information</p>
<p><u>Global benefits:</u></p> <p>Baseline: Under a World Bank supported initiative under CEP regional cooperation started to identify root causes of seal death in Caspian. Information on Seal numbers/habitats still far from satisfactory</p> <p>Alternative: Establishment of an Caspian Eco-net will lead to enhanced regional information exchange and integrated decision making processes. A Caspian Seal Action plan will be developed that will be a major step towards conservation of this globally important species. A water level fluctuations adaptation plan for a pilot lagoon of global significance will put theory into practice to obtain concrete positive biodiversity conservation impacts.</p>	<p><u>Alternative:</u> <u>\$ 20.68 m</u></p>

Outcome C: Implementation of CEP Invasive Species Action Plan	<u>Baseline total:</u> <u>Azerbaijan:</u> see Outcome A <u>I.R.Iran:</u> see Outcome A <u>Kazakhstan:</u> - <u>Russia:</u> see Outcome A* <u>Turkmenistan:</u> see Outcome B
<u>Domestic benefits:</u> Baseline: National authorities in particular in southern Caspian alarmed by impact of ML on fisheries. Work underway in Iran to assess impact of Beroe introduction on ML. Alternative: National legislations reviewed on introduction of alien species to mitigate impacts of same on ecosystems. Create/strengthen national ML monitoring capacity. Mitigate impact of ML on fisheries communities. Assist national deliberations on consideration of ML mitigation policies including pre-feasibility studies for reception facilities.	* Russia is considering a \$ 50 millions emergency response facility in Astrakhan but not budgetary earmarking has yet been made <u>Increment total:</u> <u>\$ 1.231 m</u> Committed co-funding by littoral countries: \$. 716m CEP/GEF: \$.515m
<u>Global benefits:</u> Baseline: A regional strategy outlined to deal with ML developed under CEP which helped the region to develop and discuss a preliminary EIA for introduction of Beroe. No regional mechanism to discuss and agree on introduction /mitigation of alien species. Alternative: Mitigate impact of ML on caspian fisheries. Assist towards regional dialogue /understanding towards integrated regional ML mitigation policies/measures. Reduce likelihood of undesired introduction of Caspian species to other marine systems and vice versa.	<u>Alternative:</u> <u>\$ 1.231m</u>
Outcome D: Assessment of Pollution loading and determination of sources, distribution and composition of PTS in the riverine waters and sediments and coastal waters to prioritize amelioration interventions.	<u>Baseline total:</u> <u>\$ 26.9m</u> <u>Azerbaijan:</u> \$ 4.4 m <u>I.R.Iran:</u> \$.9 m <u>Kazakhstan:</u> \$ 6.4 m <u>Russia:</u> \$ 15 *m

<p><u>Domestic benefits:</u></p> <p>Baseline: While land and water pollution remains a major issue both at national and transboundary level there is not much reliable, accessible and up to date on state of pollution. Nor much has been done to address the issue, this being in spite of the keen national and community interest for reduced contamination levels .</p> <p>Alternative: Improved information agreed by all will help the national authorities to avoid apportioning blame on others and begin to harness resources towards dealing with pollution. It will also enhance the national management capacities and effectiveness .</p>	<p><u>Turkmenistan:</u> \$.2 plus 200m ** * the figure is inclusive of activities under Outcome E</p> <p>** Turkmenistan NCAP includes 200 millions towards renovation of industry including the Turkmenbashi refinery</p> <p><u>Increment total:</u> <u>\$ 7.2905m</u> -Committed co-funding by littoral countries: \$ 6.438 m* -CEP/GEF: \$.6525m -EBRD: \$.200m (support to Emergency Response in AZ)</p> <p>* excluding cost of modernization of emergency response facility in Russia.</p>
<p><u>Global benefits:</u></p> <p>Baseline: Under CEP both Tacis and GEF components assisted the region to identify and quantify sources of contaminants. While this has resulted in invaluable information on hot spots the information is not fully Caspian wide and does not cover all sources of contamination</p> <p>Alternative: Caspian-wide contaminants source identification/quantification including major rivers' accessible basins and coastal zones to identify/assess major sources in order to facilitate regional accord on priority actions.</p>	<p><u>Alternative:</u> <u>\$ 34.1905m</u></p>
<p>Out come E: develop regional action plans addressing the activities contributing to transboundary PTS</p>	<p><u>Baseline total:</u> <u>\$ 49.2m</u> <u>Azerbaijan:</u> \$ 42.5 m <u>I.R.Iran:</u> \$ 6.7 m</p>
<p><u>Domestic benefits:</u></p> <p>Baseline: Most countries are developing POPs National Plans With GEF assistance</p> <p>Alternative: Regional coordination will improve quality/effectiveness of National Plans</p>	<p><u>Kazakhstan:</u> see Outcome D <u>Russia:</u> see Outcome D <u>Turkmenistan:</u> see Outcome D</p> <p><u>Increment total:</u> <u>\$ 3.7245m</u> Committed co-funding by littoral countries: \$ 3.222m CEP/GEF: \$.5025m</p> <p><u>Alternative:</u> <u>\$ 52.9245m</u></p>

<p><u>Global benefits:</u></p> <p>Baseline: No regional agreement / strategy to deal with PTS.</p> <p>Alternative: A regional system of effective monitoring and action plan that will inter alia synergise the National POPs action plans. Two pilot initiatives will be undertaken to survey usage and stockpiling of pesticides and efforts will be made to enhance stakeholders sensitivity to the issue.</p>	
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Objective II: to continue specific capacity building towards a regionally owned CEP coordination mechanism capable of SAP implementation and consolidate/update the TDA, SAP and NCAPs following a series of information gap-filling measures	
Outcome F: A sustainable, strengthened and regionally owned coordination mechanism including PCU in Tehran, CNSs and network of institutions addressing transboundary issues	Baseline total: - <u>Azerbaijan:</u> <u>I.R.Iran:</u> <u>Kazakhstan:</u> <u>Russia</u> <u>Turkmenistan:</u>
<u>Domestic benefits:</u> Baseline: Under CEP an Inter sectoral Function was established in each country to ensure improved inter-sectoral coordination. Also in each country a National Caspian Action Plan was developed and approved. Alternative: In each country a Caspian National Coordination Structure (NCS) will be established to assist national inter-sectoral coordination towards NCAP implementation in synergy with SAP. The NSC will also assist liaison with PCU and the Regional Advisory Groups.	<u>Increment total:</u> <u>\$ 3.092m</u> Committed co-funding by littoral countries: \$ 1.9 m <ul style="list-style-type: none"> - cost of participation in CEP activities: \$ 1.450m - cost of Coordinator and Assistant: \$.150m - Cost of hosting PCU: \$.300m
<u>Global benefits:</u> Baseline: Under CEP a regional structure has been established to improve Caspian wide environmental management coordination. The structure which included A Steering Committee, a PCU , Magicas , National Focal Points(NFPs) , Public Participation Advisors (PPAs) and CRTCS has substantively improved the regional environmental dialogue and cooperation. The structure however will need to be modified to satisfy the enhanced regional ownership of the CEP . Alternative: Strong regional body and regional cooperation and partnership will facilitate the regional dialogue towards improved management of the environmental resources of the Caspian. Thematic Regional Advisory Groups (RAGs) will become central to the coordination of environmental cooperation towards implementation of the SAP. Updated TDA and SAP will also be pursued.	CEP/GEF: USD 1.192 m <u>Alternative:</u> <u>\$ 3.092m</u>

Outcome G: Enhanced and informed stakeholders and inter-sectoral participation in CEP management	<u>Baseline total:</u> <u>\$ 16.84m</u>
<u>Domestic benefits:</u> Baseline: Progress has been made to sensitize and involve coastal communities, the industry and the local governments in the environmental management activities around the caspian Sea. This has however not been fully adequate and there is a clear need for more public partnership. Alternative: Enhanced stakeholders partnership through training, sensitization campaigns, participation in national events and community development initiatives .	<u>Azerbaijan:</u> \$ 15.8*m <u>I.R.Iran:</u> \$.7m <u>Kazakhstan:</u> \$.3 m <u>Russia:</u> - <u>Turkmenistan:</u> \$.04 **m * also includes community development initiatives ** Turkmenistan NCAP includes some 15 millions over three years for social and economic development of coastal communities. <u>Increment total:</u> <u>\$1,418m</u> -Committed co-funding by littoral countries: \$. 912m -CEP/GEF: USD .506m
<u>Global benefits:</u> Baseline: Attempts have been made under CEP, and also by international NGOs, to create networking of NGOs around the Sea and to encourage regional stakeholders regional environmental dialogue. The progress has been fairly promising but there is a clear need for further improvement. Alternative: A possible Stakeholders Advisory Group in addition to PPAs can be considered. All organs of CEP will be open to stakeholders participation. Efforts will be made to network local authorities and NGOs around the Sea. Training and educational initiatives for local communities will be strongly pursued.	<u>Alternative:</u> <u>\$ 18.258 m</u>

Objective III: to strengthen the regional and national environmental legal and policy frameworks including implementation and compliance capacities

<p>Outcome H: preparation of ancillary agreements to the Framework Convention and drafts of the protocols targeting priority transboundary issues</p>	<p><u>Baseline total</u> -</p>
<p><u>Domestic benefits:</u></p> <p><u>Baseline:</u> Efforts have been made to build /strengthen national legal capacities in areas of relevance to international environmental domain under CEP.</p> <p><u>Alternative:</u> Continuation of the efforts. National capacity legal building activities will be undertaken.</p>	<p><u>Azerbaijan:</u></p> <p><u>I.R.Iran:</u></p> <p><u>Kazakhstan:</u></p> <p><u>Russia</u></p> <p><u>Turkmenistan:</u></p> <p><u>Increment total:</u> <u>\$.516m</u></p> <p>-Committed co-funding by littoral countries: reflected in other - outcomes in particular F CEP/GEF: USD.516m</p>
<p><u>Global benefits:</u></p> <p><u>Baseline:</u> CEP has been instrumental to assist in getting the region to discuss and agree on the Framework, the Regional cooperation Plan for Response to Oil Spills, and the SAP. These will be incomplete if are not seriously pursued</p> <p><u>Alternative:</u> Countries will be assisted towards ratification of the FC and towards formulation, discussion and agreement on ancillary protocols and agreements. Use of national and regional economic instruments and EIA will be encouraged.</p>	<p><u>Alternative:</u> <u>\$.516 m</u></p>

Objective IV: To achieve tangible environmental improvements in priority areas by implementation of small scale investment supported by Matched Small Grants Programme

Outcome I: Matched Small Grant programme to fund small scale investments	<u>Baseline total:</u> Total equivalent matching
<u>Domestic benefits:</u> <u>Baseline:</u> MSGP projects are being implemented in each of the five countries and the demand for more of the same appears to be fairly considerable. <u>Alternative:</u> MSGP will continue to benefit local community applicants who meet the programme criteria.	<u>Azerbaijan:</u> <u>I.R.Iran:</u> <u>Kazakhstan:</u> <u>Russia</u> <u>Turkmenistan:</u> <u>Increment total:</u> <u>\$ 3.151m</u> -Committed co-funding by littoral countries: - GEF \$.511m - EU/Tacis: 2.640 m
<u>Global benefits:</u> <u>Baseline:</u> MSGP projects with transboundary impact or potential to be replicated are being implemented in each of the five countries. <u>Alternative :</u> MSGP will continue and will be complemented by the Tacis small grants initiative under its Sustainable Coastal development project	<u>Alternative:</u> <u>\$3.151 m</u>

Total funding picture

<u>A: GEF funding</u>	<u>\$ 6,448,800</u>
- PDF A	\$ 25,000
- PDF B	\$ 397,400
- Full Project	\$ 6,026,400
<u>B: Co-funding by littoral countries</u>	<u>\$ 21,142,000</u>
- towards SAP activities (EQ II, III and V)	\$ 19,242,000
- towards cost of participation in CEP	\$ 1,450,000
- cost of Coordinator and Assistant	\$ 150,000
- cost of PCU	\$ 300,000
<u>C: Co-funding by international agencies</u>	<u>\$ 4,660,000</u>
- Co-funding by EU/Tacis	\$ 3,740,000
- Co-funding by BTC	\$ 720,000
- Co-funding by EBRD	\$ 200,000
TOTAL INCREMENT:	<u>\$ 32,250,800</u>
<u>D. Total Baseline</u>	<u>\$ 153,240,000</u>
<u>Total Alternative</u>	<u>\$ 185,490,800</u>

Annex A.II: Incremental Cost Analysis
Co-funding: Breakdown by EQOs, Targets and Interventions
(Figures in USD 1000 and for three years period unless otherwise stipulated)

EQOs/Targets/ Interventions	Azerbaijan	I.R.Iran	Kazakhstan	Russian Federation	Turkmenistan	total
EQO I: Conservation and sustainable use of commercial fisheries resources						
Target 1: Sustainable use of commercial fisheries resources						
1.1 Adopt the Regional Agreement on the preservation and management of Bioresources of the Caspian Sea.						
1.2 Further strengthen the regional cooperation for fisheries management.	60	30	300		15	
1.3 Develop compliance, enforcement and monitoring mechanisms for sturgeon fisheries in accordance with CITES Paris declaration.	780	90	840		317.4	
1.4 In coordination with national and regional organizations, develop enforcement mechanisms and economic instruments to reduce illegal trade in Caspian commercial fish resources.			336		36	
Target 2: Rehabilitate stocks of commercially viable fish species						
2.1 Carry out national activities to identify, protect, restore and manage natural spawning grounds for sturgeon and other commercially viable anadromous species.	3720		102	90	600	
2.2 Increase sturgeon hatchery efficiency through creation of new hatcheries, rehabilitation of existing facilities and introduction of improved methodologies.	4200	600		3000	6000	

Total for EQOI for three years	8,760	720	1,578	3,090	6,968	21116
EQO II: Conservation of Biodiversity						
Target 1: Increased regional collaboration to achieve maximum regional benefit for biodiversity						
1.1 Draft and initiate implementation of a Biodiversity Protocol to the Caspian Marine Environment Framework Convention.		30				
1.2 Establish a regional biodiversity monitoring system.	150	600		750	60	
1.3 Create a regional ‘clearing house mechanism (CHM) on biodiversity.	150	225		150	6	
1.4 Develop a framework for international research on Caspian biodiversity related issues.	30	300			10.2	
1.5 Develop and implement an awareness campaign to highlight the biological uniqueness of the Caspian.	60	150			15	
1.6 Ensure biodiversity issues and impacts are taken into account in all EIA applications.		60				
Target 2: Ensure all key species are maintained or restored to viable levels						
2.1 Identify and assess key threatened and endangered species status and publish results.		45	12	12		
2.2 Ensure adequate legal protection for key threatened and endangered species.	-	45	18	-	15	
2.3 Provide in-situ and ex-situ protection for key threatened and endangered species	600		24	600	105	

Target 3: Control of introduction and invasion of non-native (alien) species and manage impact of existing introduced/invasive species.						
3.1 Control of the purposeful and accidental introduction and spread of alien species, including management of key transport routes.		105		180	6	
3.2 Investigation of biological control measures to reduce the impact of Mnemiopsis on the ecosystem of the Caspian.		300		84	11,4	
3.3 Development and adopt a protocol to the Caspian Convention on introduction and invasion of non-native Species				30		
3.4 Implementation of IMO Ballast Water Management Guidelines (or of new Ballast Water Convention).						
Target 4: Ensure all key coastal and marine habitats are represented in a regional system of protected areas.						
4.1 Improve effectiveness of protection measures for protected areas.	1080	120	102	600	6	
4.2 Create new and expand existing protected areas to cover all key Caspian coastal and marine habitats.	1020	-	-			
4.4 Promote the positive aspects of eco-tourism and develop pilot projects.	420		30	300	60	
Total for EQOII for three years	3,510	1,980	186	2,706	295	8,677
EQO III: Improve the water quality of the Caspian						

Target 1: Strengthen environmental enforcement and management littoral states						
1.1 Develop regional proposals for strengthening discharge licensing, compliance monitoring and enforcement of pollution of the Caspian.	60	30	6	180	6	
1.2 Increase resources to regulatory bodies responsible for pollution control and improve capacity through targeted training programmes	1320	600			90	
1.3 Develop recommendations for harmonization of pollution discharge and water quality standards				90		
Target 2: Implement a regionally coordinated water quality monitoring programme						
2.1 Develop and implement regional monitoring programme focused on critical contaminants and hotspots		600	78	1,050		
2.2 Develop and implement a rapid assessment programme for contaminant levels in all Caspian waters	(see above)	(see above)	(see above)	(see above)	(see above)	
2.3 Provide report on contaminant levels in Caspian every three years, and make proposals for remedial actions				300		
Target 3: Development of regional pollution reduction Strategies						
3.1 Develop and adopt a protocol to the Caspian Environment Convention for land based sources of pollution and undertake a comprehensive land-based source				180		

assessment of the near Caspian basin						
3.2 Develop and adopt a protocol on Hazardous Substances and encourage all littoral states to sign and ratify the Stockholm Convention on Persistent Organic Pollutants				180		
3.3 Develop and implement a programme to dispose of stores of banned agro chemical products in the region in accord with Stockholm Convention provisions		30				
3.4 Develop and implement protocols on environmental standards for oil and gas activities in the region			30	180		
3.4 Develop and adopt a protocol on dumping at sea				180		
Target 4: Develop and initiate implementation of a regional action plan for contaminated land						
4.1 Undertake a survey of coastal zone to identify and characterize major contaminated land sites and develop a hot spot strategy to be coordinated with PoPs enabling activities in signatory states	900					
Target 5: Promote environmentally sound agricultural practices in the Caspian region						
5.1 Establish and promote guidelines for the use of agro chemicals, including application times and rates, handling, storage and disposal		60				

Target 6: Disaster prevention and response						
6.1 Finalize and implement national and regional oil spill contingency plans	150	1500	90	30,000		
6.2 Sign and implement a Regional Cooperation Plan on Oil Spill Preparedness and finalise a protocol on Emergency Response						
6.3 Update sensitive area mapping of the Caspian	150		600			
6.4 Undertake risk assessment for oil and hazardous substances from shipping, pipelines, offshore and onshore production and storage facilities	120	600	300			
6.5 Develop guidelines for liability in the event of oil spills in line with the Civil Liability Convention						
Total for EQOIII for three years	2,700	3,420	1,104	32,340*	96	39,660
EQO IV: Sustainable development of the coastal zones						
Target 1: Sustainable use and management of coastal areas through integrated coastal area management						
1.1 Review and revise, as needed, national regulation on coastal area planning and management	60	45			30	
1.2 Strengthen technical capacity at local and municipal government level for coastal planning and introduce economic instruments to promote rational land use.		300			11,4	
1.3 Develop a regional and national data center and GIS database for coastal planning and management		90			15	
1.4 Undertake pilot integrated coastal area management		600				

planning project in each Caspian state with a view to replicate and to develop national guidelines						
Target 2: Combat the desertification and deforestation Process						
2.1 Strengthen national legislation, if necessary, to combat desertification and deforestation, to be coordinated with activities under the Convention to Combat Desertification		60			11,4	
2.2 Apply remote sensing techniques and GIS database to monitor trends in desertification and deforestation in the Caspian region		120				
Total for EQOIV for three years	60	1215	0	0	68	13,43
EQO V: Strengthen stakeholder participation in Caspian environmental stewardship						
Target 1. Increased coastal community involvement in managing the Caspian environment						
1.2 Promote broader public access to Caspian relevant environmental information held by public authorities, in accordance with the Aarhus Convention	100	375	10		29	
1.3 Create press bureau for CEP to improve country, regional and international awareness of status of Caspian environmental issues and encourage the media to participate in the dissemination of information						
1.4 Development of academic curriculum materials focusing on Caspian environmental issues at all school levels, including university	150	100	5			
1.6 Develop environmental awareness for issue specific	100	250				

stakeholder groups, e.g. farmers, water consumers, through public outreach campaigns and training programmes.						
1.7 Set up a fund for micro-grants addressing coastal community development schemes and local environmental problems, sponsored by the private sector						
Target 2. Increase local and regional authorities understanding of socio-economic importance of environmental issues						
2.1 Establish environmental issues awareness training for local authorities, and national ministries that affect the Caspian environment emphasizing cost/benefit analysis of status quo and proposed projects	100	100				
2.2 Review, and revise, as needed, national legislation to require EIA in all development project decisions, and develop procedures for application, including provision for public participation, and encourage littoral countries to sign ESPOO convention	50	100				
2.3 Hold biennial CEP mayoral conferences sponsored by national and international partners to foster networking among coastal local authorities and enhance their participation in implementing Caspian environmental policies						
Target 3. Develop active partnerships between CEP, local and multinational enterprises						
3.1 Promote NGO/ government/ private sector environmental partnerships to improve monitoring, public relations and educational activities related to specific Caspian issues		50				
3.2 Develop a programme to encourage adoption of environmental management systems by local industries						

3.3 Set up “Friends of CEP” programme with annual competition for local, national and international company or facility						
Total for EQOV for three years	300	585	9	0	17	911
Grand Totals for three years for all EQOs	15,330	7,920	2,877	38,136*	7,444	71,707*
Grand totals for three years for EQO II, III and V	6,510	5,985	1,299	35,046*	402	49,248*

* The figure includes a \$ 50 millions investment to upgrade and modernize emergency response facility in Russia. This proposed investment has not been included in the total co-funding for lack of clear commitment.

Annex B - LOGFRAME

OBJECTIVE I: To commence implementation of the SAP in three priority areas: Biodiversity, Invasive Species and Persistent Toxic Substances.

Activities	Verifiable Indicators	Sources of Verification	Assumptions and Risks
Out come A: A quantitative assessment of habitat loss in the Caspian and its coastal zone and verification of critically threatened areas, and, the design and establishment of a standardised monitoring methodology programme for the Caspian Sea in conjunction with the oil and gas industry.			
<ul style="list-style-type: none"> Activity A 1 Undertake quantitative surveys of coastal wetland and marine habitats of the Caspian Sea and develop a preliminary Caspian Coastal Sites Inventory, which will include information on environmental sensitivity, prevailing threats (including water level fluctuations), usage history and legal status of the sites. 	<ul style="list-style-type: none"> National and regional understanding of the diversity of coastal biotopes and reference to in development planning. Evaluation of sensitivity and threats and incorporation into Caspian Coastal Sites Inventory and Land use/CZM plans Development and implementation of action plans to protect venerable coastal sites. 	<ul style="list-style-type: none"> National reports on coastal sites within 18 months of programme commencement. Completed Caspian Coastal Sites Inventory within 2 years No. of references to Caspian Coastal Sites inventory in EIA's, and development plans in 3 year period. Increased number of proposals submitted to donors for marine protected areas in the Caspian at the end of 3 year period. 	<ul style="list-style-type: none"> Access to data and information regarding coastal zones freely available from national and regional sources. Maximum use made of remote sensing Minimum ground-truthing surveys required Risk Mitigation: clearly indicate to countries that failure to supply nationally controlled data could result in cessation of funds from Project. Identify where ground-truthing surveys may be required.
<ul style="list-style-type: none"> Activity A 2 In collaboration with UNEP's World Conservation Monitoring Center produce quantitative and accurate Environmental Sensitive areas maps of the Caspian and make available using internet map server technology (ImapS). These maps will form one block of a Caspian biodiversity database and be a component of the Regional Oil Spill Cooperation Plan. 	<ul style="list-style-type: none"> Inclusion of ImapS outputs in national regional and industry oil spill contingency plans ImapS to be accepted as the regional biodiversity database to be supplemented and supported financially by countries and industry alike. 	<ul style="list-style-type: none"> Placement of the interactive map on the WWW by WCMC within 18 months No. of visits to the interactive map on WCMC's web-site over a 12 month period to be recorded and reported to SC meeting Funding for ImapS upkeep secured after 18months. Number of new data sets submitted for inclusion to WCMC in 3 years. 	<ul style="list-style-type: none"> The data set will be of sufficient size and quality to support the interactive map technology Funds will be made available from the oil industry to maintain the Caspian ImapS on WCMC's web-site. Risk mitigation: establish current status of data set, and target specific areas for improvements. Obtain commitments for logistical support and information sharing with oil industry.

Activities	Verifiable Indicators	Sources of Verification	Assumptions and Risks
<ul style="list-style-type: none"> Activity A 3 Create an up-to-date Caspian biodiversity database, building on work done in the first GEF support project to CEP. 	<ul style="list-style-type: none"> Closer agreement between regional and international scientists on the species diversity and endemism of the Caspian and a baseline from which to trends, and identify and differentiate between natural and man-made drivers. A better foundation for decision making for biodiversity protection. 	<ul style="list-style-type: none"> A published Caspian species check-list on CEP web-site within 12 months A published biodiversity database on CEP web-site within 24 months No. of new published scientific papers on Caspian biodiversity in three years Amendments to national and regional biodiversity monitoring programmes, decision frameworks and action plans in four years. 	<ul style="list-style-type: none"> All major stakeholders will make available biodiversity data, including fisheries organizations and the private sectors Risk mitigation: clearly emphasise that biodiversity data is to be shared among all stakeholders
<ul style="list-style-type: none"> Activity A 4 Develop guidelines for the protection and rehabilitation of environmental sensitive sites and design a monitoring programme to serve the decision making process. 	<ul style="list-style-type: none"> Development of regional and national monitoring protocols and programmes, which are affordable, cost effective and linked to agreed management frameworks. An improved and more effective decision process, which will empower the authorities to initiate bolder measures and increase funds for biodiversity protection. 	<ul style="list-style-type: none"> Monitoring protocols agreed and an initial regional management framework accepted through the CEP Biodiversity Advisory Board within 18 months Establishment of the monitoring programme and the first set of monitoring results published within 3 years A measurable increase in national and local funding allocations for Caspian Sea biodiversity within 4 years 	<ul style="list-style-type: none"> Habitat monitoring protocols appropriate for region, and feasible to implement The monitoring programme once established can be maintained by Caspian states, perhaps with support of the private sector Risk mitigation: Solicitation of funds and other support from private sector with public/private partnerships.
<ul style="list-style-type: none"> Activity A 5 Provide training to government agencies, NGOs and local communities on the management framework and underlying monitoring programme. 	<ul style="list-style-type: none"> To demonstrate how the results of the monitoring can be used to improve the decision processes and how to encourage more active participation. 	<ul style="list-style-type: none"> Report on development and use of environment management plans 6 months after delivery of training. 	<ul style="list-style-type: none"> The training recipients are of an appropriate age and level to benefit from training. Risk mitigation: carefully select participants and training session for specific groups

Outcome B: Preliminary implementation of the Caspian Biodiversity Action Plan, focusing on compliance with existing nature protection regulations, implementation of species and habitat protection conservation action plans and targeted public awareness campaigns			
<ul style="list-style-type: none"> Activity B 1 Establishment an Eco-Net around the Caspian, comprising a coordinated network of conservation practitioners from institutions, NGOs and interest groups. A structured training programme will be provided and linkages facilitated with international conservation groups. 	<ul style="list-style-type: none"> Strong, independent network of conservation professionals, which will initiate, mobilise funding and execute conservation projects in the Caspian. An active self-financing forum for discussion of conservation issues, that engages actively with the public and key interest groups. 	<ul style="list-style-type: none"> Quarterly reports by CoNet advisors Involvement of CoNet members in international conservation projects within 12 months of project commencement CoNet published in English and Russian on the web-site and in paper form. Within 6 months of initiation of project. Letters of awards of contracts and grants for 10 conservation projects within 3 years The organisation by the forum of three self funded public awareness campaigns on critical Caspian conservation issues within three years. A 30% increase in public subscription/donation to the NGO membership of the forum within 3 years. 	<ul style="list-style-type: none"> Effective communication between the CoNet members can be executed through the Caspian web-site and e-mail International conservation bodies are willing to support CoNet activities Risk mitigation: technological support for CoNet members, including e-mail addresses and access to internet where possible. Communication with International conservation bodies.
<ul style="list-style-type: none"> Activity B 2 Development and implementation of a conservation action plan for the Caspian seal. Assistance will be sought from the private sector in implementation of the plan. 	<ul style="list-style-type: none"> Evaluation of the potential threats to the survival of a viable population of Caspian seal. Promote a regional response to address threats to the Caspian seal through the establishment of a seal advisory group and implementation of an action plan 	<ul style="list-style-type: none"> Seal census undertaken and results published widely in regional and international publications 15 months from initiation, and ongoing annual thereafter Increase protective measures for seals adopted at the national and regional levels. 24 months from initiation Reports on seal mortalities and 	<ul style="list-style-type: none"> The seal monitoring programme once established can be maintain by the Caspian states The ministries of Environment have the resources to enforce any new protection measures The public opinion will drive the need for increase protection of the Caspian seal. No additional lethal infections in seal populations Risk mitigation: establishment of private

		<p>their root causes to be completed 18 months from initiation</p> <ul style="list-style-type: none"> • In the long term stabilized seal population numbers to occur within 10 years 	<p>sector support fund, obtain firm commitment from Environment Ministries for enforcement, public awareness campaign as part of the management plan</p>
<ul style="list-style-type: none"> ▪ Activity B 3 Development and implementation of a water level fluctuation adaptation management plan for a lagoon selected for a pilot project. 	<ul style="list-style-type: none"> ▪ Development of conversation management techniques for coastal wetlands which allow for natural acclimatization to water level fluctuations to be replicated throughout the Caspian ▪ Integration of wetland management into the local development and planning processes ▪ Inclusion of major stakeholders in the development and implementation of the management plan. 	<ul style="list-style-type: none"> ▪ TDA report within 12 months • Stakeholder analysis report and minutes of stakeholder meetings within 12 months • Management plan agreed by local authorities and budget allocated to its implementation within 24 months] • Legislative, capacity building public awareness and investment activities implemented within approximately 36 months 	<ul style="list-style-type: none"> • The local administration understands the threats to the pilot site, understands the wetlands value and wishes to take action. • All stakeholders are involved within the catchment not just the immediate area around the lagoon. • The local administration is prepared to involve the stakeholders in the decision making process. • Risk mitigation: selection of lagoon site based upon local administrators understanding of wetlands value, and willingness to involve all stakeholders in the decision making process. Stakeholders throughout catchments area identified through TDA.

Outcome C: Implementation of the CEP invasive species action plan in close coordination with the GEF Globlast Ballast Waters project to address, in particular, the impact of the ctenophore <i>Mnemiopsis</i> on the Caspian ecosystem.			
<ul style="list-style-type: none"> Activity C 1 Support and expand the <i>Mnemiopsis</i> monitoring programme ongoing in the five Caspian States. 	<ul style="list-style-type: none"> Determine the present and forecast the future impact of <i>Mnemiopsis</i> on the Kilka fisheries and the general biodiversity of the north, middle and southern Caspian. Determine other potential causes for the dramatic decline in zooplankton and subsequent failure of kilka fishery. A revised ISAG action plan to combat <i>Mnemiopsis</i>. 	<ul style="list-style-type: none"> Bulletin on <i>Mnemiopsis</i> activities published 2 times per year, first within 6 months of initiation National and regional annual monitoring reports Revised action plan to tackle <i>Mnemiopsis</i> to be produced within 12 months 	<ul style="list-style-type: none"> Commitment to and equipment for monitoring efforts in all Caspian countries Multisectoral support for monitoring efforts Risk mitigation: ensure monitoring equipment availability prior to initiation of project.
<ul style="list-style-type: none"> Activity C 2 Provide technical assistance in development of a proposal for the introduction of <i>Beroë Ovata</i> in the Caspian as biological control agent for <i>Mnemiopsis</i>, and provide support to the I.R. Iran and Russia in undertaking in-vitro behavioural studies of <i>Beroë</i> and an environmental impact assessment report. 	<ul style="list-style-type: none"> An assessment of the long-term impact of the introduction of <i>Beroë</i> as a biological control agent for <i>Mnemiopsis</i>. The first regional agreement on the introduction or otherwise of biological control agent into the Caspian and the establishment of future procedures (see activity C 3) 	<ul style="list-style-type: none"> Delivery of Environmental Impact Study findings and recommendations to CEP Invasive Species Advisory Group 12 months after project initiation Delivery of Invasive Species Advisory Group recommendations on introduction of <i>Beroë</i> or alternatives 15 months after project initiation If approved controlled introduction of <i>Beroë</i> into region 18 months after project initiation Regional procedures (in perhaps the form of a signed protocol) for the approval of purposeful introductions into the Caspian agreed by the littoral states within 24 months 	<ul style="list-style-type: none"> <i>Beroë</i> introduction does not exacerbate destruction of biodiversity Controlled introduction of <i>Beroë</i> most appropriate means of managing <i>Mnemiopsis</i> infestation Advisory Group approval of study findings Full country support throughout region for activities including introduction of predator species Risk mitigation Full country inclusion in decision making process.

<ul style="list-style-type: none"> Activity C 3 Review the national legislation on introduction of alien species and make recommendations for the formation of a Caspian Regional body to evaluate and authorize introductions. 	<ul style="list-style-type: none"> A regional body trained and equipped to authorize, monitor, and police purposeful introductions of alien species Signed regional procedures for authorising purposeful introduction of alien species to protect the existing biodiversity and bioresources of the Caspian. National legislation updated within all Caspian states in line with regional procedures 	<ul style="list-style-type: none"> A functioning authority established to oversee planned alien species introductions, with broad responsibility within 18 months of project initiation Regional procedures in place (in perhaps the form of a signed protocol) for the approval of purposeful introductions into the Caspian, agreed by the littoral states within 24 months Functional database accessible to multiple stakeholders delivered within 18 months of project initiation. Reports by countries of legislation adopted and implemented within 3 years of project initiation. 	<ul style="list-style-type: none"> Country, multisectoral support for authority of invasive species management officials Invasive species management officials adequately trained and equipped to monitor invasive species introductions Complete and accurate data available to construct database Enforcement of and compliance with new legislation Risk mitigation: Data compilation verified and quality evaluated by empirical means. Legislation created with strong incentives for enforcement and compliance.
<ul style="list-style-type: none"> Activity C 4 In collaboration with the GEF Globallast undertake an assessment of extent of traffic of ship-borne invasive species into the Caspian via the River Volga and undertake a pre-feasibility study into ways and means of controlling invasions at the port of entry Astrakhan. 	<ul style="list-style-type: none"> A commitment from the Caspian countries and their Ministries of Shipping and transport to implement actions to managed ballast waters coming into and out of the Caspian Sea. 	<ul style="list-style-type: none"> Delivery of pre-feasibility study 15 months of commencement Regional proposal agreed by the CEP SCM and the Ministries of Shipping/Transport within 24 months of commencement. 	<ul style="list-style-type: none"> Pre-feasibility study recommendations realistic and realizable Risk mitigation: alternative management strategies explored within study.
<p>Outcome D: Assessment of the pollution loading of the Caspian and determination of distribution and composition of PTS (such as persistent organic pollutants, oil products, and heavy metals) in the riverine waters and sediments and coastal waters, in order to prioritise future interventions directed at amelioration of the environment.</p>			
<ul style="list-style-type: none"> Activity D 1. Expand and improve the Tacis land-based activity assessment, including contaminant source assessment in the coastal zone and major river basins (Kura/Arax, Volga up to Volgograd, Sefid Rood, and Ural), including point and non-point sources and quantification of hot-spots within the rivers (working with the GPA Secretariat in The Netherlands, the POPs Secretariat in Geneva, and with the regional and national PTS and POPs 	<ul style="list-style-type: none"> An assessment of the pollution loading into the Caspian from the near basin taking account of the sequestering in the major river impoundments. Identification of the priority hot-spots in the near basin and agreement to address those hot-spots through a regional action plan to combat land-based 	<ul style="list-style-type: none"> Regional and national land-based source assessment reports within 15 months from project initiation Ground-truthing reports produced within 18 months of project initiation Regional plan endorsed at the regional level and incorporated 	<ul style="list-style-type: none"> States become defensive when assessing land-based sources and rely on official data. Access is granted to public and private enterprises to verify pollution loads Good working relationships are formed with GPA and the POPs secretariat Risk Mitigation: inform relevant ministries

assessments and enabling activities)	sources, including timetable and financing plan.	into the revised SAP within 3 years	of actions to be taken and incorporate their concerns into strategy for information gathering.
<ul style="list-style-type: none"> Activity D 2 Determine the flux of major contaminants from the Volga cascade (in conjunction with the planned UNESCO project) and the Mingechaur reservoir. 	<ul style="list-style-type: none"> Preparation and implementation of contaminant management plans for the Volga cascade and Mingechaur reservoirs, which will address an emerging threat to the Caspian. 	<ul style="list-style-type: none"> Five priority hot-spots addressed within 4 years. Estimate contaminant flux and forecast possible percent change in contaminants brought about by reductions in live-storage and climate change and prepare a report within 24 months Recommendations of the contaminant management plans adopted by responsible authorities in Russia and Azerbaijan within 2 years Agreements reached with upstream oblasts/states for reduction of pollution loading within 3 years. 	<ul style="list-style-type: none"> UNESCO funding assured Normal distribution of contaminants in sampling year The authorities regulating the reservoirs give approval for studies Risk Mitigation: Develop close working relationship with the UNESCO project team and the beneficiaries

<ul style="list-style-type: none"> Activity D 3 As a continuation of work from the first GEF CEP project, further surveys of the riverine water, sediments and sea waters in the Caspian states, including the coastal sediments off Turkmenistan, assessing the impact of key transboundary contaminants in water and sediments. 	<ul style="list-style-type: none"> Agreement between states on the priority transboundary contaminants impacting the coastal and off-shore waters of the Caspian. Production of improved baseline data for the design of a regional ambient contaminant monitoring programme Assessment of capabilities of key regional laboratories 	<ul style="list-style-type: none"> Report on survey (s) within 6 months of completion and approval of results and recommendations by the Caspian states. Involvement of at least 3 regional laboratories in sample analysis and inter-calibration exercises with IAEA and report on results and R&C for capacity building within 18 months. Laboratory report on contaminant analysis within 9 months As part of the revised TDA, production of a pollution status report for the Caspian Sea, within 30 months of project initiation 	<ul style="list-style-type: none"> Access denied to coastal waters by countries. Difficulty in analysing Furans and Dioxins Regional laboratories unable to participate in inter-calibration exercises because of lack of capacity. Risk mitigations; articulation of clear benefits of all countries cooperation with this activity. Careful selection of regional laboratories to be involved in study
<ul style="list-style-type: none"> Activity D 4 Assistance in the design and implementation of a cost effective and affordable regional monitoring methodology / programme for key transboundary contaminants and in conjunction with the oil industry develop an environmental rapid assessment methodology/programme using bio-marker techniques, combined with awareness-raising activities 	<ul style="list-style-type: none"> Implementation of a cost effective and affordable monitoring programme for contaminants tied to an agreed management/decision framework contained in the Land-based activities action plan (activity D1). Development of a suite of agreed environmental rapid assessment methodology/ programme using bio-marker, biological effects and biological monitoring techniques, tied again to a management/decision framework. Heightened and informed awareness of pollution problems of the Caspian Sea amongst the key stakeholders 	<ul style="list-style-type: none"> Agreement on the first phase of an integrated (chemical, biological and physical parameters) regional monitoring programme key transboundary contaminants by CEP, within 12 months, based on existing monitoring commitments and capabilities. Agreement on a management/decision framework within 12 months. Results from the first year of the monitoring programme within 24 months Training delivered on environmental rapid assessment programme within 15 months and agreement of a suite of methods to be tested in an 	<ul style="list-style-type: none"> Region-wide access for monitoring Effectiveness of biomarker marker and biological effects techniques for rapid assessment in the Caspian Sea Support of oil industry Appropriate stakeholders identified and targeted <p>Risk mitigation: Evaluation of appropriate techniques by the regulating authorities. Maintaining open channels of communication with oil industry.</p>

		<p>enhanced monitoring programme.</p> <ul style="list-style-type: none"> Proposals for a second phase of enhanced monitoring, taking into account results from activities D1,D2 and D3. Implementation of awareness raising campaign, including materials for distribution to key stakeholders within 2 years 	
<p>Outcome E: Regional (developed as part of the project) and National Action Plans addressing the activities contributing to transboundary Persistent Toxic Substances (PTS) including persistent organic pollutants, oil products, and heavy metal pollution (as only two of the five Caspian littoral states are presently signatories to the Stockholm Convention, assistance by UNEP in developing national support for signature and in developing enabling activities will be part of the project).</p>			
<ul style="list-style-type: none"> Activity E 1 Draft and agree to a regional Action Plan for addressing the activities contributing to transboundary PTS, including Persistent Organic Pollutants and heavy metal pollution. 	<ul style="list-style-type: none"> Strengthen legislation and guidelines relating to the usage of agro chemicals. Each country countries to commit to 5% annual reduction in agro chemicals for next 5 years. Linkage to POPs enabling activities in countries which are signatories to the Convention Drafted and signed Regional Action Plan for addressing the activities contributing to transboundary PTS adopted by at least 4 countries within 2 years 	<ul style="list-style-type: none"> Signed and ratified agreement on PTS within 15 months Standardized plan approved in all Caspian states within 3 years 	<ul style="list-style-type: none"> The states have the capacity and willingness to implement plans Risk mitigation: incorporate clearly articulated incentives for states to implement plans
<ul style="list-style-type: none"> Activity E 2 In two pilot project areas a survey of usage and stockpiling of pesticides, undertake public education programme and demonstrate the use of Integrated Pest Management (coordinated with any national POPs Enabling Activity inventories to avoid duplication). 	<ul style="list-style-type: none"> Recommendations for the introduction of integrated pest control as a means of reducing the use of pesticides and their adoption by at least two Caspian states. Replicate pilot projects established in the other three states within 3 years. 	<ul style="list-style-type: none"> Report on pesticide stocks and sources and verification of problem within 18 months of project inception. Report on training and a record of number of site visits by local farmers within 24 months Guidelines for IPC produced by two littoral governments within 	<ul style="list-style-type: none"> Good collaboration with the local farmers and Ministry of Agriculture Strong linkage with Activity E3 Risk mitigation: Choice of pilot project site to be competitive among farmers, in centrally located area, and clear incentives for Ministry of Agriculture to support programme. Close collaboration with the POPs secretariate and the enabling

		3 years.	projects.
<ul style="list-style-type: none"> ▪ Activity E 3 Undertake a regional public awareness campaign against the use of banned pesticides and other PTS (coordinate with any similar activities planned under country's POPs Enabling Activities). . 	<ul style="list-style-type: none"> ▪ A reduction in banned pesticide usage monitored in the areas where awareness campaign was implemented. ▪ On-going, self supporting, campaigns against pesticide usage created. 	<ul style="list-style-type: none"> • Increased attendance at public information meetings on use of pesticides, within 6 months. • In those countries which are signatories to PoPs Convention, increased reported stockpiles of banned substances in those areas where the public awareness campaign is being implemented, within 18 months. • Increased membership and funding of NGOs involved in pesticides control, within 18 months. 	<ul style="list-style-type: none"> • Pressure in the main population centres can impact not only the decision makers but also the farmers in the agricultural regions. • Risk mitigation: Focus of enforcement capacity rather than individuals in PA campaign

OBJECTIVE II : To continue with specific capacity building measures to ensure a regionally owed CEP coordination mechanism capable of full implementation of the SAP and regional coordination of the NCAPs and consolidate/update the TDA, SAP and NCAPs following a series of information gap-filling measures

Activities	Verifiable Indicators	Sources of Verification	Assumptions and Risks
Outcome F: A sustainable, strengthened, and regionally owned coordination mechanism for development and management of the Caspian Sea environment, in the form of a newly formed country-supported PCU located in the Islamic Republic of Iran capable of execution of regional projects, strong country-supported National Coordination Structures capable of execution of national projects, and a network of institutions addressing transboundary environmental issues as addressed in the NCAPs and SAP.			
<ul style="list-style-type: none"> Activity F 1 Supporting establishment of the Programme Coordination Unit in Islamic Republic of Iran, including provision of additional furniture and computer equipment and assistance with preliminary training needs. 	<ul style="list-style-type: none"> A fully functioning regional coordinating body established in Tehran heading a vibrant Caspian Environment Programme. Increased bi-lateral and private funding of CEP activities Country support to CEP activities in-kind and in cash maintained throughout the GEF project life time and beyond. The international profile of the CEP maintained and enhanced principally through the CEP web-site 	<ul style="list-style-type: none"> A staffed PCU office in Tehran, including Programme Coordinator and assistant established within 3 months of project initiation. At least two new bilateral/private funded projects confirmed within 12 months Web-site up-dated and new project information available within 3 months of project initiation with monthly updates Web-site maintained in accordance with IW-learn guidelines. 	<ul style="list-style-type: none"> Availability of staff and training resources Country agreement on staffing components Littoral states unanimous support of Programme Coordinator and assistant Risk mitigation: Selection of PCU staff should be based on merit.
<ul style="list-style-type: none"> Activity F 2 If not already undertaken as part of PDF-B activities, transfer the Caspian Information System and web-site to I.R. Iran. Develop the information system further by developing strong linkages with contributing institutions. 	<ul style="list-style-type: none"> A strong CEP outreach programme maintained in regional and internationally through the web-site. CEP contributing institutions producing regular reports to the CEP for inclusion on the web-site and their own web-pages. Increased connectivity between regional and international scientific research institutions, CEP and other regional seas programmes 	<ul style="list-style-type: none"> Fully functional Caspian Information System at PCU in I.R. Iran posted on web-page within 3 months of project initiation. Linkages with regional institutions functional and active with either separate web-sites or web-pages within 6 months. Increased number of scientific papers written by regional scientists /institutions and accepted by recognised journals. At least three joint activities implemented by CEP with neighbouring Regional Seas programmes (Aral, Black Sea, 	<ul style="list-style-type: none"> Transferability of systems Communication networks capable of forming and maintaining strong linkages with regional institutions Risk mitigation: testing of available systems and networks to ensure optimal compatibility throughout region and with regional institutions.

Activities	Verifiable Indicators	Sources of Verification	Assumptions and Risks
		ROPME, MEDPOL) within 18 months.	
<ul style="list-style-type: none"> Activity F 3 Provision of project management training to the staff of the PCU and NCS to enable them to execute regional and national projects. 	<ul style="list-style-type: none"> An independent PCU and network of regional officer capable of coordinating a large number of component SAP projects. A PCU with the management and technical capacity of developing and executing component SAP projects. 	<ul style="list-style-type: none"> Improved delivery from PCU and NCS measured in terms of the number of inter-connected activities between the SAP component projects, within 3 months of training completion Three proposals for regional SAP implementation projects submitted to bi-lateral/private donors, within 12 months, one of which is approved. 	<ul style="list-style-type: none"> Access to training materials for staff throughout region Training/workshops will be effective for execution of national and regional projects Risk mitigation: Review of previous training efforts for successful trends. Careful consideration of design of workshops and training to meet intended objectives.
<ul style="list-style-type: none"> Activity F 4 Support NSC SAP implementation activities by provision of a SAP implementation advisor for GEF focal areas and inter-sectoral coordination activities by the formation and support of a coordination body. 	<ul style="list-style-type: none"> Inter-sectoral coordination improved in each country with the appointment of a SAP implementation advisor and creation of an inter-sectoral body. Inter-sectoral body meeting on a regular basis to review the national implementation of the SAP and NCAP and agree means of overcoming blockages, including financial, to implementation. 	<ul style="list-style-type: none"> Coordination body established and SAP advisor appointed within 4 months Improved coordination and accelerated implementation of SAP in specific for GEF focal areas, within 1 year 	<ul style="list-style-type: none"> Delay in status of SAP or Framework Convention Lack of acceptance by ministries of Intersectoral activities due to bureaucratic turf guarding Risk Mitigation: Increased inter-sectoral in all five countries
<ul style="list-style-type: none"> Activity F 5 Develop an integrated monitoring and evaluation programme for the SAP and the NCAPs and revise the CEP concept paper, with reference to the SAP and Framework Convention. 	<ul style="list-style-type: none"> A standardised integrated monitoring and evaluation programme applied to implementation of the SAP and NCAPs based on specific quantifiable results to ensure uniform and on programme implementation. Strengthening the of CEP by 	<ul style="list-style-type: none"> National reports on effectiveness of SAP and NCAP implementation with clear quantitative and empirical measurement criteria within 2 years, to be reviewed every 2 years thereafter. Delivery of final draft of CEP Concept Paper to the SCM within 6 months and approval within 12 	<ul style="list-style-type: none"> Access to materials, reports, etc, for monitoring and evaluation National acceptance of regional monitoring Framework Convention not signed by all littoral countries Risk Mitigation Improved articulation of the need for monitoring of the NCAPs and SAP.

Activities	Verifiable Indicators	Sources of Verification	Assumptions and Risks
	approval by the SCM of a revised concept paper, taking into account SAP and Framework Convention within 12 months year	months.	Alternative scenarios in the event that Convention only signed and ratified by a portion of countries.
<ul style="list-style-type: none"> Activity F 6 Revise the TDA and the SAP. 	<ul style="list-style-type: none"> A revised TDA taking into account the findings of outputs A,B and C of the GEF project and the findings from the EU-Tacis fisheries and sustainable coastal development projects. A revised SAP and NCAPS, which, following national reports on implementation (activity F5) and revised TDA, will make better use of limited resources to target the priority transboundary issues. 	<ul style="list-style-type: none"> Revised TDA within 24 months, Revised SAP and NCAPS within 3 years 	<ul style="list-style-type: none"> Lack of substantive information to update TDA NCAPS not effectively implemented due to delays or lack of capacity Risk Mitigation: increase informational sources for TDA including linked projects. Close coordination of NCAP and SAP project objectives to provide incentives for NCAP progress.
Outcome G: Enhanced and informed stakeholder and intersectoral participation in the management of the Caspian environment			
<ul style="list-style-type: none"> Activity G 1 Enhanced participation of media through the development of a CEP media kit for local, national, and international journalists outlining mission objectives, projects, and programmes of the CEP. Develop database of media contacts. 	<ul style="list-style-type: none"> An enhanced regional and international image for CEP and greater media exposure of its activities Improved management of the press by CEP. Improved understanding by the media of the environment complexities of the Caspian and implementation constraints and realities. 	<ul style="list-style-type: none"> Production and distribution of media kits to relevant local, national and international journalists and media outlets with 6 months Journalists database to be produced within 12 months Press release mechanisms tested within 12 months At least five positive articles on CEP activities to be published regionally within 18 months. 	<ul style="list-style-type: none"> Support and interest from journalists and media outlets Terms and concepts correctly translated/translatable into local languages Correct outlets targeted Risk Mitigation: Proven local language translators identified and UNDP offices consulted on appropriate press release mechanisms.
<ul style="list-style-type: none"> Activity G 2 Strengthening of Caspian NGO community building on the work undertaken by ISAR and USAID. Encourage NGO representation on the CEP Steering Committee and in 	<ul style="list-style-type: none"> A maintained and strengthened NGO involvement and input into CEP activities Increased local NGO execution of CEP activities and develop a better sense of local ownership. 	<ul style="list-style-type: none"> NGO workshops (co-) hosted by CEP and ISAR annually and publish NGO comments feed-back on CEP web-site Value of contracts with local NGOs increased by at least 50% above the 	<ul style="list-style-type: none"> NGOs representative of civil society NGO supporting organizations run democratically Steering Committee acceptance of NGO representative

Activities	Verifiable Indicators	Sources of Verification	Assumptions and Risks
CEP activities.		<p>level recorded during the first GEF project.</p> <ul style="list-style-type: none"> NGO representative serving on CEP Steering Committee within two years 	<ul style="list-style-type: none"> Risk Mitigation: work closely with NGOs and ISAR/USAID to encourage NGO grassroots efforts and governance procedures, encourage Steering Committee to accept NGO representative nomination.
Activity G 3 Continue with the support of Caspian Coastal Concern Groups, established in the first project, and expand the network. Hold a conference of the Caspian Mayors.	<p>An increased sense of ownership of the CEP programme at the coast and improved engagement of the key stakeholders by the municipal authorities.</p> <p>An improved sense of community created Caspian wide and focussed on the common, shared environment.</p>	<p>Expansion of the network of Caspian Coastal Concern Groups to include a minimum of 3 groups per country</p> <p>Reports produced semi-annually on activities of the country coastal concern groups.</p> <p>Reports on conferences of Caspian Mayors for all towns with populations over 10,000.</p> <p>Report on bi-lateral and trilateral environmental projects outside CEP initiated by coastal authorities.</p> <ul style="list-style-type: none"> 	<p>Caspian Coastal Concern Groups representative of regional and local stakeholders</p> <p>Input made with best intentions</p> <p>Mayoral/local authorities willing and able to participate</p> <p>Risk Mitigation: CCCG representatives able to demonstrate grassroots involvement and support</p>
Activity G 4 Creation and implementation of environmental awareness training programme for policy makers, building on GEF-I PIPP training. Active intersectoral coordination enhanced within all five Caspian States.	<p>Enhanced Intersectoral cooperation between the government bodies and institutions and creation of environmental champions.</p> <p>New Intersectoral coordination strategies shared throughout region via annual report</p>	<p>Improved Intersectoral cooperation measured by increased financial commitments to SAP and NCAP year-on-year by government Ministries other than Ministry of Environment.</p> <p>Number of new environmental cross ministry environmental initiatives created in 3 years.</p> <ul style="list-style-type: none"> 	<p>Appropriate curriculum development</p> <p>Policy makers willingness to attend training</p> <p>Intersectoral coordination enhancement institutionally feasible</p> <p>Risk Mitigation: Importance of intersectoral coordination for all sectors to be emphasised with the countries. Garnering of high level institutional support for coordination.</p>
Activity G 5 Strengthened private sector participation in the CEP, perhaps through establishment of a	Improved and coordinated private sector involvement in the Caspian Environment Programme	<ul style="list-style-type: none"> Database of private sector representatives to be ongoing, but established within 6 months of 	<ul style="list-style-type: none"> Identification of appropriate private sector industries Willingness of private sector to participate

Activities	Verifiable Indicators	Sources of Verification	Assumptions and Risks
CEP private sector advisory body which could include the International Petroleum Industry Environmental Conservation Association (IPIECA), local oil and gas operators, shipping companies and fish processing companies.	<ul style="list-style-type: none"> Enhanced funding of the CEP at local, national and regional levels. 	<ul style="list-style-type: none"> project initiation. Active CEP private sector advisory body established within one year of project initiation Increased private sector support to SAP and NCAPs activities measured year-on year. 	<ul style="list-style-type: none"> Advisory body not given undue influence in CEP Risk Mitigation: private sector industries identified in part through stakeholder analysis and to be expanded as appropriate throughout project. Private sector encouraged to attend as networking opportunity, advisory board input weighted equally as other groups institutionally.
<ul style="list-style-type: none"> Activity G 6 An evolving public participation plan that is updated frequently according to changing conditions and needs. 	<ul style="list-style-type: none"> A CEP engaged public at both the local and national level, that drives rather than leads policy. 	<ul style="list-style-type: none"> Number of new environmental initiatives taken up by CEP arising from on-going public awareness /participation plans. The speed and flexibility with which public participation programmes can be recovered after a dramatic change in the political or financial atmosphere. Updated public participation plan submitted annually 	<ul style="list-style-type: none"> Plans appropriate for changing needs and conditions Risk Mitigation: Flexibility of plans, and close coordination with public sector allow for monitoring of changing needs and conditions.

OBJECTIVE III: To strengthen the environmental legal and policy frameworks operating at the regional and the national levels and where necessary improve implementation and compliance of those frameworks.

Activities	Verifiable Indicators	Sources of Verification	Assumptions and Risks
Outcome H: Preparation of ancillary agreements to the Framework Convention and drafts of the major protocols targeting priority transboundary issues (biodiversity, persistent toxic substances, invasive species, land-based sources, marine and seabed pollution, and environmental impact assessment, data exchange)			
<ul style="list-style-type: none"> Activity H 1 To provide assistance that may be needed by some countries in the process leading to the ratification of the Framework Convention. 	<ul style="list-style-type: none"> A ratified Framework Convention document within the life-time of the project. 	<ul style="list-style-type: none"> Documentation of FC support compiled semi-annually 	<ul style="list-style-type: none"> The FC process will continue and not be abandoned Requests for assistance realistic and appropriate Risk Mitigation: high prioritisation of FC process emphasised to countries, assistance provided to towards enhancement of FC process.
<ul style="list-style-type: none"> Activity H 2 To develop ancillary agreements to the Framework Convention, most likely in the form of protocols that will become integral parts of the Convention. 	<ul style="list-style-type: none"> Protocols to the Convention covering key aspects of environmental management, including oil spill response, biodiversity and hazardous substances Ancillary agreements to the Convention need to make it operable. 	<ul style="list-style-type: none"> Documentation of all working groups participation and outcomes to be delivered every 6 months Drafted protocols or other ancillary agreements within life-time of the project. 	<ul style="list-style-type: none"> The differing titles and content of protocols in the SAP and FC are rationalized Countries agree to negotiate protocols before ratification of the FC Working groups sufficiently knowledgeable of issue and relevant legalese Working groups able to reach consensus on protocol

Activities	Verifiable Indicators	Sources of Verification	Assumptions and Risks
			<ul style="list-style-type: none"> Risk Mitigation: harmonization of protocol titles and content in SAP and FC. Selection of protocol working to be based on merit. Goal oriented management of working groups.
<ul style="list-style-type: none"> Activity H 3 To strengthen the capacity of the countries and their institutions to participate fully in the implementation of the Framework Convention, including the functioning of an active secretariat. 	<ul style="list-style-type: none"> A closer linkage between the obligations contained in the Framework Convention and its protocols and the National legislation A good understanding in each of the functions of an active regional seas secretariat and the pitfalls. 	<ul style="list-style-type: none"> Country reports on the where in the legislative aegis national environmental legislation either supports or conflicts with the FC and its protocols, produced within 24 months. Documentation of assistance in drafting enabling policies in consultants mission reports to be delivered annually 	<ul style="list-style-type: none"> Conventions signed and ratified by required number of states Drafted policies/legislation will address intended problems Recommendations which are regional are applicable and heeded at the national level Risk Mitigation: The proposed legislation amendments additions should target root causes identified in TDA. Emphasis of importance compliance of existing legislation and approximation rather than full harmonisation of legislation..
<ul style="list-style-type: none"> Activity H 4 To delivery workshops/seminars reviewing the salient features of selected multi-lateral environmental agreements and programmes, including the legal obligations of the parties to these conventions and activities expected from countries participating in these programmes. 	<ul style="list-style-type: none"> An improved record in compliance with selected multi-lateral environmental agreements related to the CEP and Framework Convention (g.g. CITES, Aarhus). 	<ul style="list-style-type: none"> National reports detailing the challenges to good compliance and strategies for over-coming them to be produced and approved by the relevant Ministries within 12 months. Independent verification of implementation and enforcement of agreements.to be carried out 24 month after project initiation. 	<ul style="list-style-type: none"> National circumstances allow for enforcement and implementation of agreements The appropriate ministries are targeted Ministries receptive to technical and legal assistance Risk Mitigation: close monitoring of national circumstances
<ul style="list-style-type: none"> Activity H 5 Promote the regional practice of environmental impact assessment and the use of economic instruments contributing to improved environmental management. 	<ul style="list-style-type: none"> A regional agreed procedure for Transboundary EIA to be agreed based on the guidelines set out in the ESPOO Convention. Regional supported recommendations for the introduction of appropriate economic instruments to support transboundary environmental activities , concurrent with existing economic situations. 	<ul style="list-style-type: none"> Protocol on EIA procedures developed within 30 months Report on possible economic instruments (levies on bioresource products, tourism, etc) that could be used to support regional environment activities and recommendations for their development, within 18 months. Regional agreement on introduction of regional economic instruments. 	<ul style="list-style-type: none"> Region wide acceptance of regional EIA procedures at Ministerial level Technical assistance accepted by littoral states Involvement of Ministries of Finance assured at an early stage Ability to successfully implement economic measures in region for environmental sustainability Consensus of countries on proportional

Activities	Verifiable Indicators	Sources of Verification	Assumptions and Risks
	<ul style="list-style-type: none"> A sustainable funding source for implementation of the SAP. 		<p>dedication of revenues to Caspian Sea sustainability environmental economic instruments</p> <ul style="list-style-type: none"> Risk Mitigation: inclusion of representatives from all relevant ministries throughout process. Finance ministries involvement assured prior to any commitment to a study on economic instruments.

OBJECTIVE IV: To achieve tangible environmental improvements in priority areas by implementation of small-scale investments supported by a small matched grants programme

Activities	Verifiable Indicators	Sources of Verification	Assumptions and Risks
Outcome I: Matched Funding of small-scale investments from the NGO, public and private sector, which target common or transboundary Caspian issues identified as priorities in the TDA/NCAPs/SAP and will result in tangible environmental improvements. This activity will be a continuation of the Matched Small Grants Programme currently being executed by the World Bank as part of the first GEF support project to the CEP.			
<ul style="list-style-type: none"> Activity I 1 Matched funding of small-scale investments from the NGO, public and private sector, which target common or transboundary Caspian issues identified as priorities in the TDA/NCAP/SAP and will result in tangible environmental improvements. This activity will be a continuation of the Matched Small Grants Programme currently being executed by the World Bank as part of the first CEP GEF project. 	<ul style="list-style-type: none"> Tangible improvements in the local environment of the Caspian Sea. Improved capacity at the local level to design, promote and implement environmental projects. 	<ul style="list-style-type: none"> Report on training and feed-back from trainees within one month of project preparation training sessions. Number of project proposals received and the range of organizations applying. Amount of money disbursed in the first and second phases.. Reports on individual project at mid-way and the end of execution period. 	<ul style="list-style-type: none"> The matching funds committed by the grantees are not illusory. The successful projects will spawn new projects that will be executed without the need of support. Risk Mitigation: Lessons learnt from the first MSGP applied. Close monitoring of project implementation.

Annex C1: STAP REVIEWER'S COMMENTS

Towards a Convention and Action Programme for the Protection of the Caspian Sea Environment

Requesting countries -- Azerbaijan, Islamic Republic of Iran,
Kazakhstan, Russian Federation, Turkmenistan)

Implementing agency -- United Nations Development Programme

Executing agency -- UNOPS

Introduction

As a preface to this review, it is noted that the environment of the Caspian region has attracted media, political and global attention over the past few decades. It is because of this reality that Caspian Sea has subsequently received the attention of the United Nations, international and regional organizations, and the Global Environment Facility (GEF). Accordingly, the comments provided herein are directed to the program elements in three priority areas to receive initial attention in support of the Strategic Action Programme (SAP), and continuance of the Convention process, as agreed in the Caspian Environmental Programme (CEP) for the Caspian Sea and its drainage basin. These latter activities resulted from the first phase of this continuing GEF/UNDP/UNOPS-sponsored CEP, the goals of which were to (1) create a regional coordination mechanism to achieve sustainable development and management of the Caspian Sea and its drainage basin, (2) complete a Transboundary Diagnostic Analysis (TDA) of priority environmental issues to guide necessary environmental actions; (3) formulate and endorse a Strategic Action Programme (SAP) and adopt National Caspian Action Plans (NCAPs). All the riparian states expressed continued support for a single, regional structure to coordinate initiatives to address regional environmental issues associated with the Caspian Sea; hence the development of this proposal.

As a follow-up to the initial effort, the comments presented herein are directed to the program elements in three priority areas to receive initial attention in support of the SAP, and continuance of the Convention process, as agreed in the CEP. The objectives focus on implementation of the SAP in three priority areas, namely biodiversity, invasive species, and persistent toxic substances. Additional elements include continued regional capacity building efforts to allow full SAP implementation and regional coordination of the National Action Plans (NCAPs), as well as implementation of small-scale investments supported by a small matched grants programme to provide tangible environmental improvements in SAP priority areas.

The project is being proposed under the International Waters focal area of the GEF, under Operational Program 9 (Integrated Land and Water Multiple Focal Area). Also relevant to this review is the fact that the GEF specifically recognizes the need for more integrated approaches to land and water management as a mechanism to address threats to their water resources. The proposal supports the notion of Integrated Watershed and Coastal Area Management (IWCAM) as essential for a sustainable future for the Caspian Sea and its bioresources, and this approach should also produce results beneficial in other GEF focal areas as well.

Key Issues

Key issue 1. Scientific and technical soundness of the project. The SAP identified four major socio-environmental concerns, including habitat/biodiversity loss, pollution, invasive species and fisheries declines. Accordingly, this proposal focuses on activities to address these regional environmental concerns; namely, biodiversity, invasive species, and persistent toxic substances. Conceptually, the project appears to be scientifically and technically sound in regard to these individual components. The background information on these issues is extensive and explanatory of the problems and their impacts on the Caspian Sea ecosystem. The social, economic, institutional and legal implications of these issues also are identified and discussed. The

current inadequacies of regional cooperation and institutional frameworks are also identified, and the problems that this reality superimposes on the scientific and technical components of the project also are noted.

The proposal notes a history of involvement by various national and international governments, institutions and organizations on issues of concern in the Caspian Sea.

However, it seems they are poorly coordinated. A weakness of the proposal is the lack of practical guidance on how the scientific and technical elements of the biodiversity and pollution issues are to be assessed and remediated on a drainage basin scale by the various governments, agencies and institutions (i.e., how will they be addressed on a national basis; how will a basin-wide approach based on the national efforts be developed, etc.). A need to coordinate existing environmental activities, as a means of facilitating synergism for integrated water resource management (IWRM) in this region, provides part of the rationale for this proposal. It also is conceptually consistent with the interdisciplinary goals of Chapters 17 and 18 of Agenda 21.

In fact, it could be argued that the project is not comprehensive enough in focusing only on biodiversity and pollution, but that it also should incorporate research elements focusing on how such large aquatic ecosystems respond to continued environmental degradation, including aquatic chemistry, hydrodynamics and sediment characteristics, particularly in view of the increasing pollution of the Caspian Sea. Further, it would be useful if the implementing agencies and their partners provided more detailed information on their specific roles, and how they will coordinate others working in this project.

Key issue 2. Identification of global environmental benefits and/or drawbacks of the project, and consistency with the goals of the GEF. The proposed project addresses specific elements of biodiversity loss and environmental degradation in the Caspian Sea. Consistent with the goals of the GEF, the proposal suggests that the holistic approach to integrated management and use of the Caspian Sea and its resources, as emphasized in the SAP, is fundamental to addressing these elements. This approach should facilitate addressing most environmental concerns in the Caspian Sea drainage basin, and the coordinated management of aquatic resources for their sustainable use. Lack of clear responsibility and authority in the Caspian Sea drainage basin, as well as inadequate financial and intellectual resources, are major root causes of the lack of integrated approaches to integrated management of the Caspian Sea for its sustainable use. Against this background, addressing the environmental problems associated with the sustainable use of this major water system, especially against the background of its use by multiple countries, with differing goals and objectives, should prove especially beneficial for other large, international waterbodies around the world.

The project has few obvious drawbacks, other than consideration of the anticipated lag period between the management interventions and the ultimate response of the Caspian Sea to these interventions. Given the size of the Caspian Sea, its volume and its flushing rate, it is likely that positive responses may require an extensive period of time to become evident. Effort should be made to point out that this period of seemingly no response is a natural feature of any water system, and should not be interpreted as failure of the remedial activities. The primary concern would be to determine how soon positive responses may become evident. Further, given the size and complexity of the Caspian Sea ecosystem, it is also likely that other environmental concerns may become evident during the course of this project. Some attention should be given in the proposal in regard to how any emerging environmental issues might also be considered.

Given the underlying project goals of facilitating IWRM within the Caspian Sea drainage basin, this project appears to be consistent with the goals of the integrated land and water multiple focal area outlined in Operational Programme 9 of the GEF Operational Strategy. Accordingly, the project results also should be applicable to large international waterbodies in other parts of the world. To this end, it would be important to widely disseminate the results and outcomes of this project; with the

UNDP national offices and IW-LEARN network being good examples of potential information sources.

Key issue 3. Regional context. The participation of all the riparian countries, including Azerbaijan, Islamic Republic of Iran, Kazakhstan, Russian Federation and Turkmenistan, suggests the regional context of the project is more than adequate. However, as previously noted, clear information on which agencies, entities and/or countries will undertake specific project elements is a weakness of the proposal. It is not clear how the proposed activities will be distributed among the participating riparian country institutions and agencies. Clarification of this matter would significantly strengthen the ability of the project to deliver its identified outcomes.

Key issue 4. Replicability. A major contribution of this project would be its transferability and replicability to similar waterbodies around the world. Noting that virtually all international, large enclosed bodies of water share to varying degrees the same environmental stresses, and often limited financial and intellectual resources, it is anticipated that the project results should be replicable in other regions of the world. The identified outcomes should contribute to the overall potential value of the project activities. Further, the inclusion of mechanisms and networks for disseminating information and project results should facilitate the replication of the project outcomes in other locations throughout the world.

Key issue 5. Sustainability of the project. The sustainability of this project will depend primarily on the full implementation of the SAP by the riparian countries throughout the Caspian Sea drainage basin. As stated in the proposal, the Caspian littoral countries are cognizant of an array of environmental, socio-economic, legislative, and institutional challenges to reach their objectives. It is suggested that they are also conscious of potential barriers to success, and are considering alternative strategies to avoid the obstacles. A related concern is the unresolved legal status of the Caspian Sea. It is pointed out that this issue will impact any subsequent regional agreements, even for those environment and fisheries issues de-linked from the legal status question. Further, as part of the Phase I CEP activities, the Region has prepared a near-final draft of a Framework Convention for the Protection of the Environment of the Caspian Sea. However, the signing and ratification of this convention has been delayed by the lack of a regional agreement on the legal status of the Caspian Sea and other factors, including the Convention institutional arrangements. However, no discussion is provided in the proposal in regard to how this issue should be addressed within the context of the sustainability of the project.

As a practical observation, it appears that the activities associated with Objectives II and III comprise the ‘make or break’ elements of the project in regard to its sustainability. Unfortunately, it is not clear how strongly the participating countries will undertake and carry out these activities over the long term. It is assumed that their participation in the project in the first place illustrates their desire to complete the proposed activities. However, this goal may require implementation of additional activities on a national basis, including the possibility of seeking donor and/or other funding for specific activities, following completion of the project. The project document simply does not provide sufficient information to determine how strong this will be among all the riparian countries.

Key issue 6. Targeted Research Projects. Targeted demonstration and capacity building projects are key features envisioned within the GEF International Waters Program. Although strictly speaking, they don’t necessarily constitute targeted research, the activities associated with Objective IV of the proposal (small-scale investments from the NGO, public and private sectors targeting common or transboundary Caspian issues identified as priorities in the SAP) are relevant here. These activities are a continuation of the Matched Small Grants Programme (MSGP) currently being executed by the World Bank as part of the first GEF support project to the CEP. The MSGP is one of the most successful components of GEF’s Priority Investment Portfolio Project (PIPP) in the CEP. It exhibits a strong demand shown for grants from a range of projects, including drinking water purification, sturgeon management projects, oil contamination remediation, biodiversity protection and cleanup and restoration projects.

It is noted, however, that the development and application of the SAP Environmental Quality Objectives should receive more research attention than currently discussed in the proposal. The relevance of specific indicators is being looked at for other large water systems, the most notable example being the “State of the Lake Environment Condition” (SOLEC) being undertaken in the Laurentian Great Lakes of North America. The project should make use of this considerable international effort, considering its possible application to the Caspian Sea. Further, given the focus of the project on invasive species and water pollution, attention should be given to some targeted research projects directed specifically to these issues. Finally, more specific information and rationale should be provided for the research activities to be directed to the study of the Caspian seal, as an indicator species for the impacts and consequences of human activities in the region.

Secondary Issues

Secondary issue 1. Linkage to other focal areas. This project is formulated as an International Waters project under International Waters focal area of the GEF, under Operational Program 9 (Integrated Land and Water Multiple Focal Area). It also suggests that it will likely produce benefits in other GEF focal areas, most notably biodiversity. Noting the interrelated goals of the proposed project, there is clear linkage with other focal areas, and the project appears more than adequate in regard to its proposed coverage of relevant topics, notwithstanding the need for additional information on specific project components.

Secondary issue 2. Linkages to other proposals. The goal of integrated water resource management is a major focus of many projects within the GEF International Water portfolio. Further, UNDP, UNEP and the World Bank have implemented many projects under the International Water Portfolio identifying integrated freshwater resource management as a fundamental goal. Thus, the project as envisioned appears to be adequately linked to other GEF water-related goals.

Secondary issue 3. Other beneficial or damaging environmental effects. The potential beneficial outcomes of the project were previously articulated. Further, the project has no apparent damaging environmental impacts associated with the activities proposed to be executed.

Secondary issue 4. Degree of involvement of stakeholders in the project. Stakeholder involvement is acknowledged as a fundamental requirement for the success of this project. Coordination and dissemination of project results, including demonstration projects, and possible revision of existing legislation and policy, are fundamental project goals. The full array of stakeholders expected to participate in the Project include officials from Environmental Ministries/Agencies, Agriculture and Fishing Ministries, Foreign Affairs Ministries, Economic/Finance Ministries, Energy Ministries, Transportation Ministries, and other relevant national ministries, local and regional government officials, oil and gas industry officials, fishermen and fishing industry managers, nature park staff, educators, students, scientists, NGO representatives, public healthcare providers, coastal zone residents, and international organization representatives. By including these wide ranging groups as stakeholders, CEP has enabled broader and more comprehensive participation within the Project. The project is more than adequate in this regard.

Secondary issue 5. Capacity building aspects. Objective II of this project specifically focuses on capacity building, with Outcome G calling for enhanced stakeholder and inter-sectoral participation in the management of the Caspian Sea environment. The project also contains specific activities designed to increase stakeholder participation as part of capacity building efforts. Accordingly, the project appears adequate in regard to this element.

Secondary issue 6. Innovativeness. There is nothing in the project that can be considered especially innovative in regard to new topics, elements or procedures. However, the continued environmental degradation of this large aquatic ecosystem does not require new or innovative approaches to be useful. Indeed, the proposed elements focus on problems and issues that have existed for many years. In most cases, the means of attempting to address these issues are not unknown; indeed, most are well known.

What is necessary is to get agreement among the riparian states on their coordinated use, and the means (intellectual and financial) to implement them. Thus, the lack of “innovative” elements does not constitute a reason for not considering this proposed project as an important and relevant activity.

General Conclusion and Recommendations
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Overall, this reviewer concludes that the proposed project is wholly consistent with the GEF International Waters operational program, its broader philosophy, and general funding criteria. As previously noted, there are several places in the proposal where additional information on how specific project elements will be done, how they will be done, who will do them, etc., would be beneficial. The environmental and socioeconomic situation in regard to the sustainable use of the Caspian Sea and its resources is extremely complex in regard to the scientific and technical elements, and extremely difficult in regard to the institutional, economic, institutional and legal elements to be identified and considered. In fact, without implementation and long-term continuation of the SAP by the riparian countries, it is doubtful that the Caspian Sea can be used in a sustainable manner. The tragic and dramatic demise of the Aral Sea of southcentral Asia, in the absence of such an approach, provides sobering proof of this reality. Against this background, and noting the substantial effort already expended in developing the Caspian Sea TDA and SAP, *this reviewer recommends this project be funded by the GEF.* In making this recommendation, the reviewer also believes that additional efforts will be required in the future to further the goal of the sustainable use of the Caspian Sea and its resources. Nevertheless, this possibility does not preclude the need for completion of the activities in this proposal as necessary components of continuing efforts directed to the sustainable use of this major water system of global significance.

As additional recommendations, the GEF Implementing Agency should also give specific attention to:

- The means for implementing the results of this project within the context of the SAP;
- Providing additional information on the expected consequences to the Caspian Sea and its environs if the proposed studies and activities are not undertaken and the trends in the present use(s) of the Caspian Sea and its bioresources continues;
- The relevance of the proposed environmental indicators, both in regard to scientific and technical assessments, as well as the rationale for making changes in the social, economic, institutional and/or legal frameworks in the riparian countries in the Caspian Sea drainage basin;
- The means for ensuring that national legislation and policy requiring reform and/or revision are adequate, particularly for facilitating the project results vis-à-vis integrated water resource management throughout the region;
- The means for ensuring widespread dissemination of project results throughout the Caspian Sea riparian countries, and for other large water systems facing similar problems in other parts of the world;
- Ensuring the will and determination of the participating governments to obtain the necessary funding and intellectual resources required to successfully address the problems addressed in the proposal, as well as for implementing the SAP throughout the Caspian Sea drainage basin; this latter element is particularly important for implementing effective integrated water resource management efforts throughout the Caspian region in order to ensure its sustainable use.

Walter Rast
Roster of STAP Experts

Annex C.2: Response to STAP Review:

The following changes have been made in the proposal in response to STAP review:

p. 6

removed "...having overseen the evolution of the first phase of CEP and guided programme development thus far" para 3

replaced "...project and assistance with the implementation of the SAP." para 3

Added: "... The institutional arrangements of the CEP are reproduced in annex H of this document." para 3

Changed: "Endorsement of the FC" to "Signing of the FC"

Added: "National Support for any Caspian Regional Thematic Centres (CRTC)s that the countries agree to maintain, and support to the Regional Advisory Boards"

Added: ". Countries that have not signed the Framework Convention will not be eligible for support by the Project." To paragraph 5

Added: " Initial steps have already been taken to increase the intersectoral coordination within the government ministries in each country; the continuation of this will be an integral component of the next phase of the Project. This coordination will enhance national level support of the Project as well as limit redundancy, improve efficiency and enhance national and regional communication among sectoral stakeholders." after para 7

Page 7

Added: "The Caspian Sea the largest enclosed water body on earth and given its volume and flushing rate there will be a considerable lag between managed interventions and the hoped for positive responses in the environmental conditions. All parties must understand that a period of seemingly no response is a natural feature of the water system and should not be interpreted as a failure of the remedial activities." Before para starting "Two major areas of environmental concern...." At top of page.

Page 10

Added "capacity" to " v) To reduce risk of pollution disasters and improve response capacity. This involves the signing of a regional agreement on oil spill response, updating mapping of sensitive areas of the Caspian, risk assessment for oil and hazardous substances, and development of a regional agreement on minimum standards of maintenance of existing Caspian tanker fleet.

Page 12

Added to the end of the first paragraph "Another risk that will continue to be closely monitored is the possibility of a sub sea pipeline from the port of Aktau in Kazakhstan to the port Sangachal south of Baku. Azerbaijan and Kazakhstan are currently in negotiations regarding this potential pipeline that would feed oil from Kazakhstan into the Baku-Tbilisi-Ceyhan system. Though construction of this sub-sea pipeline is largely illusory to date, the increased pressure to supply the Baku-Tbilisi-Ceyahn route with sufficient crude oil may lead to actualisation of this project."

Page 12

Under section "g. HUMAN HEALTH" added "directly" to last sentence: As a result, it is problematic to tie human health decline directly to poor environmental concerns.

Page 13

Under section "i. LACK OF TRANSPARENCY/ACCOUNTABILITY", first paragraph:

Added: “Further this lack of transparency traditionally hampers coordination between sectors, and specifically leads to environmentally counterproductive efforts from Ministries unintentionally working at cross-purposes.”

Page 14

In section “c. COMPLIANCE AND ENFORCEMENT ISSUES”

Changed “Low income levels and poverty amongst some Caspian residents results in subsistence use of Caspian resources in a manner that irreversible environmental degradation often occurs.” to “Low income levels and high poverty rates amongst some Caspian residents leads to non-sustainable use of Caspian resources leading to irreversible environmental degradation.”

Page 15

Last paragraph in section “a. NATIONAL INSTITUTIONS”, added “Strategic Action Programme Implementation Coordinators” to define (SAPICs).

Page 16

Added to “VI. PROJECT RATIONALE AND OBJECTIVES” section “a. OBJECTIVES”, below last paragraph on page 16: “A key component to these early reforms is the enhancement of intersectoral cooperation. During the initial phase measures were taken with the intention of reducing the redundancy of efforts by competing sectors. Multiple ministries were addressing various components of a single issue. In many cases these countries, the competing approaches were counterproductive and a waste of already limited revenues. Within the SAP the countries have emphasised the need to increase intersectoral inclusion and cooperation. It is a key objective of this project to improve intersectoral harmonization and to assist the countries to develop strong inter-sectoral mechanisms.”

Page 18

Section “d. BASELINE SCENARIO” after last paragraph added “The environmental damage to the Caspian has come to attention of the world quite dramatically over the last ten years with the failure of the sturgeon fisheries, decline of the Caspian seal, impact of invasive species such as Mnemiopsis, and increase in oil production by multinational corporations. However the major damage was begun much earlier in the 1950’s and 1960’s with the expansion of the industry and agriculture in the Soviet Union, combined with the impoundment of the great rivers entering the Caspian for hydro-electricity and irrigation waters. Slowly the anthropogenic pressures placed on the Caspian took their toll and brought about a sudden, although not fatal, collapse. To reverse the trend there needs to be active interventions on numerous fronts, but there also needs to be patience. The Caspian is an extremely large water body with a very slow flushing rate and it will be slow to react to the remedies, just as in the same way it was slow to succumb to the anthropogenic impacts.”

p. 19

added to section vi) “...and development of institutional structures to deliver intersectoral cooperation, communication and coordination.”

P. 22

5th full paragraph significantly revise to include:

“The Project will provide guidance for initiatives to conserve the endemic marine mammal, the Caspian seal, as the main top predator in the Caspian Sea. The Caspian Seal is characteristic of much of the flora and fauna of the Caspian Sea - it was originally an import. The seal is thought to have originated from the

Arctic Sea during the glacial periods along with the Lake Baikal seal. The Caspian seal is one of the World's smallest seals, weighing 50-60kg and has adapted to the Caspian's harsh environment. It is listed in the IUCN Red list of threatened animals as vulnerable and it is unclear how many seals remain in the Caspian. The population in the early 20th century was estimated to be more than 1 million. Population numbers at present are unclear with estimates varying between 30,000 to 400,000. The true significance of the recent mass mortalities of up to 10,000 individuals is unknown but they do signify an alarming indication of deteriorating ecological conditions in the Caspian Sea. The seal is a flagship species at the top of the food-chain and sensitive to impacts and consequences of human activities in the Caspian Basin. It is a bell-weather species.. The CEP has a significant role to play in coordinating and facilitating concerted actions leading to conservation of the Caspian Seal, between countries, and scientists, policy makers and managers."

p.26

Outcome D, end of page:

"In addition, linkages were made with the Academy of Sciences in each country and through those to active research projects. The Russian Academy of Sciences are particularly active in the Caspian and CEP has collaborated with the Oceanographic Institute in Moscow, NIRO the Fisheries Science Institute, the Zoological and Botany Institutes in St. Petersburg and research institutes of the Federal Service of Hydrometeorology and Environmental Monitoring Service. The CEP web-site contains a meta-database of all scientific institutions involved in the Caspian and a list of active scientists from all five countries. In this project, these linkages will be strengthened and deepened. Coordination of SAP activities and on-going research project will be undertaken by the CEP Advisory Boards, the ToR of which are given in full in Annex H."

Page 30

Bottom of page:

The CEP web-site has been the main tool for dissemination of results for the Caspian projects. It has been highly successful and widely praised by scientists and decision makers alike. The Caspian Information System is the most complete gathering of information and data on the Caspian Environment anywhere. This project will help to maintain and expand this valuable resource and increase its capabilities and linkages with other international waters projects. Through the UNEP regional seas programme and IW-Learn CEP has excellent communication and knowledge transfer with many international waters projects.

Page 31

Bottom of page:

The possible composition of the inter-sectoral coordination bodies in each Caspian State is given in the table below.

Table of Ministries and relevant intersectoral agencies.

Page 34

4th paragraph, Outcome H

Added "Signing of the Convention by the Caspian States is scheduled to take place in late October 2003. Only those who have signed the document will be eligible for support under this project. " after second sentence.

Page 37

Paragraph 5

Added “Consideration will be given to research based proposals if they are shown to be directly applicable to implementation of transboundary elements of the SAP and NCAPs.” To the beginning of paragraph

Page 39

Paragraph Assumption 6, added to first risk:

“Considerable efforts have been made in the last 18 months by the International Partners to ensure good coordination, both at the project and implementing agency level. In addition to the Steering Committee meeting the International Partners meet every six months to discuss project execution and development. The CEP PCU team is confident that there is maximum synergy and minimum overlap between the planned EU-Tacis projects on fisheries and sustainable coastal development, and the new GEF project. With the separation of the GEF CTA role from that of Programme Coordinator the potential for friction between the International Partners has been lessened considerably.”

ANNEX D1: Executive Summary and Environment Quality Objectives of Transboundary Diagnostic Analysis of the Caspian Environment programme**I. The Caspian Environment Programme**

The Caspian Environment Programme (CEP) is a regional umbrella Programme established by the Caspian littoral states and aided by the international agencies. Born out of a desire for regional cooperation, expressed through a number of regional agreements, including the Almaty Declaration on Environmental Cooperation of May, 1994, the CEP was agreed to in June 1995 during a joint mission by The World Bank, United Nations Environment Programme (UNEP), and United Nations Development Programme (UNDP). This mission marked the start of a close partnership between the region and the international community. The mission also cemented the collaborative mechanisms between the GEF implementing agencies.

The CEP, which encompasses all Caspian States and numerous international agencies, including the World Bank, UNEP, UNDP, the European Union/TACIS (EU/TACIS) is now officially four years old and now approaching completion of its strategic planning and study stage. A Steering Committee has been established and national managements structures created.

As a part of this initial study this Transboundary Diagnostic Analysis of the Caspian Sea has been undertaken and a information managements system created, which can be accessed via the CEP web site (www.caspianenvironment.org). National Caspian Action Plans (NCAPs) and a Caspian Strategic Action Programme (SAP) are currently under preparation.

II. TDA Content and Process

According to GEF guidance, the purpose of conducting a Transboundary Diagnostic Analysis (TDA) is to scale the relative importance of sources and causes, both immediate and root, of transboundary waters problems and to identify potential preventive and remedial actions. The TDA has been treated as a process through which regional experts have passed and in so doing gained experience in evaluation and prioritization of environmental problems and a deeper understanding of their underlying causes. These same regional experts have since progressed to work on their NCAP and the SAP. The TDA presented here is the product of the regional experts and although the national governments were consulted at all stages they have not adopted or approved its content. The TDA provides the technical basis for development of both the NCAPs, which are to be endorsed and agreed by the national government, and the SAP.

The TDA focuses on the major Transboundary issues. “Transboundary” can include several types of issues, such as an environmental concern that originates in one country, but affects other countries (for example, river discharge) or an issue that originates in several countries (air pollution, Transboundary rivers). Transboundary issues are normally defined as problems shored by all littoral states, however, in some cases, in this TDA Transboundary has been defined as a problem common to several target countries even though they may not have common sources, but this is not the general definition.

This TDA, therefore, summarizes information available from the region, gathered both as part of ongoing national activities within the littoral states, as well as information made available since the inception of the Caspian Environment Programme (CEP) in May 1998. The CEP established a series of ten Caspian

Regional Thematic Centers (CRTCs), or themes, throughout the Caspian littoral countries, in order to facilitate the acquisition of the information required to produce this TDA and to support the requirements of the NCAPs and SAP. Much of the information for this TDA came directly from studies produced by the CRTCs. This TDA also draws on the Preliminary TDA, adopted by the Caspian littoral states at the Ramsar Steering Committee Meeting (May 1998), Draft Tacis TDAs (May 2000 and December 2001).

Since May 1998, five regional meetings of experts have been held to discuss the format and content of the TDA. Decisions made by experts are included in this TDA, including the TDA Outline, Major Perceived Problems and Issues, Causal Chain Analysis (including root causes), and Environmental Quality Objectives with targets and interventions.

The TDA, as the technical basis for the NCAPs and SAP, provides expert opinion on the above matters. It ends with a list of actions that are recommended for consideration in the NCAPs and SAP. This list of recommendations must be considered in the context of national priorities and regional priorities, and is expected to be refined during the NCAP/SAP process. In addition, the list of recommendations is not exhaustive. Indeed, many of the CEP reports list a series of actions that may be considered for the NCAP/SAP, and which may not be fully presented here.

The geographic scope of the Caspian Sea TDA cannot be described simply, much depends on the transboundary problem and issues being analyzed. Thus, a common geographical scope for the TDA cannot be identified, even though the TDA guidance states that the entire water basin must be covered under the study. Within the Framework TDA approved at Ramsar in May 1998, it was agreed to take the boundaries as far out to sea as can be actively managed, and as far inland as the administrative boundaries of coastal provinces. Where these boundaries impinge too far inland, the TDA should concentrate on a corridor width of between 100 and 200 km. In general, the geographic scope agreed at Ramsar is used where other guidance is not available.

The geographic scope or scale for some issues may extend farther, for instance, coastal desertification and water level fluctuations may be caused by climatic events on a global scale. Pollution also has a much broader scale, since rivers may bring pollution from all portions of the drainage basin. The Volga River, for instance, services much of interior Russia, and the drainage basin extends beyond basin Moscow and the Kura River pollution may emanate from any of the countries including Turkey, Georgia, Armenia, Iran, and Azerbaijan. For pollution it has not been practical in this initial phase (schedule-wise and budget-wise), to include the entire Caspian drainage basin and therefore, the TDA is limited to the lower basin reaches. This shortcoming is partly offset by considering river mouths as “point sources” of pollution to the Sea, where sufficient data on river pollution exists. However, the TDA has attempted to make up for these shortfalls by cooperating with ongoing programme focusing on the rivers. For instance, USAID and Tacis are working on monitoring for the Kura River Basin and the Russian Federal Volga Revival project focused on obtaining data on the Volga River and on developing plans for improved governance of the river basin. These data were incorporated into the TDA as available.

The Caspian region provides special challenges for a TDA. All five countries are in socio-economic transition; the four former USSR countries have developed much new policy and legislative structure during the past decade, and have not yet finished these efforts; the legal status of the Caspian Sea has not been resolved, contributing indecisiveness and uncertainty to negotiations regarding the environment. But despite all of these uncertainties, the five Caspian littoral states have cooperated on environmental matters within the Caspian Environment Programme, producing this TDA with assistance from international partners.

The TDA is composed of three volumes:

Volume 1: The Executive Summary and Environmental Quality Objectives;

- Volume 2: *Section 1, Caspian Environment Status and Its Legal Economic and Social Settings;*
 Section 2, Major Perceived Problems and Issues;
- Volume 3: *Supplementary Materials, Causal Chain Analyses and Bibliography;*

Volume 1, the Executive Summary gives details of the TDA content and process, a summary of the Causal Chain Analysis and details of Agreed EQOs and associated targets and interventions. The summary also includes a brief description of the Major Perceived Problems and Issues of the Caspian and the legal and economic settings. Attached to the Executive Summary is a CD Rom prepared by the PCU with the assistance of GRID-Arendal containing GIS information on key aspects of the Caspian.

Volume 2, Sections 1 and 2 summarize vast knowledge of the Caspian socio-economic regime, legal and regulatory regime, environmental status, and stakeholders. The major components are:

- *Physical and biogeochemical setting of the Caspian Sea and its catchment area:*
This component establishes the geographic scope of the TDA, the primary geomorphic, biophysical and biogeochemical processes operating within the Caspian basin, as well as establishing its unique biodiversity.
- *Socio-economic and development setting:*
This component summarizes the socio-economic conditions and trends within the region in order to identify constraints to action, so that interventions can be directed either at removing these constraints, or at addressing problems and issues that can in fact be addressed effectively. Describes the state of human development within the countries and how this state may contribute to constraints to action.
- *Legal and regulatory setting:*
This component summarizes the major international, regional and national environmental laws and regulations affecting the Caspian region. Reviews existing instruments for environmental control and identifies weaknesses and gaps. Documents specific legal and regulatory constraints to effective intervention.
- *Major Transboundary Perceived Problems and Issues:*
This component summarizes the regional consensus on major perceived problems and issues, and identifies their Transboundary aspects. Includes a detailed stakeholder analysis that identifies conflicts amongst stakeholders that may constrain effective interventions. Summarizes the Causal Chain Analysis for each of the major perceived problems and issues, including root causes, environmental impacts, and sectoral analysis of the contributors to the causes and impacts.

This information has been placed in a separate volume in order to make the contents of the TDA more accessible and focused for the reader. A summary of salient points is given in section II of Volume 1.

The first step in the TDA process was to identify the Major Perceived Problems and Issues (MPPI). This step was performed as part of the PDF-B activity in 1998, and then revisited in TDA meetings during the CEP. These MPPI then were the basis for the analysis activity, during which time the validity of the MPPI was investigated.

Causal chain analyses were then undertaken for each of the MPPI by regional experts drawn from the countries and the CRTCs. Each MPPI was broken down to determine primary, secondary and root causes and the experts were asked to identify and prioritize interventions to target root causes. The result of this

exercise, which took place during two TDA workshops held four months apart, is given in Volume three of the TDA, Annex 3.4 and is synthesized in table 1.

These steps lead to investigation of the Quantitative Understanding of the Environment, which is the TDA. By nature this quantitative understanding has uncertainties: The data are not perfect, they are too infrequent, they are too sparsely located around the Caspian, the analytical methods are imperfect, etc. The TDA is therefore based on an expert judgment of the best available data and an analysis, the Causal Chain Analysis, of the underlying root causes. The TDA process followed by CEP is depicted in Figure 1.

This investigation then is followed by agreement of regional Environments Quality Objectives: If the TDA describes the current status of the environment, what is the desired status? What environmental goals are desirable for the Caspian? These are the Environmental Quality Objectives (EQOs). This TDA has therefore added an additional step to the general GEF TDA Guidelines for International Waters projects, the use of EQOs in order to facilitate consensus on the desired state of the Caspian Sea.

Borrowing from methodology commonly used in the European Union and other regions, the TDA Meetings identified a series of five EQOs, which represent the regional perspective of major goals for the Caspian environment. The use of EQOs helps to refine the TDA process by achieving consensus on the desired status of the Caspian Sea.

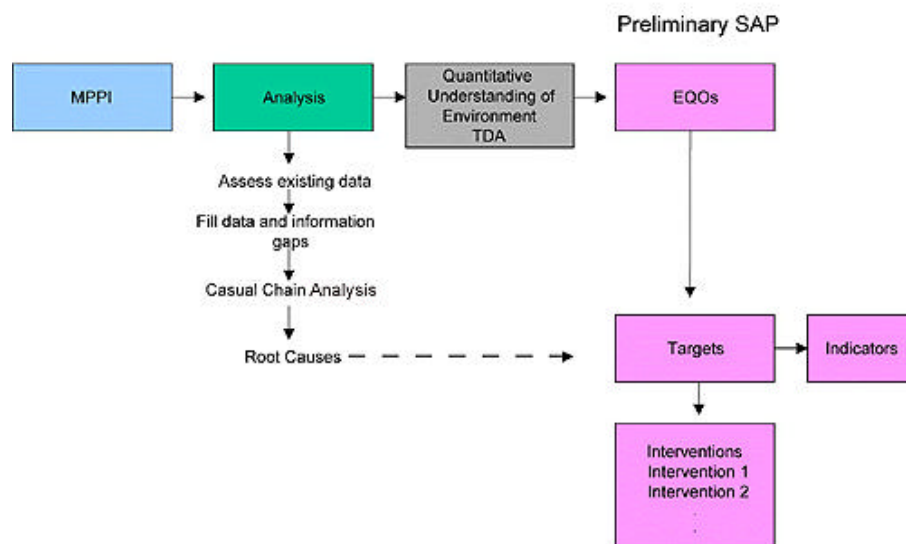
Each EQO is a broad policy-oriented statement. To move towards the EQOs, several specific, quantifiable, time-constrained targets are set. Each target generally has a timeline associated with it, as well as a specific level of improvement/status. Specific interventions or actions were identified to permit realization of each target within the time frame designated. For the purposes of this TDA, the time frames were limited to the first five or ten year periods, with some targets achieved earlier.

In general, per each MPPI there is a corresponding EQO and the targets and interventions have been prepared with close reference to the Causal Chain Analysis, noting the importance of addressing the root causes.

The activities or interventions that lead to the achievement of the targets are the main output of the TDA: They represent expert opinions about how best to achieve the EQOs given the existing conditions (environmental, institutional, capacity, state of knowledge, etc.).

Figure 1 TDA Process Flow Diagram

TDA Flow Diagram



III. Caspian Economic and Legal Settings and its Major Perceived Problems and Issues

The Caspian coastal region is home to some 14.7 million people. Iran has the highest population (6.0 million) followed by Azerbaijan (4.1 million), Russia (3.5 million), Kazakhstan (0.8 million), and Turkmenistan (0.4 million). In Azerbaijan close to half of population lives in the coastal region and in all other countries the figure is less than 10%. On the basis of Human Development Index (HDI) the Caspian littoral countries fall in the lower half of the 'medium human development countries,' thus reflecting the unsatisfactory global human development condition for the region.

The region as a whole is not, at least for the time being, a major economic center. The region's total GDP was \$534.9 billions in 1999, which was equal to 6 percent of the USA GDP and only slightly lower than Spain's GDP of 595.9. Unemployment rates are generally high and considerably higher among the women and the internally displaced population. Increased economic inequality has also been a feature of economic development of the past decade. In general, the income, job, education, and health situation for most of the region is not satisfactory. The implications are twofold: i) for years to come, the littoral governments will give higher priority to job creation, health, and education than to environment protection; and ii) individuals will be less concerned with safeguarding the environment when they are unemployed and faced with finding adequate health, food, shelter, and education for their families.

The Caspian Sea is believed to contain considerable oil and gas deposits. The recoverable oil reserves were estimated to be around 200 billion in the mid-1990s, but have recently been revised downward to 100 billion or less. The potentially vast oil and gas resources have already brought in millions of dollars worth of foreign investment into the region. Most of the money is being spent on the application of high technology to the often daunting task of drilling in the open seas, in which case the money basically reverts to the technology providers in foreign countries. A small part of the money is being spent in the littoral countries, particularly in the logistical support services, but not much substantial impact has been made at the national level. The Caspian Sea is also rich in fish. The street value of Caspian caviar alone can be estimated at close to 3 billion US dollars annually, although again only a small fraction of this money will return to the coastal communities at any time.

Governments dominated by strong executive powers mark the Caspian littoral states. Each country now has a democratically elected president, but the five countries have reached varying stages of democratization. For most part governmental accountability is weak coupled with weak and undeveloped civil society. This has led to paternalism on the part of the central governments. Governmental structures are large and economically unsustainable across the region. Environmental and natural resources are overseen by a host of ministries and local governments. Reforms have been attempted to streamline environmental management, although efforts are often duplicated and scarce human and technical resources are often wasted. In most countries government agencies often do not have the resources to conduct the necessary monitoring and enforcement activities to protect the regional environment. The governments in the region have primarily focused their efforts on economic growth and revitalization, giving much less attention to policy development aimed at encouraging environmental protection. Integration of the development planning process and environmental development still remains a distant objective. The countries are not using economic incentives as much as possible in the region in order to promote environmental protection.

In the next decade it is likely that the Caspian littoral countries will continue to develop economically in the same vein as the last decade. This means that dependence on the oil and gas sector will remain strong. A full review of the Socio-economic setting of the Caspian is given in Volume II of the TDA, section 1.3.

The existing legal and regulatory setting of the region is not conducive to the effective environmental management of the Caspian, with no regional agreement for the Caspian Sea signed by all five littoral states. Under these conditions, protection and sustainable management of the Caspian Sea environment and its resources depend predominantly on national legislations combined with the efforts to further international cooperation. From a regional perspective, the absence of agreement on the legal status of the Caspian Sea continues to delay the signing of the Framework Convention for the Protection of the Environment of the Caspian Sea. The lack of regional agreements on the use of mineral resources complicates relations among the countries. Given that each country has claims to hydrocarbon resources in the Caspian and many foreign oil companies are active in the region, there is an urgent need for addressing these regional issues. The legal regime for navigation is defined by international conventions and, in part, by national legislation. Of all the Caspian states, only Russia is a party to the Maritime Law Convention and no other Caspian littoral state is obliged to comply although these countries are guided by the generally accepted principles and norms of maritime law. Legal regulation of fishing and protection of biodiversity takes place mainly at the national level. The CIS countries set up a Commission on Aquatic Bioresources with advisory powers in 1992 and Iran has been recently joined the Commission, which will need to be more active in the future. The basic agreements between the Russia and Persia (1921) and between the USSR and Iran (1940) laid down the principle of free fishing throughout the sea except for a 10-mile nationally exclusive coastal zone. The definition of the 10-mile coastal zone is uncertain now because of the absence of an agreement on the legal status of the Caspian Sea. No country has a special law to preserve biodiversity. Legislation includes traditional legal mechanisms for protecting wildlife, such as regulations on fishing, protection of certain species' habitats and artificial reproduction. No national legislation even has a definition of biodiversity, although the term is employed in a general way to refer to plants and animals. No regional agreements on special protected areas exist, a deficiency that must be corrected in order to preserve regionally significant biodiversity. All Caspian littoral states have set quality standards to reduce negative impacts on the environment. The countries employ two tools: environmental quality standards and pollution limitations. For the CIS countries, economic incentives to encourage achievement of standards are absent. For these countries, the standards are said by some to be too strict, by others too weak. No Caspian-specific standards exist; instead, the standards apply to all water bodies for specific uses such as fishing, communal water supply, and economic use.

Commendable efforts have been made to encourage international and regional cooperation to safeguard the Caspian environment, although results have been mixed. Tehran Communiqué of 1992, committed the

states to cooperation in environmental management of the Caspian Sea and the Astrakhan Communiqué of 1993 reinforced the need to cooperate in environmental matters. Almaty Declaration of Cooperation in the Field of Environmental Protection in 1994 called on the countries to jointly implement the Convention on Biodiversity. In Tehran in June 1995 the countries confirmed willingness to cooperate in environmental matters, regardless of the legal status of the Caspian Sea. In Ramsar in 1998 the first Steering Committee launched the Caspian Environment Programme and initiated implementation with assistance from the EU/Tacis, UN agencies, and the Global Environmental Facility. In 1995, UNEP, working in conjunction with experts from all the Caspian littoral states, launched work on a Framework Convention on the Protection of the Environment of the Caspian Sea. During the ensuing years, seven working meetings were held to discuss and amend the text of the Convention, which is now ready in advanced form ready for signature. The Convention could be signed by the littoral countries in 2002. CEP also successfully led a regional initiative to develop a Regional Cooperation Plan in case of Major Oil Spills. The draft Plan is ready for submission to the CEP Final Steering Committee for approval in principle. CEP has also been substantively involved in furthering regional interest in Aarhus, CITES and Espoo Conventions.

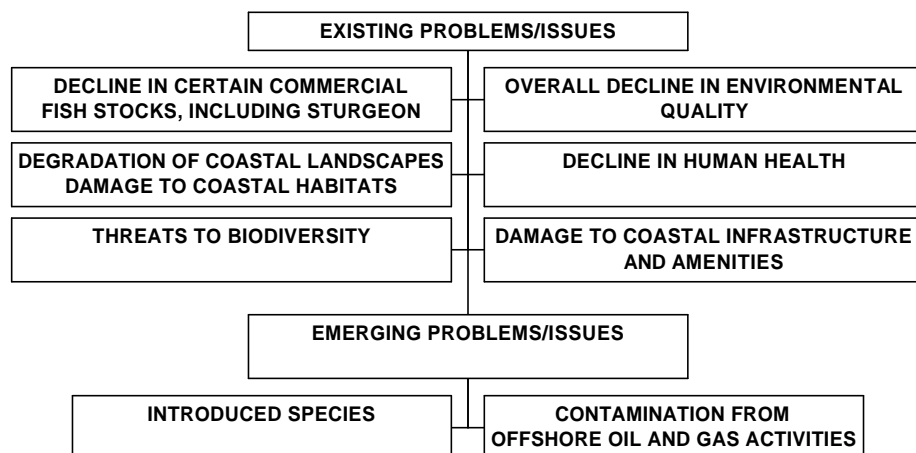
Despite the lack the regional agreements signed by all five countries, all the states carry obligations to protect the Caspian under global environmental conventions. During the past few years, the Caspian littoral states joined many major global environmental conventions. The best results have been achieved in the area of flora and fauna protection. The conventions on Biological Diversity and CITES, to which all the Caspian countries are signatories except Turkmenistan oblige them to maintain a certain level of flora and fauna protection. Compliance with these global conventions needs to be closely monitored and improved.

In general, the national environmental laws of all the Caspian littoral states are fairly well developed, and most environmental issues engage attention at the highest legislative levels. During the past few years, the political, legal, and economic regimes of the Caspian Sea countries have undergone radical transformations, and this transition continues. Difficulties still exist in environmental protection and management, caused by various factors including deficiencies in laws and governmental regulations; gaps and inconsistencies in laws and regulations; lack of economic instruments to encourage polluters not to pollute; lack of regional agreements and economic and financial constraints. A full review of the legal and regulatory setting of the Caspian Sea is given in Volume II of the TDA, section 1.4.

IV. Major Perceived Problems and Issues

The significance of the perceived issues and problems should be substantiated on environmental, economic, social, and cultural grounds. The Ramsar Steering Committee Meeting in May 1998 approved a Preliminary TDA that included a preliminary list of major perceived problems and issues associated with the Caspian Sea. During subsequent regional TDA meetings, this list was expanded and refined. The following list of major MPPI was finalized to include six existing problems/issues, and two emerging problems/issues:

MAJOR PERCEIVED PROBLEMS AND ISSUES



The status assessment was undertaken by the PCU and the CRTC and recorded in the national and regional reports prepared over a four year period. These reports can all be found on the CEP web-site: www.caspianenvironment.org and their findings are condensed and summarized in Volume two of this TDA document.

The analysis recognizes that society commonly acts within a number of nearly independent sectors (agriculture, industry, transport, etc.), which are poorly coordinated and often have conflicting interests and associated policies. Within these sectors, various Stakeholders have interests in the Caspian Environment, both affecting and being affected by that environment. Sectors and their Stakeholders work in an uncoordinated and sometimes conflicting fashion, but they typically affect the Caspian environment in similar ways. Loss of habitat, for instance, may be caused by activities of various sectors (transport, farming, industry), and by various types of Stakeholders (governmental policy-makers, ranchers grazing animals, small farmers). A detailed Stakeholder analysis has been completed and is summarized in this TDA (Volume 2, section 2.1) to identify Stakeholder priorities and conflicts that might have an impact on implementation of targeted interventions.

The TDA analysis of the MPPI can be summarized as follows:

- 1) *Decline in certain commercial fish stocks, including sturgeon: strongly transboundary.*
 - a. *Brief statement of the problem:* Catches of various fishes have declined in recent years for a variety of reasons. Included in this decline have been sturgeon, cyprinids, herring, salmon, mullet, and others. Official sturgeon catch, for instance, has dropped from an average 13.8 thousand tons a year in the period from 1910-1930 to 1.8 thousand tons a year in the period from 1996-1998 (excluding Iran), peaking in the 1970s at about 22 thousand tons a year. Official catches may be swamped by illegal poaching, particularly for sturgeon, the most economically valuable fishes of the Caspian Sea.
 - b. *Analysis:* Historical data and a recent Caspian Marine Expedition documented the decline in certain commercial fisheries. Poaching, effects of dams, loss of habitats, and perhaps pollution have all contributed to this decline. This major issue is the most important one to the Stakeholders in the region. Interventions are required in order to improve the fisheries situation before it becomes irretrievable.

- 2) *Degradation of coastal landscapes and damage to coastal habitats: strongly transboundary.*
 - a. *Brief statement of the problem:* The coastal landscapes and habitats are damaged by a variety of natural and man-made factors. Natural factors include water level fluctuations (on both storm and decadal scales), earthquakes, and climate change. Some of the man-made causes of the degradation of coastal landscapes and damage to coastal habitats are: desertification/deforestation, regulation of rivers, urbanization/ industrial development, inadequate agricultural/ aquaculture development, inadequate recreational development, and land-based and sea-based pollution. About 40 percent of the Caspian coastal hinterland is arid; of this arid area, about 69 percent has been desertified.
 - b. *Analysis:* Ranked by Stakeholders as a medium-to-low priority, this perceived problem has both natural causes (water level fluctuations and earthquakes) and human influence (desertification). There are links with biodiversity, below, and loss of habitats caused by human interventions. Lack of regional and integrated planning is a major cause of this problem; multi-sectoral approaches will be required to achieve improvement in this area.
- 3) *Threats to biodiversity: strongly transboundary.*
 - a. *Brief statement of the problem:* Caspian species biodiversity across nearly all phyla is low compared to that of other more open seas. Two major flagship species exist in the Caspian: the Caspian Seal and the Beluga sturgeon. Both are threatened at present, enhancing concern over biodiversity. A high rate of species endemism in the Caspian Sea, due to long separation from world oceans, increases the potential for loss of biodiversity in the Caspian due to industrial pollution, overfishing, invasion of exotic species, and other activities in the region.
 - b. *Analysis:* Data documenting loss of biodiversity are sparse, yet this is one issue that many people are concerned about. Concern over loss of biodiversity in the Caspian Sea at species, genetic, and habitat levels is widespread in the region. Stakeholders ranked this as a medium-to-high priority. Loss of biodiversity comes from a number of causes, including overfishing, poor water and sediment quality, damming of rivers, loss of habitat, exotic species, and other factors. A first step will be to document the true biodiversity of the region, and then to continue monitoring it. Strategic creation of protected areas to target regionally important elements of biodiversity may assist in conservation efforts.
- 4) *Overall decline in environmental quality: strongly transboundary.*
 - a. *Brief statement of the problem:* Decline in environmental quality includes the decline in air, water and sediment quality, damage to ecosystems due to human activities, loss of aesthetic appeal, and related issues. There have been widespread fears of increasing rates of decline in overall environmental quality due to the strong dependence of the economies of all five nations on oil and gas extraction from the sea or its coastal zone. Widespread die-offs of seals in 2000, a kilka mortality in 2001, and other similar natural disasters create fear of widespread decline in environmental quality.
 - b. *Analysis:* Knowledge of pollution load is incomplete; CEP estimates are rough and incomplete. Ambient contaminant levels have been measured somewhat unevenly. Large volumes of data exist on ambient levels, but much of it lacks full quality assurance/quality control documentation and could not be used in this analysis. Most useful data were from the CEP activities and from other multinational and international efforts in the Caspian region. Few data exist on air quality, water

quality data are weak, and sediment quality data are reasonably good. In general, except for some hot spots, the Caspian water and sediment quality, as far as can be assessed and in comparison with other regional seas, is good. No widespread eutrophication exists basin-wide. Hotspots of pollution exist in Azerbaijan (Baku Bay/ Absheron peninsula, Kura River, Sumgait), Iran (Sefid Rood River, Bandar Anzali, Chalus/Noshahr ports, and Gorgan Bay), Kazakhstan (Ural River delta, Fort Shevchenko, Aktau), Russia (Derbent, Makhachkala, Volga Delta), and Turkmenistan (Turkmenbashi, Chelekan). Migratory biota are affected by this contamination: Seals, sturgeon, and migratory fish carry significant concentrations of contaminants. The priority contaminants appear to be persistent organic pollutants (specifically DDT and its breakdown products, HCH, endosulfans, oil and oil products) and heavy metals (mercury, zinc and barium).

5) *Decline in human health: weakly transboundary.*

- a. *Brief statement of the problem:* UNDP, EU, World Bank, WHO, and other health data sources in the region show high levels of infant mortality, relatively short life spans compared to developed countries, and incidence of certain types of diseases in certain areas. Some improvement in health has occurred during the past half decade, following a precipitous decline in health after dissolution of the Soviet Union.
- b. *Analysis:* Few data are available on this issue, as the CEP has not focused on it. Stakeholders rank this problem as a medium-to-high priority. However, clear links between human health and the Caspian environment are weak. They require investigation as a focus for the CEP in the future.

6) *Damage to coastal infrastructure and amenities: not transboundary.*

- a. *Brief statement of the problem:* As water level fluctuates, coastal infrastructure and related amenities are affected. As water level drops, water-related structures may no longer be useable (piers, docks, etc.). As water level rises, previously dry areas will be inundated, causing damage to infrastructure of various types, and, where contaminated land is affected, pollution. Damage occurs on both storm time scales and decadal time scales. Wind-induced or storm-induced surges cause considerable flooding or exposure of coastal areas, particularly in the North Caspian region where not only are the wind directions more likely to cause such changes, but also the land slope is quite flat (slopes of 1:10,000 or 1:20,000 are commonly found there). Lack of planning at all levels has led to construction practices that ignore water level fluctuations. Desertification may push urbanization closer to the water, further increasing pressure on coastal infrastructure. Earthquakes may cause hazards due to the strong tectonic activity in the middle and southern sections of the region.
- b. *Analysis:* Damage to coastal infrastructure and amenities comes largely from long-term water level change, short-term storm surge impacts, and desertification. This issue was ranked as a low-to-medium priority by the Stakeholders. Improved coastal planning and intersectoral exchange would benefit this area of concern. Planning to adapt to water level fluctuations is important, as all countries are vulnerable to water level change, particularly if it rises much above the levels of 1995.

7) *Introduced species: strongly transboundary.*

- a. *Brief statement of the problem:* Introduction of exotic species is a natural phenomenon in the Caspian Sea, as much of the ecosystem arises from flora and fauna transported from other bodies of water (Atlantic, Mediterranean and Arctic fauna and flora versus the indigenous or para-tethyan fauna and flora). Subsequent separation of the Caspian from these earlier geological connections has allowed

endemism to proliferate, for instance amongst gobies. More recently, man has introduced species both purposely and accidentally. Certain mollusks have been introduced into the North Caspian Sea in the past, for instance, in response to changes in river hydrological regimes. Plant species have been introduced to coastal wetlands in Iran. Some of these introduced species have unexpectedly caused anoxia in lagoons as a result of decreasing light penetration (e.g., *Azolla pinnata* in Iran). New fish have been introduced for economic purposes. Some organisms enter the Caspian by accident, including most recently the ctenophore *Mnemiopsis leidyi* (ML), a gelatinous organism that has devastated the Black Sea and now threatens the Caspian Sea. Concern over its introduction extends to the commercial fishing industry, which fears loss of kilka and other valuable fisheries, and perhaps ultimately the Caspian seal. Not only is the Caspian a recipient of invasive species, it is also a source. Many Caspian species are now widespread throughout the world.

- b. *Analysis:* Exotic species are of considerable concern for the Caspian Sea, and dozens of species have been introduced both naturally and artificially. Stakeholders don't view this as a major concern, possibly because of lack of awareness. This issue ranks as low as the issue of damage to coastal infrastructure. The recent accidental introduction of *Mnemiopsis* threatens the stability of the Caspian ecosystem, much as it did the Black Sea's ecosystem one decade earlier. Observations that the effects of *Mnemiopsis* in the Caspian are even faster than in the Black Sea argue for rapid action. Direct effects of *Mnemiopsis* could include reduction in kilka and other fish stocks, with consequent effects on human livelihoods, food sources for the local populace, and food sources for the Caspian seal and the sturgeon. Rectification of this problem will require short-term action against *Mnemiopsis*, and in the longer term, regional agreements on mechanisms to control future invasive species will be required.

8) *Contamination from offshore oil and gas activities: strongly transboundary.*

- a. *Brief statement of the problem:* Commercial oil and gas exploration and production have taken place in the Caspian Sea for nearly 150 years, following nearly two millennia of local extraction and use. Production has waxed and waned during this period, but the current international focus on the Caspian raises the possibility that oil and gas extraction and processing may be a primary economic driver for the economies of most of the Caspian countries. Present estimates of recoverable reserves in the Caspian linger around 100 billion barrels of oil, with a range of estimates from about 50 billion up to nearly 200 billion. The largest reserves appear to be near the Kazakh coast, but exploration is taking place in all five Caspian countries, and extraction in the Caspian coastal area is occurring in all but Iran at present (where exploration is now taking place). This economic activity creates concerns over the environmental impacts of oil and gas development. First, the Caspian Sea is a closed basin, with no direct connections to other world oceans, so other than natural degradation processes and oil spill response clean-up, any spills in the Caspian will not flush from the system. Second, the Soviet conditions of oil extraction in the region were characterized during the 1970s and 1980s by environmentally unsound practices and procedures as well as outdated and obsolescent technology. High levels of pollution in Caspian air and waters have been reported due to these exploitation activities. Besides extraction, downstream activities such as oil refining, transport, and related industries may increase the environmental pressures in the sea, in the sediments, and in air.
- b. *Analysis:* This issue is ranked as a medium priority for most of the Stakeholders. The major concerns are twofold: First, historically, oil and gas development in the

Caspian region has been without concern for the environment. More than 150 years of neglect have left the Caspian coast with vast environmental problems (particularly in Azerbaijan). Second, the expected expansion of oil and gas activities in the Caspian increases the risk of significant spills or other impacts on the environment. This vast expansion requires comprehensive approaches to emergency planning and response infrastructure to safeguard the environment.

V. Causal Chain Analyses

Identification of common root causes is important, because these tend to be more systemic and fundamental contributors to environmental degradation. The common root regional causes include such fundamentals as poor law enforcement and compliance, inadequate development planning, undeveloped civil society and public awareness and inadequate finances.

Interventions and actions directed at the root causes tend to be more sustainable and effective than interventions directed at primary or secondary causes. However, because the links between root causes and solution of the perceived problems are often not clear to policymakers, interventions are commonly directed at primary or secondary causes. This TDA attempts to make the links between root causes and perceived problems more clear, to encourage sustainable interventions at the root level. Fortunately, as table 1 shows, root causes are often common to a number of different perceived problems and issues, so addressing a few root causes may have positive effects on several problems and issues.

Figure 2

Causal Chain Analyses

Common Regional Root Causes			
<ul style="list-style-type: none"> - inappropriate regional agreements plans & measures - inadequate development planning 		<ul style="list-style-type: none"> - inadequate & insufficient information - poverty & unemployment - corruption - undeveloped civil society & inadequate awareness 	
		<ul style="list-style-type: none"> - poor law enforcement & compliance - population dynamics - inadequate technology - greed 	<ul style="list-style-type: none"> - inadequate pricing policies - inadequate finances - absence of Caspian legal framework
Major Perceived Issues	Primary causes	Specific Anthropogenic Root Causes	
1 Decline in certain Fish stocks	<ul style="list-style-type: none"> - poaching & over-fishing - loss of spawning & feeding habitats - pollution - Inadequate fisheries management 	<ul style="list-style-type: none"> - corruption & crime - low re-stocking investment - high global demand for caviar - competition from introduced species - coastal poverty - river impoundments & river mining 	
2 Coastal habitat & Landscape degradation	<ul style="list-style-type: none"> - deforestation - desertification - waste dumping - soil erosion - over-grazing - rapid urbanization 	<ul style="list-style-type: none"> - overuse of agro-chemicals - inadequate industrialization - coastal population growth - inadequate waste management - damaging agricultural practices - inadequate spatial planning 	
3 Decline in Environmental Quality	<ul style="list-style-type: none"> - agro-chemicals - municipal & industrial pollution 	<ul style="list-style-type: none"> - inadequate & obsolete treatment technologies - inadequate contaminant monitoring - chemical subsidies - inadequate agricultural practices - uncontrolled discharge of mining waters 	
4 Biodiversity erosion	<ul style="list-style-type: none"> - loss of habitat municipal & industrial pollution - over-fishing - introduced & invasive species 	<ul style="list-style-type: none"> - poor land use planning & actions - detrimental water-use policy & reduced in-water flows - inadequate biodiversity monitoring - aggressive agricultural development policies 	
5 Damage to coastal infrastructure & amenities	<ul style="list-style-type: none"> - water level fluctuation - sea surges - desertification 	<ul style="list-style-type: none"> - inadequate spatial planning - insufficient & inadequate knowledge of water level trends - lack of awareness 	
6 Decline in human health	<ul style="list-style-type: none"> - air & soil pollution - desertification - decline in ground & surface water quality - food safety 	<ul style="list-style-type: none"> - inadequate sewage & waste management policies - inadequate & insufficient health information - malnutrition 	
7 Introduced Species	<ul style="list-style-type: none"> - transfer of species by ballast waters - introduction of species without appropriate control & per trade 	<ul style="list-style-type: none"> - lack of regional agreements on introduction of species - inadequate EIA practices - lack of awareness - inadequate customs procedures - lack of ballast water control 	
8 Oil & Gas Contamination	<ul style="list-style-type: none"> - plans for enhanced activities - state of existing oil 	<ul style="list-style-type: none"> - inadequate equipment - inadequate monitoring - increased shipping/ninelines 	

VI. Environmental Quality Objectives, Targets and Interventions

EQOs are a means to develop broad Stakeholder agreement on the major environmental objectives of the region. They represent consensus views of environmental priorities, or visions of what the environment should look like in the future. Clearly, these EQOs are visions, not simple, rapidly achievable actions. By identifying specific targets and clearly defined time frames, the EQOs can lead to concrete actions (interventions) that will help achieve the EQOs in the long term.

The targets are quantitative statements of progress towards achieving a particular EQO, and generally have associated timelines or milestones. The targets generally are focused on relatively short-term goals, which are achievable in time frames that governments can understand.

Once EQOs and targets are identified, it is relatively straight-forward to identify specific or concrete steps required in the next few years to achieve these targets. What policies are required? What legislative acts? What investments? What capacity building? What infrastructure? These specific steps are identified in this TDA as activities or interventions. In drawing up the targets and interventions the experts' group were instructed to use the causal chain analyses as an identification and prioritization guide.

The EQOs identified for the Caspian at the third TDA meeting were:

1. *Sustainable economic uses of the natural resources of the Caspian Sea*
2. *Balanced Caspian environment including biodiversity conservation (species, habitat, and genetic)*
3. *High quality of Caspian Sea, surface and groundwaters*
4. *Sustainable multiple use of the Caspian coastal environment*
5. *Strengthened civil society for the purposes of environmentally sustainable development*

Table 1, page 15, outlines for each EQO targets, specific actions/interventions, and estimated costs identified during the Third TDA Workshop and categorizes the intervention by type. Categories of intervention were defined as:

- *Legal / Regulatory*
- *Baseline investment*
- *Incremental investment*
- *Institutional strengthening*

- *Policy*
- *Scientific investigation*
- *Capacity building*
- *Data management*

Although some actions / interventions may span several categories, the dominant category was selected as representative. In some cases, a single action / intervention was assigned to two categories, when no dominant type was apparent. The table also lists the intervention in terms of GEF indicators (see below). Consistent with GEF guidance, each Target and each Intervention/Activity is assigned an environmental indicator. GEF specifies three types of indicators, as follows:

Process Indicator (PI)
Stress Reduction Indicator (SPI)
Environment Status Indicator (ESI)

A review of the environmental indicators for each target should show a logical sequence of PI to SRI to ESI.

Table 1 contains many of the regional elements foreseen to be included in the Strategic Action Programme, and is to be used by the countries as a guide when developing their National Action Programme. The cost estimates given in the table are admittedly crude, however, they are very useful in identifying those interventions, which can and cannot be considered for implementation in the short and medium timeframe.

The actions and interventions listed represent only some part of recommendations of the experts to be considered while drafting the NCAPs and SAP. Other recommendations are included in the individual CEP reports available through the PCU. Not all recommendations from all previous published reports were collated since many are repetitive and some lack the rationale provided by the use of the EQOs.

Table 1 Environmental Quality Objectives, Targets, and Interventions Agreed at the Fourth and Fifth CEP TDA Meetings

EQO I: Sustainable economic uses of the natural resources of the Caspian Sea.

Targets	Interventions	Estimated Cost in U.S. \$	Type of Intervention	Indicators
<i>1- To reduce the oil & gas related pollution of the Caspian</i>	1. Development and endorsement of Protocols on higher environmental standards (best international practice), including possibly zero emission standards, for exploitation and exploration, licenses granted after 2004	\$ 500 K	Legislative / Regulatory at regional and national levels	PI: New legislations and Regulations
	2. Development and endorsement of Protocols on reduction of oil emissions from old installations to half of current value by 2015	\$ 500 K	Legislative / Regulatory at regional and national levels	PI: New legislation
	3. Development (1 year), endorsement (1year) and implementation (2 years) of national and regional oil spill emergency plans, for ships and offshore units as well as for sea ports and oil handling facilities by 2006.	\$ 5 - \$ 10 million	Investment at national level	PI/SRI: proven capacity to effectively deal with oil spills and clean-up
	4. Decommissioning of obsolete non-competitive on shore and offshore installations including storage facilities to ensuring elimination of their emissions by 2008	\$ 10s millions	Investment mostly at national level	SRI: Survey the existing oil and gases emission rate. Monitoring Reduced emission rate by execution of the project
	5. Protection of oil /chemical facilities oil contaminated land under potential threat of inundation from rising sea level, including the development of monitoring and early warning system for water level rise or surges to protect facilities and installations by 2015	\$ 100s millions	Investment at national level	SRI: Survey the amount of oil or specific chemical discharge into the sea in different scenario

[illegible]

Targets	Interventions	Estimated Cost in U.S. \$	Type of Intervention	Indicators
	2. Ratification and implementation of MARPOL by the five littoral states. 2010.	\$ 10s millions	Legislative / Regulatory at regional level investment	PI/SRI: Auditing of fleet, floating installations as well as ports
	3. Regional agreement on minimum standards for construction and maintenance, and national licensing mechanisms for undersea pipelines 2004.	\$ 500k	Legislative / Regulatory at regional level investment	PI/New legislation
	4. Risk assessment of shipping routes to feed into National and Regional Oil Spill Contingency plans by 2003	\$1 million	Scientific investigation	PI/ESI: Redrafting of National and Regional Oil Spill Contingency Plan to take account of shipping risk
	5. Establishment of a safe system of navigation and shipping control (navigation aids, buoys, lighthouses, etc.) by 2012	\$ 10s	Investment both at regional and national levels	SRI/ Implement safety record
<i>3- To abate the impact of agriculture on ecosystems of the Caspian Sea</i>	1.Development and endorsement of agreement on a list of banned agrochemicals and a program to destroy stored banned products by 2003, and implementation by 2005	\$ 1-10 million	Legislative / Regulatory	PI/SRI: Reduction in levels of agrochemicals detected in runoff
	2. Establishment of a coastal zone of delimitation within which special limits (amount & type) are established for use of agrochemicals and implementation by 2007	\$ 5-10 million	Legislative/ Regulatory regional & national/Investment	PI/SRI: Reduction in levels of agrochemicals monitored in coastal waters
<i>4- To ensure sustainable use of aquatic resources , with emphasis on fisheries</i>	1.Establish a five-country Commission on the management of bioresources by 2003 that should include as priorities: a. an agreed methodology for distributing the total allowable catch between five countries as annual catch and export quotas; b. an interstate Caspian Fisheries Inspectorate to verify fisheries and restocking, reporting to Commission (composition: one member of each Caspian State + international observer); and c. shared network of scientific institutions investigation regional bioresource issues,	\$ 500k	Legislative / Regulatory at the regional level	PI/SRI/ESI: Improved knowledge of bioresource stocks evidence and application of that knowledge in changes in fishery practice.

Targets	Interventions	Estimated Cost in U.S. \$	Type of Intervention	Indicators
	2.Strengthen and establish a formal mechanism for co-ordination between national fisheries protection organizations by 2003	\$ 100k	Institutional Strengthening at regional and national levels	PI/SRI: New regulation
	3. Strengthen national fisheries organizations efficiency, training & equipment by 2005	\$ 1-10 million	Institutional strengthening at national level	PI/SRI: Improved record in management of fisheries in sustainable manner - Stable with returns.
	4. Identify, protect and manage natural spawning grounds of sturgeon, Caspian salmon and other commercial species.	\$ 10 millions	Investment at national levels	SRI/ESI: Increase use of spawning ground (number of redds cut) and higher recruitment
	5. Develop environmentally sound aqua-culture programmes for commercially viable species	\$ 10s millions	Scientific investigation at regional and national levels	PI/SRI: Development of a commercial aquaculture industry
	6. Study of genetic variability at population level, particularly for sturgeon and other important fish stocks and establish a genetic conservation strategy	\$ 2 million	Scientific investigation at regional and national levels	ESI/PI: Increased genetic variability

Targets	Interventions	Estimated Cost in U.S. \$	Type of Intervention	Indicators
	1. Review reservoir control rules on the major rivers to ensure adequate releases are made for anadromous while fish spawning 2007.	\$ 500k	Institutional Strengthening & Legislative / Regulatory at national and regional levels	PI/SRI/ESI: Increased levels of in-river flows, particular during sensitive spring period
	9			

Targets	Interventions	Estimated Cost in U.S. \$	Type of Intervention	Indicators
	2. Develop and implement guideline for upstream rational use of water in coastal wet land area 2007.	\$ 1 million	Institutional Strengthening & Legislative / Regulatory	PI/ESI: Policy guideline and improved resistance of coastal wetlands to draught events

¹ PI: Process Indicator
 SRI: Stress Reduction Indicator
 ESI: Environmental Status Indicator

EQO II: Conservation of Caspian Biodiversity

Targets	Interventions	Estimated Cost in U.S. \$	Type of Intervention	Indicators
<i>1- Development and implementation of a strategy for the protection of Caspian biodiversity</i>	1.Elaborate on and ratify Regional Strategy and Action Plan on Biodiversity by 2003, as well as a Protocol on Regional Strategy on Biodiversity, including the Protocol on preliminary plan on Biodiversity to the Framework Convention and specific action plans on specie(s) and habitat.	\$300k	Policy	PI – A Regional Strategy on Biodiversity adopted.
	2. Establish an eco-net (net between specially protected Natural Territories (SPNT)) by 2005 in the Caspian through collaboration with NGOs and international organizations.	\$ 400k	Institutional Strengthening	PI – Eco-net between specially protected territories established. Transboundary Protected Natural Territories (TPNT) established.
	3. Survey the sensitivity of areas and habitats in the Caspian imposed to anthropogenic and natural impact; Develop Action Plan for sensitive eco-system/habitat; and Develop necessary recommendations for legislative protection.	\$ 500k	Institution strengthening	PI – Action Plan on sensitive territories developed and normative-legislative instruments on legislative protection developed.
	4.Adopt in 2005 and implement ESPOO Convention and regional EIA procedures. 2005	\$ 200 k	Legal/regulatory	PI – Convention ratified and its provisions implemented SRI – Impact of economic activities on biodiversity reduced
<i>2. Establish control system for the import and export of exotic species into and from the Caspian Sea</i>	1. Develop protocol/agreement to the framework convention on control of introduced new species by 2003	\$ 200 k	Legislative / Regulatory	PI – An agreement on control of introduced species signed
	2. Develop and implement proposals for control of ballast waters transfer to and from the Caspian Sea (2005); including possibly a ballast reception and inspection facility in Astrakhan (2010)	\$10 Million	Investment	SRI – a list of proposals on the control of ballast waters elaborated and establishment of relevant technical facilities.
	3. Implement special studies and monitoring program for invasive species in the frame work of biodiversity monitoring 2004	\$ 500k		PI – Monitoring of invasive species is being conducted

	4.Establish a regional inter-governmental body to review planned introduction of new species and develop proposals for financing by 2004.	\$ 300k	Institutional Strengthening / Scientific investigation	PI – A regional inter-governmental body on a regular basis and meeting established
<i>3. A biodiversity monitoring system based on a set of regional monitoring protocols</i>	1.Develop a set of biodiversity monitoring protocols for the Caspian and implement monitoring programmes in the coastal waters and areas of each littoral state by 2004	\$ 5 Millions	Institutional Strengthening/ Scientific Investigation	PI – National centers endorsed and regional center established.
	2.Create Caspian Biodiversity Data Base, including a complete check-list of species, specific Caspian identification keys, and reference collections	\$ 400k	Scientific Investigation/Data processing	PI – Database on biodiversity in the Caspian created and volumes of reference collections published.
	3.Develop target monitoring and conservation programmes for endangered species.	\$ 1 Million	Institutional/ Scientific Investigation	PI – Monitoring programmes elaborated for individual species of flora and fauna
	4.Establish a bio-molecular laboratory under the Regional Biodiversity Center to investigate genetic biodiversity	\$ 2 Million	Institutional investigation	PI – Laboratory has been created
	5. Organize recurring expeditions to assess the biodiversity of the deep part of the middle and southern sectors of Caspian.	\$ 300 k	Scientific investigation	PI - Expeditions has been conducted and their findings published. Trend analysis undertaken.
<i>4. Increase public awareness of the value of the Caspian Sea biodiversity</i>	1.Dissemination of information on biodiversity in the Caspian; promotion of eco-tourism and sensitization of decision makers to biological diversity protection	\$400k	Institutional Strengthening	Publication of informational materials of CRTC (Caspian Regional Thematic Center) on biodiversity. Information on eco-tourist route published. Training for decision-makers facilitated.
<i>5. Establish inter-governmental mechanisms for rapid response to oil and non-oil emergency events affecting Caspian biodiversity (mass mortality events, etc.) 2005</i>	1. Identify national bodies charged with coordination of rapid response to oil and non-oil emergencies; establish lists of rapid response regional experts; establish national fund for rapid response activities and animal welfare centers	\$5 million	Institutional Strengthening National investment	PI/ SRI – List of regional experts published. National Funds created. Animal Advocacy Centers are operating.
	2. Develop and adopt intergovernmental agreement on rapid communication, data access and sampling during Emergency situations	\$ 50k	Legal/regulatory	PI – Regional agreement signed and adopted.

EQO III: High quality of Caspian Sea, surface and groundwaters

Targets	Interventions	Estimated costs in U.S. \$	Type of intervention	Indicators
<i>1. Develop, based on water use, a regional legal framework for protection of the Caspian from Pollution under the Framework of the Convention</i>	1. Develop and adopt a protocol to the Convention on Protection of the Environment of the Caspian Sea in connection with land-based activities (2004)	\$ 200k	Legislative / Regulatory	PI: New legislation
	2. Develop and adopt a protocol to the Convention on hazardous waste. 2005.	\$ 200k	Legislative / Regulatory	PI: New legislation
	3. Develop and adopt a protocol to the Convention on at sea dumping. 2005.	\$ 200k	Scientific Investigation	PI: New legislation
	4. Develop regional guidelines for solid waste disposal in coastal areas	\$ 200k	Legal/Regulatory	PI: New legislation
	5. Sign, ratify and implement Convention of Persistent Organic Pollutants. 2008.	\$200k	Legal/Regulatory	PI: New legislation
	6. Develop EQOs / EQSs for establishing realistic goals for water sediment and bio-quality improvement in the Caspian Sea. 2004.	\$ 400k	Scientific Investigation	PI: New guideline
<i>2- To prepare, agree to, and initiate the implementation of a regionally coordinated ambient monitoring program for trends in place</i>	1. Develop and implement regional contaminant monitoring Programme focused on the coastal sediments and transboundary pollutants 2004	\$ 4 million	Legislative / Regulatory/ Scientific Investigation	PI/ESI: Monitoring of the Sea
	2. Develop and implement a rapid assessment programme in the Caspian Sea using biomarker techniques tied to regional EQO/EQSs. 2006.	\$ 2 million	Institutional Strengthening / Scientific Investigation	PI/ESI: Monitoring of the Sea
	3. Establish monitoring programmes on the major rivers to measure the inflow of the priority transboundary contaminants.	\$ 10 million	Institutional Strengthening, National / Scientific Investigation	PI/ESI: Monitoring of the Sea

<i>3- Develop and begin implementation of a Regional Action Plan for land-based activities to meet defined Water Quality objectives</i>	1. Undertake a comprehensive land-based source assessment of the near Caspian Basin, including point and diffuse sources. 2004.	\$ 300 k	Scientific Investigation	PI/ESI: Pollution load
	2. Develop national action plan and portfolio of hot-spots, for the near Caspian basin, action plan is to contain a compliance strategy for polluting industry based on the Polluter Pays principle and BATEC. 2005.	\$ 500 k	Legal / Regulatory	PI/SRI: Auditing of polluting industries
	3. Establish and implement restrictions on application of agro-chemicals for user corridor buffer zones and nutrient areas associated with groundwater aquifers in the Caspian basin. 2008.	\$ 10s million	Legal / Regulatory/Scientific investigation	PI SRI/ESI: Monitoring of nutrient in groundwater
	4. Introduce primary treatment for all coastal sewage from settlements with population greater than 10,000 by 2012	\$ 10s millions	National Investment	SRI/ Monitoring of effluent
	5. Address 50% of priority pollution hot-spots by the year 2012	\$ 10s millions	National Investment	SRI/Auditing
	6. Develop the legislation and technology basis for the free and regular exchange of environmental data and information within the region by the year 2005. Implementation by 2006.	\$ 2 million	Data management Legal/Regulatory	PI/ criteria for exchange rate

EQO IV: Sustainable multiple use of the Caspian coastal environment

Targets	Interventions	Estimated cost in U.S \$	Type of Intervention	Indicators
<i>1. Establish coastal planning zones (including spatial plans) in the five littoral states</i>	1. Establish or revise national legislation on coastal zone planning and management, including determination and adoption of the Coastal Planning Zones, 2005	\$2 million	Legislative/ Regulatory	PI: National legislation on coastal zone management established or revised and planning guidelines developed
	2. In each littoral country develop full environmental, socio-economic, sea- and land-use and other related information GIS database on the coastal zone by 2006.	\$ 2.5 million	Scientific Investigation	ESI: Regional GIS established PI: Coastal planning guidelines developed
	3. Establish planning authorities in critical coastal zones and implement coastal zone planning. 2016.	\$ 10 million	Legislative/ Regulatory / National	PI / SRI PI: Functional coastal planning authorities SRI: Improved coastal zone management
	4. Develop and demonstrate technical and information mitigation measures to reduce negative impacts of natural hazards (such long-term water level fluctuation of the Caspian, storms, surges, and earthquakes) on the life style of the population and infrastructure of the coastal zone. 2004.	\$ 2 million	Investment Transboundary / National	PI: Guidelines for natural hazards mitigation measures are developed PI: Related pilot projects completed
	5. Establishment of a regional Standing Committee on coastal zone planning and management under auspices of CEP, following approval by the Governments of the Caspian littoral states by 2005	\$100k	Institutional Strengthening	PI: Regional cooperation on coastal zone planning and management is initiated PI: National inter-sectoral and regional cooperation on coastal zone planning and management is achieved
<i>2. Establish an eco-tourism “green” belt around the entire Caspian Sea by 2007</i>	1. Establish a regional “green” belt working group to review national coastal eco-tourism proposals and recommend alternatives, develop a management framework, and identify regional financial mechanisms	\$2 million	Institutional Strengthening	PI: Intergovernmental agreement on regional eco-tourism framework

	2. Develop investment strategies for ecotourism in the region	\$ 100k		PI: Financial Mechanism in place
	3. Develop one or two eco-tourism centers in each country and market them actively linked to eco-network	\$10 million	National Investment	SRI: Improved social-economic situation SRI: Enhanced environment awareness
<i>3. Net rate of loss of coastal forests to be reduced by 50% by 2007</i>	1. Identify main contributors to deforestation, in the public and private sector, socio-economic reasons; legal and regulatory failures; and poor forestry practice and develop action programme 2007. Undertake trend analysis and taxonomic studies by 2005.	\$300k	Scientific investigation	PI: Causes for deforestation are identified ???
	2. Identify alternative sources for timber products historically produced from coastal forests, and link with appropriate incentives and disincentives (economic instruments). 2005.	\$600k	Scientific investigation Legislative / Regulatory	PI: Alternative sources economic instruments are proposed.
	3. When necessary draft new legislation to reduce rate of deforestation, based on economic incentives and disincentives. 2005.	\$200k	Legislative / Regulatory	PI: New legislation is adopted
	4. Establish reforestation programs and commence implementation in affected regions. 2006.	\$10s million	National Investment	SRI: 50% reduction of coastal deforestation is achieved
<i>4. Reduce rate of loss of land due to technogenic desertification by 10% by the year 2008.</i>	1. Improve legal basis in each country for combating desertification, including: - criteria to define land degradation - amend laws on forestry, water resource and land use - strengthened legal mechanisms such as EIA, planning procedures. 2005.	\$50k	Legislative / Regulatory National	PI: Legal basis established in each country
	2. Increase public awareness of the desertification process, thereby preventing the public being causes or victims of this process, and strengthen institutional structures making them more effective in combating desertification. 2005.	\$500k	Institutional Strengthening National	PI: Institutions strengthened SRI: Decreased rate of desertification
	3. Develop a desertification monitoring system based on remote sensing and GIS database 2005.	\$500k	Institutional Strengthening, Capacity Building National	ESI: Monitoring system in place
	4. Demonstrate ways to reverse Technogenic degradation. 2002.	\$4 million	Investment, national	SRI: Decreased the share of technogenic degradation

EQO V: Strengthened civil society for purposes of Environmentally Sustainable Development

Targets	Interventions	Estimated cost in U.S \$	Type of intervention	Indicators
<i>1. Integration of environmental considerations in local, national and regional development strategies, implementation to start by 2004</i>	1. Creation and implementation of environmental awareness training program for policy makers, planners, and development project managers to be administered to regional and municipal governments throughout the region. Implementation to be begin by 2004	\$2.5 million	Capacity Building/ Transboundary	PI: Development plans approved to include factors of carrying capacity, sustainable environmental protection PI: 50% of key environmental management personnel of the coastal area to be trained
<i>2. Enhanced and informed stakeholders participation in the development process</i>	1. Strengthening national NGOs and civil society movements focusing on environmental awareness and sustainable development components of developmental processes by 2003 including: <ul style="list-style-type: none"> a. New legislation to require broader civil society, including Stakeholder Participation b. Environmental science and policy program/curriculum for public administration students at universities throughout the region. 	\$500k	Capacity Building, Legislative/ Regulatory National	PI: Legal support for stakeholder participation achieved PI: Increased environmental education for Public, industry and governments; Increased transparency of planning processes
	2. Community driven development: Empower local authorities including collaboration among cities and local scale activities including: <ul style="list-style-type: none"> a. Study of current local development plans across the Caspian region for coastal communities. b. Development of criteria for minimum impact goals c. Development of regional network to assess implementation of materials by 2006 	\$500k	Capacity Building (process)	PI: local development plans produced and implemented, consistent across the region
	3. Demonstrate Caspian-conscious school curricula by 2003	\$500k	Capacity building National	PI: teachers trained in environmental education incorporated into school curricula

	<p>4. Enhance participation of media (in particular regarding environmental issue reporting) by 2002</p> <ul style="list-style-type: none"> - Development of Caspian Environment Programme Media kit for local, regional, national, and international news teams outlining mission, objectives, projects and programmes of the CEP and related organizations. - Distribution of news kits on CD-ROM with contact information for project leaders, and affiliates for major news issues, and information listed above. Summary of news items/issues of interest - Develop and make available a database of specialized media contacts throughout the Caspian Region 	\$60k	Capacity Building/ Transboundary	PI: Higher incidences of accurate news items on the environment locally, nationally and internationally
	<p>5. Public-private partnership for environmental monitoring and public awareness:</p> <ul style="list-style-type: none"> - Pilot projects on Caspian private/public sector coordination to increase environmental monitoring and development in region by 2005 	\$500k	Capacity Building/ National	PI: Implementation of pilot for monitoring and evaluation of environmental impacts of private sector activities.

PI: Process indicator

SRI: Stress reduction indicator

ESI: Environmental status indicator

Annex D2 (full annex) : Strategic Action Programme (SAP) for the Caspian Sea

STRATEGIC ACTION PROGRAMME (SAP)

FOR
THE CASPIAN SEA

Caspian Environment Programme
Baku, July 2003

This Strategic Action Programme was agreed by the Caspian Environmental Programme National Focal Points of the respective countries:

On behalf of the Azerbaijan Republic:

.....

..... Date:

On behalf of the Islamic Republic of Iran:

.....

..... Date:

On behalf of the Republic of Kazakhstan:

.....

..... Date:

On behalf of the Russian Federation:

.....

..... Date:

On behalf of Turkmenistan:

.....

..... Date:

List of Abbreviations

Aarhus :	UN/ECF Convention on Access to Information, Public Participation in Decision Making and Access to Justice in Environmental Matters (Aarhus)
BSAP :	Biodiversity Strategic Action Plan
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 :	Environment Quality Objective
EQS :	Environment Quality Standard
ESI :	Environment Status Indicator
Espoo :	Convention on Environmental Impact Assessment in a Transboundary Context (Espoo)
EU/Tacis:	European Union/Technical Assistance for CIS
GEF :	Global Environment Facility
GIS :	Geographical Information System
HDI :	Human Development Index
IA :	Institutional Arrangement
I.R. Iran :	Islamic Republic of Iran
ML :	Mnemiopsis Leidy
MPPI :	Major Perceived Problem and Issue
NEAP :	National Environmental Action Plan
NCAP :	National 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
SAP :	Strategic Action Programme
SRI :	Stress Reduction Indicator
TDA :	Transboundary Diagnostic Analysis
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 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).

The SAP identifies the national and regional interventions needed to address four priority regional environmental concern areas:

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

The SAP 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 and interventions 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.

The SAP is a regional policy framework document. The Programme 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 and ensure the 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.

The SAP is the final of a regional consultation process, which has involved the littoral countries and the International Partners. The NCAPs and the TDA, which are the major pillars of the SAP have been thoroughly studied and reviewed at a number of regional meetings leading to the draft, review and finalized SAP. This process has included a causal chain analysis, stakeholders analysis and gap analysis to help to sharpen and prioritize the SAP interventions. The consultation process has also benefited from the regional dialogue concerning the Framework Convention for the Caspian Marine Environment. The consultation process is further detailed in the attached SAP Chronology in Annex 1.

Implementation of the 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.

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, in two distinct five year periods. To improve environmental stewardship and protect the ecosystems of support 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 coastal rivers of Kalmykia, Dagestan, and northern Azerbaijan, the Kura basin in the territory of Azerbaijan below Mingachaur reservoir, the basins of the coastal rivers in Iran, and the rivers in the territory 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 introduction of user fees.

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; and unsustainable coastal area development. The observed impacts are degrading the environment, draining already strained state resources and, moreover, 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, herring, salmon, sprat, and other commercial fish have declined in recent years. Official data from Caspian states (excluding Iran) indicate that the sturgeons catch has dropped from an average of 13.8 thousand tons a year in the period from 1910-1930, to 1.8 thousand tons a year in the period from 1996-1998, peaking in the 1970s at about 22 thousand tons a year; poaching, the impact of dams, loss of habitats, and perhaps pollution have all contributed to the decline of these key fisheries. A major recent factor impacting both fisheries and biodiversity has been the invasion by the ctenophore *Mnemiopsis leidyi* (ML), a jellyfish that devastated the Black Sea a decade ago and now threatens the Caspian Sea. The commercial fishing industry fears for the loss of kilka and other valuable fisheries, with consequent effects on human livelihoods, food for the local population, and food sources for the Caspian seal and the sturgeon populations. Observations showing that the growth of *Mnemiopsis* biomass in the Caspian Sea is even faster than in the Black Sea support the need for rapid action.

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 the potential loss of global biodiversity is high. **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 fisheries productivity has been undertaken by the Caspian states; even population numbers of flagship species such as the Beluga sturgeon and Caspian seal are in dispute. This lack knowledge is in itself a major threat. Other threats include habitat erosion and degradation - again observed but not measured - habitat fragmentation, unsustainable use of key species, pollution and invasive species. Of these invasive species is potentially the most damaging and most acute threat, as witnessed by the invasion of *Mnemiopsis*, which may have already irrevocably changed the composition of the zooplankton of the Caspian. The presence of persistent organic pollutants, in particular DDT, in the food-chain is also a major source of concern.

2.1.3 Pollution

Data on the overall environmental quality of the Caspian are generally not systematic or comprehensive. In the former USSR water and sediment quality measurements were taken on a regular basis and with good coverage, however, since its break up monitoring has increasingly become more fragmented and irregular. Over the same period the flux of pollutants into the Caspian has changed with a drastic reduction in industrial and agricultural activity in the four CIS states. A review of those reliable data that do exist, including data from sediment and ecotoxicological surveys undertaken as part of CEP, do not indicate a highly stressed environment, but of course there are hot-spots. These data do not support the generally held view that the Volga is the major source of pollution, or that nutrient loading is a regional problem, although on the Iranian coast eutrophication is observed. Some heavy metals (Aluminum, 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 regional geology rather than pollution. Elevated levels of mercury, lead and chromium indicate local pollution sources superimposed over the regional signature. Levels of agrochemicals, in particular DDT and endosulfans, are a major cause for concern in the Caspian. Although a banned substance, DDT and its break-down 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. Hydrocarbons are an area of concern where there has been oil and gas production over many years, particularly in the waters off the Azerbaijan coast. Pollution threats include contaminants sequestered in the major impoundments on the Volga, above Volgograd, and the Kura; continued and increased use of banned agrochemicals; potential widespread hydrocarbon pollution, with the anticipated expansion of oil and gas development; and, acute damage from oil and hazardous substance spillage.

2.1.4 Unsustainable coastal area development

The coastal landscapes, habitats, amenities and infrastructures are being damaged by a variety of natural and man-made factors. Natural factors include water level fluctuations, wind induced or storm-induced surges, earthquakes, and climate change. Man-made causes, which are also likely to exacerbate impacts of the above-mentioned natural factors, include desertification/deforestation, regulation of rivers, urbanization/ industrial development, inadequate agricultural/aquaculture planning and development, inadequate recreational development, and land-based and sea-based pollution. Close to 40 percent of the Caspian coastal area is arid and it is estimated that of this area, about 69 percent has undergone desertification in various ways. 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, although none have specific laws on environmental protection of the Caspian Sea. A desk study undertaken as part of the transboundary diagnostic analysis has identified a number of deficiencies, gaps and inconsistencies in national laws and regulations relating to priority regional environmental concern areas. While the Soviet-Iranian (Persian) agreements of 1921 and 1940 might not fully corresponds with the new realities of region after the collapse of the USSR, the problem of the new legal status of the Caspian sea remains undetermined. The littoral states, however, recognize the need to take joint and separate actions to protect the Caspian Sea environment and to protect, preserve, restore and use its resources in a sustainable and rational manner. At present time littoral states prepare for signing Framework Convention on the Protection of the Marine Environment of the Caspian Sea and also negotiate to create the necessary legal base to solve the major transboundary problems of the region. A number of the multilateral agreements, such as: “On the protection of the environment of the Caspian Sea”, “On the preservation and management of biological resources of the Caspian Sea”, “On the cooperation of the Caspian states in the field of hydrometeorology and monitoring of pollution of the Caspian Sea” are under preparation. I.R. Iran, Kazakhstan and Russia have signed the Stockholm convention on persistent organic pollutants. Littoral states are participating in many other major international environmental conventions. The issues of necessity of improvement of legal base also will be covered in NCAPs preparing in all littoral states.

2.2.2 Institutional

Over the past few years, the political, legal and economic regimes of the Caspian states have undergone radical transformations and this transition continues to create enormous challenges. In most states, the necessary monitoring and enforcement activities are not carried out. Some of the responsible institutions lacking adequate capacity, resources, mandate or expertise. At times, the responsibilities are shared across a range of organizations, with likely consequences of inconsistent or conflicting policies and measures. Institutional deficiencies bring about ineffective spatial planning, environmentally aggressive subsidies, insufficient control procedures, inadequate EIA practices, and/or 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.

2.2.3 Economic and financial

The Caspian Sea is believed to contain considerable oil and gas deposits and is rich in bioresources; For the time being however the Caspian region as a whole is 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 is weak, and coupled with weak and undeveloped civil society. Environmental and natural resources are overseen by a host of ministries and local governments. In most countries government agencies often do not have the resources to conduct the necessary monitoring and enforcement activities to protect the regional environment. Integration of the development planning process and environmental development still remains a distant objective. 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 the data and information that is available, 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 lack of data often promotes regulatory capture and self interest. Further, if 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 TDA identified eight Major Perceived Problems and Issues. These were later refined through further regional consultation into four priority environmental regional concern areas, described above, requiring coordinated efforts by all littoral states. 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 supporting are 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 II of this document are listed the interventions and their corresponding indicators.

EQO I: Conservation and sustainable use of bioresources

EQO Indicator: **Commercial fish stocks are maintained at sustainable levels with reference to the base year (1998)**

Target 1: Sustainable use of commercial fisheries resources

- 1.1 Promote the signature and implementation at the governmental level of a regional agreement on the preservation and management of Bioresources of the Caspian Sea. (H) 1-5 years.**
- 1.2 Further strengthen the regional cooperation for fisheries management, including the development of regional standards of fisheries harvest practices for commercial species, and the setting of scientifically based quota system. (H) 1-5 years.**
- 1.3 Develop compliance, enforcement and monitoring mechanisms for sturgeon fisheries in accordance with CITES Paris declaration. (H) 1-5 years.**
- 1.4 In coordination with national and regional organizations, develop enforcement mechanisms and economic instruments to reduce illegal trade in Caspian commercial fish resources 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 Carry out national activities to identify, protect, restore and manage natural spawning grounds for sturgeon and other commercially valuable anadromous species, within the framework of regional agreements, including development of a financing strategy. (M) 1-5 years.**
- 2.2 Increase sturgeon hatchery efficiency and capacity through improvement in bio-techniques and fry growth technology as well as enhancing production scales (H) 1-5 years.**
- 2.3 Strengthen regional cooperation including scientific exchanges on improving hatchery efficiency and the creation of a gene bank for anadromous fish stocks. (H) 1-5 years.**

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

- 3.1 Promote more selective fishing methods and small-scale aqua-culture. (M) 5-10 years.**
- 3.2 Promote alternative income sources for fishing communities and adoption sustainable livelihoods, and improve access to social/community services. (H) 5-10 years.**

EQO II: Conservation of Biodiversity

[EQO II was extracted from the CEP Caspian Sea Biodiversity Strategy and Action Plan, developed with support of Flora and Fauna International]

EQO Indicator: **Arrest biodiversity erosion due to anthropogenic impacts**

Target 1: Increased regional collaboration to achieve maximum regional benefit for biodiversity

- 1.1 Draft and adopt a Biodiversity Protocol to the Framework Convention for the Protection of the Marine Environment of the Caspian Sea. (H) 1-5 years.**
- 1.2 Establish a regional biodiversity monitoring system. (M) 1-5 years.
- 1.3 Create a regional 'clearing house mechanism' on biodiversity. (M) 1-5 years.
- 1.4 Develop a framework for international research on Caspian biodiversity related issues. (H) 1-5 years.
- 1.5 Develop and implement an awareness campaign to highlight the biological uniqueness of the Caspian. (H) 1-5 years.
- 1.6 Ensure biodiversity issues and impacts are taken into account in all EIA applications. (H) 1-5 years.

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

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

Target 3: Control of introduction and invasion of non-native (alien) species and manage impact of existing introduced/invasive species.

- 3.1 Development and adopt a protocol to the Framework Convention for the Protection of the Marine Environment of the Caspian Sea on introduction and invasion of non-native species. (H) 1-5 years.**
- 3.2 Develop regional control procedures to manage the introduction, both purposeful and accidental and spread of alien species in the Caspian, in particular along the key transport routes. (H) 1-5 years.**
- 3.3 Investigate potential biological control measures to reduce the impact of *Mnemiopsis* on the ecosystem of the Caspian. (H) 1-5 years.**
- 3.4 Implementation of existing IMO Ballast Water Management Guidelines. H.1-5 years**
- 3.5 Study on the possibilities of development of a Ballast Water Reception facilities at all shipping exits and entrances to the Caspian Sea. (M) 1-5 years**

Target 4: Ensure all key coastal and marine habitats are represented in a regional system of protected areas.

- 4.1 Improve effectiveness of management of Caspian protected coastal areas, including compliance with existing legislation. (H) 1-5 years.**
- 4.2 Create new and expand existing protected coastal areas, where necessary transboundary areas, to encompass priority sensitive coastal and marine habitats. (H) 1-5 years.**
- 4.3 Create a regional information network between Caspian protected coastal areas. (M) 5-10 years.**
- 4.4 Develop management plans for the hydrological regimes of the major impounded rivers in the Caspian basin, the Volga, Kura and Sefidrude. (H) 1-5 years.**

Target 5: Identify and restore priority sensitive coastal habitats

- 5.1 Develop and apply a standardized methodology for assessment of priority coastal habitat health. (M) 5-10 years.**
- 5.2 Design, implement and monitor a minimum of five priority 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 assessment of priority marine habitat health. (M) 5-10 years.**
- 6.2 Design, implement and monitor a minimum of five priority marine habitat restoration projects. (M) 5-10 years.**

EQO III: Improve the water quality of the Caspian

EQO Indicator: a measurable decline in levels of the main contaminant groups in the water, sediment and biota.

Target 1: Strengthen environmental enforcement and management in the littoral states

- 1.1 Develop regional proposals for strengthening discharge licensing, compliance monitoring and enforcement of pollution control in the near Caspian basin. (H) 1-5 years.**
- 1.2 Increase resources to regulatory bodies responsible for pollution control and improve capacity through targeted training programmes. (H) 1-5 years.**
- 1.3 Develop recommendations for harmonization of pollution discharge and emission standards, and water quality standards. (H) 1-5 years.**
- 1.4 Introduce economic instruments to encourage reduced pollution loads. (M) 5-10 years.**

Target 2 : Implement a regionally coordinated water quality monitoring programme

- 2.1 Develop and implement regional monitoring programme focused on critical contaminants and hotspots. (H) 1-5 years.**
- 2.2 Develop and implement a rapid assessment programme for contaminant levels in all Caspian waters. (H) 1-5 years.**
- 2.3 Provide report on contaminant levels in Caspian every three years, and make proposals for remedial actions. (H) 1-5 years.**

Target 3: Development of regional strategies for pollution reduction

- 3.1 Develop and adopt a protocol to the Framework Convention for the Protection of the Marine Environment of the Caspian Sea for land based sources of pollution and undertake a comprehensive assessment of land based sources of pollution in the near Caspian basin. (H) 1-5 years.
- 3.2 Develop and implement a regional action plan to remedy hotspots identified in the near Caspian basin. (H) 5-10 years.
- 3.3 Develop and adopt a protocol on Hazardous Substances to the Framework Convention for the Protection of the Marine Environment of the Caspian Sea and encourage all littoral states to sign and ratify the Stockholm Convention on Persistent Organic Pollutants. (H) 1-5 years.**
- 3.4 Develop and implement a programme to dispose of stores of banned agro chemical products in the region in accord with Stockholm Convention on Persistent Organic Pollutants provisions (H) 1-5 years.
- 3.5 Through the use demonstration pilot projects, investigate cost effective means of treating municipal wastewaters and produce regional recommendations. (M) 5-10 years.**
- 3.6 Reduce pollution from existing and decommissioned coastal and offshore oil and gas facilities, including the re-sealing of well heads. (M) 5-10 years.
- 3.7 Develop and adopt a protocol to the Framework Convention for the Protection of the Marine Environment of the Caspian Sea on dumping at sea. (H) 1-5 years.
- 3.8 Establish waste reception facilities in all major ports. (M) 5-10 years.**

Target 4: Develop and initiate implementation of a regional action plan for contaminated land

- 4.1 Undertake a survey of coastal zone to identify and characterize major contaminated land sites and develop a hot spot strategy to be coordinated with POPs enabling activities in signatory states. (H) 1-5 years.
- 4.2 Implement pilot projects to demonstrate the most cost effective reclamation technologies for a range of contaminants. (H) 5-10 years.**

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

- 5.1 Establish and promote recommendations for the use of agro chemicals, including application times and rates, handling, storage and disposal. (M) 1-5 years.**
- 5.2 Promote through pilot projects environmentally sound agricultural practices such as soil conservation, creation of river 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.**

Target 6: Disaster prevention and response

- 6.1 Finalize and approve national oil spill contingency plans and harmonize mutual aid plans. (H) 1-5 years.
- 6.2 Sign Memorandum of Understanding on Oil Spill Preparedness and implement a Regional Cooperation Plan. (H) 1-5 years.

6.3 Finalize and adopt of a protocol to the Framework Convention for the Protection of the Marine Environment of the Caspian Sea on Emergency Response. (H) 1-5 years.

6.3 Update sensitive area mapping of the Caspian. (H) 1-5 years.

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

6.6 Promote development of a regional intergovernmental agreements for liability and compensation in the event of oil spills,. (H) 1-5 years.

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

EQO IV: Sustainable development of the coastal zones

EO 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 Review and revise, 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 and national data centers and GIS databases for coastal planning and management. (M) 1-5 years.

1.4 Undertake pilot integrated coastal area management planning project in each Caspian state with a view to replication and development of national guidelines. (M) 1-5 years.

1.5 Promote the positive aspects of eco-tourism and develop pilot projects. (H) 1-5 years.

Target 2: Combat the desertification and deforestation process

2.1 Where necessary, strengthen national legislation to combat desertification and deforestation and encourage signing by the Caspian states of the Convention to Combat Desertification. (H) 1-5 years.

2.2 Apply remote sensing and GIS techniques to monitor trends in desertification and deforestation in the Caspian coastal region. (H) 1-5 years.

2.3 In critical desertification and deforestation areas, develop and implement pilot restoration projects designed to address both immediate and root causes. (M) 5-10 years.

2.4 In threatened forest areas introduce renewable energy alternatives to fuel wood. (H) 5-10 years.

2.5 In threatened desert areas conduct targeted awareness campaign on sustainable grazing practices. (H) 5-10 years.

EQO V: Strengthen stakeholder participation in Caspian environmental stewardship

EQO Indicator: Enhanced involvement of civil society representatives in the NCAPs and SAP implementation, including NGO representation on the CEP Steering Committee.

Target 1. Increased coastal community involvement in managing the Caspian environment

- 1.1 Create a Caspian Environment Center in each littoral state to provide information to public on Caspian environmental issues. (M) 5-10 years.**
- 1.2 Create press bureau for CEP to improve country, regional and international awareness of status of Caspian environmental issues and encourage the media to participate in the dissemination of information. (H) 1-5 years.**
- 1.3 Promote broader public access to Caspian relevant environmental information held by public authorities, in accordance, where applicable, with the Aarhus Convention. (H) 1-5 years.**
- 1.4 Development of academic curriculum materials focusing on Caspian environmental issues and promote academic partnerships at school and University levels. (H) 1-5 years.**
- 1.5 Set up a fund for micro-grants addressing coastal community development schemes and local environmental problems, in partnership with the private sector and international donor community. (M) 1-5 years.**

Target 2. Increase local and regional authorities understanding of importance of environmental issues

- 2.1 Establish environmental issues awareness training for local authorities, and national ministries that affect the Caspian environment, emphasizing the need to take account of environmental costs/benefits of proposed projects. (H) 1-5 years.**
- 2.2 Implement national EIA procedures for all appropriate project developments, including provision for public participation, and encourage all littoral countries to sign and apply the ESPOO convention. (H) 1-5 years.**
- 2.3 Hold biennial CEP 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 Promote the positive aspects of eco-tourism and develop one pilot project in each Caspian littoral state. (H) 1-5 years.

Target 3. Develop active partnerships between CEP and local and multinational enterprises

- 3.1 Promote NGO/ government/ private sector environmental partnerships to improve monitoring, public relations and educational activities related to specific Caspian issues. (H) 1-5 years.**
- 3.2 Develop a programme to encourage adoption of cleaner technologies by local industries. (M) 1-5 years.**
- 3.3 Set up "Friends of CEP" programme with annual competition for local, national and international company or facility that has achieved the most concrete gains in protection of the Caspian environment in the previous year. (M) 1-5 years.**

Section 4: SAP implementation

- 4.1 National Caspian Action Plans (NCAPs)

The NCAPs are the main foundation of the SAP. Preparation of the NCAPs by the littoral states was started prior to the SAP preparation, based on an assessment of the priority national concern areas, which included, where they were in concordance, regional concerns identified in the TDA. Each country developed objectives, targets, proposed interventions, and drew 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. 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.

In preparing 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 following 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.

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 along common guidelines and like the SAP will be implemented in two separate 5-year periods and will be reviewed every four years. Once full government endorsement has been granted the NCAP and will move forward independently of the SAP process.

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 the NCAPs the littoral states were 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

It has been calculated by the Caspian states that implementation of SAP in its first five year period will require a total of approximately \$170 million. The present total national budgetary earmarking in the five littoral states for Caspian related NCAP initiatives in the corresponding period however only amounts to \$120 million. Potential assistance from the international donor community and the private sector over this period is estimated at \$20 million. 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. A Donor Conference could be planned for the second half of 2003 upon definition of priority funding needs and clarification of national commitments.

Even given the above initiatives there will remain however 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.

4.5 Institutional Arrangements

Once agreed at Ministerial level, implementation of the SAP will become 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. At the regional level SAP implementation will be coordinated by the CEP Programme Coordination Unit (PCU) assisted by Advisory Boards for Biodiversity, Fisheries, Pollution, Emergency Response and Sustainable Coastal Development. The PCU will also be responsible for coordination of the International Partner CEP umbrella projects and work to attract further SAP implementation support from the both the public and private sectors at the regional and national levels. The PCU will maintain close communication with the NCSs to ensure concordance between the SAP and the five NCAPs and shall report annually to the Steering Committee on the implementation status of the SAP and the NCAPs. Every four years the littoral states, facilitated by the PCU, shall review and recast the SAP for the next 5+5 year period and, if necessary, resetting the regional environmental priorities. The full terms of reference of the Steering Committee, PCU and NCU, and Advisory Boards and Advisory Groups are contained in the CEP Institutional Arrangements document (updated March 2003).

Section 5. The Future of the Strategic Action Programme

The SAP is officially launched 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 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 CTRCs 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 were 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 linkages 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.**

Annex II: Interventions and the corresponding indicators

EQO CONSERVATION AND SUSTAINABLE USE OF BIORESOURCES
I:

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 signature and implementation at the governmental level of a regional agreement on the preservation and management of Bioresources of the Caspian Sea.	a) Signed and implemented agreement	PI	1-5 years
	1.2 Further strengthen the regional cooperation for fisheries management, including the development of regional standards of fisheries harvest practices for commercial species, and the setting of scientifically based quota system.	a) Relevant regional standards of fisheries harvest practices developed and adopted by the national governments	PI	1-5 years
		b) An effective regional fisheries body made operational	PI	1-5 years
		c) Regular joint stock assessments undertaken and annual quotas set based on results.	PI	1-5 years
	1.3 Develop compliance, enforcement and monitoring mechanisms for sturgeon fisheries in accordance with CITES Paris declaration.	a) Reduced level of illegal trade measured and verified by CITES.	SRI	1-5 years
		b) A system of regional fisheries inspection established.	PI	1-5 years
	1.4 In coordination with national and regional organizations, develop enforcement mechanisms and economic instruments to reduce illegal trade in Caspian commercial fish resources in accordance with CITES Paris Declaration.	a) Development of required national legislation of enforcement	PI	1-5 years
		b) Legal instruments in place to mitigate illegal trade/strengthen mechanisms to reduce illegal trade.	PI	1-5 years

Indicator Types:

PI Process Indicator
SRI Stress Reduction Indicator
ESI Environmental Status Indicator

Annex II: Interventions and the corresponding indicators

EQO CONSERVATION AND SUSTAINABLE USE OF BIORESOURCES
I:

2. Rehabilitate stocks of <u>migratory</u> (sturgeon, inconnu, herring) commercially valuable fish species.	2.1 Carry out national activities to identify, protect, restore and manage natural spawning grounds for sturgeon and other commercially valuable anadromous species, within the framework of regional agreements, including development of a financial strategy for their protection.	a) Caspian-wide inventory of spawning grounds	PI	1-5 years
		b) Key spawning grounds restored, protected and maintained at productive levels including Kura, Sefidrood, Anzali Wetlands, Ural and Volga.	SRI	1-5 years
		c) Increase in numbers of fish using spawning grounds.	SRI	1-5 years
		d) Financial strategies developed and approved	PI	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	a) Double amount of fingerlings released from hatcheries from baseline 120 millions per year.	SRI	1-5 years
		b) Double survival rate of released fingerlings from 2002 rate of 2.5%.	SRI	1-5 years
		c) Broodstocks are maintained alive in hatcheries.	SRI	1-5 years
	2.3 Strengthen regional cooperation including scientific exchanges on improving hatchery efficiency and the creation of a gene bank for anadromous fish.	a) Gene bank established.	SRI	5-10 years
		b) Hatcheries management network established	PI	1-5 years
3. Improve livelihoods in coastal communities to reduce dependency on unsustainable fishing practices via pilot projects	3.1 Promote more selective fishing methods and small scale aqua-culture	a) Detailed regulations requiring selective fishing methods in place and enforced in all Caspian Countries.	PI	5-10 years
		b) 25% of fishermen use more selective fishing methods in first five years and 100% use selective methods in ten years.	SRI	5-10 years

Indicator Types:

PI Process Indicator
SRI Stress Reduction Indicator
ESI Environmental Status Indicator

Annex II: Interventions and the corresponding indicators

EQO CONSERVATION AND SUSTAINABLE USE OF BIORESOURCES
I:

		c) At least one functioning coastal community small-scale aqua-culture scheme in each of the Caspian states	SRI	5-10 years
	3.2 Increase well-being of fishing communities by inter alia improving access to basic social /community services.	a) Extension programmes in each Caspian country to promote alternative livelihoods in all coastal communities. Revenue of fishing in communities to fall less than 50% of total.	SRI	5-10 years
		b) Improved health and education status in coastal communities as measured by life expectancy and years at school	SRI	5-10 years

Indicator Types:

PI Process Indicator
SRI Stress Reduction Indicator
ESI Environmental Status Indicator

Annex II: Interventions and the corresponding indicators

EQO II: CONSERVATION OF BIODIVERSITY

EQO INDICATOR: BIODIVERSITY EROSION DUE TO ANTHROPOGENIC IMPACTS ARRESTED

<i>Target</i>	<i>Intervention</i>	<i>Indicator</i>	<i>Indicator type</i>	<i>Time-frame</i>
1 Increased regional collaboration to achieve maximum regional benefit for biodiversity	1.1 Draft and adopt of a Biodiversity Protocol to the framework Convention for the Protection of the Marine Environment of the Caspian Sea.	a) Regionally endorsed Biodiversity Protocol	PI	1-5 years
	1.2 Establish a regional biodiversity monitoring system	a) Regional report on status of biodiversity of the Caspian	PI	1-5 years
	1.3 Create a regional 'clearing house mechanism' (CHM) on biodiversity	a) Established mechanism for communication between national and international scientists working on the Caspian	PI	1-5 years
		b) A continually updated review of the status of the Caspian biodiversity	ESI	1-5 years
	1.4 Develop a framework for international research on Caspian biodiversity related issues	a) Coordinated and accelerated research into Caspian biodiversity, leading to deeper understanding of threats and better amelioration actions	ESI	1-5 years
	1.5 Develop and implement an awareness campaign to highlight the biological uniqueness of the Caspian	a) An informed and more active public and more environmentally conscious decision making bodies	PI	1-5 years
	1.6 Ensure biodiversity issues and impacts are taken into account in all EIA applications	a) Increased reference to biodiversity as a key issue in coastal planning /land use decision making documents	PI	1-5 years

Indicator Types:

PI Process Indicator
SRI Stress Reduction Indicator
ESI Environmental Status Indicator

Annex II: 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>
2 Ensure all key threatened and endangered species are maintained at or restored to viable levels	2.1 Identify and assess key threatened and endangered species status and publish results	a) A list of threatened key species whose predicament embodies the overall threats to biodiversity	ESI	1- 5 years
	2.2 Ensure adequate legal protection for key threatened and endangered species	a) New or strengthened national legislation for the protection of key threatened species	PI	1-5 years
	2.3 Provide in-situ and ex-situ protection for key threatened and endangered species	a) Increased or slowed down rate of decrease in population numbers of key threatened species	PI	5-10 years
		b) Expansion of the ranges of key threatened species	SRI	5-10 years
		c) Increased level of effective re-introduction of species /restoration of habitats	SRI	5-10 years
	2.4 Create a gene bank for threatened and endangered species	a) DNA of known threatened and endangered species deposited in gene bankspecies	ESI	5-10 years
3 Control of introduction and invasion of non-native (alien) species and manage impact of existing introduced/invasive species.	3.1 Develop and adopt a protocol to the Framework Convention for the Protection of the Marine Environment of the Caspian Sea on invasive species.	a) Endorsed Protocol on Control of Invasive Species	PI	1-5 years
	3.2 Develop Regional control procedures to manage the introduction and spread of alien species in the Caspian, in particular along the key transport routes	a) Agreement and implementation of regional guidelines	PI	1-5 years
		b) Management plan for the control of invasive species via the Volga-Don and Volga-Baltic navigation routes	PI	1-5 years

Indicator Types:

PI Process Indicator
SRI Stress Reduction Indicator
ESI Environmental Status Indicator

Annex II: 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>
	3.3 Investigate potential biological control measures to reduce the impact of Mnemiopsis on the ecosystem of the Caspian	a) Mnemiopsis levels decreased to a harmless level	SRI	1-5 years
	3.4 Implementation of existing IMO Ballast Water Guidelines	a) Caspian states prepare Ballast Water management Plans	PI	1-5 years
	3.4 Study on the possibilities of development of ballast water reception facilities at all shipping exits and entrances to the Caspian Sea	a) Documents based the decision on the construction of one ballast water reception facility	SRI	5-10 years
4 Ensure all key coastal and marine habitats are represented in a regional system of protected areas.	4.1 Improve effectiveness of management of Caspian protected coastal areas including compliance with existing legislation	a) Increased number of better trained protected area wardens	PI	1-5 years
		b) Evidence of use of modern protected area management	PI	1-5 years
		c) Increased local community involvement in protected area management decision making	PI	1-5 years
	4.2 Create new and expand existing protected areas (including where necessary transboundary areas) to cover all key threatened and endangered Caspian coastal and marine habitats	a) Increased area (30%) of key threatened habitats under protection	SRI	5-10 years

Indicator Types:

PI Process Indicator
SRI Stress Reduction Indicator
ESI Environmental Status Indicator

Annex II: 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 Create a regional information network between Caspian protected coastal areas.	a) Regional integration of protected area management as evidenced by regional meetings/conferences, newsletters, annual reports etc.	PI	1-5 years
	4.4 Develop management plans for the hydrological regimes of the major impounded rivers in the Caspian basin, the Volga, Kura and Sefidrude	a) New management plans agreed which include increased allocations for environmental needs	SRI	1-5 years
5 Identify and restore priority coastal habitats	5.1 Develop and apply a standardized methodology for assessment of the environmental health of coastal habitats.	a) A health map of the region's coastal habitats based on standardized assessment methodology	PI	5-10 years
	5.2 Design, implement and monitor a minimum of five 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) A health map of the Caspian 's marine habitats based on standardized assessment methodology	PI	5-10 years years
	6.2 Design, implement and monitor a minimum of five priority marine habitat restoration projects.	a) Agreed and financed prioritized action plan for restoration of marine habitats	PI	5-10years
		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 II: 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 WATER, SEDIMENT AND BIOTA

<i>Target</i>	<i>Intervention</i>	<i>Indicator</i>	<i>Indicator type</i>	<i>Time-frame</i>
1. Strengthen environmental enforcement and management by the littoral states	1.1 Develop regional proposals for strengthening discharge licensing, compliance monitoring and enforcement of pollution in the near Caspian basin	a) Completed, acceptable regional proposals which address the need for enhanced management capacity of licensing, compliance monitoring and enforcement of pollution discharges in the Caspian.	PI	1-5 years
	1.2 Increase resources to regulatory bodies responsible for enforcement and improve capacity through targeted training programmes.	a) Increased number of training days of staff in regulatory institutions	PI	1-5 years
	1.3 Develop recommendations for harmonization of pollution discharge and emission, and water quality standards	a) Developed recommendations for harmonized regional pollution discharge standards and Caspian EQOs/ EQSs	PI	1-5 years
	1.4 Introduce economic instruments to encourage reduced pollution loads	a) Introduced economic instruments which can be shown to encourage pollution reduction in public and private sectors at local, national and regional levels	SRI	5-10 years
2. Implement a regionally coordinated water quality monitoring programme	2.1 Develop and implement 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.	ESI	1- 5 years
	2.2 Develop and implement a rapid assessment programme for contaminant levels in all Caspian waters	a) Implemented rapid assessment programme for contaminant levels throughout all Caspian waters, including synchronized assessment standards, and region-wide information sharing mechanisms.	ESI	1- 5 years

Indicator Types:

PI Process Indicator
SRI Stress Reduction Indicator
ESI Environmental Status Indicator

Annex II: 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>
	2.3 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 initially, 5-10 on going
3. Development of regional strategies for pollution reduction	3.1 Develop and adopt a protocol to the Framework Convention for the Protection of the Marine Environment of the Caspian Sea for land based sources of pollution and undertake a comprehensive land-based source assessment of the near Caspian basin	a) Developed and adopted protocol on land based sources of pollution	PI	1-5 years
		b) Implemented land source assessment (point and diffuse sources) in the Caspian water basin leading to prioritized listing of hotspots	PI	1-5 years
	3.2 Develop a regional action plan to remediate pollution hotspots identified in the near Caspian basin	a) An agreed action plan and development of a prioritized investment programme	PI	1-10 years
		b) Reduction in the number of hotspots by 20%	SRI	1-10 years
	3.3 Develop and adopt a protocol to the Framework Convention for the Protection of the Marine Environment of the Caspian Sea on Hazardous Substances and encourage all littoral states to sign and ratify the Stockholm Convention on Persistent Organic Pollutants	a) Developed and agreed protocol on hazardous substances	PI	1-5 years
		b) Signed and ratified Convention on Persistent Organic Pollutants by all five littoral countries	PI	1-5 years
	3.4 Develop and implement a programme to dispose of stores of banned agro chemical products in the region in accord with the Stockholm Convention on Persistent Organic Pollutants provisions.	a) Removal of all stocks of banned agrochemicals within near Caspian basin	PI	1-5 years

Indicator Types:

PI Process Indicator
SRI Stress Reduction Indicator
ESI Environmental Status Indicator

Annex II: 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>
	3.5 Through the use of demonstration pilot projects investigate cost effective means of treating municipal wastewater and produce regional recommendations	a) Three demonstration pilot projects established in the coastal zone.	PI	5-10 years
		b) Recommendations developed for cost effective means of environmentally sensitive treatment of municipal wastewater in the littoral states and available resources.	PI	5-10 years
	3.6 Reduce pollution from existing and decommissioned coastal and off shore oil and gas facilities, including the resealing of well heads	a) Decreased hydrocarbon pollution from existing and decommissioned facilities by 50 %	SRI	5-10 years
	3.7 Develop and adopt a protocol to the Framework Convention for the Protection of the Marine Environment of the Caspian Sea on dumping at sea	a) Adopted protocol on dumping at sea	PI	1-5 years
	3.8 Establish waste reception facilities in all major ports	a) Functional waste reception facilities installed in all major ports with standardized management practices and enforcement	SRI	5-10 years
4. Develop and initiate implementation of a regional action plan for contaminated lands	4.1 Undertake a survey of coastal zone to identify and characterize major contaminated land sites and develop a hot spot strategy to be coordinated with PoPs enabling activities in signatory states.	a) Coastal survey completed, with major contaminants listed and hot spot management strategy devised.	PI	1-5 years
	4.2 Implement pilot projects to demonstrate the most cost effective reclamation techniques for a range of contaminants.	a) Functioning contaminants reclamation pilot projects in all five littoral countries	SRI	5-10 years
5. Promote environmentally sound agricultural practices in the Caspian region	5.1 Establish and promote 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

Indicator Types:

PI Process Indicator
SRI Stress Reduction Indicator
ESI Environmental Status Indicator

Annex II: 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>
	5.2 Promote through pilot projects environmentally sound agricultural practices such as soil conservation, creation of river protection zones, use of natural fertilizers and use of pest resistant crop strains.	a) Functioning environmental conservation promotional pilot projects 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	SRI	5-10 years
6. Disaster prevention and response	6.1 Finalize and approve national oil spill contingency plans and harmonize mutual aid plans	a) Operational national oil spill contingency plans, harmonized with the industry mutual aid plans	PI	1-5 years
	6.2 Sign Memorandum of Understanding on Oil Spill Preparedness at an inter-governmental level and implement and regional cooperation plan	a) First regional exercises to test regional cooperation plan	PI	1-5 years
	6.3 Finalize and adopt of a protocol to the Framework Convention on the Marine Environment of the Caspian Sea	a) Adopted protocol	PI	1-5 years
	6.4 Update sensitive areas mapping of the Caspian	a) Sensitive areas mapped and information made available on Internet to relevant local, national, regional and international bodies	ESI	1-5 years
	6.5 Undertake risk assessment for oil and hazardous substances spillage from shipping, pipelines, offshore and onshore production and storage facilities	a) Risk assessment completed and made available to relevant bodies for consideration	PI	1-5 years
	6.6 Promote development of a regional intergovernmental agreements for liability and compensation in the event of oil 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

Indicator Types:

PI Process Indicator
SRI Stress Reduction Indicator
ESI Environmental Status Indicator

Annex II: 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>
	6.7 Develop regional agreement on minimum standards of maintenance of existing tanker fleet	a) IReduction in ship borne pollution incidents by 50%	SRI	5 -10 years

Indicator Types:

PI Process Indicator
SRI Stress Reduction Indicator
ESI Environmental Status Indicator

Annex II: 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 ZONES

<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 Review and revise, as needed, national regulation on coastal area planning and management.	a) Put in place improved, cost effective and environmental 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) Develop and implement economic instruments aiming at efficient and wise land use in coastal areas	PI	1-5 years
	1.3 Develop a regional and national data center and GIS database for coastal planning and management.	a) Functioning national and regional data centers and access to GIS database for use by coastal planning authorities	PI	1-5 years
	1.4 Undertake a pilot integrated coastal area management planning project in each Caspian state with a view to develop and replicate national guidelines	a) Functioning pilot projects and publication of national guidelines on integrated coastal area management planning for the Caspian.	SRI & PI	1-5 years
	1.5 Promote positive aspects of eco-tourism and develop pilot projects	a) Functioning pilot project and guidelines for development of eco-tourism in the Caspian coastal zone	PI	1-5 years
2. Combat the desertification and deforestation process	2.1 Where necessary, strengthen national legislation, to combat desertification and deforestation and encourage the signing of the Convention to Combat Desertification (CCD) by the Caspian states.	a) Improved deforestation and desertification control legislation in place in all five littoral countries and all five countries signatories to the CCD.	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 a regular basis	ESI	1-5 years

Indicator Types:

PI Process Indicator
SRI Stress Reduction Indicator
ESI Environmental Status Indicator

Annex II: 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>
	2.3 In critical desertification and deforestation areas develop and implement pilot projects designed to address immediate and root causes.	a) Functioning pilot projects in all five littoral states and guidelines for protection of coastal forest and desert areas.	SRI & PI	5-10 years
	2.4 In threatened forest areas introduce alternatives to fuel wood sources.	a) Measurable reduction in wood fuel consumption in coastal forest areas	SRI	5-10 years
	2.5 In threatened desert areas conduct targeted awareness campaigns on sustainable grazing practices and targeted habitat restoration.	a) Measurable reduced in animal population grazing in coastal areas	SRI	5-10 years

Indicator Types:

PI Process Indicator
SRI Stress Reduction Indicator
ESI Environmental Status Indicator

Annex II: Interventions and the corresponding indicators

EQO IV: SUSTAINABLE DEVELOPMENT OF COASTAL ZONES

EQI
INDICATOR: ENHANCED INVOLVEMENT OF CIVIL SOCIETY REPRESENTATIVES IN THE NCAPS AND SAP IMPLEMENTATION INCLUDING NGO REPRESENTATION ON THE CEP STEERING COMMITTEE

<i>Target</i>	<i>Intervention</i>	<i>Indicator</i>	<i>Indicator type</i>	<i>Time-frame</i>
1. Increased coastal community involvement in managing the Caspian environment	1.1 Create a Caspian Environment Center in each littoral state to provide information to public about Caspian environmental issues	a) Functioning Caspian Environment Centers in each littoral state and	PI	5-10 years
	1.2 Create a CEP press bureau to improve country, regional and international awareness of the status of Caspian environmental issues and encourage the media to participate in the dissemination of information	a) Functioning press bureau and an increased number of articles at all levels published on the Caspian environment	PI	1-5 years
	1.3 Promote broader public access to Caspian relevant environmental information held by public authorities in accordance with, where applicable, the Aarhus Convention.	a) The establishment of easy accessing mechanisms to Caspian environmental information held by public authorities in all five littoral states.	PI	1-5 years
	1.4 Development of academic curriculum materials focusing on Caspian environmental issues and promotion of academic partnerships at school and university levels.	a) New curriculum included in primary, secondary and tertiary schools in coastal communities in the region and a 100% increase in the number of academic partnerships recorded by CEP	PI	1-5 years
	1.5 Set up a fund for micro-grants addressing coastal community development schemes and local environmental problems, in partnership with the private sector and international donor community.	a) Established fund and number of micro-grants disbursed	SRI	1-5 years

Indicator Types:

PI Process Indicator
SRI Stress Reduction Indicator
ESI Environmental Status Indicator

Annex II: Interventions and the corresponding indicators

EQO IV: SUSTAINABLE DEVELOPMENT OF COASTAL ZONES

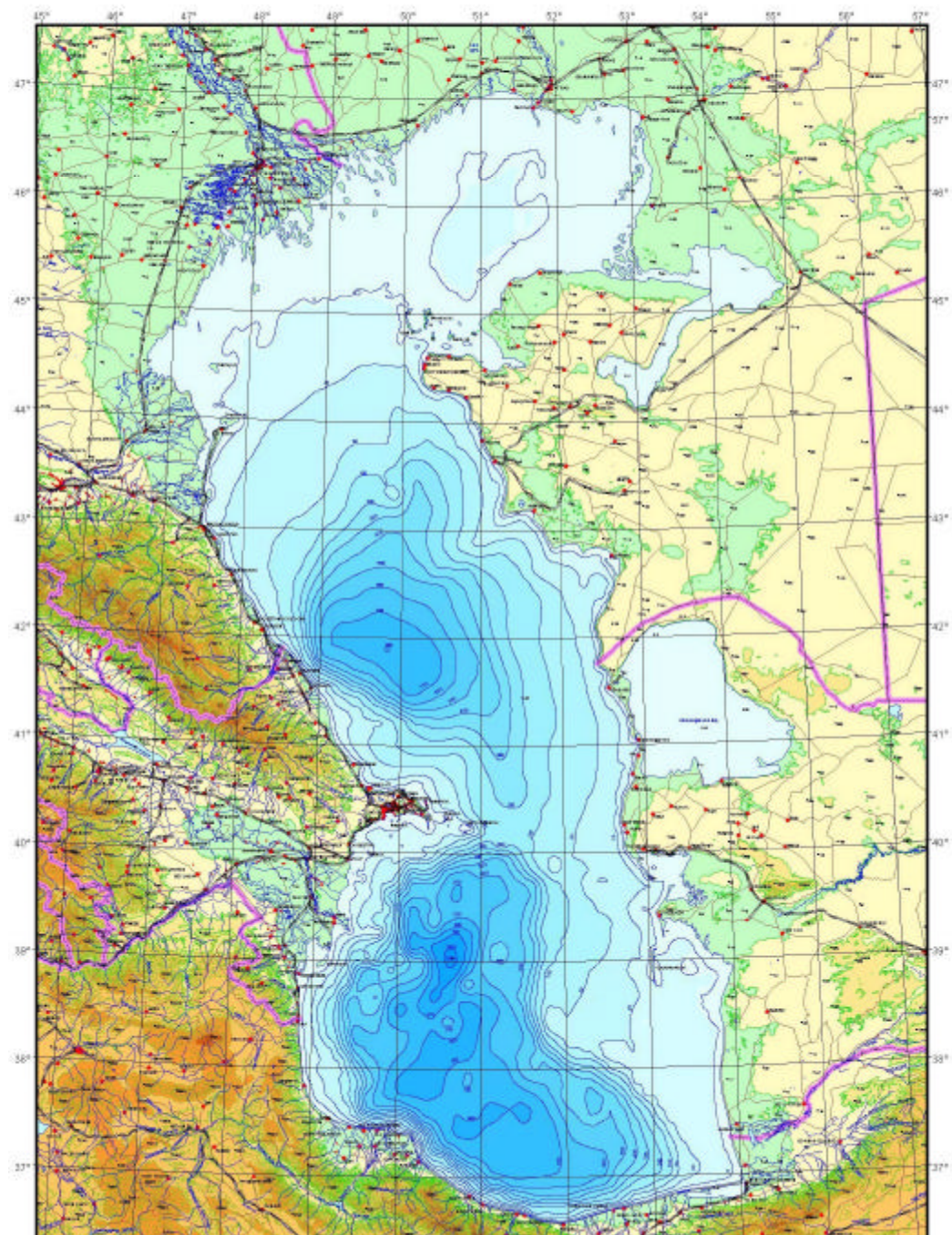
<i>Target</i>	<i>Intervention</i>	<i>Indicator</i>	<i>Indicator type</i>	<i>Time-frame</i>
2. Increase local and regional authorities understanding of socio-economic importance of environmental issues	2.1 Establish environmental issues awareness training programmes for local authorities, and national ministries, emphasizing cost/benefit analysis of status quo and proposed projects.	a) Development and execution of environmental awareness training programmes for local authorities, and national ministries.	PI	1-5 years
	2.2 Implement national EIA procedures for all appropriate project developments, including the provisions for public participation, and encourage littoral countries to sign ESPOO Convention.	a) Mandatory application of EIA in development project decisions making process and increased number of public meetings and	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 mayoral conferences held with environmentally focused networking linkages developed.	PI	1-5 years
3. Develop active partnerships between CEP, local and multinational enterprises	3.1 Promote NGO/ government/ private sector environmental partnerships to improve monitoring, public relations and educational activities related to specific Caspian issues.	a) Number of enhanced multiple stakeholder group partnerships to address Caspian environmental issues increased by 100%	PI	1-5 years
	3.2 Develop a programme to encourage adoption of cleaner technologies by local industries.	a) Increased number of coastal industries installing new, cleaner technologies (to be measured in conjunction with EQO III intervention 1.4)	SRI	1-5 years
	3.3 Set up "Friends of CEP" programme with annual competition for local, national and international company or facility that has achieved the most concrete gains in protection of the Caspian environment in the previous year.	a) Number of applicants for Friends of CEP 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 E: MAPS

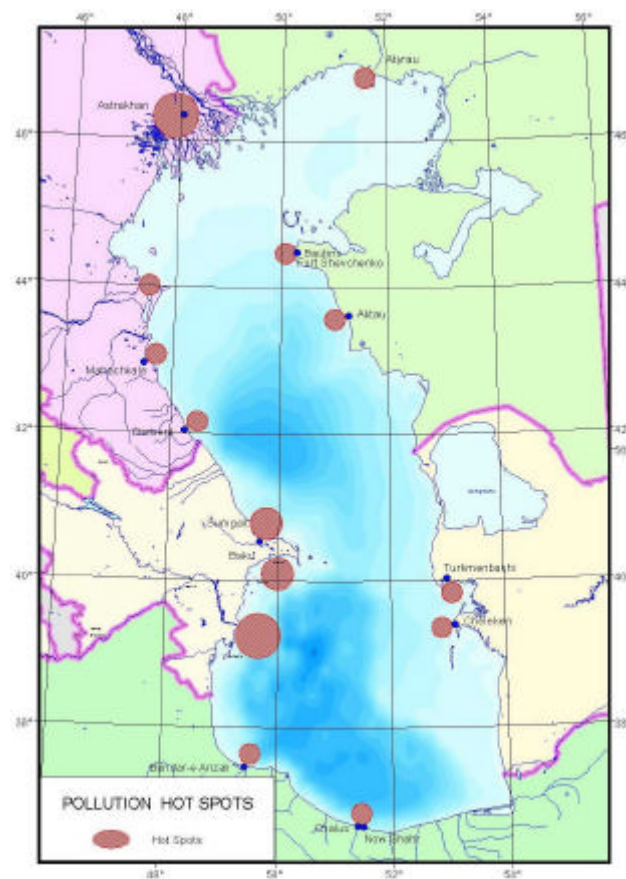
E.1 Map of the Caspian Sea



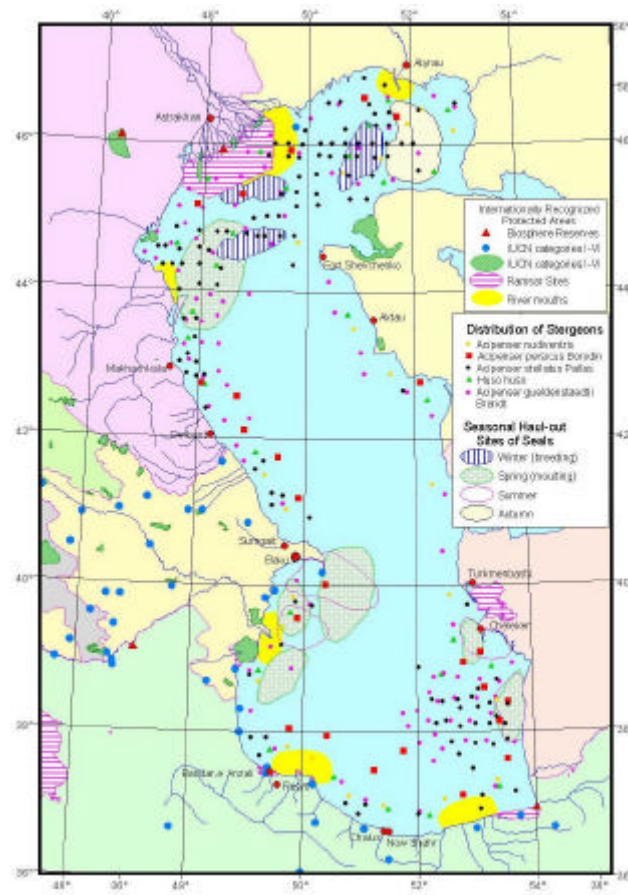
ANNEX E.2 Map showing the oil and gas activities in the Caspian Sea and environs



ANNEX E.3 Map showing the identified pollution hot spots in the Caspian Sea



ANNEX E.4 Map showing biodiversity hot spots in Caspian Sea



Annex F.1: Budget

Project Number: 2622

Project Title: Towards a Convention and Action Programme for the Protection of the Caspian Sea Environment

A. Budget Lines

Budget		Year 1	Year 2	Year 3	Total
Line	Description				
010	Project Personnel				
011	International Experts - CTA	\$120,000	\$ 120,000	\$120,000	\$360,000
	- Biologist	\$90,000	\$90,000	\$90,000	\$270,000
	- Chemist/IT expert	\$90,000	\$90,000	\$45,000	\$225,000
	- Public Awareness	\$30,000	\$30,000	\$20,000	\$80,000
	- Invasive species expert	\$30,000	\$30,000		\$60,000
	- Seal expert	\$20,000	\$30,000		\$50,000
	-POPs expert	\$30,000	\$30,000		\$60,000
	- Miscellaneous consultants	\$100,000	\$100,000	\$50,000	\$250,000
013	Administrative Support (NPPP)	\$80,000	\$80,000	\$50,000	\$230,000
015	Monitoring and Evaluation		\$10,000	\$50,000	\$60,000
016	Mission costs	\$80,000	\$80,000	\$80,000	\$240,000
017	National Consultants	\$100,000	\$100,000	\$100,000	\$300,000
	SUBTOTAL	\$780,000	\$790,000	\$605,000	\$2,175,000
020	Contracts/Inter Agency Agreements				
021	Regional Institutions	\$100,000	\$100,000	\$100,000	\$300,000
022	IAEA (Marine Environmental Laboratory)	\$100,000	\$100,000		\$200,000
023	GPA	\$70,000			\$70,000
024	FAO		\$100,000	\$50,000	\$150,000
025	WCMC	\$70,000			\$70,000
026	IMO		\$50,000		\$50,000
027	Vessel hire	\$60,000	\$20,000		\$80,000
028.01	Ballast Water Reception Facility feasibility study		\$70,000		\$70,000
028.02	UNEP (Outcome I:Framework Convention support)	\$180,000	\$180,000	\$140,000	\$480,000
	SUBTOTAL	\$580,000	\$620,000	\$290,000	<u>\$1490,000</u>
030	Training and Meetings				
032.01	Project steering Committee meetings	\$30,000	\$30,000	\$30,000	\$90,000
032.02	Thematic meetings	\$90,000	\$90,000	\$90,000	\$270,000
032.03	PCU and NCS training	\$60,000	\$60,000		\$120,000
032.04	MSGP training	\$50,000	\$25,000		\$75,000
032.05	Public Awareness campaigns	\$100,000	\$100,000	\$50,000	\$250,000

	SUBTOTAL	\$330,000	\$305,000	\$170,000	<u>\$805,000</u>
040	<i>Equipment</i>				
045.01	Office equipment	\$60,000	\$30,000	\$10,000	\$100,000
045.02	Web-site	\$30,000			<u>\$30,000</u>
045.03	Biological monitoring equipment	\$100,000	\$100,000		<u>\$200,00</u>
	SUBTOTAL	\$190,000	\$130,000	\$10,000	<u>\$330,000</u>
050	Miscellaneous				
52.01	Office operations	\$50,000	\$50,000	\$50,000	<u>\$150,000</u>
52.02	Reporting costs	\$10,000	\$20,000	\$60,000	<u>\$90,000</u>
	SUBTOTAL	\$60,000	\$70,000	\$110,000	<u>\$240,000</u>
070	Micro-capital grants				
071	Match Small Grants	\$200,000	\$200,000		\$400,000
072	Caspian Coastal Concern Group grants	\$60,000	\$80,000		\$140,000
	SUBTOTAL	\$260,000	\$280,000		<u>\$540,000</u>
093.01	UNOPS execution fee	\$176,000	\$175,600	\$94,800	\$446,400
99.00	Total Project cost	\$2,376,000	\$2370,600	\$1,279,800	\$6,026,400

Annex F.II Project Objectives and Outcomes:

Objective I: commence implementation SAP in the areas of biodiversity, invasive species and PTS

Outcome A: Quantitative Assessment of habitat loss, verification of critically threatened areas and the design and establishment of a standardized Monitoring methodology programme.

Budget: \$: 665,000

Activity A1: Undertake a quantitative assessment of the coastal and marine habitats of the Caspian Sea and develop a preliminary Caspian Coastal Sites Inventory, which will include information on environmental sensitivity, prevailing threats (including water level fluctuations), usage history and legal status of the sites.

Budget: \$285,000

Activity A2: In collaboration with UNEP's World Conservation Monitoring Center produce quantitative and accurate Environmental Sensitive areas maps of the Caspian and make available using internet map server technology (ImapS). These maps will form one block of a Caspian biodiversity database and be a component of the Regional Oil Spill Cooperation Plan.

Budget: \$150,000

Activity A3: Create an up-to-date Caspian biodiversity database, building on work done in the first GEF support project to CEP.

Budget: \$100,000

Activity A4: Develop guidelines for the protection and rehabilitation of environmental sensitive sites and design a monitoring programme to serve the decision making process.

Budget: \$50,000

Activity A5: Provide training to government agencies, NGOs and local communities on execution of the monitoring programme.

Budget: \$80,000

Outcome B: Preliminary implementation of the Biodiversity Action Plan focusing on compliance issues, protection and conservation action plans and targeted public awareness campaigns

Budget: \$ 520,000

Activity B1: Establishment of an Eco-Net around the Caspian, comprising a coordinated network of conservation practitioners from institutions, NGOs and other stakeholder groups. A structured training programme will be provided and linkages facilitated with international conservation groups.

Budget: \$120,000

Activity B2: Development and implementation of a conservation action plan for the Caspian seal. Assistance will be sought from the private sector in implementation of the plan.

Budget: \$100,000

Activity B3: Development and implementation of a water level fluctuation adaptation management plan for a coastal lagoon of global biodiversity significance selected for a pilot project.

Budget: \$300,000

Outcome C: Implementation of CEP Invasive Species Action Plan

Budget: \$ 515,000

Activity C1: Support and expand the *Mnemiopsis* monitoring programme on-going in the five Caspian States.

Budget: \$75,000

Activity C2: Provide technical assistance in development of a proposal for the introduction of *Beroë Ovata* and/or other alternatives in the Caspian as biological control agent for *Mnemiopsis*, and provide support to the I.R. Iran and Russia in undertaking in-vitro behavioural studies of *Beroë* and an environmental impact assessment report.

Budget: \$60,000

Activity C3: Review the national legislation on introduction of alien species and make recommendations for the formation of a Caspian Regional body to evaluate and authorize introductions.

Budget: \$80,000

Activity C4: In collaboration with the GEF Globallast undertake an assessment of extent of traffic of ship-borne invasive species into and from the Caspian via the River Volga and undertake a pre-feasibility study into ways and means of controlling invasions at the port of entry Astrakhan.

Budget: \$300,000

Outcome D: Assessment of pollution loading of the Caspian and determination of the source, distribution and composition of PTS in the riverine waters and sediments and coastal waters to prioritize amelioration interventions .

Budget: \$ 652,500

Activity D1: Expand and improve the Tacis land-based activity assessment, including contaminant source assessment in the coastal zone and major river basins (Kura/Arax, Volga up to Volgograd, Sefid Rood, and Ural), including point and non-point sources and quantification of hot spots within the rivers (working with the GPA Secretariat in The Netherlands, the POPs Secretariat in Geneva, and with the regional and national PTS and POPs assessments and enabling activities).

Budget: \$200,000

Activity D2: Determine the flux of major contaminants from the Volga cascade (in conjunction with the planned UNESCO project) and the Mingechaur reservoir.

Budget: \$100,000

Activity D3: As a continuation of work from the first GEF CEP project, further surveys of the riverine waters, sediments and sea waters in the Caspian states, including the coastal sediments off Turkmenistan, assessing the impact of key transboundary

contaminants in water and sediments.

Budget: \$300,000

Activity D4: Assist in the design, promotion and implementation of a cost effective and affordable regional monitoring methodology/programme for key transboundary contaminants and in conjunction with the oil industry develop an environmental rapid assessment methodology/programme using bio-marker techniques, combined with awareness-raising activities.

Budget: \$52,500

Outcome E: Develop regional action plans addressing the activities contributing to transboundary PTS

Budget: \$ 502,500

Activity E 1: Draft and agree , in coordination with the national GEF supported enabling POP activities, a regional Action Plan for addressing the activities contributing to transboundary PTS, including Persistent Organic Pollutants hydrocarbons and heavy metal pollution.

Budget: \$100,000

Activity E2: In two pilot project areas, undertake a survey of usage and stockpiling of pesticides, undertake a stakeholder education programme and demonstrate the use of Integrated Pest Management (coordinated with any national POPs Enabling Activity inventories to avoid duplication).

Budget: \$300,000

Activity E3: Undertake a regional public awareness campaign against the use of banned pesticides and other PTS (coordinate with any similar activities planned under country's POPs Enabling Activities).

Budget: \$102,500

Objective II: To continue specific capacity building towards a regionally owned CEP coordination mechanism capable of SAP implementation and NCAPs coordination

Outcome F: A sustainable , strengthened and regionally owned coordination mechanism including PCU in Tehran , CNSs and network of institutions addressing transboundary issues.

Budget: \$ 1,192,000

Activity F1: Supporting establishment of the Programme Coordination Unit in Islamic Republic of Iran, including provision of additional furniture and computer equipment and assistance with preliminary training needs.

Budget: \$300,000

Activity F2: If not already undertaken as part of PDF-B activities, transfer the Caspian Information System and web-site to I.R. Iran. Develop the information system further by developing strong linkages with contributing institutions. Maintain web-site.

Budget: \$102,000

Activity F3: Provision of project management training to the staff of the PCU and NCS to enable them to execute regional and

national projects. <u>Budget: \$250,000</u>
<u>Activity F4:</u> Support national SAP implementation activities by provision of a SAP implementation coordinator for GEF focal areas and national inter-sectoral coordination activities by formation and support of a coordination body. <u>Budget: \$150,000</u>
<u>Activity F5:</u> Develop an integrated monitoring and evaluation programme for the SAP and the NCAPs, measured against the process, stress reduction and environmental status indicators defined in the SAP (see annex D) <u>Budget: \$50,000</u>
<u>Activity F6:</u> Revise the TDA and the SAP. <u>Budget: \$120,000</u>
<u>Activity F7:</u> Fund semi-annual inter-agency consultation meetings in each country; the GEF Project Manager will attend CEP Steering Committee meetings. <u>Budget: \$200,000</u>

Outcome G: Enhanced and informed stakeholders and intersectoral participation in CEP management

Budget: \$ 506,000

<u>Activity G 1:</u> Enhanced participation of media through the development of a CEP media kit for local, national, and international journalists outlining mission objectives, projects, and programmes of the CEP. Develop database of media contacts; publication of CEP Bulletin. <u>Budget: \$60,000</u>
<u>Activity G 2:</u> Strengthening of Caspian-wide NGO community building on the work already undertaken in the region with a view to promote NGOs regional outlook. Encourage NGO representation on the CEP Steering Committee and in CEP activities. <u>Budget: \$70,000</u>
<u>Activity G 3:</u> Continued support of Caspian Coastal Concern Groups, established in the first project, and expand the network. Hold a conference of the Caspian Mayors and establish linkages with EU-Tacis Coastal Sustainable Development project through information exchange, joint activities, reciprocal representation/participation in meetings/activities. <u>Budget: \$226,000</u>
<u>Activity G 4:</u> Creation and implementation of environmental awareness training programme for policy makers. <u>Budget: \$80,000</u>
<u>Activity G 5:</u> Strengthened private sector participation in the CEP, perhaps through considering the establishment of a CEP private sector advisory body that could include the International Petroleum Industry Environmental Conservation Association (IPIECA), local oil and gas operators, shipping companies and fish processing companies.

Budget: \$50,000

Activity G 6: Creation and implementation of an evolving public participation plan that is updated frequently according to changing conditions and needs.

Budget: \$20,000

Objective III: to strengthen the regional and national environmental legal and policy frameworks including implementation and compliance capacities

Outcome H: Preparation of ancillary agreements to the Framework Convention and drafts of the major protocols targeting priority transboundary issues .

Budget: \$ 516,000

Activity H1: provide assistance that may be needed by some countries in the process leading to the ratification of the Framework Convention.

Budget: \$80,000

Activity H2: develop ancillary agreements to the Framework Convention, most likely in the form of protocols that will become integral parts of the Convention.

Budget: \$160,000

Activity H3: strengthen the capacity of the countries and their institutions to participate fully in the implementation of the Framework Convention, including the functioning of an active secretariat.

Budget: \$96,000

Activity H4: delivery workshops/seminars reviewing the salient features of selected international environmental agreements and programmes, including the legal obligations of the parties to these conventions and activities expected from countries participating in these programmes.

Budget: \$100,000

Activity H5: promote the regional practice of environmental impact assessment and the use of economic instruments contributing to improved environmental management.

Budget: \$80,000

Objective IV: To achieve tangible environmental improvements in priority areas by implementation of small scale investments supported by matched small grants programme

Outcome I Matched Small Grant Programme to fund small scale Investments

Budget: \$ 511,000

Activity I: establishment and training of the new MSGP team in Iran

<p><u>Budget: \$ 30,000</u></p>
<p><u>Activity 2:</u> development of application, evaluation, implementation and monitoring documents/procedures by the new MSGP team for approval by UNOPS, in consultation with the World Bank whenever required</p> <p><u>Budget: \$20,000</u></p>
<p><u>Activity 3:</u> grants awareness campaign conducted in the coastal region/applications sought for grants; applications for 1st grant round received</p> <p><u>Budget: \$ 10,000</u></p>
<p><u>Activity 4:</u> evaluation meeting conducted and grants disbursed</p> <p><u>Budget: \$ 376,000</u></p>
<p><u>Activity 5:</u> grant projects executed, monitored and reported on. Activities 3, 4 and 5 are repeated for the 2nd grant round</p> <p><u>Budget: \$ 75,000</u></p>