Sixteenth OSCE Economic and Environmental Forum - Part 1:
“Maritime and inland waterways co-operation in the OSCE area: Increasing security and protecting the environment”
Vienna, 28-29 January 2008

Session IV
Promoting regional and inter-regional co-operation on environmental security

Please find attached the presentation by Mr. Vladimir Mamaev, GEF Regional Technical Advisor, Europe and the CIS, UNDP Bratislava Regional Centre.
The 16th OSCE Economic and Environmental Forum
Part 1 / Vienna, 28 - 29 January 2008

Regional Governance for the Caspian Sea
Vladimir Mamaev, UNDP/GEF

Caspian Environment Programme (CEP)

- Environmental program initiated by Republic of Azerbaijan, I.R.Iran, Republic of Kazakhstan, Russian Federation & Turkmenistan
- Officially launched in 1998
- Total budget of about 13m $

Overall Goal of the Caspian Environment Programme (CEP)

“Environmentally sustainable development and management of the Caspian ecological resources in order to obtain the optimal long-term benefits for the human population of the region.”
Decline in Certain Commercial Fish Stocks, Including Sturgeon Strongly Transboundary.

- Catches of various fishes including sturgeon, Caspian roach, herring, salmon, mullet, and others have declined

Sturgeon Catch 1929-1998 (tons/year)

World caviar imports into the EU (European Union), Japan and USA, 1990-1995

Sturgeon catches in the Caspian Sea
**Threats to biodiversity: strongly transboundary**

- Concern over loss of biodiversity is high at species, genetic and habitat levels
- Biodiversity is low compared to other more open seas
- High rate of endemism
- The loss of the biodiversity is increasing due to industry, fisheries and other activities
- All Caspian Littoral States are signatories to the Biodiversity Convention
- The major factors: regulation of rivers, illegal fishing and overfishing, SWLF, pollution, introduced species and climate changes

**There were several events of seal mortality in the Caspian sea**

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**Degradation of coastal landscapes and damage to coastal habitats: strongly transboundary**

- Natural factors include water-level fluctuations (on both storm and decadal scales) and climate change
- Man-made factors include poor coastal zone planning and management, poor use of water resources, poor agricultural practices, urbanization, industrial activities, land pollution, and other factors
- About 40 percent of the Caspian coastal hinterland is arid; of this, about 69 percent is desertified
Overall Decline in Environmental Quality: Strongly Transboundary

- Decline in air, water and sediment quality, damage to ecosystems due to human activities, loss of aesthetic appeal, and related issues.

- The strong dependence of the economies of all five nations on oil and gas extraction from the sea or its coastal zone.

Pollution Hot Spots

<table>
<thead>
<tr>
<th>Country</th>
<th>Locations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Azerbaijan</td>
<td>Baku Bay/ Apsheron Peninsula, Sumgait, Aura River</td>
</tr>
<tr>
<td>Iran</td>
<td>Ust-Ilim River area, Bandar Anzali, Chatal-New Shah port, Gorgan Lagoon</td>
</tr>
<tr>
<td>Kazakhstan</td>
<td>Ural River Delta, Bureine/Fort Shevchenko, Aktau</td>
</tr>
<tr>
<td>Russian Federation</td>
<td>Astrakhan/ Volga River delta, Lopatn, Makhachkala, Ossetia</td>
</tr>
</tbody>
</table>

Decline in human health: weakly transboundary

- High levels of infant mortality
- Relative short life spans
- Incidence of certain types of diseases
- Diseases caused by pathogenic agents
- Diseases caused by environmental pollution (PAHs, Radioactive waste, ultraviolet light, etc.)

Damage to Coastal Infrastructure and Amenities: Not Transboundary

- Sea Water Level Fluctuation
- Wind-induced or storm-induced surges
- Lack of land and water use planning and management
- Desertification
- Seven million ha of land affected by Sea Level Rise (1978-1997)
- Damages to Azerbaijan infrastructures amounted billions of dollars
Changes in the Water level of the Caspian Sea from 1930-2000.
**Introduced Species**

**Strongly Transboundary**

- Separation of Caspian from Tethys, Black Sea and Arctic Sea has allowed endemism to proliferate
- Introduction of Mollusks due to chance in river hydrological regimes
- New flora and fauna introduced for economic purposes
- Accidental introduction by ballast waters e.g. *Mnemiopsis leidyi*

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### Introduced Species of the Caspian Sea (Aladin 2001, Mitrofanov 2000)

<table>
<thead>
<tr>
<th>Time</th>
<th>Species</th>
</tr>
</thead>
<tbody>
<tr>
<td>19th Century</td>
<td>Zostera nana, Cardium edule, Fabricia sabella, Atherina mochon, Syngnathus nigrolineatus, Pomatoschistus caucasicus, Bowerbankia imbricata, 19th Century</td>
</tr>
<tr>
<td>Beginning of 20th Century</td>
<td>Mnemiopsis leidyi, Planktivorous fishes, Kilka, Catches, Kilka fluctuations, Seals feed on Kilka and naturally they can be affected by Kilka fluctuations</td>
</tr>
<tr>
<td>Middle of 20th century</td>
<td>Penilia avirostris, Calanipeda aquaedulcis, Acartia clausi, Mnemiopsis leidyi, Aurelia aurita, Oncorhynchus keta, Ctenopharyngodon idella, Hypophtalmichthys molitrix, salmon, Atlantic salmon, Aristichthys nobilis, Oncorhynhus gorbusha, O. kisutch, Middle of 20th century</td>
</tr>
<tr>
<td>End of 20th century</td>
<td>Rhizosolenia calcar-avis, Mytilaster lineatus, Leander squilla, L. adspersus, Mugil auratus, M. saliens, Pleuronectes flesus luscus, Scomber scomber, Nereis diversicolor, Abra ovata, End of 20th century</td>
</tr>
<tr>
<td>Beginning of 21st century</td>
<td>Rhizosolenia calcar-avis, Mytilaster lineatus, Leander squilla, L. adspersus, Mugil auratus, M. saliens, Pleuronectes flesus luscus, Scomber scomber, Nereis diversicolor, Abra ovata, Beginning of 21st century</td>
</tr>
</tbody>
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### Presence of Mnemiopsis leidyi in the Caspian Sea:

- It could reproduce in great numbers
- Feeding on zooplanktons, it could win competition over planktivorous fishes such as Kilka
- The feeding competition with kilka has resulted in decline of Kilka Catches
- It has adverse impact on biodiversity as well as the Fisheries Economic of the region
- Seals feed on Kilka and naturally they can be affected by Kilka fluctuations
Contamination from Offshore Oil and Gas Activities: strongly Transboundary

- About 150 years of oil and gas exploration and production
- Oil and gas are primary driver for the economies of the region
- Recoverable reserve amounts to 100-200 billion barrels of oil
- Caspian Sea is a closed basin, any spills if not naturally degraded or response will not flush from the system
- Old practices and procedures of oil extraction during 1970s and 1980s
- Downstream activities e.g. oil refining transport and related industry, flooding of former oil wells and natural seepage
Common Root Causes for all the Perceived Environmental Issues

- Weak Economy
- Inadequate Public Awareness/Participation
- Population Growth/Migration
- No/Inadequate EIA
- Cost of Appropriate Technology
- No ICAM & P
- No Integration of Land-use & Sea-use Planning
- Weak Enforcement and Compliance

Common Root Causes for all the Perceived Environmental Issues (…Cont’d)

- Natural Resources Demand
- Inadequate Capital Investment
- Lack of Incentives/Disincentives Measures in Environmental Management
- Weak Administrative Framework
- Inadequate Participation in the Regional & International Conventions/Agreements
- Lack of Regional Convention

Threats from Invasive Species
Potential Damage from Oil and Gas Activities
Damage to Coastal Infrastructure and Amenities
Decline in Human Health
Decline in Overall Environmental quality
Decline in Biodiversity
Degradation of Coastal Landscape
Decline in Certain Fisheries

Stakeholder Group Prioritization of MPPI (High Priority, Medium Priority, Low Priority)

- Fishermen
- Public Healthcare Providers
- NGOs
- Scientific Community
- Industry
- Multinational Corporations
- Regional and Municipal Governments
- Energy Ministries
- Agriculture and Fishing Ministries
- Environmental Ministries
Environmental Quality Objectives (EQOs)

- EQOI - Sustainable uses of the natural resources of the Caspian Sea
- EQOII - Balanced Caspian Environment including biodiversity conservation
- EQOIII - High quality of Caspian Sea, surface, and ground waters
- EQOIV - Sustainable multiple use of the Caspian Coastal Environment
- EQOV - Strengthened civil society participation for purposes of environmentally sustainable development

Caspian Sea Convention Process

- In June 1995, an international meeting in Tehran confirmed the five countries’ willingness to cooperate in environmental matters, regardless of the legal status of the Caspian Sea.
- In May, 1998, at Ramsar, the first Steering Committee launched the Caspian Environment Programme, with assistance from the EU/Tacis, UN agencies, and the Global Environmental Facility.
- One of the main Outcome of the CEP was development of a Framework Convention for the Protection of the Marine Environment of the Caspian Sea.
- During the ensuing years, nine working meetings were held to discuss and amend the text of the Framework Convention, and the Framework Convention for the Protection of the Marine Environment of the Caspian Sea was signed in November, 2001.
- Tehran Convention entered into force on 12th August 2006, announced as the “Caspian Day.”