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Conference Services

**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 \$

- GEF
- UNDP
- EU/Tacis
- World Bank
- UNEP



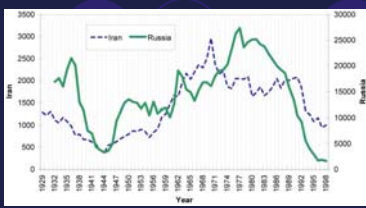
Overall Goal of the Caspian Environment Programme(CEP)



“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”.

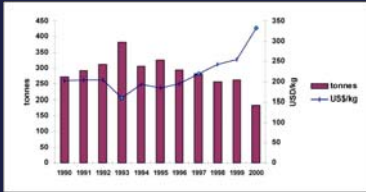
Decline in Certain Commercial Fish Stocks, Including Sturgeon Strongly Transboundary.

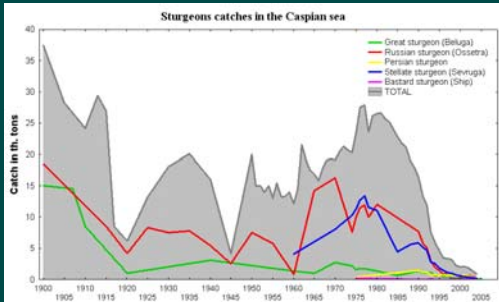
- Catches of various fishes including sturgeon, Caspian roach, herring, salmon, mullet, and others have declined



Sturgeon Catch 1929-1998 (tons/year)

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





**Threats to biodiversity:
strongly transboundary**

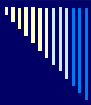
- Concern over loss of biodiversity is high at species, genetic and habitat levels
- Biodiversity is low compared to other more open seas
- High rate of endemism
- The loss of the biodiversity is increasing due to industry, fisheries and other activities
- All Caspian Littoral States are signatories 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



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

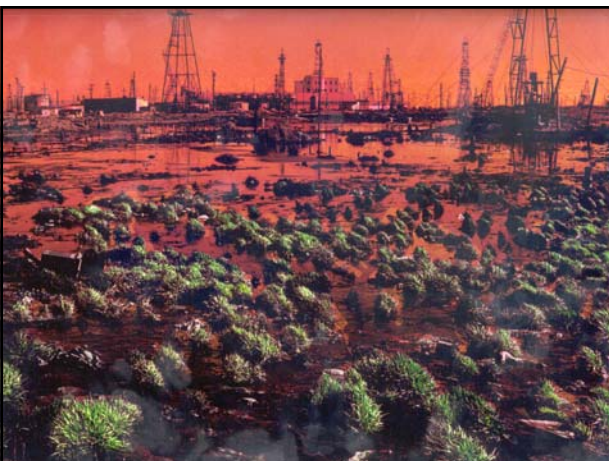
- Natural factors include water-level fluctuations (on both storm and decadal scales) and climate change
- Man-made factors include poor coastal zone planning and management, poor use of water resources, poor agricultural practices, urbanization, industrial activities, land pollution, and other factors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



Overall Decline in Environmental Quality: Strongly Transboundary

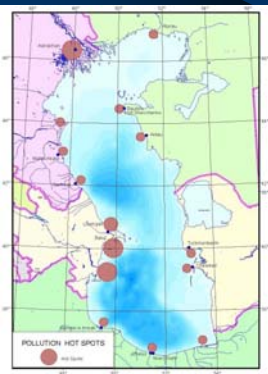
- Decline in air, water and sediment quality, damage to ecosystems due to human activities, loss of aesthetic appeal, and related issues.
- The strong dependence of the economies of all five nation on oil and gas extraction from the sea or its coastal zone.
- Widespread die-offs of seals in 2000, and 2006, a kilka mortality in 2001, and other similar natural disasters





Pollution Hot Spots

| Country | |
|--------------------|--|
| Azerbaijan | <ul style="list-style-type: none"> •Baku Bay/ Apsheron Peninsula •Sumgait •Kura River |
| Iran | <ul style="list-style-type: none"> •Sefid-Rood River area/ Bandar Anzali •Chalus/Now Shahr ports •Gorgan Lagoon |
| Kazakhstan | <ul style="list-style-type: none"> •Ural River Delta •Bautino/Fort Shevchenko •Aktau |
| Russian Federation | <ul style="list-style-type: none"> •Astrakhan/ Volga River delta •Lopatın •Makhachkala •Derbent |



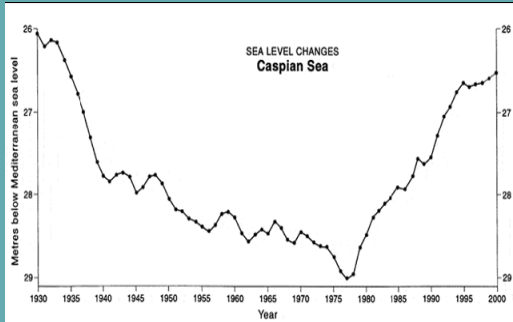
Decline in human health: weakly transboundary

- 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*

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

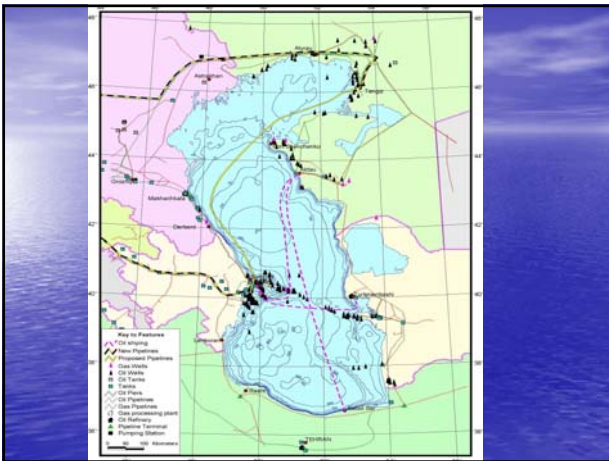
| Time | Species |
|---|---|
| 19 th Century | <i>Zostera nana</i> (eelgrass), <i>Cardium edule</i> , <i>Fabricia sabella</i> (polycheta worm), <i>Atherina mochon pontica</i> (sand smelt), <i>Syngnathus nigrolineatus</i> (pipe fish), <i>Pomatoschistus caucasicus</i> (transcaucasian goby), <i>Bowerbankia imbricata</i> |
| Beginning of 20 th Century | <i>Rhizosolenia calcar-avis</i> , <i>Mytilaster lineatus</i> (mussel), <i>Leander squilla</i> (euro-african shrimp), <i>L. adpersus</i> (Paleocean adpersus – European shrimp), <i>Magil auratus</i> (golden mullet), <i>M. saliens</i> (gray mullet), <i>Pleuronectes flexus luscus</i> (now <i>Platichthys flexus luscus</i> – black sea flounder), <i>Scomber scomber</i> (mackerel), <i>Nereis diversicolor</i> (nereides), <i>Abra ovata</i> (bi-valves) |
| Middle of 20 th century (after building Volga-Don canal) | <i>Pleopis polyphemoides</i> (small crustacea – Cladocera), <i>Balanus improvisus</i> (shellback), <i>B. Eburneus</i> (shellback), <i>Membranipora erusulenta</i> , <i>Ceramium diaphanum</i> , <i>C. tenuissimum</i> , <i>Ectocarpus confervoides</i> , <i>Polysiphonia variegata</i> , <i>Blattfordia virginica</i> (jelly fish), <i>Rhithropanopeus harrisi</i> (crab), <i>Engraulis encrasicolus</i> (European anchovy), <i>Anguilla anguilla</i> (European eel), <i>Gambusia affinis</i> (mosquito fish and top minnow), <i>Oncorhynchus keta</i> (chum salmon and dog salmon) |
| End of 20 th century | <i>Penilia avirostris</i> , <i>Calanipeda aquaeduleis</i> (small crustacea), <i>Acartia clausi</i> (small crustacea), <i>Mnemiopsis leidyi</i> (jelly fish), <i>Aurelia aurita</i> (jelly fish), <i>Oncorhynchus keta</i> (chum salmon), <i>Ctenopharyngodon idella</i> (grass carp), <i>Hypophthalmichthys molitrix</i> (silver carp), <i>salmo salar</i> (Atlantic salmon), <i>Aristichthys nobilis</i> (spotted silver carp and bighead), <i>Oncorhynchus gorbuscha</i> (pink humpback salmon), <i>O. kisutch</i> (coho silver salmon) |
| Invasaders in 21 st century | <i>Pseudoevadne tergistina</i> |

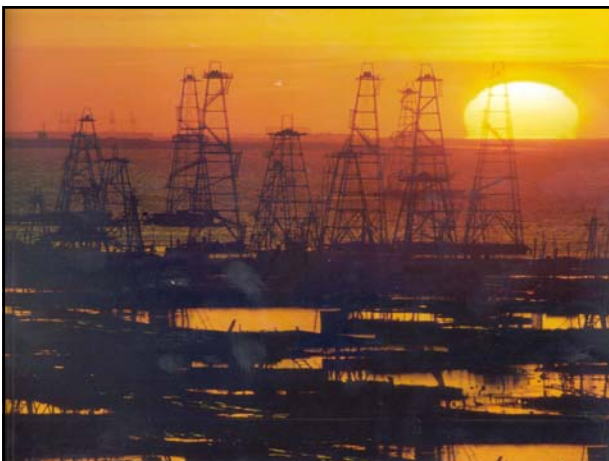
Presence of *Mnemiopsis leidyi* in the Caspian Sea:

- It could reproduce in great numbers
- Feeding on zooplanktons, it could win competition over planktivorous fishes such as Kilka
- It's 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

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

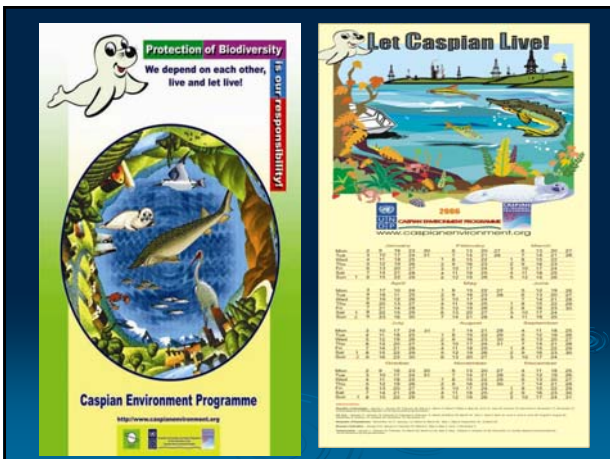
| | Decline in Certain Fisheries | Degradation Of Coastal Landscape | Decline in Biodiversity | Decline in Overall Environmental quality | Decline in Human Health | Damage to Coastal Infrastructure And Amenities | Potential Damage from Oil and Gas Activities | Threats from Invasive Species |
|------------------------------------|------------------------------|----------------------------------|-------------------------|--|-------------------------|--|--|-------------------------------|
| Environmental Ministries | High | Low | High | High | Low | Low | Low | High |
| Agriculture and Fishing Ministries | High | High | High | High | High | High | Low | Low |
| Energy Ministries | High | High | Low | Low | Low | High | Low | High |
| Regional and Municipal Governments | High | High | High | High | High | Low | Low | Low |
| Multinational Corporations | High | High | Low | Low | High | Low | Low | Low |
| Industry | High | Low | Low | Low | High | Low | Low | High |
| Scientific Community | High | Low | High | High | High | High | High | Low |
| NGOs | High | Low | High | High | Low | Low | Low | High |
| Public Healthcare Providers | Low | High | Low | High | High | High | Low | Low |
| Fishermen | High | High | High | High | High | High | High | Low |

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 on the Protection of the Marine Environment of the Caspian Sea (Tehran Convention), which was signed in November, 2003.
- Tehran Convention entered into force on 12th August 2006, announced as the "Caspian Day".



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