Workshop on Strategic Fisheries Research Issues and their Impact on Management, Conservation and Development of Caspian Fisheries

EU Project on Sustainable Management of Caspian Fisheries in Azerbaijan Kazakhstan, Russia and Turkmenistan, part of the EU/TACIS/ Caspian Environment Programme
Workshop, Baku, Azerbaijan, 19th -21st October, 2004

During the Kick-Off visits carried out recently in Brussels, Azerbaijan, Iran, Kazakhstan and Turkmenistan the Eu Project Manager, various Caspian Ministers and Ministries of the Environment Fisheries Committees, Fisheries and other Research Institutes, the CEP (Capsian Environmental Programme) SAPICs, NCUs, and the CEP's Project Coordination Unit in Teheran, EU, TACIS and other project offices in the Caspian area, were visited and the main fisheries research and management issues facing the Caspian countries were discussed, together with the need for a first Workshop covering key Caspian fisheery issues. This Workshop is the immediate response to these discussions and provides for the description and review of past achievements of the strategically important management issues identified in discussions with key Caspian stakeholders. The Workshop will facilitate review and identification by Caspian managers and scientists of the project's research and institutional targets, and will encourage a regional view of scientific and managerial issues that are often addressed by national research programmes and decision makers, often with insufficient discussion of the regional aspects of these issues. The workshop will provide:

a) four scientists from each participating Caspian country with the opportunity to review their own country's work and achievements;
b) two managers covering environmental and fishery issues;
c) NGOs, FAO, CITES , CEP and other players will also be invited.

The Workshop will be encouraged to identify recommendations on strategic issues that can be informed by the technical discussions and the agreement and consensus of all those present. The Workshop will include:

i) papers covering important issues in Azerbaijan, Iran, Kazakhstan, Russia and Turkmenistan
ii) papers on key methodologies and ideas that may not yet have been fully applied in the Caspian Region
iii) round table discussions of scientists and managers on technical, strategically important management issues;
iv) a session to identify strategic technical output and recommendations about any implications, for asubmission to the appropriate authorities in each country through the CEP
v) A session (requested and chaired by the CEP Coordinator (to discuss the implementation of the CEP's Fishery Regional Advisory Group). Dr. Hamid Ghafarzadeh will be writing separately to all participating organisations to cover this issue and will convene this session. This project is supporting the CEP by providing the venue

Sessions will cover the following issues:

A. Restocking of sturgeon and salmon:

a) In Azerbaijan available information suggests that an average of around 90% of sturgeon and 100% of slamon taken by all gear combined, whether trough legal or illegal fishing, were originally spawned by hatcheries. Thus around 0.3-0.4% of sturgeon fingerlings released by hatcheries reached sexual maturity, and proivided about 90% of all sturgeon landings. In other countries this exact information was not yet available but

scientists felt that data already available could be re-analysed to shed light on this question. A critical review of data and previous analyses would allow a scientific consensus to emerge which could be critically important for informing CITES and FAO: if it is true that all/most or at least a veery important amount of the catch originates from hatcheries, any attempt to protect sturgeon stocks from oveerfishing (illegal or otherwise) by closing international markets to Caspian Caviar, will necessarily risk destruction of the sturgeon stocks since the conomic impetus for running old and for creating new hatcheries will be destroyed. Excessive fishing would be stopped, but only at the collateral expense of destryoing most or all recruitment.

b) A second issue is why is restocking being done at current levels? If restopcking supports a large proportion of the fishery and is so beneficial, then could landings be increased by increasing the restocking level?

c) A third issue involves Total Allowable Catches and national sturgeon (and other) quotas. The amount of fingerlinds released into the sea is one of the criteria for determining national sturgeon quotas, regardless of ist ecological effectiveness in increasing recruitment, or of ist economic importance in supporting the landings and fishermen revenues.

d) The whole question of the bio-economic modeling of the sturgeon and slamon fisheries needs to be addressed so as to determine the overall cost and beneift of releasing stugeon and salmon; e.g. the profil to the fishery (US $ increase in revenue from landings/sturgeon fingerling released) needs to be determined for the different countries.

B Illegal Fishing:

a) **Local aspects**: in some countries there was disagreement about this issue with some fishery players being convinced that illegal fishing is rare to non-existent; while other sources of information contrradicted this idea. One estimate suggested that for every t of sturgeon caught legally, 0.5-1.0 t more were caught illegally. This issue may be flarified by:
   i) summarizing available information in each contry on the MSC process over the last few years, e.g. numbers and locality of arrests, fines, confiscations and other penalities for illegal fishing,
   ii) summarizing available descriptive observations.

b) International aspects: data on caviar exports from the Caspian are very difficult to get as much of the trade is often illegal. The project will carry out a survey of caviar imports to the EU, the USA, Japan and other important caviar importers priot to and since the collapse of the former Soviet Union. Results may be combined with biological data on caviar production by sturgeon to back calculate the sturgeon landings needed to produce the observed black caviar imports to rich countries. Resulting estimates of sturgeon production can be compared with official estimates of sturgeon landings to obtain estimates of the impartance of illegal fishing.

C. **Caspian regional tagging studies:** important sturgeon tagging studies were carried out under Russian initiative in the Soviet Union, but the much higher fishing pressures in the Caspian experienced since then may have altered migratory patterns. In Iran around 300,000 electronically tagged sturgeon fingerlings have been released annually over the last few years, but equipment for detecting and reading the electronic tags is not available outside Iran so that no information can be obtained from this study about migratory patterns outside of Iranian waters. It is also necessary to carry out tagging work so as to verify how many tagged sturgeon actually enter the fishery and the adult populations. A review of currently available information about Iranian and other older and current tagging work will provide insight into

how illegal fishing impacts various fisheries, and how successful the restocking programme really is.

D. Mnemiopsis (Black Jellyfish) and ecological modeling: Black Jellyfish is reliably identified as a cause of reduced anchovy landings in the Black Sea. Some Caspian scientists have suggested by analogy that Caspian kilka landings have been endangered by Black Jellyfish, but a critical review of this issue is needed to determine whether falling kilka landings are indeed caused by Black Jellyfish, or whether some other cause is as likely, e.g. climatic and other key environmental changes of the type shown elsewhere to impact fisheries supported by short-lived species (e.g. shrimp in the Persian Gulf, sardines and anchovies in upwelling areas, e.g. the Bali Straits of Indonesia). Caspian scientists are also concerned about the reduction of fodder fish and plankton that support fingerling and older sturgeon. All of these questions may be addressed, especially by means of ecological modeling using the well known ECOPATH, ECOSIM, ECOSPACE methodologies eleaborated at FAO, ICLARM and the University of Vancouver and other similar modeling systems. The project will present a paper covering modeling the role of Black Jellyfish.

E. Population/fishery assesmemts, TAC modeling and determining national quotas: various modeling systems are used to assess fih stocks and to provide estimates of TAC. Methods used in the Caspian are often based on the Russian models developed in KaspNIKH and Moscow prior to and after the breakup of the Soviet Union. An alternative method is used in Iran. These models and methods have been applied in Kazakhstan and Azerbaijan for some time, but most analyses used to fix TACs and quotas need to be reviewed so that all of the assumptions and their consequences are clear and may be studied, refined and improved in the light of the latest regional and international research. This review will also inform the current ongoing discussion about the scientific criteria needed by managers in preparing and justifying national quotas. The project will provide a paper covering various aspects of the issues related to modeling. TACs and quota estimation and allocation, so that different methods may be evaluated and compared with those currently being used and discussed in the Caspian.

F. Sturgeon Escapement from trawl nets: trawl surveys are and have been carried out routinely as an important input into estimating sturgeon biomass and TAC. This method requires accurate information about the escapement of sturgeon form the trawl nets. Because this is usually a veery difficult parameter to evaluate, arbitrary assumptions may be and often are made, and these may lead to questionable biomass estimates that are sometimes misleading. Since the sturgeon stocks are seriously threatened by overfishing, both legal and illegal, it is important to evaluate escapement objectively. The project will present a paper on how this may be done cost effectively using cameras placed on nets so that direct observations of sturggeon escaping during trawling operations may be made.

G. Sturgeon Spawning Grounds: these have been severely reduced owing to dam construction and other important civil works. It is necessary to abtain estimates of historic and current spawning grounds so as to interpret the availabile time series correctly (e.g. annual sturgeon and salmon catches, e.g. from as far back as possible to the present) so that the effects of major civil works on landings and revenues from these fisheries may be evaluated.

H. Any other issues that Caspian Countries, NFPs, SAPICS, and Research Institutes may with to raise: