

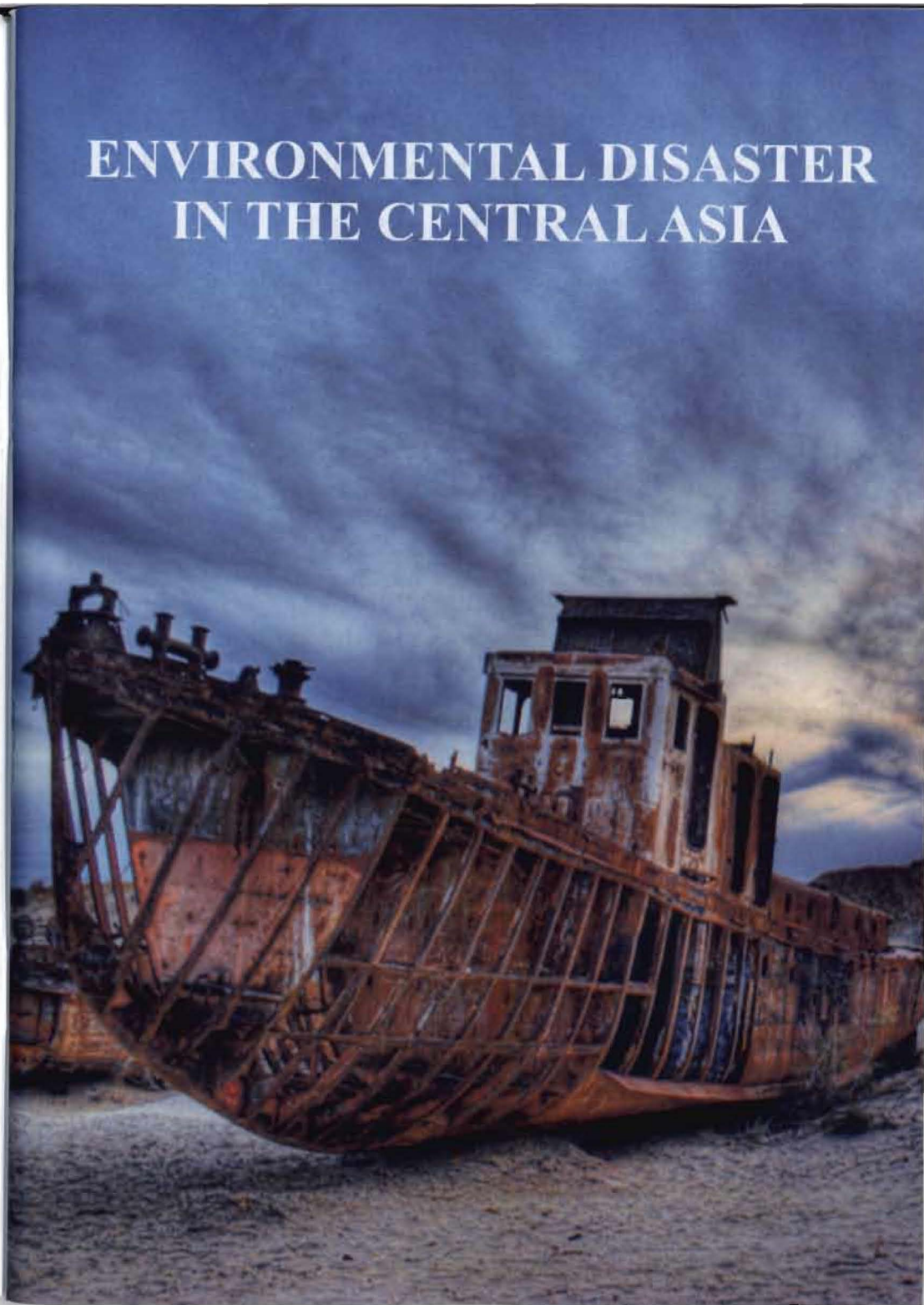
Ecological Movement of Uzbekistan



ENVIRONMENTAL DISASTER IN THE CENTRAL ASIA

Tashkent 2010

ENVIRONMENTAL DISASTER
IN THE CENTRAL ASIA

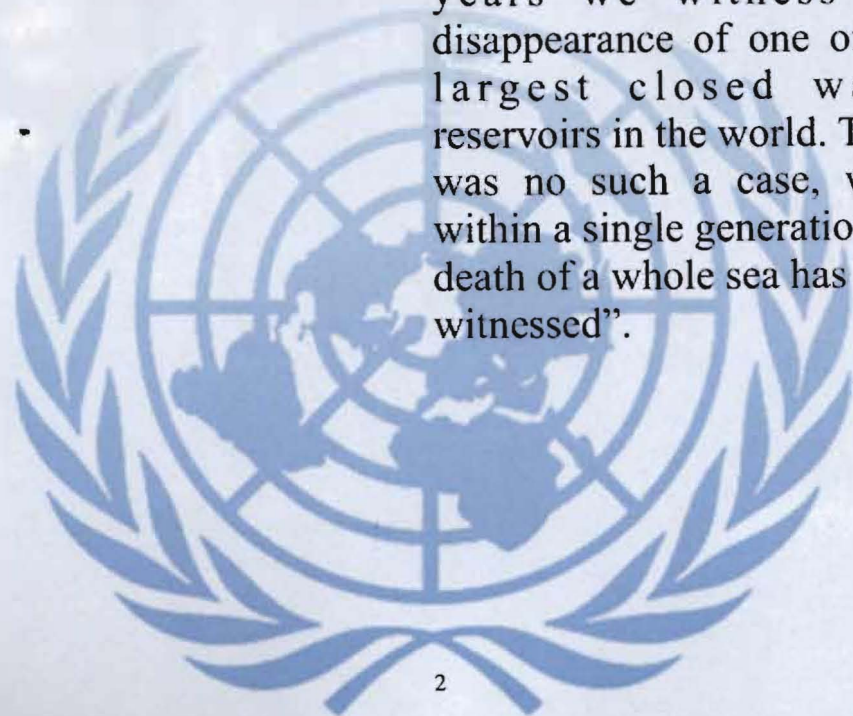


From the Address of the President of Uzbekistan at the UN General Assembly session



“The Aral Sea Disaster, which affected millions of people, living in the basin of the sea is one of the biggest ecological and humanitarian catastrophes in the history of humankind”.

“In the course of several years we witness the disappearance of one of the largest closed water reservoirs in the world. There was no such a case, when within a single generation the death of a whole sea has been witnessed”.



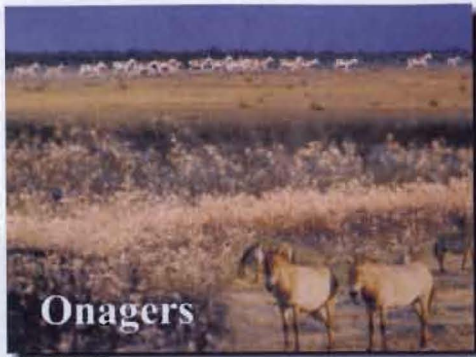
Aral Sea yesterday 1960



- 1960 - the Aral Sea territory was 68,9 thousand square km
- The water volume was 1083 cubic km,
- Sources – Amudarya and Syrdarya rivers.

Ichthyofauna:

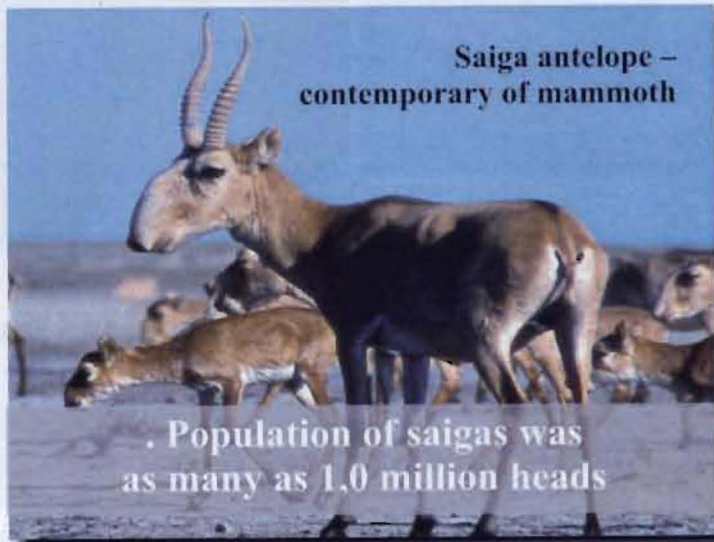
- inhabited by 20 fish species.
- in the lakes of Aral Sea Area-inhabited by 38 fish species.
- the annual fish catch estimates: 30 thousand tons



Onagers



The bukhara deer



Saiga antelope –
contemporary of mammoth

. Population of saigas was
as many as 1,0 million heads

Aral Sea area was inhabited by hoofed animals, such as Bukhara deer, goitered gazelle (djeyran), onager (kulan), Ustyurt argali, registered in the Red Book of Uzbekistan.

Aral Sea today

- The volume reduced for more then 13 times.
- The area reduced for more then 7 times.
- The water level decreased to 26 meters.
- Coastline receded to hundreds of kilometers.
- In the western parts salinity level reached 120 grams/liter, in the eastern parts 280 grams/liter.

From 1964 the Aral Sea surface has shrank more then 13 times



1964
Total area 64800 km²



2001
Total area 21100 km²



2009
Total area 8730 km²

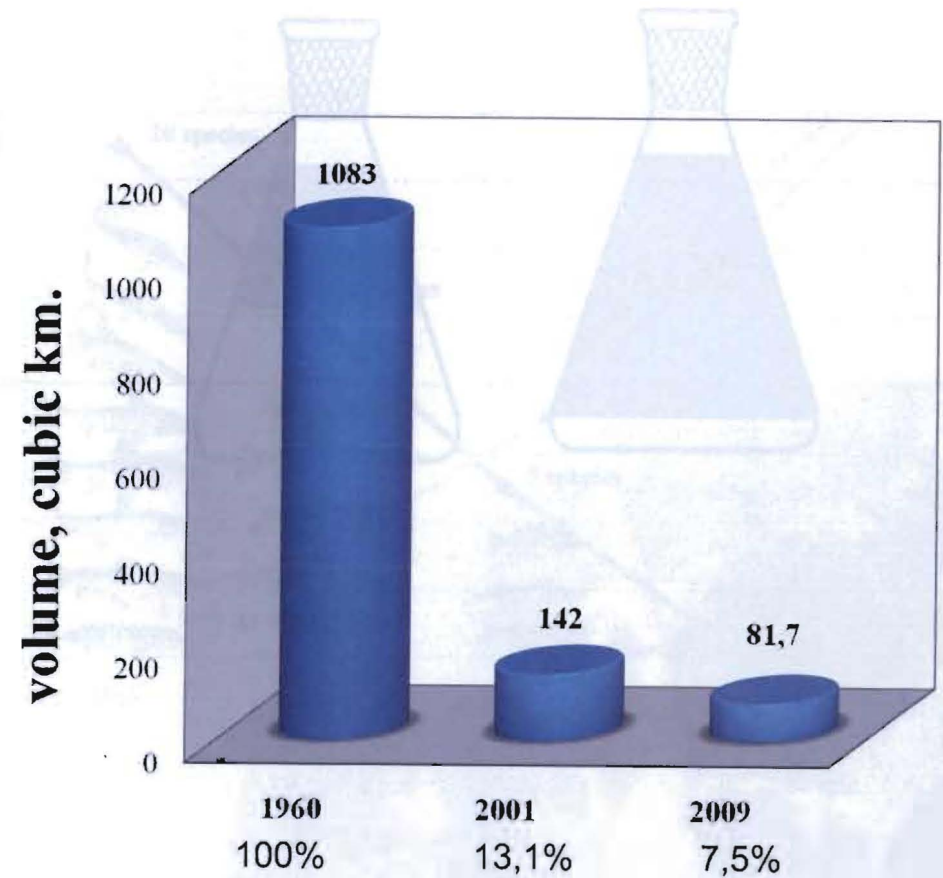
100%

32,5%

13,5 %

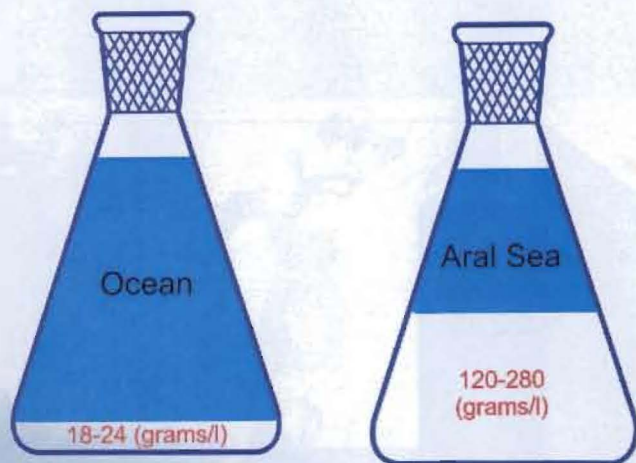
In % of 1964

The dynamics of Aral Sea Change in years 1960-2009

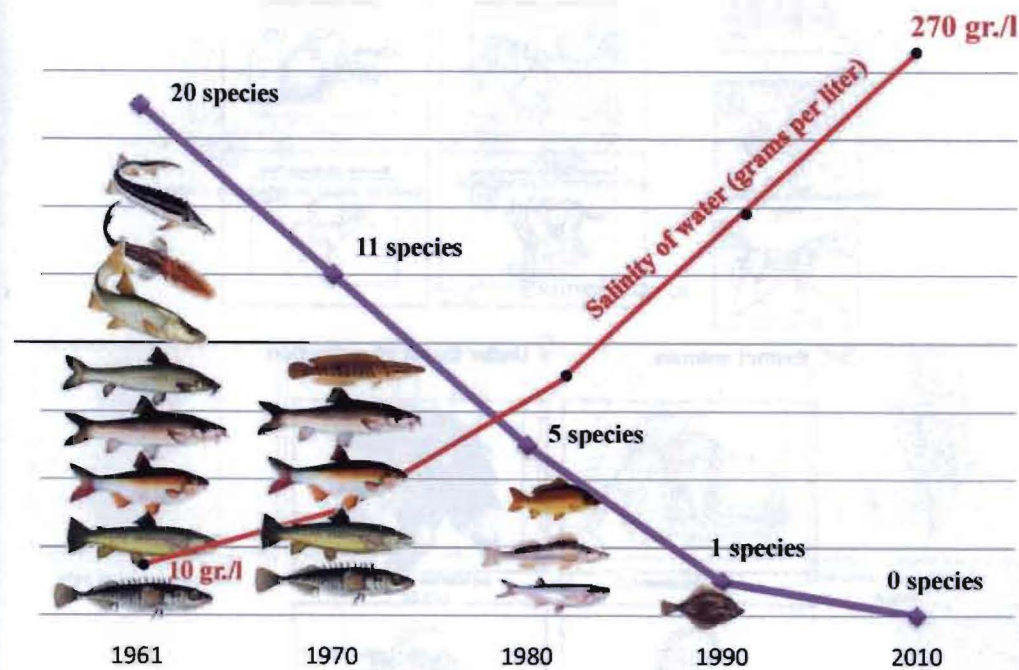


In % of 1964

High level of mineralization makes the Sea and its outskirts impossible to exist for living organisms.



Fish species that inhabited the Aral Sea





Asiatic Cheetah



Caspian Tiger



Transcaucasian (Ustyurt) Uril



Kulan



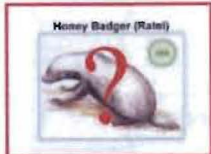
Brandt's Hedgehog
Hemiechinus hypomelas



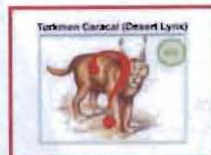
Goltz's Gazelle



Thick-tailed Pygmy Jerboa



Honey Badger (Ratel)



Turkmen Caracal (Desert Lynx)



Bactrian (Bukhara) Deer

X Extinct animals

? Under threat of extinction



Great white pelican



Ring-tailed Fish (Pallas) Eagle



Dalmatian pelican



Marbled Teal



Squacco Pond Heron



Desert Monitor

? Under threat of extinction



Lepidium Subcordatum Botch. et Vved



Malocarpus crithmifolius



Tulipa Sogdiana Bunge

X Extinct plants



Stipa aktaunesis Roshev



Salsola chiwensis
M.Pop



Tulipa buhseana



Euphorbia sclerociathium
Korov

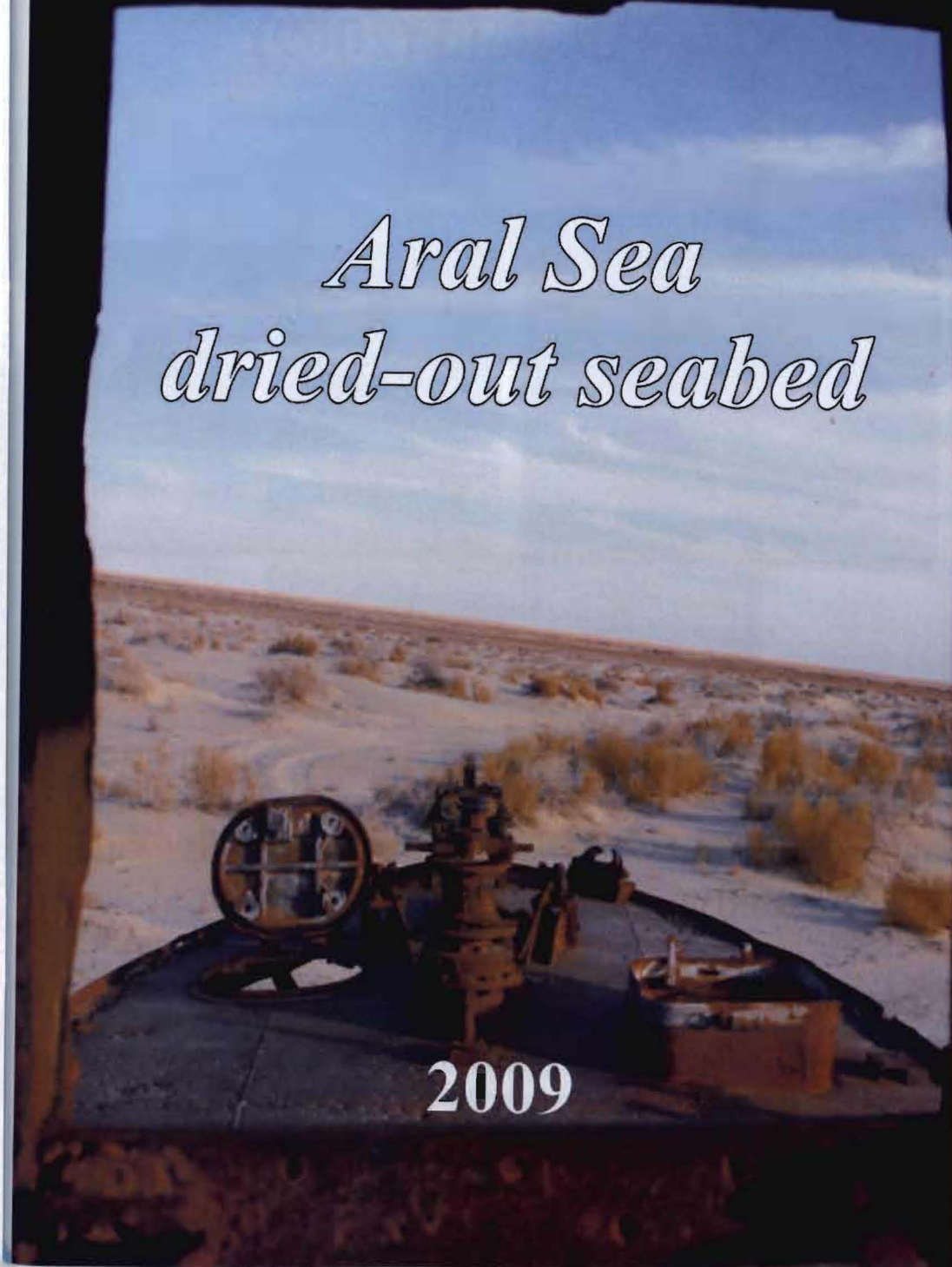
? Under threat of extinction

Impact on the gene pool



Congenital anomalies

Aral Sea dried-out seabed



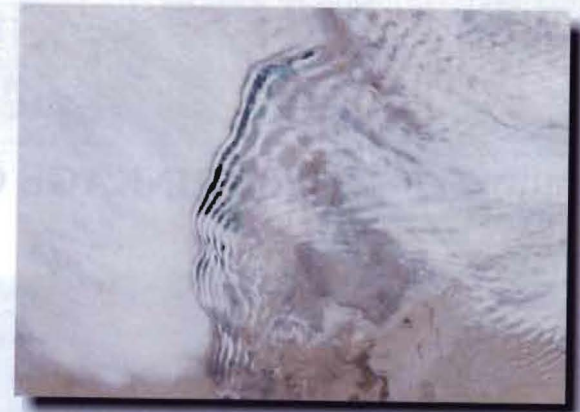
2009

New salt field (2009)



On the dried parts of a seabed massive territories of white salty fields manifested, covered with sand and turned into the new Aralkum Desert with estimated territory around 5,0 million hectares.

Sandy and salty storms rage in this area, spreading millions tons of salt, dust and sand to hundred kilometers away.



**Plumes of salty dust reach as far as 400 km and more;
The range of dusty salty storms is as far as 300 km.**

Annually around 100 millions of tons of salty dust go up to the atmosphere. From early 1980s such storms amounted to as many as 90 days a year.

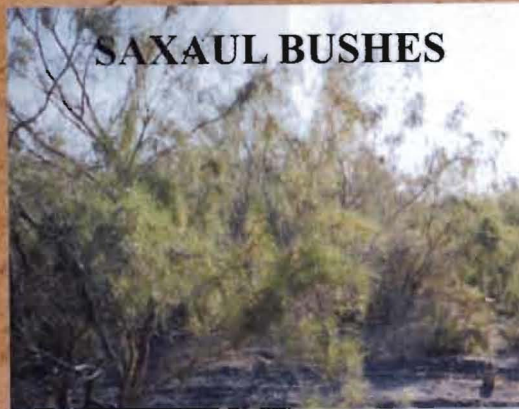
Desertification



SHRINKAGE OF LAKES



SAXAUL BUSHES



Hundreds of lakes disappeared in the delta of Amudarya

Almost 90 % of tugay (riparian) forests disappeared in the area of 800 th. ha.

Climate Change Effects

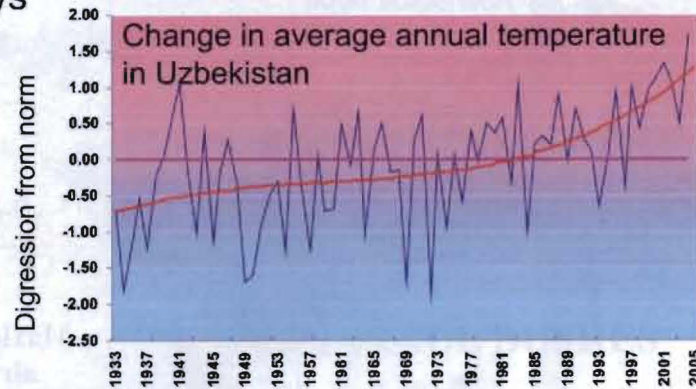
Maximum temperature has increased



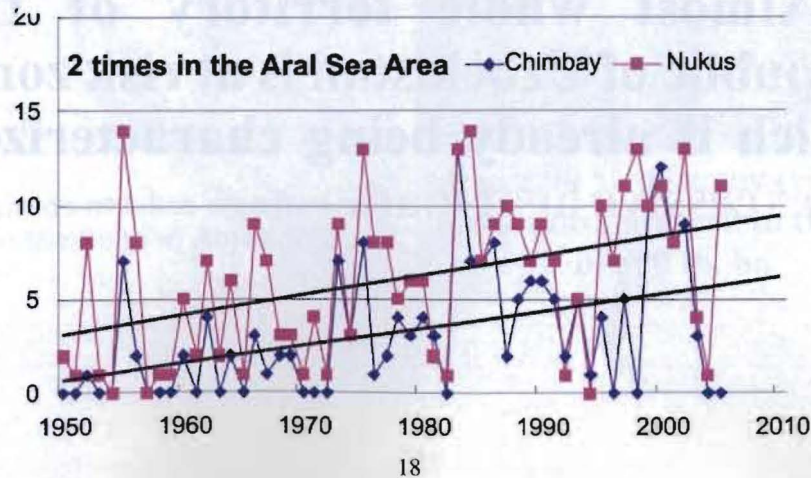
Almost whole territory of the Republic of Uzbekistan is at risk zone, which is already being characterized by **excessive heat load**.

Climat Change

- Statistically significant rise of air temperature throughout Uzbekistan
- Increasing number of hot days
- Decreasing number of low temperature days



Changing number of days with air temperature over 40°C in the Aral Sea Area



International Cooperation for Aral Sea and near Sea area saving



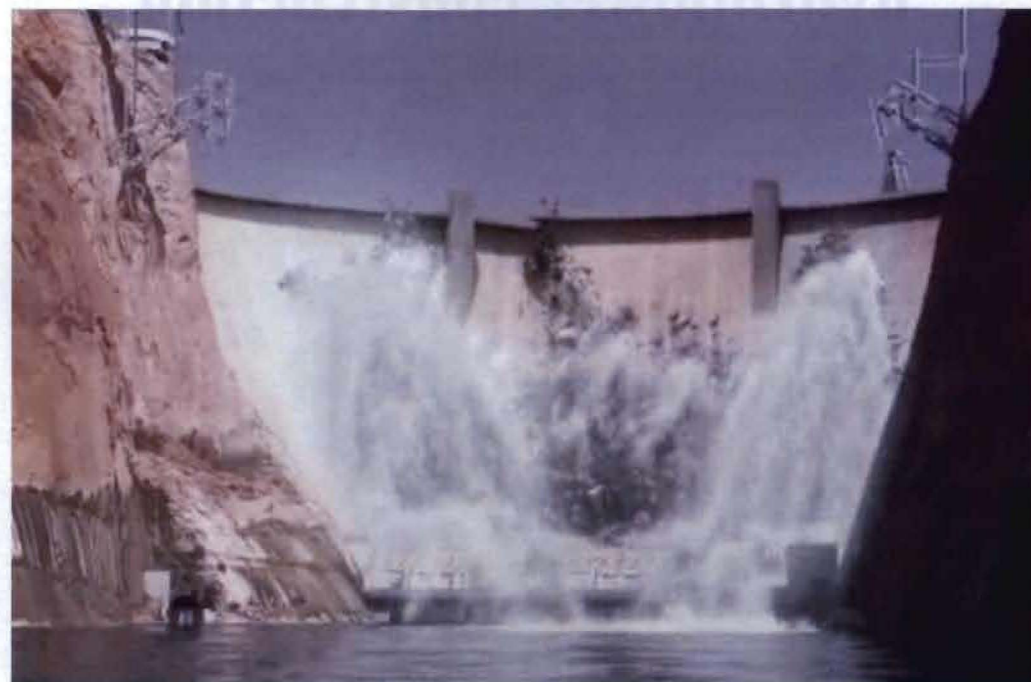
On April 2009 in frames of the IFAS member countries leaders meeting the President I.A. Karimov suggested the concept of program for further activities of IFAS member countries for 2011-2015 and more strong involvement of world community for solving the problem of Aral Sea basin.

It is necessary to form a new vision and understanding of Aral Crisis for international communities and work out specific ways for improvement of situation, which would be the basis for the future fruitful cooperation to protect the gene pool of population, plants and animals of Central Asian region.

I. Karimov

Water Supply Projects supported by international financial institutions :

«Clean Water, Sanitation and Health» - participated by World Bank;
«Improvement of the Water Supply Systems in the Republic of Karakalpakstan and Khorezm Province» - participated by Asian Bank for Development;
"Installation of water treatment equipment for the supply of drinking water, the Mo'ynoq" participated by French Government;
«Water supply improvement in the cities of Nukus and Urgench» participated by Kuwait fond of Arab Economic Development;
Project - «Conservation of the Tugay (Riparian) Forests and Improving the System of Protected Territories on the Amudarya delta» assisted by UNDP;
The Project demonstrates the practical use of solar energy in individual rural areas of Karakalpakstan, supported by UNDP;
Project: «Project Development and Creation of Artificially Watering Landscape Ecosystems in the deltas of rivers and on the seabed of the Aral Sea»;
Project: "Creation of forest rotection belts in the dried seabed of Aral Sea" Supported by German Society for Technical Assistance



The new threat of fragile ecologic balance destruction of Central Asia, is the building of new hydroelectric power stations on trans-border rivers.

The draft of Rogun hydropower construction



The decision on building of giant Rogun Hydropower Station was made in frames of XXIV meeting of Communist Party (1974).

The project is being realized based on out of date project decisions , which were made about 30-40 years ago.

- The height of dam: is about 350 meters (the highest in the world);
- Is located In the active seismicity (up to 9 on Richter scale), landslide and mudflow processes zone;
- The reservoir capacity: 13,3 км³;
- Fill up period : up to 8 years

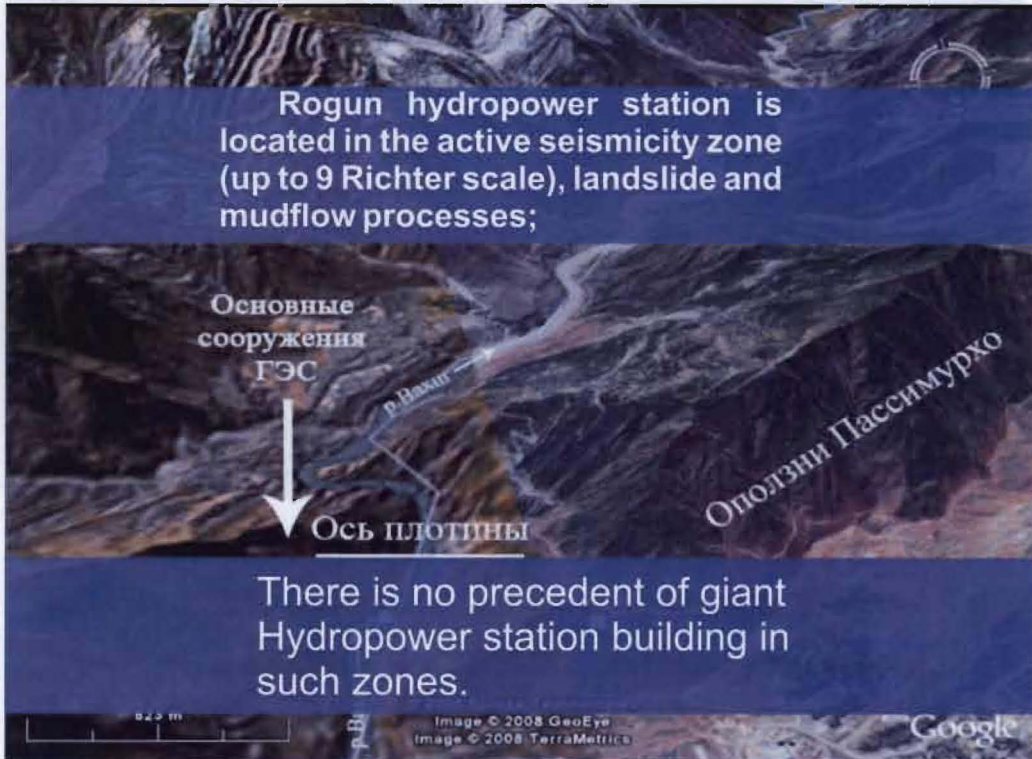
Projection of giant Hydropower station was made under the same model, was carried out 40 years ago under the imperfect standards of the former USSR which has led to Man-caused accidents on the Chernobyl Hydropower station and Sajano-Shushensk Hydropower station The project of Rogun Hydropower station which is not providing passage of ecological examination and a mark of influence on environment became bright acknowledgement of adherence to out-of-date technologies.

The construction of Rogun Hydropower Station has:

- Man-caused accidents, potential destructions of constructions and destruction of hundreds thousand people in a flooding zone;
- Irreversible consequences for ecology;
- Sharp deterioration of living conditions of the population in the lower reaches countries;
- Economically pointless.

Man-caused risks of Rogun Hydropower station construction

Rogun hydropower station is located in the active seismicity zone (up to 9 Richter scale), landslide and mudflow processes;



There is no precedent of giant Hydropower station building in such zones.

Man-caused risks of Rogun Hydropower station construction



Since hydroelectric station is being constructed in the, which is related to the category of seismically dangerous zone, the construction of a massive dam in a seismically active zone could trigger a new earthquake.

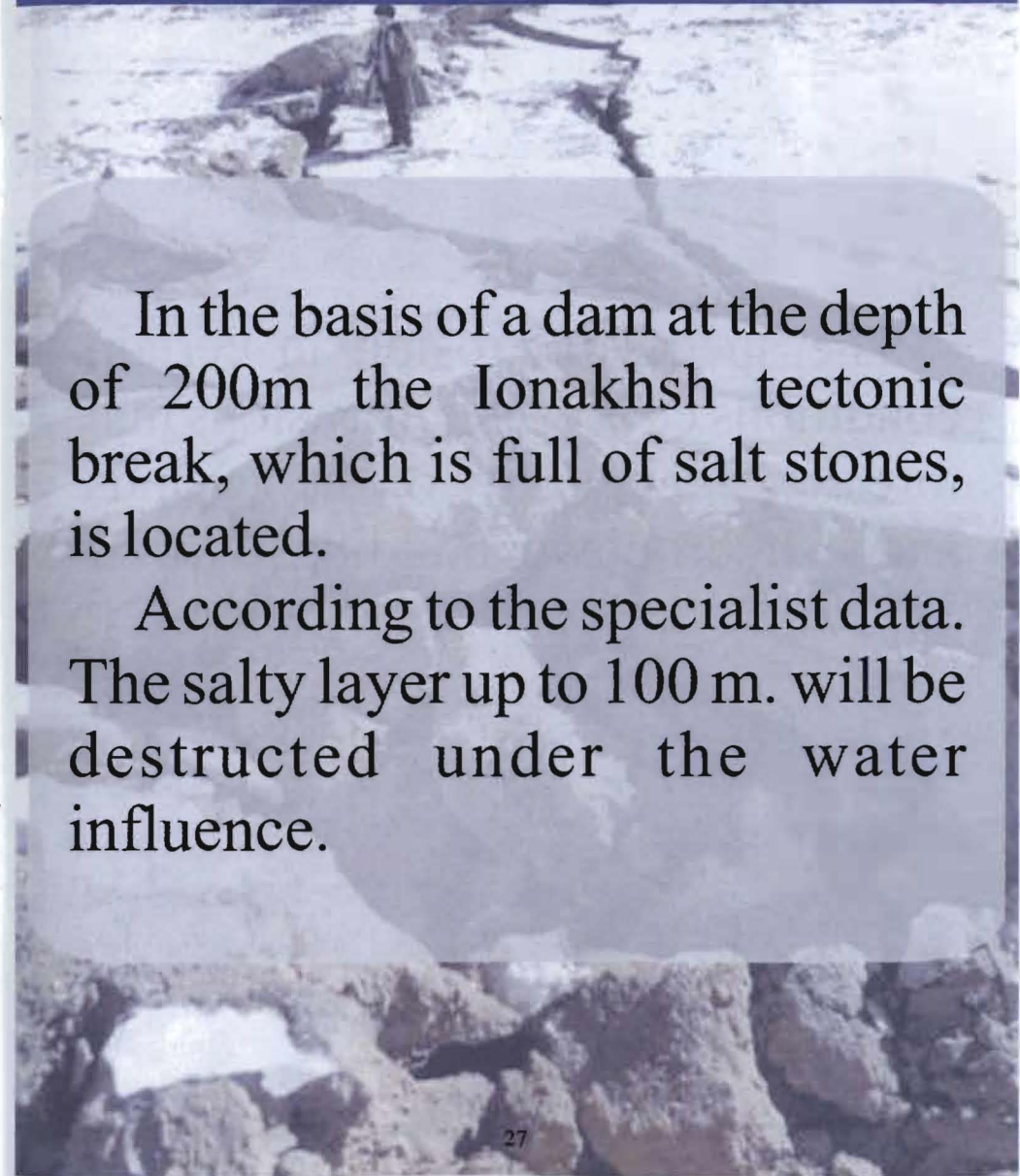
Man-Caused risks of the Rogun Hydropower station construction



In the basis of a dam at the depth of 200m the Ionakhsh tectonic break, which is full of salt stones, is located.

According to the specialist data. The salty layer up to 100 m. will be destroyed under the water influence.

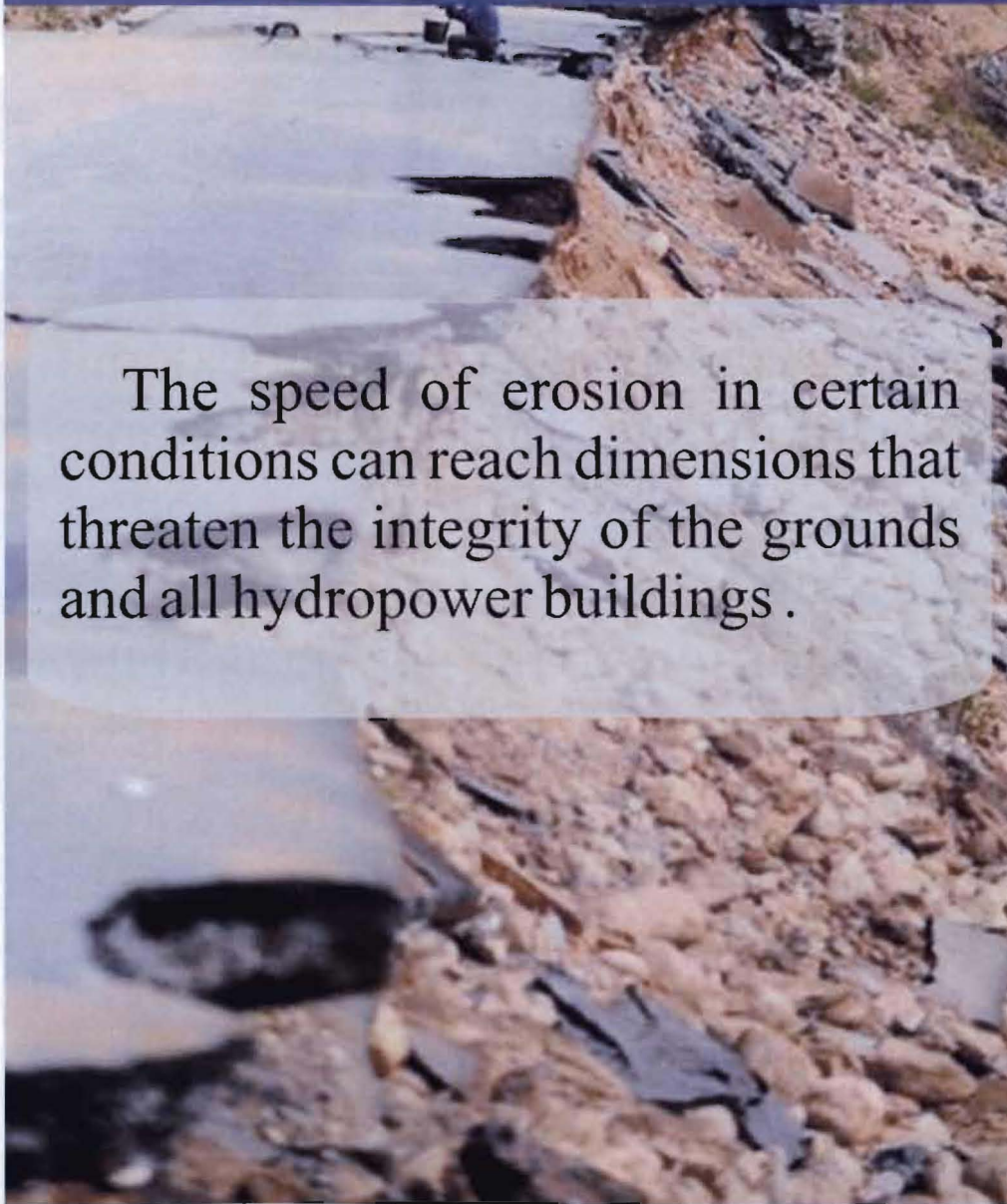
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Man-Caused risks of the Rogun Hydropower station construction



The speed of erosion in certain conditions can reach dimensions that threaten the integrity of the grounds and all hydropower buildings .

Man-caused risks of Rogun Hydropower station construction



- Poor technical condition of earlier build constructions of waterworks facility;
- Beginning the late 80th and early 90th the construction of waterworks facilities has been made under large deviations from the original project draft. In 1992 the construction delay was made practically without conservation.

Construction tunnels and other structures are seriously damaged by mudflow.

- By the time decision to renew the construction was made many constructive fragments of the dam were totally damaged and were not to reconstruct;
- Displacement (convergence) of underground machine hall side wall is 68cm. (3 times more then allowed norms).

Man-caused risks of Rogun Hydropower station construction



According to the estimates of German company "Lamaier International":

- Mounting equipment which is designed to build various metal constructions is not suitable for usage.
- As the projection of turbine-generator plant was made 30 years ago, today the close examination for the modern technical norms, national and international standards is needed.

Man-caused risks of Rogun Hydropower station construction



Accident at Rogun Hydropower station in 1993.

- Inapplicability to exploitation a large quantity of imported equipment;
- Poor technical condition or lack of adequate protective structures;
- Technical, financial and staffing constraints, creating a danger to man-made accidents in the continuation of construction of waterworks.

RESULT: Accident at Rogun Hydropower station in 1993

Example: Sayan-Shushenskaya Hydropower Station

The projection of Sayan-Shushenskaya Hydropower Station was made at the same time as the projection of Rogun Hydropower Station at similar standards.

Construction beginning: 1968

Dam Height: 245 m

Reservoir volume: 15,3 км³

Number of people died in the accident of 2009: 75



HIGH TECHNICAL RISKS FROM CONSTRUCTION OF ROGUN HYDROPOWER:

- In the case of a breakthrough of the dam the wave height at the starting point of will reach 245 to 280 m (near Nurek);
- At first 4-5 kms the wave speed will reach 40-129 km/s.;
- At the end point (Republic of Karakalpakistan, more than 1400 км from Rogun Hydropower station) the wave height will reach 6-7 m;
- The whole tandem of downstream located hydropower stations will be destroyed. (Nurek GES, Vahsh cascade №1, №2, Perepadnaya №1, №2 and Sangtudinskaya GES №1 и №2);
- 1,3 - 1,5 million hectares will be flooded area, over 700 settlements in the territory of Tajikistan, Afghanistan, Uzbekistan, Turkmenistan, where living about 5 million people, including 3 million - in Uzbekistan.

Environmental Risks of Rogun GES construction



Filling the reservoir with water up to its draft capacity (13 billion cubic meters) takes 8 years, leading to a number of negative consequences. The average increase of water deficit will reach 22.2% in the vegetative period, and in some dry years, almost 2 times more compared to current conditions.

Excluded from agricultural use because of the drought earlier irrigated lands (1,5 mln. ga) will be accumulators of salts. The accumulation of salts on the vacant land structureless lower reaches of the Amu Darya River (in the territory to 500 thousand hectares) will eventually turn into fat salt marshes and salt are no longer valid for the entire surrounding area, exacerbating an already unfavorable eco-reclamation conditions in the region.

Environmental Risks of Rogun GES construction



Water flushing to the Amu Darya river in connection with the operation of Rogun reservoir in the winter period will lead to the inundation of riverine areas, settlements, pastures, wells, roads etc.

After years of same situation in the Amu Darya extent of the damage to soil fertility will continue to grow and, ultimately, may lead to new environmental disaster in the form of loss of farming in the lower reaches of the Amu Darya River.

Environmental Risks of Rogun GES construction



As a result of land degradation due to drought, only the direct loss of yield of grain and cotton production, related processing industries and fishing resources over 5 years will be at nearly 20.6 billion dollars.

Reducing the area of sown land and reduced crop yields will affect the income level of population and ability to survive of more than 18 million people of Uzbekistan and Turkmenistan.

Environmental Risks of Rogun GES construction



Total damage caused by riparian forests shrinkage, reed beds, natural pastures, reduction and extinction of rare species of animals and birds, the actual loss of flora and fauna because of their irrevocability can not be estimated.

One of the most catastrophic consequences of upsetting the balance of water use in the region due to the construction of Rogun will be deterioration in the gene pool of the population, flora and fauna, the disappearance of large areas of riparian forest, a dramatic reduction in biodiversity.

Social Consequences of Rogun GES construction



Rogun GES construction will lead to a sharp worsening of population's living condition inhabiting the lower reaches of rivers who will practically lose all means of existence. In dry years, which will become the norm, it will be impossible to accumulate fresh water in other reservoirs.

The mineralization of water in the river that affect the health of the population who consume this water will increase two times. The quality of underground drinking water will deteriorate, which will entail the threat of complete failure of the drinking water intakes from local sources, located in the lower reaches of rivers and canals.



Construction of hydraulic structures, such as Rogun will exacerbate an already difficult environmental situation in the region, large-scale socio-ecological and humanitarian disaster.

UN convention requirements

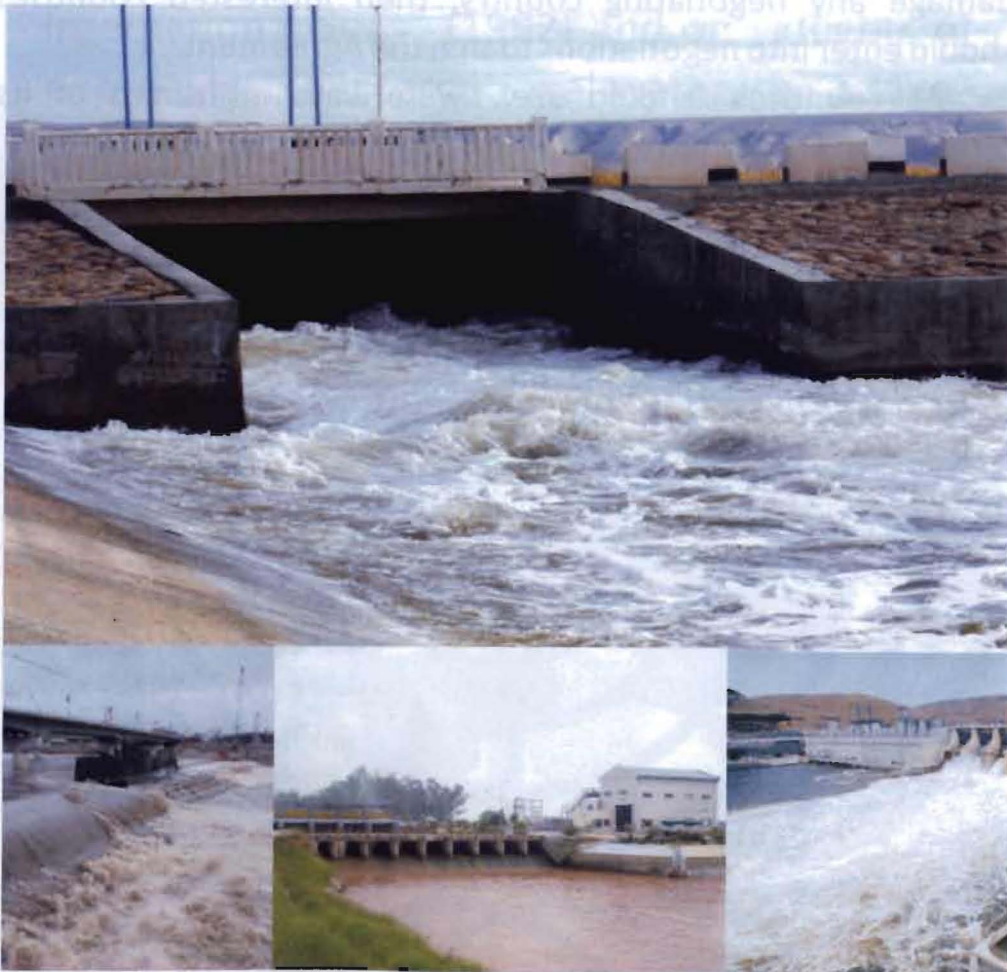
In accordance with International laws, requirements of UN convention on "Protection and usage of trans-border waterways and international Seas" (1992) and on «Rights of non-navigable international waterways usage" (1997) before implementing or sanctioning the implementation of planned actions, which may have a major negative consequences for other countries of waterways, the waterway country timely makes announcement via notice to other waterway countries about this decision. Such a notice is escorted by technical data and information, including the results of expertise for the countries being announced could evaluate possible outcomes of planned actions.

Geneva Convention

Analogical requirement is also included to a Geneva Convention about «The Influence of hydroelectro energy production on other countries", which says that in case where one country wants to produce electro energy which might damage any negotiating country, then interested countries should enter into negotiations to sign the Agreement.

All countries "should use waterways in frames of its territory on equal and reasonable base".

There are alternative ways of electricity generation equal to the one which would be generated at Rogun GES, this could be achieved by building number of small sized GES, which are many times cheaper and do not cause risks mentioned above.



**Ecological Movement of Uzbekistan
calls its partners and colleagues to support
the address on:**

To stop the construction of Rogun GES, which might cause the global environmental, man-caused and social catastrophe for the whole Central Asian Region;
Reject the implementation of projects, created in years of Soviet totalitarianism and which are based on violence of nature;
Support alternative ways, which do not cause damage for population and environment.

Ecological Movement of Uzbekistan



August 2008 – formation of the Ecological Movement of Uzbekistan

From 2010 Ecological movement is represented by 15 deputies of Legislative Chamber of Oliy Majlis (Parliament) of Republic of Uzbekistan.

Ecological movement unites more than 220 NGOs, working in the area of environmental protection and health.



For Notes