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The Aral Sea and Aral Sea coast: past, present and future

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The problem of the Aral Sea - created by water resources development in Central Asia during the Soviet epoch – came upon the shoulders of New Independent States formed after the collapse of the Soviet Union. Following the decision of the Head of 5 States: Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan, of March 26, 1993, the Interstate Commission for Water Coordination (ICWC) and the Executive Committee of the International Fund for Aral Sea Saving initiated the Aral Sea Basin Program (ASBP) that commenced activities directly aimed at the Aral Sea coast (Prearalie). An assessment of social-economic and environmental damage from shrinking the Aral Sea was done by the Scientific Information Center of ICWC was done in 1995. . . 2000 and the total losses were estimated at 146 million $US annually. This assessment was supported by identification of the prior zones of damage on the basis of GIS that was concentrated around the dense populated areas. In order to overcome these consequences, the two projects - one for Syrdarya delta and another one for Amudarya delta – facilitated the creation of ecologically stable profile in Prearalie, with account of scarce water. The first pilot project - rehabilitation of Lake Sudochye in Amudarya delta - resulted in recovering fish, muskrat and reed productions in the size that can compensate a part of damage and promote social sustainability of surrounding villages. Based on this first success, the total rehabilitation scheme for Amudarya delta was prepared by SIC ICWC together with “Resource Analyses” (Netherlands) and put in implementation by limited national financing. The rehabilitation of Syrdarya delta was started with the creation of the North Aral Sea with a volume of 26 m^3. Now, SIC ICWC together with IHE-UNESCO (Joop de Schutter)

elaborated a model and a scheme of the delta that differ principally from Amudarya delta. The Syrdarya delta consists of 6 lake-canal systems, stability of which depend on a guarantee of water in lower reaches of Syrdarya. The modeling gives solutions for different flow options in the main river. Now attention of ICWC is paid activities aimed at the Aral Sea itself. They are divided into two parts:

- assessment and monitoring of the dry Aral Sea bed;
- forecast of the future of the Aral Sea.

The first project in collaboration with GTZ (Germany) included 5 field expeditions that covered 1.7 Mha of the dry bed and the comparison with RS maps. The investigation determined 16 landscape classes with different degrees of ecological risk that allowed the identification of first-priority zones for afforestation. In addition to this comparison with our previous survey and a map of 1990, it was discovered that besides negative destructive change of the landscape, natural self-growing took place on the area comparable with afforestation.

The second project was implemented together with Bokum University (Vienna) and Novosibirsk branch of the Russian Academy of Sciences and presented possible consequences of 18 different options of flow formation, infrastructure and water delivery to the Aral Sea. Only 10 % of option allows the rehabilitation of bioproductivity in the Aral Sea in his western bowl, if water delivery is organized thru Adjibay in western part of the delta to this water body. As a result of shallow water and high evaporation, the Eastern part of the Sea is impossible to transform into ecology appropriate water body.