

The Status Quo of Water Resource Management in the DPRK

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Summary

Water resources in the Democratic People's Republic of Korea (hereinafter referred to as the DPRK) are mainly used for hydroelectricity generation, agricultural irrigation, industry and domestic usage. According to the statistics in 2009, the DPRK's annual renewable surface water resources were 111.1 billion cubic meters and the total available resource is 71.1 billion cubic meters, accounting for 64%. The total withdrawals were estimated at 55.1 billion cubic meters, accounting for 48.7%. Demand is from the following sectors: 84% (45.4 billion cubic meters) hydroelectricity generation, 12.2% (7.63 billion cubic meters) agricultural irrigation, 2.1% industry, and 1.7% domestic usage.

In order to resolve electricity shortage on the one hand, the DPRK has concentrated on the construction of hydropower stations since the 2000s. On the other hand, to resolve the grain shortage, the country has been improving the irrigation infrastructure. Since 500,000 ha of arable land in the DPRK depends on pumps in irrigation, along with the electricity shortage comes irrigation insufficiency. Annual precipitation in the DPRK is volatile, escalating the tension of water demands between hydroelectricity generation and irrigation. It's a vicious circle. DPRK is still in economic crisis and industry and domestic usages of water are not in great demand of water. But if the country succeeds in sustained economic growth, the water demand from industry and domestic usage will increase drastically. Then the competing demand for water among hydroelectricity generation, agriculture, industry and domestic, will heighten.

Therefore, the DPRK should take the following measures to improve and solve. In the short term, the DPRK should develop the thermal power industry by upgrading existing thermal power facilities, constructing new ones, improving equipment utilization, upgrading the power grid actively, and increasing thermal power to ease the shortage of electricity. In the medium to long term, newly-built thermal power stations or extensions should be developed to supply electricity reliability, in the meanwhile, decreasing hydropower generation, developing water saving irrigation facilities, and the DPRK should promote the restoration of its forest and river ecosystems by returning arable land into forest by developing eco-agriculture.