

APWS2 Technical Workshop WDC4: Korea's Experience and Know-how in Overcoming Water-related Disasters (organized by K-water)
Final 500-word summary

2nd Asia-Pacific Water Summit Technical Workshop

Sub-theme 7: Water-related Disaster Challenges
Session WDC4: Korea's Experience and Know-how in Overcoming Water-related Disasters
Date, Time: Saturday, May 18, 2013, 1:30 – 4:30 p.m.
Venue: D3 Pood-sorn

Final 500-Word Summary

This session examined Korea's responses to and preparations for water-related disasters. The individual presentations covered Korea's water disaster mitigation projects, conflict management, and flood control and water information and monitoring technologies. The presentations were followed by a panel discussion and Q&A.

The first presentation recognized the effects of climate change and introduced Korea's responses in terms of structural and non-structural measures. The former included the Four Major Rivers Restoration Project and turbidity mitigation, while the latter concerned hydrological data acquisitions systems and decision making support systems.

Large-scale disaster mitigation projects can, by affecting diverse stakeholders, involve social and political opposition. The second presentation addressed this issue, considering the examples of upstream and downstream water use, Korea's National Water Plan, and the Four Major Rivers Restoration Project. These examples showed that an inclusive and proactively engaging approach, whether through consultation, awareness raising, or mediation by a third party, such as an NGO, can help resolve or mitigate conflict. Ultimately, however, some conflicts may not be completely solvable, and the search for a single right answer may be misplaced.

The third presentation detailed K-water's water resources management technologies in its K-water Hydro Intelligent Toolkit (K-HIT). This toolkit includes the Hydrological Data Acquisition and Processing System (HDAPS), a rain forecasting system (PFS) that utilizes high performance computing and weather data from official sources and feeds into flood analysis, the Flood Analysis System (FAS) for flood control decision making, the Reservoir Water Supply System (RWSS), and the Generation Integrated Operation System (GIOS) for remote hydropower monitoring and control. These tools have been used to mitigate flood impact, for example during the three typhoons that passed over Korea in 2012, maintain water supply during the 2012 drought, and maintain water quality through controlling water release from reservoirs.

The final presentation enumerated Korea's water information and monitoring system. This involves many technologies and includes a hydrological unit map, basic information analysis, water resources planning support, policy decision support, and 3D river information management. This system and its technologies point to a smart river approach in the future.

These presentations resulted in the following session outcomes. With expected temperature and sea level rise 2.3 and 3 times greater than the global average respectively, Korea has had no choice but to prepare for more frequent and more severe water disasters. This preparation involves various large projects and information technologies, as well as conflict management to ensure the projects can proceed. These measures point to an approach of integrated water resources management. The audience showed interest in the possibility of adopting Korea's experiences and know-how. However, in order to be successfully transferred, Korea's projects and technologies will need to be adapted to local conditions. In this regard, technology transfer is not so much of a problem—since, for example, K-water's modeling software is open source-based—as is financing. To help overcome the financing challenge, K-water has enlisted the aid of partners in such organizations as the ADB, KOICA, and others to help in its cooperation with developing countries.