

DEVELOPMENT OF TECHNOLOGY FOR DIAGNOSING AND IMPROVING WATER CONVEYANCE AND DISTRIBUTION SYSTEMS FOR IRRIGATION OF COLD-REGION RICE PADDIES AND LARGE-SCALE UPLAND FIELDS

Abstract : To provide technologies for the diagnosis and improvement of water conveyance/distribution functions of rice paddy irrigation facilities in cold regions, a prediction of future water demand and supply in Hokkaido and a diagnostic flow of the water conveyance/distribution function required for stable water supply were proposed. Cropping ratio variation is an important factor that affects water demand for rice paddies. It was considered that climate changes predicted for the future will affect water supply by altering the runoff levels of input rivers. Reconsideration of the time at which dam storage is started was also suggested as a method of keeping up with variations in runoff caused by climate change.

Concerning the functional evaluation of large-scale upland farm irrigation facilities and preventive/preservative technologies for them, the tendencies of maintenance and management costs and the characteristics of facility deterioration in Hokkaido are summarized, and preventive/preservative measures (including the installation of valves and other auxiliary facilities and pipelines) are presented.

Key words : rice paddy irrigation, snowy and cold region, water management, climate change, upland field irrigation