

Information and communication technology-based water management system for reducing agricultural water usage, agricultural labor, and electricity

Production → Implementation → Item: Paddy rice

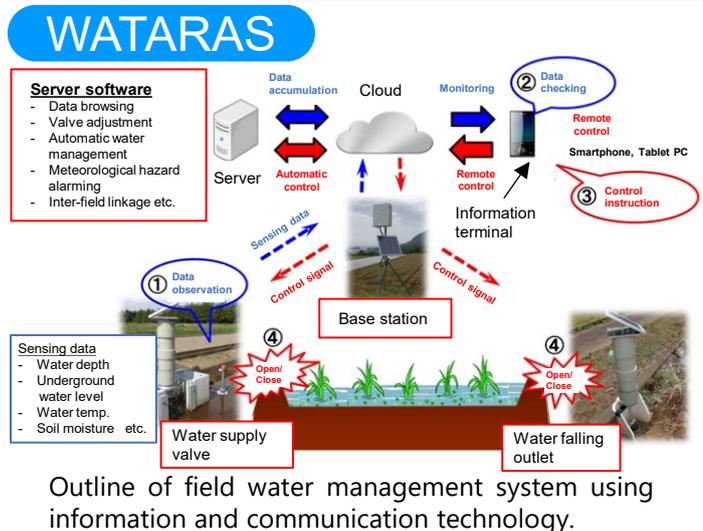
Resource management
Labor productivity enhancement

Outline

We developed the following two information and communication technology (ICT)-based systems: Water for Agricultural Remote Actuated System (WATARAS), for remote automated water supply and drainage management of paddy fields; Irrigation and Drainage Automation System (iDAS), for optimizing regional agricultural water allocation. The effective introduction of both systems enables optimum water supply and significant savings in labor costs and energy consumption.

Background/effect/note

The depopulation and the aging population of rural areas and the decline in the number of farmers have contributed to the insufficient management efforts of paddy fields and irrigation facilities and the wastage of water and power. The ICT-based water management from irrigation facility to paddy field enables the reduction of ① water management labor for paddy fields by approximately 80%, ② regional water consumption, and ③ the power consumption of pumps required for water use (Fig. 1). It is noted that those systems should be constructed to match existing infrastructure (e.g. paddy fields, water channels, information and communication) and cost-effectiveness that may vary depending on the country.



Technical Details:

<<Episode 22>> Easy Water Management of Paddy Fields with Smartphones
<https://www.naro.go.jp/laboratory/brain/english/press/stories/155708.html>
 (Research results) Development of an efficient water distribution management control system through field-water utilization facility cooperation using ICT.
https://www.naro.go.jp/english/laboratory/nkk/press_release/idas/index.html
 (Video) Easy Water Management of Paddy Fields with Smartphones [Japanese]
<https://www.youtube.com/watch?v=tdwMKxa2hs&list=PLW99yTRNzVkNDB0HaClwbaqGm4ikBF2&index=13>
 (Video) Automated Water Management and Control System with ICT from irrigation facility to paddy field [Japanese]
<https://www.youtube.com/watch?v=j1mrcuGSV1Y>
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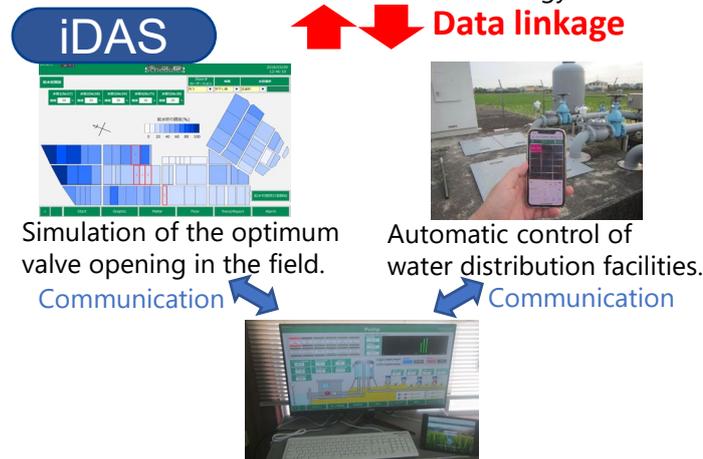


Fig. 1. Management system for efficient agricultural water supply from irrigation facility to paddy field