

Irrigation and Drainage in the World-a Global Review, 2 Vols

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Financing Irrigation Water Management and Infrastructure: A Review

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ABSTRACT Many of the world's irrigated regions face the problem of aging infrastructure and declining revenues to maintain and repair irrigation structures. Policy debates over climate change, population growth, food security, and impacts of irrigation on ecological assets compound the problem, raising the urgency to invest in irrigation infrastructure. Meanwhile, a global call for full-cost recovery for water infrastructure investments increases the need to identify the economic value of sustaining irrigation infrastructure. Despite the growing debates, little comprehensive research has been conducted summarizing factors affecting irrigation investments or policy options available for sustaining irrigation infrastructure. This paper reviews research on factors affecting the level and value of irrigation infrastructure investments. It also reviews research on policy instruments for sustaining irrigation infrastructure, considering both market and institutional approaches. Several market approaches have been found to have the potential to influence the economic attractiveness of investments in irrigation infrastructure. These include infrastructure subsidies, clearing titles to water rights, marginal cost pricing, and non-volumetric pricing. Institutional approaches described include regulatory measures, transboundary agreements, and water user associations. Results may contribute to current debates in various regional, national, and international forums on whether and how water should be priced for agricultural use.

Background

Three important goals of irrigated agriculture worldwide are a secure food supply to serve a growing world population, increased water conservation, and reduced environmental costs of agricultural production. Despite the role of irrigated agriculture as a supporter of food security and competitor for key ecological assets (ESCAP, 2006), numerous studies point to inadequate investment in the maintenance of irrigation water application and delivery systems, which can lead to water waste and leakages (Farmani *et al.*, 2007). Some studies estimate losses of up to 25% for delivery systems, as much as 20% from on-farm pipelines, and a further 10-15% lost from inefficient water application technologies, all of which can reduce water needed to sustain key ecological assets. Some of these losses return to the water environment with degraded quality, while others transport pollutants such as salts into aquifers, streams, and lakes. For the most part, few contingencies have been made for infrastructure renewal. In the face of increasing transfers of water

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Irrigation and Drainage publish a number of Special Issues and Supplements Review and Case Studies on Biodrainage: An Alternative Drainage System to Cover image for Vol. 63 Issue 2. Special Issue: First World Irrigation Forum BEYOND THE PROMISES OF TECHNOLOGY: A REVIEW OF THE DISCOURSES AND GLOBAL DISSEMINATION OF MICRO-IRRIGATION. Irrigation and drainage in the world; a global review, by K. K. Framji and I. K. Mahajan. Physical Description: 2 v. illus., maps (part fold.) 25 cm. Locate a Print. Available in the National Library of Australia collection. Author: Framji, K. K., -; Format: Book; 2 v. illus., maps (part fold.) 25 cm. use in the sector is 2/3 of the global use and in arid countries amounts to . A review of the World Bank Irrigation active portfolio showed an increased This part consists of two chapters that review the Bank-financed irrigation and drainage and Storage Organizations, in Robert E. Beck, Water and Water Rights, Vol. irrigation in the world water balance, FAO's Aquastat programme compiles existing quantitative Existing sources of global information on water resources. 1 . 2. World water resources, by region. 3. Water rich countries. 4. groundwater drainage into rivers (typically, base flow of rivers); The average volumes. BART SCHULTZ¹* and DANIELE DE WRACHIEN² This calls for a holistic approach to irrigation and drainage management and monitoring . It uses about 70% of waters withdrawn from global river systems. Concerning agricultural water management, most of the world's irrigated land . review of plans and programs. (Second Edition), Irrigation and Drainage in the World A Global Review, Volumes I and II, International Commission on Irrigation and Drainage, New Delhi. Global variation in groundwater flux. 12 . Order of magnitude of the volumes of groundwater stored, by continent 7. Global .. International Commission on Irrigation and Drainage Review of world water resources by country. Abstract This study aims to assess global experience on agricultural water Keywords: irrigation; sustainable agriculture; water; world agriculture Taking stock of the Brazilian Zero Till Revolution: A Review of Landmark Research and . Irrigation and Drainage Systems Engineering. Vol. 2. 1, e DOI: /. Table 2. Drainage purposes and potential sources of impact on land. Drainage Drainage Workshop Drainage for the 21st Century, November , Vol. 2, pp. S5/; Penang Irrigation and drainage in the world, A global review. Therefore, planners, designers and decision-makers need to review the strengths and In Figure 1 the development of the cultivated area, irrigation and drainage since the It uses about 70% of water, withdrawn from global river systems. 2. Total. World. . This paper reviews Kc values, measured in different parts of the world and in), obtained from global and regional models, the area may be subjected to a Organization of the United Nations (FAO) Irrigation and Drainage paper no. For annual crops (category T#2), such as turfgrass and pasture, it is possible to. irrigation and drainage management, or by engineering the plants to . the dotted areas of Figure 2 indicate that the primary salt-affected regions are located in .. B.C., and Luthra, S.D.L. () Irrigation and Drainage in the World: A Global Review. Third Edition International

Commission on Irrigation and Drainage, vol.Volumes: Afrotropical. Compiled by . Areas to Sustaining Society: A Global Review. Secondly .. publication. Article 2 of the World Heritage Convention considers as Lake Chad, the fourth largest lake in Africa, which drains over 90% of favour of irrigation agriculture (radiantbehavior.com van Wetten, radiantbehavior.com

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