

From Water Management to Water Governance in Irrigation - Introduction to this special issue of the Journal of Applied Irrigation Science -

**Vom 'Management' zur 'Governance' der Wasser-
bewirtschaftung im Bewässerungssektor
- Eine Einführung in das vorliegende Schwerpunk-
t- heft der Zeitschrift für Bewässerungswirtschaft -**

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The efficient management of increasingly scarce water resources is becoming a crucial issue for the future of many countries. This is bringing about a shift in the conception of "water management", particularly with respect to water used in agriculture. In the early days of the management debate in the irrigation sector, experts firmly focused on technology and on improving management in (generally large-scale) irrigation agencies. The results were limited. The hoped-for "management revolution" in irrigation that was supposed to follow the Green Revolution failed to materialize. On the contrary, high levels of inefficiency and the run-down state of many large first-generation irrigation systems increasingly drew attention to user participation. In a context of global trends toward decentralization and privatization, efforts began to center on passing management responsibilities on to the farmers – known as "Turnover" or "Irrigation Management Transfer". More recently, awareness of the rapidly increasing scarcity of water resources has given these efforts a new slant, but there is growing recognition of the fact that in water resources management, numerous actors – organizations, groups, individuals – have to cooperate in order to provide water to water users. In most cases, a whole network of different stakeholders is involved. In irrigation, this network will include actors providing direct services to the farmers, for instance the operations unit of an irrigation agency that delivers water to the farms. It will also comprise organizations or groups responsible for coordinating the efforts of water users, representing the interests involved and implementing various rules and agreements. These may be informal groups, associations or federations. Other members are also involved – agricultural and/or

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irrigation departments, planning departments, an environmental agency and legal bodies which perform important statutory and regulatory functions.

If we accept this multi-actor basis for providing irrigation service, then water management can no longer be seen as the responsibility of a single body, and the term "water management" becomes misleading. It suggests that an executive management exists with the powers to direct the supply and distribution of scarce water resources. Instead, water management, seen in a context of multiple actors with their diverse goals and interests, implies endeavoring to manage "water delivery" in a way that reconciles the demands of the various potential consumers. This calls for strategies and guidelines for the "governance" of water service provision. "Governance" here is meant to designate a set of laws, rules, regulations, processes and common practices that establish and enforce the "rules of the game" which make such a complex system of many actors function. "Management", as exercised by a singular and omnipotent unit of authority remains an important function and process to be dealt with in individual organizations. However, with respect to the multi-organizational system, it is replaced by a web of governance mechanisms and the institutions that stand behind them. These mechanisms are supposed to bring about coordination, mutual adjustment and – last but not least – sufficient motivation of the parties involved to engage in the provision process.

This special issue of the *Journal for Applied Irrigation Science* is dedicated to the topic of *Water Governance in Irrigation*. It tries to balance the need for conceptual background papers on one hand, with the necessity of illustrating theoretical findings with hands-on experience from irrigation practice on the other.

The series of articles opens with a paper on *Governance by Contractual Rules*. In this paper, *Birgitta Wolff and Walter Huppert* contend that every type of exchange system or human interaction can be described as an explicit or implicit contractual relationship. They apply this idea to service relationships in water resources management and irrigation, and thus set the stage for the further discussion of governance problems that unfolds in the following papers. Their paper sheds light on typical contractual deficiencies in irrigation and thus reveals hidden causes behind various operational problems in this field.

Waltina Scheumann, Artur Vallentin and Mehmood ul Hassan follow with an article on *Public Governance of Irrigation Water Distribution and Maintenance: The Large-scale Lower Seyhan Irrigation System*. Giving outright attention to contractual relationships between exchange partners in a service relationship, they focus on the evolution from state dominated management to joint governance structures. While public management proved to be weak in terms of financial viability and service provision, the introduction of farmers participation and joint governance mechanisms led to improvements in both respects. The authors discuss the evolution of improved water governance in the context of overall changes in the Turkish

irrigation sector. Doing so, they reveal the dependency of changing institutions on changes in the overall political, legal and social conditions.

After this example taken from irrigation practice, *Walter Huppert and Birgitta Wolff* refer back to recent conceptual developments and apply the institutional-economics concept of "Principal-Agent" problems to the field of irrigation. In a paper entitled *Principal-agent problems in irrigation – inviting rentseeking and corruption*, they highlight the often overlooked role of such problems in bringing about efficiency deficits in irrigation. The authors provide a description of the essential characteristics of such problems, indicating potential areas of occurrence in irrigation, and pointing to possible coping strategies.

Walter Huppert and Klaus Urban then present irrigation in the Jordan Valley as an example where more explicit attention to Principal-Agent situations may help overcome deadlock in efforts to achieve improvements in irrigation efficiencies. Their paper, *Irrigation in the Jordan Valley – the neglected issue of Principal-Agent problems*, draws attention to the fact that some of the longstanding operational problems in the Jordan Valley irrigation schemes may have their roots in problem situations of this nature. Are well-meaning efforts to improve irrigation operation and maintenance in the Jordan Valley bound to fail because it is in the best interests of some stakeholders to maintain existing inefficiencies?

The paper by *Ruth Meinen-Dick* deals with an issue that is central to any discussion on water governance: the issue of property rights. *Property rights and maintenance of irrigation systems* is the title of this article that examines the linkages between property rights and the maintenance of irrigation systems. The paper defines property rights, explores the different combinations of rights that should be examined in irrigation systems, and explains why property rights are important when striving for improvements in maintenance provision in irrigation.

Finally, *Thilo Hatzius* emphasizes a particularly important governance mechanism, the pricing mechanism. His paper is entitled *Pricing of goods and services in the water economy sector – criteria for the design of a new water fee system in the Republic of Macedonia*. The author presents some criteria from neo-classical, new institutional and resource economics to be considered in the design of a water fee system. He illustrates the application of such criteria with the example of recent discussions about a new water fee system in Macedonia.

The articles presented in this volume are based on studies and discussion papers that were elaborated in the context of the "MAINTAIN" project, a research and development project that focussed on institutional aspects of maintenance provision. The project was implemented by Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ), Eschborn, Germany, with contributions by the International Water Management Institute (IWMI), Colombo, Sri Lanka and the International Food Policy Research Institute (IFPRI), Washington, D. C., USA. The project was financed by

the German Ministry for Economic Cooperation and Development (BMZ). Further information about this project and the MAINTAIN-working papers, and full access to the book "Governing Maintenance Provision in Irrigation – a Guide to Institutionally Viable Maintenance Strategies" can be found under www.gtz.de/maintain.