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Expertise of the scientific community



Societies and sustainable development

Contribution of the social sciences

Number 7

Water governance and institutional framework changes in South Africa

Research conducted in South Africa by CIRAD (UMR G-EAU, UPR GREEN), in collaboration with the Centre for Environmental Economics and Policy in Africa (CEEPA) and the University of Pretoria, is aimed at supporting new water governance organizations (Catchment Management Agencies, CMAs, Water User Associations, WUAs) by proposing socioeconomic strategies, tools and methods to support them with sustainable water resource management negotiations and collective decision making. Since 2002, four projects have been carried out in collaboration with local universities, the Water Research Commission, the South African Ministry of Water Affairs and Forests and the Department of Science and Technology amongst other partners.

The Action-Research on Institutions, Social aspects and Economics of water management project (ARISE), as part of the South African-French Network for Research in Water Science and Technology, was launched for a 4-year period in 2007. The aim is to generate knowledge and develop methods to help solve water resource governance issues in rural areas. The goal is also to strengthen ties between research teams from both countries through cosupervision of graduate students, thus promoting the development of expertise in the water management field. A PhD candidate and two South African MSc students, as well as two French PhD candidates, are currently being cosupervised within the framework of this project by research teams from France, South Africa, Italy and USA.

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For further information: www.ceepea.co.za/arise.html



A woman allocating collected water for different uses, Ga-Gekororo, South Africa

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Technical, economic and social management of water and associated ecosystems

The joint research unit (UMR) Water Resource Management, Actors and Uses (G-EAU, AgroParisTech/ENGREF, CEMAGREF, CIHEAM/IAM.M, CIRAD, IRD, Montpellier SupAgro) proposes to provide practical knowledge on issues concerning the management of water and associated ecosystems, on reference situations in developed and developing countries, thus helping to identify levers to overcome these constraints. The UMR deals with many different research topics:

- water resources (variability, sustainability, allocation, transfers)
- management institutions
- water services and uses

■ behaviours and viewpoints of users and stakeholders involved in water management

■ production systems and irrigated crops, environmental impacts of irrigation practices.

There are three lines of research, with human and social sciences focused in lines 2 and 3:

1. *From operational management to the analysis of resource allocation scenarios.* The research is aimed at managing water flows, on different time scales, in systems that combine water tables, canals, rivers or dams.

2. *Consultations on water, public policies and service management.* This research deals with the assessment of public water policies in conjunction with other policies, institutions, types of usage regulation, and economic or informational tools for water

service management. The issues assessed concern resource sharing and access to water and sanitation services, aquatic environment quality, and vulnerability to water-related risks (drought, flooding). One specific feature of this UMR is that it promotes the use of models (computerized or not) with stakeholder participation.

3. *Water practices and uses.* The topics investigated include users' behaviour (agricultural water) and determining factors, the performance of agricultural production systems and irrigation equipment, including their effects on the environment, and the development of innovations for these agricultural systems.

Two transversal missions devoted to education and training and to decision-support tools supplement the unit's research. ...