CONVENTION ON WETLANDS (Ramsar, Iran, 1971)
31st Meeting of the Standing Committee
Gland, Switzerland, 6-10 June 2005

DOC. SC31-34

Agenda item 14

Request for International Organization Partner (IOP) status: the International Water Management Institute (IWMI)

Action requested: The Standing Committee is invited to consider the proposal from IWMI and make a recommendation to COP9.

Note by the Ramsar Secretariat

1. The Chair of the Standing Committee and the Secretariat have received a request from Frank Rijsberman, the Director General of the International Water Management Institute (IWMI), for IWMI to receive formal recognition under the Convention as an International Organisation Partner (IOP).

2. The Standing Committee will recall that Resolution VII.3 ("Partnerships with international organizations") decided that "international organizations interested in formal recognition as Partners to the Convention should present an application to the Convention's Bureau for its inclusion in the agenda of the next meeting of the Standing Committee, which in turn shall make a recommendation to the Conference of the Contracting Parties for final decision".

3. The Annex to Resolution VII.3 established "Rules for conferring the status of International Organization Partner of the Convention on Wetlands".

4. Information provided by IWMI in support of its request is attached to this note. In this material, IWMI has provided a summary of its *modus operandi* and work against each of the "Rules" established in the Annex to Resolution VII.3, and has also provided supplementary information on its offices, selected wetland projects undertaken by IWMI and its partners, selected IWMI publications, and MSc and PhD theses prepared by its staff.

5. In considering this request, the Standing Committee may wish to note that IWMI has already been collaborating closely with the Convention through a 2004 Memorandum of Cooperation with the Secretariat, and that IWMI has been a highly active contributor to the work of the Scientific and Technical Review Panel (STRP) this triennium, notably on water management issues (co-leading STRP Working Group 3) and on agriculture and wetlands as a cross-cutting issue. In addition, as part of its current Comprehensive Assessment of Water Management and Agriculture (CA), IWMI has agreed to prepare a specific report to the Ramsar Convention on these matters, including addressing a set of key questions prepared by the STRP.

6. After reviewing the information provided by IWMI, the Secretariat considered that IWMI wholly fulfils the role and expectations of an International Organization Partner as set out in Resolution VII.3.

IWMI request for International Organization Partner (IOP) status: background information

Information on current IWMI objectives and activities in relation to the "Rules for conferring the status of International Organization Partner of the Convention on Wetlands" (Annex to Ramsar COP7 Resolution VII.3)

Ramsar IOP required characteristics	IWMI status and activities
1. International organizations, both intergovernmental and non-governmental, formally recognized as Partners of the Convention on Wetlands by its Conference of the Contracting Parties will be expected to contribute on a regular basis and to the best of their abilities to the further development of the policies and technical and scientific tools of the Convention and to their application.	IWMI is an autonomous, non-profit, international research and development institute (international non-governmental organization). It is one of 15 international agricultural research centers and Future Harvest Centers supported by the Consultative Group on International Agricultural Research (CGIAR), a strategic alliance of countries, international and regional organizations, and private foundations supporting IWMI and the other international agricultural Centers, that work with national agricultural research systems and civil society organizations including the private sector. The alliance mobilizes agricultural science to reduce poverty, foster human well being, promote agricultural growth and protect the environment, as well as generating global public goods. Through its 359 staff (including 247 technical and support staff), IWMI implements an ongoing programme of activities concerning water and land resources management, agriculture, livelihoods and the environment (see Annex 1). It has 112 researchers with a wide range of interdisciplinary expertise (social science and economics: 33; natural and physical sciences: 46; engineering: 33); 59 researchers are from the South and 53 from the North, 31 are female and 81 male.
2. Partners shall be invited to participate in an observer capacity and as advisors in all activities of the Convention, including the meetings of the Conference of Contracting Parties, the Standing Committee, and the Scientific and Technical Review Panel, as well as regional and subregional meetings.	IWMI participated in Ramsar COP8 and supported debates on *inter alia* Resolutions on dams, agriculture, and water allocations. IWMI was afforded STRP observer status by COP8, and presently co-leads the STRP's Working group on Water Resources Management. IWMI has also participated as an observer to the 5th Meeting of the Convention's Mediterranean Wetlands Committee.
3. Partners may also be invited, if required, to contribute to the evaluation of project proposals, project implementation, and the	IWMI is already contributing to the development of policy and technical and/or scientific instruments through its work with the STRP, and is willing and able to contribute to project-related activities.

evaluation of project results, as well as to participate in the development of policy and technical and/or scientific instruments for the application of the Convention.	
4. The status of Partner shall be conferred to international intergovernmental and non-governmental organizations taking into account the following characteristics:	
4.1 Have a programme of activities that is global or at least covers many countries in one or more regions of the world.	IWMI's current programme focuses primarily on the developing countries of Africa and Asia, covering over 20 countries in Africa, 18 countries in Asia and two countries in Latin America. It currently includes expanding it area of activities in North Africa through development of a collaborative project with the Ramsar Convention's MedWet Initiative. Several of its projects are at global scale, with outcomes available as international public goods.
4.2 Have a statement of purpose that explicitly, or by clear implication, includes the conservation and sustainable use of wetlands.	IWMI's mission is "improved management of water and land resources for food, livelihoods and nature". Its research agenda is evolving currently to enhance integration across the following four main thematic areas of research with associated draft objectives: 1) Basin Water Management: to provide better understanding of the tradeoffs and options in agricultural water management at basin scale and contribute to improved equity and efficiency in water use through the development of appropriate tools and methodologies for analysis and management; 2) Land, Water and Livelihoods: to identify and test interventions to conserve resources and increase land and water productivity for improved livelihoods, health and equity across the continuum of water management options, within integrated social-ecological landscapes; 3) Agriculture, Water and Cities: to identify and test interventions for the rapidly growing sector of urban and peri-urban agriculture to ensure safe and productive use of wastewaters, improve human health and nutrition, and enhance sustainability of high input peri-urban systems; 4) Water Management and Environment: to identify and test interventions that safeguard the environment and associated delivery of ecosystem services vital to human well-being, while enhancing land and water resources management for agriculture. Increasing emphasis is being placed on environmental issues under "Water Management and Environment", with particular attention to the environment

	in relation to other water uses in basins, and to wetlands-agriculture interactions. Health and Policies/Institutions are to be addressed in a cross-cutting manner through established communities of practice.
4.3 Have a track record of experience in providing support to and/or implementing on-the-ground projects that contribute to wetland conservation and sustainable use.	IWMI has implemented and continues to undertake a diverse range of partnered projects on wetland issues, as well as numerous projects that are of direct relevance for wetland conservation and wise use (see Annexes 2 and 3). Through its various capacity building initiatives, IWMI has also supported several completed and ongoing M.Sc. and Ph.D. projects related to wetlands (see Annex 4). IWMI annually offers internships to M.Sc. and B.Sc. students from Asia, Africa and Europe to work on projects in Southeast Asia, South Asia and Africa.
4.4 Have demonstrated experience in implementing partnership ventures such as training and education, technical and/or scientific expertise, policy development, and/or evaluation and assessment, particularly where such ventures would bring new and additional benefits to the functioning of the Ramsar partnership.	IWMI brings new perspectives to the global arena on the water and food debate, with a well-developed focus on environment. It has been actively engaged in the development of a number of complementary initiatives in this regard. In particular, the Comprehensive Assessment of Water Management in Agriculture (CA), a 5-year CGIAR initiative convened by IWMI ending in 2006, has brought together scientists from over 90 institutes worldwide with policymakers, development professionals, and water users to take stock of the costs, benefits and impacts of the past 50 years of water development for agriculture, evaluate current water management challenges and solutions, fill key knowledge gaps and identify the best options for the future. It is anticipated that the results of the CA will enable governments, donors and farming communities to make better-quality water decisions in the near future and over the next 25 years. The Ramsar Convention has been recognized as an intergovernmental end-user in relation to provision of information from the CA in support of the Convention's attention to agriculture, water and wetlands issues in implementation of Resolution VIII.34. A technical Wetlands and Agriculture report addressing key questions from the Convention's perspective is planned as a key output of the CA process, as are a series of books on agriculture, environment and related topics. The CGIAR Challenge Program on Water and Food (CPWF) developed under IWMI leadership and established in late 2002 for a first 6-year phase, is an international research, extension and capacity-building initiative that has as its development objective increasing the productivity of water for food and livelihoods, in a manner that is environmentally sustainable and socially acceptable. The CPWF, chaired and hosted by IWMI, is managed by a 19-member joint-venture consortium of partners

	comprising CGIAR Future Harvest Centers including IWMI, National Agricultural Research and Extension Systems, international NGOs and Advanced Research Institutes. The programme's intermediate objective is "to maintain the level of global diversions of water to agriculture at the level of the year 2000, while increasing food production, to achieve internationally adopted targets for decreasing malnourishment and rural poverty by the year 2015, particularly in rural and peri-urban areas in river basins with low average incomes and high physical, economic or environmental water scarcity or water stress, with a specific focus on low-income groups within these areas." The CPWF encompasses five research themes, one of which specifically deals with aquatic ecosystems and fisheries, addressed through a range of projects in benchmark river basins across the world. The Global Dialogue on Water, Food and Environment, established by IWMI, Food and Agriculture Organization (FAO), IUCN, Global Water Partnership (GWP), International Commission on Irrigation and Drainage (ICID), WWF, International Federation of Agricultural Producers (IFAP), United Nations Environment Programme (UNEP), World Health Organization (WHO) and World Water Council (WWC) in 2001 to improve water resources management by bridging the gap between the food and environmental sectors through open and transparent dialogues and knowledge sharing, has just come to an end. Several local to regional dialogues and new partnerships are ongoing, however, as a result of the programme, and a knowledge base has been produced, providing best practice information, tools and methods from the programme's suite of targeted studies. The ongoing IWMI-Tata Water Policy Research Program was established in 2000 under a financial partnership between IWMI and Sir Ratan Tata Trust, Mumbai, India, to promote practical, policy research in water resources management. Its objective is to help policy makers at central, state and local levels address their water challenges, in areas such as sustainable groundwater management, water scarcity, and rural poverty, by translating research findings into practical policy recommendations. The Program also provides grant financing to Indian scientists and institutes interested in cooperating on research on water resources. It has worked with some 40 partners and completed over 70, usually small, research projects thus far. IWMI's established Information and Knowledge Group has an ongoing Knowledge Center Initiative with the goal of further developing IWMI into a future world class knowledge centre on water, food and the environment, to ensure, among other objectives, knowledge sharing with partner organizations and capacity building. IWMI is also the convening and host institute of a CGIAR-

	initiated (2000-ongoing), international System-wide Initiative on Malaria and Agriculture (SIMA) addressing the goal of "malaria reduction resulting in improved health and well being, increased agricultural productivity, and poverty alleviation".
4.5 Have a positive reputation for being willing and able to cooperate with national and international bodies, including both governmental and non-governmental ones.	In addition to the cooperation at national and international levels required as a CGIAR Center, for projects and for the major programmes mentioned above, IWMI is developing collaboration with the MedWet Initiative in pursuance of Resolution VIII.34, and is linked with the Convention on Biological Diversity through its joint programme work with Ramsar. IWMI is a member of IUCN (March 2001, Membership No. IN/21216) and the World Water Council (January 1997, Membership No. 1997032425), as well as an associate member of the Asia Pacific Association of Agricultural Research Institutions (January 1997). IWMI is one of three GWP Advisory Centers globally, and hosts the Sri Lanka Country Water Partnership and GWP South Asia Regional Council Secretariat. It also houses the International Center for Underutilized Crops (ICUC).
4.6 Have stated their readiness to actively contribute on a regular basis to the further development of the policies and tools of the Convention on Wetlands and their application on the ground, particularly by assisting Contracting Parties to meet their obligations under the Convention.	This has already been shown by demonstration: as part of IWMI's participation as an appointed observer organisation to the Scientific & Technical Review Panel, the IWMI STRP representative co-leads the STRP's Working Group 3 (Water Resources Management), leads a cross-cutting specialist group on Agriculture, and is closely involved in the preparation of scientific and technical guidance for consideration by COP9 on *inter alia* environmental flows, river basin management, and management of agriculture in Ramsar sites and other wetlands.
4.7 Are prepared to sign a Memorandum of Cooperation with the Bureau of the Convention, where the partnership agreement should be spelt out fully.	A Memorandum of Cooperation between IWMI and the Ramsar Bureau has already been signed, on 26 January 2004, which concerns cooperation especially on agriculture, water and wetlands issues.

Annex 1 Locations and contact details for IWMI offices

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Annex 2: Select wetland projects by IWMI and partners

CP - Challenge Program on Water and Food; CA - Comprehensive Assessment of Water Management in Agriculture.

Project title	Brief description
Expansion without extinction: how can biodiversity be preserved in irrigation systems?	Project supports formulation of strategies for biodiversity conservation with large-scale water resource development while protecting/enhancing the livelihoods of the rural poor. 2002 Phase funded by IWMI (USD 115 480). 2003-2005. Joint project with IUCN Sri Lanka and Mahaweli Authority of Sri Lanka, funded by the Royal Netherlands Embassy, Sri Lanka. USD 700 000.
Sustainable management of inland wetlands in Southern Africa: a livelihoods and ecosystems approach.	To generate knowledge to assist in sustainable management of wetlands in southern African countries, by (i) assisting the countries to put in place or to enhance mechanisms that minimize the degradation of wetland ecosystems in order to optimize the ecosystem and livelihood benefits that are generated by these ecosystems; (ii) generating generic guidelines, tools and methodologies for sustainable land and water management in wetlands that will also be useful for other parts of Africa and for the implementation of the GEF OP15. Project within Umbrella Action Program, funded by GEF, co-financed by CP, includes contributions of time from government agencies in eight countries where it will be implemented (Mozambique, Lesotho, Swaziland, South Africa, Zambia, Malawi, Tanzania, and Zimbabwe). 2004-2007. USD 2 330 461.
Wetlands-based livelihoods in the Limpopo basin: balancing social welfare and environmental security.	To contribute to enhancing food security and improving the livelihoods of wetland-dependent communities by increasing productivity of water and optimizing and maintaining wetland ecosystem services, using a detailed investigation of wetlands in two subcatchments of the Limpopo River Basin (Umzingwane, Zimbabwe and Changane, Mozambique). The project addresses issues of use of wetlands for crop water productivity in wetlands, agriculture in upper catchments, aquatic ecosystems, and integrated basin water management systems. It will generate knowledge on trade-offs among several wetland uses. CP-funded project. USD 1 084 144. 2004-2007.
Improved planning of large dam operation: using decision support systems to optimize livelihood benefits, safeguard health and protect the environment.	Nile basin. Funded CP project. The project will be extended to Mozambique if additional funds are acquired. USD 925 156. 4 years.
Environmental flows: theory and applications.	To develop IWMI programme on environmental flow assessment. Development of desktop environmental flow assessment method for East Rapti River, Nepal. Workshop on Environmental Flows, Delhi, India, 2005. Rapid Environmental flow assessment of the Huong River, Viet Nam, with IUCN. 2004-2005. IWMI funds (USD 57 000).
Impact of irrigation on poverty and the environment.	Development of methods for assessing the impacts of irrigation on ecosystems. CA funded project, Ethiopia. USD 255 273.
Effects of Irrigation systems on wetland ecosystems in developing countries.	Review on impacts of irrigation and other forms of agriculture on inland and coastal environments in developing countries. CA project.

Identifying sustainable options for the mitigation of diffuse agricultural pollution.	To develop improved understanding of the interaction between diffuse agricultural pollution from large-scale irrigation and impact on the river environment and downstream livelihoods, with possible solutions identified to improve the quality of water resources and targeted towards these impacts. Case studies in Egypt and Sri Lanka. DFID-funded project focused on case studies of wetlands in Egypt and Sri Lanka. Mott MacDonald Ltd, UK (Lead) and IWMI. 2004-2006. USD 90 658.
Classifying wetland potential for agriculture.	Framework for establishing wetland working potential. Completed 2004. IWMI funds.
Improving productivity of rice irrigation upstream of the Usangu wetlands, Tanzania, to release water for downstream uses.	Joint project with University of East Anglia (UK) and Sokoine University (Tanzania).
Health and environment component of the investments in agricultural water in Sub-Saharan Africa project.	Project for World Bank and African Development Bank to be completed in 2005. Three case studies completed on: (1) health impacts of small reservoirs in Burkina Faso; (2) comparison of the impacts of different agricultural water development projects in Ghana, using selected environmental and social indicators; (3) environmental and health impact assessment of dambo utilization in Zambia.
Developing a digital wetlands database and maps for wetland management in Sri Lanka.	A wetland digital Database will be developed through inventorying, characterizing, and mapping of Sri Lankan National Wetlands. Digital maps of the inventoried wetlands will be used to assist site management. Central Environmental Authority Sri Lanka, IUCN Sri Lanka, IWMI. US$ 149,000 (mapping component only). 2005-2006.
Pro-poor intervention strategies in irrigated agriculture in Asia.	Follow-up phase of the IWMI-ADB research project expanding the scope and coverage of issues in a book synthesis that includes a chapter on poverty and environment. 2005.
Case studies of sustainable development in wetlands, Zambia and Tanzania.	Investigation of the dynamics and benefits of natural resource use and agriculture in wetlands in Tanzania and Zambia. One component of proposed Umbrella Action Program on wetland development and management. Four case studies conducted in each of Tanzania and Zambia to obtain detailed information on the: multiple uses, values and diverse benefits that wetlands provide rural communities; impact of specific (in particular agricultural) interventions and management strategies on the benefits to be gained from wetlands and the possible harmful impacts of such interventions. FAO-Netherlands Partnership Program and the Land and Water Development Division of FAO. 2003-2004. USD 22 860.
Impact of tsunami on natural resources and livelihoods.	Hambantota, Sri Lanka, post-tsunami needs assessment. Groundwater and water supply study. IWMI funds (USD 12 850).
Agro-ecosystem management for human health in Uda-Walawe irrigation scheme (Sri Lanka).	To increase the productivity of water in the Uda Walawe basin while reducing health risks and protecting the environment through evaluating the impact of different water management techniques on agrochemical inputs, vector breeding and the availability of water for domestic purposes. 2000-2003. USD 149 900. International Development Research Centre and IWMI.
Conservation of wetland biodiversity in the South and East Mediterranean region through reform of the	GEF PDF A submitted by MedWet (lead) and IWMI. FAO-SNEA report prepared on: prospects for mitigating the impacts of the use of water in agriculture on the wetlands of three North African countries: Algeria, Morocco and Tunisia.

agricultural sector as a key water user.	
Millenium Ecosystem Assessment.	Contributions to Wetlands Synthesis Report for the Ramsar Convention and Cultivated Systems Report.

Annex 3: Selected IWMI publications (1998-2004)

IWMI Research Reports

1. The New Era of Water Resources Management: From "Dry" to "Wet" Water Savings
2. Alternative Approaches to Cost Sharing for Water Service to Agriculture in Egypt
3. Integrated Water Resource Systems: Theory and Policy Implications
4. Results of Management Turnover in Two Irrigation Districts in Colombia
5. The IWMI Water Balance Framework: A Model for Project Level Analysis
6. Water and Salinity Balances for Irrigated Agriculture in Pakistan
7. Free-Riders or Victims: Women's Nonparticipation in Irrigation Management in Nepal's Chhattis Mauja Irrigation Scheme
8. Institutional Design Principles for Accountability in Large Irrigation Systems
9. Satellite Remote Sensing for Assessment of Irrigation System Performance: A Case Study in India
10. A Plot of One's Own: Gender Relations and Irrigated Land Allocation Policies in Burkina Faso
11. Impacts of Irrigation Management Transfer: A Review of the Evidence
12. Water Distribution Rules and Water Distribution Performance: A Case Study in the Tambraparani Irrigation System
13. Rehabilitation Planning for Small Tanks in Cascades: A Methodology Based on Rapid Assessment
14. Water as an Economic Good: A Solution, or a Problem?
15. Impact Assessment of Irrigation Management Transfer in the Alto Rio Lerma Irrigation District, Mexico
16. Irrigation Management Transfer in Mexico: A Strategy to Achieve Irrigation District Sustainability
17. Design and Practice of Water Allocation Rules: Lessons from in Pakistan's Punjab Warabandi
18. Impact Assessment of Rehabilitation Intervention in the Gal Oya Left Bank
19. World Water Demand and Supply, 1990 to 2025: Scenarios and Issues
20. Indicators for Comparing Performance of Irrigated Agricultural Systems
21. Need for Institutional Impact Assessment in Planning Irrigation System Modernization
22. Assessing Irrigation Performance with Comparative Indicators: The Case of the Alto Rio Lerma Irrigation District, Mexico
23. Performance of Two Transferred Modules in the Lagunera Region: Water Relations
24. Farmer Response to Rationed and Uncertain Irrigation Supplies
25. Impacts of Colombia's Current Irrigation Management Transfer Program
26. Use of Historical Data as a Decision Support Tool in Watershed Management: A Case Study of the Upper Nilwala Basin in Sri Lanka
27. Remote Sensing and Hydrologic Models for Performance Assessment in Sirsa Irrigation Circle, India
28. Performance Evaluation of the Bhakra Irrigation System, India, Using Remote Sensing and GIs Techniques
29. Generic Typology for Irrigation Systems Operation
30. Mechanically Reclaiming Abandoned Saline Soils: A Numerical Evaluation
31. Gender Issues and Women's Participation in Irrigated Agriculture: The Case of Two Private Irrigation Canals in Carchi, Ecuador
32. Water Scarcity Variations within a Country: A Case Study of Sri Lanka
33. Modernization Using the Structured System Design of the Bhadra Reservoir Project, India: An Intervention Analysis
34. Assessment of Participatory Management of Irrigation Schemes in Sri Lanka: Partial Reforms, Partial Benefits
35. Modernizing Irrigation Operations: Spatially Differentiated Resource Allocations
36. Institutional Change and Shared Management of Water Resources in Large Canal Systems: Results of an Action Research Program in Pakistan
37. Farmer-Based Financing of Operations in the Niger Valley Irrigation Schemes
38. An Assessment of the Small-Scale Irrigation Management Turnover Program in Indonesia.
39. Water Scarcity and the Role of Storage in Development

40. Using Datasets from the Internet for Hydrological Modeling: An Example from the Küçük Menderes Basin, Turkey
41. Urban-Wastewater Reuse for Crop Production in the Water-Short Guanajuato River Basin, Mexico
42. Comparing Estimates of Actual Evapotranspiration from Satellites, Hydrological Models, and Field Data : A Case Study from Western Turkey
43. Integrated Basin Modeling
44. Productivity and Performance of Irrigated Wheat Farms across Canal Commands in the Lower Indus Basin
45. Pedaling out of Poverty : Social Impact of a Manual Irrigation Technology in South Asia
46. Using Remote Sensing Techniques to Evaluate Lining Efficacy of Watercourses
47. Alternate Wet/Dry Irrigation in Rice Cultivation : A Practical Way to Save Water and Control Malaria and Japanese Encephalitis
48. Predicting Water Availability in Irrigation Tank Cascade Systems : The Cascade Water Balance Model
49. Basin-Level Use and Productivity of Water : Examples from South Asia
50. Modeling Scenarios for Water Allocation in the Gediz Basin, Turkey
51. Valuing Water in Irrigated Agriculture and Reservoir Fisheries: A Multiple-Use Irrigation System in Sri Lanka
52. Charging for Irrigation Water : The Issues and Options, with a Case Study from Iran
53. Estimating Productivity of Water at Different Spatial Scales Using Simulation Modeling
54. Wells and Welfare in the Ganga Basin : Public Policy and Private Initiative in Eastern Uttar Pradesh, India
55. Water Scarcity and Managing Seasonal Water Crisis: Lessons from the Kirindi Oya Project in Sri Lanka
56. Hydronomic Zones for Developing Basin Water Conservation Strategies
57. Small Irrigation Tanks as a Source of Malaria Mosquito Vectors: A Study in North-Central Sri Lanka
58. Fundamentals of SmallHolder Irrigation: The Structured System Concept
59. A Gender Performance Indicator for Irrigation: Concepts Tools and Applications
60. Institutional Alternatives in African Smallholder Irrigation: Lessons from International Experience with Irrigation Management Transfer
61. Poverty Dimensions of Irrigation Management Transfer in Large-Scale Canal Irrigation in Andra Pradesh and Gujarat, India
62. Irrigation Sector in Sri Lanka: Recent Investment Trends and the Development Path Ahead
63. Urban Wastewater: A Valuable Resource for Agriculture A Case Study from Haroonabad, Pakistan
64. Use of Untreated Wastewater in Peri-Urban Agriculture in Pakistan: Risks and Opportunities
65. Land and Water productivity of Wheat in the Western Indo-Gangetic Plains of India and Pakistan: A Comparative Analysis.
66. Agro-wells and Pumps in Irrigation Schemes in the Dry Zone of Sri Lanka: Past Trends, Present Status and Future Prospects
67. Water Productivity in the Syr-Darya River Basin
68. Malaria and Land Use: A Spatial and Temporal Risk Analysis in Southern Sri Lanka
69. Tubewell Transfer in Gujarat: A Study of the GWRDC Approach
70. Energy-Irrigation Nexus in South Asia: Improving Groundwater Conservation and Power Sector
71. Policies Drain the North China Plain: Agricultural Policy and Groundwater Depletion in Luancheng County, 1949 – 2000
72. Development Trajectories of River Basins A Conceptual Framework
73. A Method to Identify and Evaluate the Legal and Institutional Framework for the Management of Water & Land in Asia: The Outcome of a Study in Southeast Asia and the People's Republic of China.
74. A Diagnostic Model Framework for Water Use in Rice-based Irrigation Systems.
75. Prospects for Adopting System of Rice Intensification in Sri Lanka: A Socioeconomic Assessment.
76. Small dams and social capital in Yemen: How assistance strategies affect local investment and institutions.

77. Simulating the hydrology of small coastal ecosystems in conditions of limited data.
78. Irrigation Kuznets Curve, governance and dynamics of irrigation development: A global cross-country panel analysis from 1972 to 1991. Research
79. Strategic analysis of water institutions in India: Application of a new research paradigm.
80. Robbing Yadullah's water to irrigate Saeid's garden: Hydrology and water rights in a village of central Iran.
81. Inadequacies in the water reforms in the Kyrgyz Republic: An institutional analysis.
82. Valuing nutrients in soil and water: Concepts and techniques with examples from IWMI studies in the developing world.
83. Spatial variation in water supply and demand across river basins of India.
84. An assessment of small-scale users' inclusion in large-scale water user associations of South Africa.
85. The use of remote sensing data for drought assessment and monitoring in Southwest Asia.
86. Strategies for the management of conjunctive use of surface water and groundwater resources in semi-arid areas: A case study from Pakistan.
87. Economics and politics and of water resources development: Uda Walawe Irrigation Project, Sri Lanka.
88. Planning for environmental water allocations: An example of hydrology-based assessment in the East Rapti River, Nepal.

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1. Research Report 1, 2003: Integrated Land and Water Management for Food and Environmental Security. F.W.T. Penning de Vries, H. Acquay, D. Molden, S.J. Scherr, C. Valentin and O. Cofie
2. Research Report 2, 2004: Taking into Account Environmental Water Requirements in Global-scale Water Resources Assessments. Vladimir Smakhtin, Carmen Revenga and Petra Döll
3. Research Report 3, 2004: Water Management in the Yellow River Basin: Background, Current Critical Issues and Future Research Needs. Mark Giordano, Zhongping Zhu, Ximing CAI, Shangqi Hong, Xuecheng Zhang and Yunpeng Xue.
4. Research Report 4, 2004: Does International Cereal Trade Save Water? The Impact of Virtual Water Trade on Global Water Use. Charlotte de Fraiture, Ximing Cai, Upali Amarasinghe, Mark Rosegrant, and David Molden
5. Research Report 5, 2004: Evolution of Irrigation in South and Southeast Asia. Randolph Barker and François Molle

Current Issues of Water Policy Briefings

1. Innovations in groundwater recharge
2. Wells and welfare
3. The challenges of integrated river basin management
4. The socio-ecology of groundwater
5. Building high-performance knowledge institutions
6. Addressing the needs of poor farmers
7. Rethinking tank rehabilitation
8. Improving water productivity: how do we get more crop per drop?
9. Confronting the realities of wastewater use in agriculture
10. The energy-irrigation nexus
11. Irrigation management transfer: how to make it work for Africa's smallholders?

Books and journal articles by science publishers

1. Water Productivity in Agriculture - Limits and Opportunities for Improvement. Jacob W. Kijne, Randolph Barker and David Molden

IWMI Working Papers

1. Modeling Water Allocation between Wetlands and Irrigated Agriculture: Case Study of the Gediz Basin, Turkey
2. Developing a Hydrological Model for the Mekong Basins Impacts of Basin development in Fisheries Productivity
3. Olifants River Irrigation Schemes - Reports 1 & 2
4. Irrigation Management in Pakistan and India: Comparing Notes on Institutions and Policies
5. A Framework for Institutional Analysis for Water Resources Management in a River Basin Context
6. Irrigation, Health and Environment - A Review of Literature from Turkey
7. Elixir or Opiate? - An Assessment of Minor Irrigation Policies in North Bengal
8. An Assessment of Female Participation in Minor Irrigation Systems of Sri Lanka
9. Water Distribution Equity in Sindh Province, Pakistan
10. Gender and Irrigation in India - The Women's Irrigation Group of Jambar, South Gujarat
11. Gender in Lift Irrigation Schemes in East Gujarat, India
12. Achieving stable Canal Conditions Following Remodeling : The Case Study of Bareji Distributary, Mirpurkhas
13. Remodeling of Outlets in Three Pilot Distributaries Under the Farmer Managed Irrigation Project in Sindh Province, Pakistan
14. Spatial variation in Land and Water Productivity Across Punjab Canal Commands
15. Women Irrigators and Leaders in the West Gandak Scheme, Nepal
16. Capacity Building for Participatory Irrigation Management in Sindh Province of Pakistan
17. Hydro-Institutional Mapping in the Steelpoort River Basin.
18. Policies, Legislation and Organizations Related to Water in South Africa, with Special Reference to the Olifants River Basin
19. Empowerment Of Farmer Organizations : The Case Of the Farmer Managed Irrigated Agriculture Project, Sind Province Pakistan
20. Estimating the Potential of Rainfed Agriculture - Draft discussion paper
21. Malaria Risk Mapping in Sri Lanka - Results from the Uda Walawe Area
22. Crop Growth and Soil Water Balance Modeling to Explore Water Management options
23. Analysis of Hydro-meteorological time series, searching Evidence for Climatic change in the Upper Indus Basin
24. Spatial distribution of Reference and Potential Evapotranspiration Across the Indus Basin Irrigation Irrigation Systems
25. Childhood Diarrhea and Hygiene : Mothers' Perception and Practices in the Punjab, Pakistan
26. A Framework for Analysing Socioeconomic, Health and Environmental Impacts of Wastewater Use in Agriculture in Developing Countries
27. Ruhuna Benchmark Basin Activities - Proceedings of the Inaugural Meeting held at Peacock Beach Hotel, Hambantota, Sri Lanka, 15 June 2001.
28. Institutional Arrangements for Land Drainage in Developing Countries
29. Malaria Risk Mapping in Sri Lanka - Implications for its Use in Control
30. Wastewater Reuse in Agriculture in Vietnam : Water Management, Environment and Human Health Aspects
31. Assessment of Performance and Impact of Irrigation and Water Resources Systems in Taiwan and Sri Lanka
32. Water for Rural Development : Background Paper on Water for Rural Development Prepared for the World Bank
33. Farmers' Perceptions of the Social Mobilization of Water User Organizations in the Sindh, Pakistan
34. Proposed Business Plan for Pilot Farmer Organizations
35. Root Zone Salinity Management Using Fractional Skimming Wells with Pressurized Irrigation: Inception Report
36. Global Irrigated Area Mapping : Overview and Recommendations
37. Wastewater use in Agriculture : Review of Impacts and Methodological Issues in Valuing Impacts
38. Do Equal Land and Water Rights Benefit the Poor? Targeted Irrigation Development: The Case of the Andhi Khola Irrigation Scheme in Nepal

39. Irrigation Impacts on Income Inequality and Poverty Alleviation : Policy Issues and Options for Improved Management of Irrigation Systems
40. Farmers' Skimming Well Technologies: Practices, Problems, Perceptions and Prospects
41. Integrated Development and Management of Water Resources for Productive and Equitable Use in the Indrawati River Basin, Nepal
42. Environmental Water Needs and Impacts of Irrigated Agriculture in River Basins : A Framework for a New Research Program
43. Accounting of Agricultural and Nonagricultural Impacts of Irrigation and Drainage Systems: A Study of Multifunctionality in Rice
44. Simulating Impacts of Irrigation on the Hydrology of the Karagan Lagoon in Sri Lanka
45. Pesticides: Health Impacts and Alternatives Proceedings of a Workshop Held in Colombo 24 January 2002
46. Linkages between Irrigation and Drinking Water in Pakistan
47. Malaria in Irrigated Agriculture
48. Conjunctive Water Management in the Rechna Doab: An Overview of Resources and Issues
49. Water Resources Management in Afghanistan: The Issues and Options
50. Institutional Constraints to Conjunctive Water Management in the Rechna Doab
53. Integrated Database Development for River Basin Management: An Example from Rechna Doab
54. Growing More Rice with Less Water: Increasing Water productivity in Rice-Based Cropping Systems
55. Innovative Approaches Agricultural Water Use for Improving Food Security in Sub-Saharan Africa
56. Strategies for Conserving Water and Effecting Mosquito Vector Control in Rice Ecosystems: A Case Study from Tamil Nadu, India
57. Yellow River Comprehensive Assessment, Basin Features and Issues
58. Developing Effective Institutions for Water Resources Management: A Case Study in the Deduru Oya Basin, Sri Lanka
59. Multi-Level Participatory Consultive Approach for Institutional Change in River Basins: Lessons from the Deduru Oya Case Study
60. Food Security and Sustainable Agriculture in India: The Water Management Challenge
61. Anicut Systems in Sri Lanka : The Case of Upper Walawe River Basin
62. Rethinking Tanks: Opportunities for Revitalising Irrigation Tanks - Empirical Findings from Ananthapur District, Andhra Pradesh, India
63. Biodiversity Associated with the Rice Field Agro-ecosystem in Asian Countries: A Brief Review
64. The Groundwater Economy of Pakistan
65. Growing More Rice with Less Water: Increasing Water Productivity in Rice-Based Cropping Systems
66. Improving Agricultural Productivity for Poverty Alleviation through Integrated Service Provision with Public-Private Sector Partnerships: Examples and Issues
68. Accounting of Agricultural and Nonagricultural Impacts of Irrigation and Drainage Systems
69. Institutional Changes to Reduce Land Preparation Delay in the North Central Province of Sri Lanka
70. Gender Roles and Multiple Uses of Water in North Gujarat
71. Formal Water Rights in Rural Tanzania: Deepening the Dichotomy?
72. The Transformation of Irrigation Boards into Water User Associations in South Africa: Case Studies of the Lower Olifants, Great Letaba and Vaalharts Water User Associations Volume 1
73. The Transformation of Irrigation Boards into Water User Associations in South Africa: Case Studies of the Umlaas, Komati, Lomati and Hereford Irrigation Boards Volume 2
74. Possible Impacts of the Transformation of Water Infrastructure on Productive Water Uses: The Case of the Seokodibeng Village in South Africa
75. The River Basin Game: A Water Dialogue Tool
77. Institutions for Integrated Water-Resources Management in River Basins: A Synthesis of IWMI Research
78. Institutions for Integrated Water-Resources Management in River Basins: An Analytical Framework

79. Institutional Analysis of Integrated Water Resources Management in River Basins: A Methodology Paper
80. Institutional/Legal Classification, MSEC Project Sites in Thailand and Lao PDR
81. Institutions for Integrated Water Resources Management in Upland Watersheds of Southeast Asia: A Comparative Analysis of Thailand and Lao PDR
83. Review, Automated Estimation and Analyses of Drought Indices in South Asia
84. Review and Analysis of Drought Monitoring, Declaration and Management in India
85. Drought Mitigation in Pakistan: Current Status and Options for Future Strategies
86. Analysis of Drought Coping Strategies in Baluchistan and Sindh Provinces of Pakistan

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1. Working Paper 3 - Comprehensive Global Assessment of Costs, Benefits and Future Directions of Irrigated Agriculture: A proposed Methodology to Carry out a Definitive and Authoritative Analysis of Performance, Impacts and Costs of Irrigated Agriculture by K. Strzepek, D.Molden, H. Galbraith
2. Working Paper 32 - Water for Rural Development Water for Rural Development, Background Paper on Water for Rural Development prepared for the World Bank - David Molden, Upali Amarasinghe and Intizar Hussain
3. Working Paper 36 - Global Irrigated Area Mapping. by Peter Droogers
4. The Closure of the Chao Phraya River Basin in Thailand: Its Causes, Consequences and Policy Implications by François Molle
5. Perspectives on Asian Irrigation by Randolph Barker and François Molle
6. The Intricacies of Water Pricing in the Red River Delta, Vietnam by Jean-Philippe Fontenelle and François Molle
7. To price or not to price? Thailand and the stigma of "free water" by François Molle
8. Comprehensive Assessment of Socio-Economic Impacts of Agricultural Water Uses: Concepts, Approaches and Analytical Tools-Intizar Hussain and Madhusudan Bhattarai
9. Working Paper 43 - Accounting of Agricultural and Nonagricultural Impacts of Irrigation and Drainage Systems: A Study of Multifunctionality in Rice -by Y, Matsuno, H.S. Ko, C.H. Tan, R. Barker and G. Levine
10. Working Paper 55 - Innovative approaches to agricultural water use for improving food security in Sub-Sahara Africa by A. Inocencio, H. Sally and D.J. Merrey
11. Biodiversity associated with the rice field agro-ecosystem in Asian countries: a brief review by Channa N.B. Bambaradeniya and Felix P. Amerasinghe
12. Irrigation Impact on Agricultural Growth and Poverty Alleviation: Macro Level Impact Analyses in India by Madhusudan Bhattarai and A. Narayanamoorthy
13. Irrigation and other Factors Contribution to the Agricultural Growth and Development in India: A Cross-State Panel Data Analysis for 1970 to 94 by Madhusudan Bhattarai and A. Narayanamoorthy
14. Working Paper 57 - Yellow River Comprehensive Assessment; Basin Features and Issues Collaborative Research between IWMI and YRCC by Zhongping Zhu, Mark Giordano, Ximing Cai, David Molden, Hong Shangchi, Zhang Huiyan, Lian Yu, Li Huian, Zhang Xuecheng, Zhang Xinghai, Xue Yunpeng

Annex 4: Select M.Sc. and Ph.D. theses and ongoing projects

Boelee, E. 1999. Irrigation ecology of schistosomiasis: Environmental control options in Morocco. Ph.D. thesis, Wageningen University, Wageningen, Netherlands. 200p.

Piyankarage, S. C. 2002. Assessment of drainage water quality from the Kirindi Oya and the Badagiriya Irrigation Schemes and estimation of nitrogen and phosphorus loading to the Bundala wetland. M.Sc. thesis, University of Kelaniya, Kelaniya, Sri Lanka. xii, 123p.

Jinendradasa, S. 2004. Selected ecological processes and bleaching induced alterations in *Acropora formosa* dominated shallow reefs of South West Sri Lanka. Ph.D. thesis, University of Colombo, Sri Lanka. xxi, 356p. + annexes.

Muthuwatta, L. P. 2004. Long term rainfall-runoff-lake level modelling of the Lake Naivasha Basin, Kenya. M.Sc. thesis, International Institute for Geo-Information Science and Earth Observation, Enschede, Netherlands. 71p.

Ph.D. Scholarship Program

2000-2001
Ms. Mini G. (India)
Institute of Social & Economic Change, Bangalore, India
Water users' associations and irrigation management with special reference to environmental problems

2001-2004
Mr. Jeroen Ensink (Netherlands)
London School of Hygiene and Tropical Medicine, UK
Research activities of the IWMI Water, Health and Environment Program implemented in the Haku 6R Area, Pakistan

2002-2004
Ms. Sonali Senaratna (Sri Lanka)
Imperial College of London, UK
Factors Influencing the Sustainability of Natural Resource Use and Management of Coastal Wetland Systems in Sri Lanka.

2002-2005
Mr. Japhet Kashaigili (Tanzania)
University of Dar-es-Salaam, Tanzania
Assessment of Hydrological and Production Roles of Wetlands and Swamps in the Usangu Wetlands.

2002-2005
Ms. Eveline Klinkenberg (Netherlands)
Liverpool School of Tropical Medicine, UK
Impact of urban agriculture on malaria transmission in Ghana.

2003
Mr. Ashok Regmi (Nepal)
Indiana University, USA
The Role of Heterogeneity in Collective Action: A Look at the Inter Tie between Irrigation and Forests.

2003-2006
Mr. W.J. Ntow (Ghana)
UNESCO-IHE, Netherlands

Health and environmental implications of pesticide use in informal and formal vegetable irrigation in Ghana.

2003-2006
Mr. Olivier Briët (Netherlands)
Swiss Tropical Institute, University of Basel, Switzerland
Environmental Risk Factors for Malaria.

2004-2007
Ms. Jeniffer Kinoti (Kenya)
UNESCO-IHE, Netherlands
Watershed planning of system-innovations: Spatial mapping of environmental and hydrological determinants. A case study of Pangani River Basin, Tanzania.

2004-2009
Mr. S. C. Piyankarage (Sri Lanka)
University of Illinois, USA
Simulating Hydrologic Reference Conditions of Coastal Lagoons Affected by Irrigation Flows in Southern Sri Lanka (tbc).