

NEWS OF IWMI'S WORK IN AFRICA

# WATER FIGURES AFRICA



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## ISSUE 1 2006

# TURNING RESEARCH INTO DEVELOPMENT





# 4<sup>th</sup> World Water Forum in Mexico

ARLENE INOCENCIO, BARBARA VAN KOPPEN, ELINE BOELEE,  
KWAKU SAKYI-ADDO, TONYA SCHUETZ, AKICA BAHRI

The World Water Forum in Mexico City in March this year brought several thousand water experts together to discuss scores of important topics at a variety of sessions. In three parallel sessions water issues in an African context were presented, including the question of privatisation of water management and distribution.

One session was on "Investment in Agricultural Water Management in Sub-Saharan Africa: Diagnosis of Trends and Opportunities" under-scoring an urgent need to reinvest in agricultural water. The key lesson learned through the recent collaborative research was that the cost of successful irrigation projects in Sub-Saharan Africa (SSA) does not significantly differ from the costs of similar projects elsewhere. Search for effective, lower cost alternatives to conventional irrigation is important. Investing in large projects comprising many small scale schemes was more cost-effective. While larger projects are shown to be more economically viable than smaller ones, investments in water infrastructure including developing more storage need to be increased. One key challenge is to make use of the nearly 2 Mha in SSA which is equipped but not utilized. Water and soil nutrient management must be linked. It is necessary to improve management capability and skills/capacity of all role-players. and that agricultural water management has to be holistic and integrated. Investments must prioritize farmer-led and farmer-demanded projects tailored to local needs. Irrigation projects must also take into account water supply and sanitation needs of the target population. Panelists highlighted the dire need to set up information systems to improve planning and decision-making in agriculture and water resource development and management, and effective regional markets to promote agricultural growth and development. Energy is often a key component in water-related technologies and should be considered in evaluating investment options, especially in the light of rising oil prices. Questions related to water quality must also be considered if an integrated approach is to be pursued.

Another session focused on Africa was on urban and peri-urban Waste Water Agriculture facilitated by the International Water Management Institute. This session brought together as panelists a City Councillor and a vendor from Kampala, Uganda; a farmer from Nairobi, Kenya, and micro-biologists from Ghana and Sri Lanka. The session was especially innovative as it adopted a radio talk format, moderated by a real radio journalist. The panelists recognised the role of urban waste water farmers play in the economy, and public nutrition. However, they also conceded that there were risks associated with untreated waste water agriculture from microbial contamination. Even so, they put forward suggestions for minimising the risks. For example, rather than banning the farmers, the Kampala city council has given them legitimacy, by providing them with pipe-borne water and education. "We're working with them, rather than fighting them. And this has allowed various NGOs to also help them. Previously it would have been seen as condoning an illegality," according to Mrs. Winnie Makombi.

In Nairobi, some farmers have formed associations and are asking for rights to land. "If we have long term access to the land then the association would look for help and invest in clean water for irrigation. But since we're squatters, we could be driven off the land

anytime," says Mr. Edward Ndegwa Wanjohi, the Nairobi farmer who attended the 4th World Water Forum in Mexico.

During the session on 'Multiple-use water services' at the World Water Forum in Mexico, the expert panellists from both the irrigation and domestic water sectors all agreed: multiple-use water services approaches are the way to go. They responded to the presentations by the action-research project 'Multiple-use Systems', supported by the Challenge Program on Water and Food. Presentations were made by Local Actions from Africa, Latin America, and Asia and of the generic conceptual framework or 'learning wheel' on implementing and up-scaling of multiple use water services. Roberto Lenton, chair of the Technical Committee of the Global Water Partnership confirmed: 'Multiple use services are exactly the perfect examples of what we like to think GWP is all about...they integrate solutions to difficult problems of water and development.' He challenged water experts to think afresh because 'it is we, the water professionals, who have created the barriers between us, and it is we who must break them down'. Ede Jorge Ijiasz, the Global Manager of the Water and Sanitation Program of the World Bank expressed a similar vision: "We cannot do rural water supply projects without considering productive uses ... We should realise this in the same way that we learnt that sanitation had to be integrated with water supply in the 1980s." For more on what multiple-use water services are see page 3.

## Note from the Editor

We are happy to bring this current issue to you from the new IWMI regional office in Accra, Ghana though it has been a while due to changes that have been taking place. We hope you enjoy the articles and welcome your questions and comments.

For more information on the research described in this issue, contact Tonya Schuetz, Editor, E-mail [tschuetz@cgiar.org](mailto:tschuetz@cgiar.org) Postal address: Africa Water Update, PMB CT 112, Cantonments, Accra, Ghana

**The Africa Water Update** is also available online in English and French at [www.iwmi.org/africawaterupdate](http://www.iwmi.org/africawaterupdate)

## In our next issue

As more research results come through we make it our business to report on them. We will bring more news on the work being done by IWMI and its partners in Africa and inform about the research priorities of the regional offices.

Turn to the Africa Water Update for coverage on a range of subjects from irrigation impacts on poverty to crop water productivity, from multiple-use systems to smallholder farming systems, from integrated water resources management for agriculture to water resources institutions and policies, as well as the impact of water management decisions on health and the environment.



## 4<sup>th</sup> World Water Forum in Mexico

# Multiple-use water services approaches are the way to go

BARBARA VAN KOPPEN, IWMI South Africa Office and ELINE BOELEE, IWMI East Africa Office

What are multiple-use water services? In brief, integrated water resources management in rural and peri-urban areas starts at the household level. It involves women and men using water in an integrated way for drinking, other domestic purposes, but also for livestock, gardening, fisheries, tree growing, brick making, small businesses and ceremonies. Delivering water to cater for these multiple water needs is integrated water management where it matters and significantly contributes to achieving the Millennium Development Goals. Multiple-use services overcome the traditional ways in which the water sector itself was split into sectors with single-use mandates, where one sector is supposed to deliver 'domestic' water, and another, 'irrigation' water. Yet, any domestic or irrigation scheme planned for such single water use is de facto used for multiple purposes. Anticipating and designing for such multiple needs improves more dimensions of wellbeing (food, income, and health); enhances water efficiency by 'more use per drop'; fosters willingness and ability to pay; and better ensures scheme sustainability; at no or low incremental technology costs.

IWMI's Research Report 98 'Multiple-use water services to advance the Millennium Development Goals' unpacks multiple-use water services in-depth, as found by the action-research project on 'Multiple-use Systems' supported by the Challenge Program on Water and Food. In a review of global literature from the various water sectors, a distinction is made between 'single-use planning and design approaches' which, in reality, always lead to de facto multiple-use water systems, and 'domestic-plus', 'irrigation-plus', and full-fledged 'multiple-use' planning and design approaches. The report identifies the many merits of multiple-use approaches as found in the past. It also identifies the conditions that need to be created in the future in order to implement multiple-use services at community level and to upscale multiple-use approaches at intermediate levels (local government, service providers, local NGOs etc) and at national levels. These conceptual underpinnings are captured in a 'learning wheel' which the project team and its national learning alliances compiled at the start of the project, facilitated by Juergen Hagmann. This generic framework guides the project's action-research in Ethiopia and South Africa, and six other countries in five benchmark basins of the Challenge Program on Water and Food. Findings of each site will feed into the learning wheel and allow cross-basin comparison. Thus, by the end of the project in December 2007, we hope to establish generic field-tested models, guidelines and tools on how to implement and upscale multiple water use approaches worldwide.



Photo: Barbara van Koppen  
Washing bicycle in canal

### Further reading:

- Feedback on the multiple use water services session at the 4th World Water Forum, Mexico, by John Butterworth. In: News from the ProdWat Thematic Group No. 4, April 2006, at [www.prodwat.watsan.net](http://www.prodwat.watsan.net)
- IWMI-HRC-GWP Water Policy Briefing Issue 18. 2006. Taking a multiple-use approach to meeting the water needs of poor communities brings multiple benefits.
- Van Koppen, Barbara; Moriarty, Patrick and Boelee, Eline. 2006. Multiple-use water services to advance the Millennium Development Goals. Research Report 98. International Water Management Institute, IRC, and Challenge Program on Water and Food. Colombo, Sri Lanka: IWMI
- Multiple Use Systems Project, supported by the Challenge Program on Water and Food. [www.musproject.net](http://www.musproject.net) Contact: Barbara van Koppen at [b.vankoppen@cgiar.org](mailto:b.vankoppen@cgiar.org) or Eline Boelee at [e.boelee@cgiar.org](mailto:e.boelee@cgiar.org)
- PRODWAT: IRC Thematic Group about the productive uses of water [www.prodwat.watsan.net](http://www.prodwat.watsan.net) Patrick Moriarty at [moriarty@irc.nl](mailto:moriarty@irc.nl)

# The WORLD WATER DAY in Ghana

EVA SCHIFFER, IFPRI, Bolgatanga, Ghana



For the first time since Ghana started celebrating the UN World Water Day, research played a distinct role in the national celebrations. The activities were generously supported by the Challenge Program on Water for Food (CPWF) Volta Basin Coordinator, the GLOWA Volta Research Project and by the CPWF project Integrating Governance and Modeling. The national celebration was held in Bolgatanga, Upper East Region of Ghana. The day was marked by a colorful program that included a children's drawing and essay competition, the display of the traditional rain dances of the close-by Tongo hills, a children's "water road march" through town, a demonstration of adapted technologies for rural drinking water provision and a festive durbar with regional, national and international guests. On the celebration grounds an exhibition of posters introduced water related research taking place in the White Volta Basin. The exhibition focused on the activities of the Challenge Program for Water and Food with its eight on-going projects in the Volta Basin and the GLOWA Volta Project. Visitors were taken on a guided tour of the posters to increase visibility and improve understanding of research issues.

A brochure that introduced "water-research" and the activities of CPWF was distributed. To capture the experience of participants in the celebration, different members of the general public were interviewed about their personal view of the event. Interview with member of staff at the State Housing Company

## **How did you hear about the world water day celebrations in Bolga?**

*Well, I heard the announcements on the radio but also the loudspeaker car that drove through our area to invite us. So I went to the place to see what it was all about*

## **What did you enjoy most about the celebration?**

*Oh, it was the first time that I saw them having children's competitions for a water day. That is so important. You know, children can talk a lot – with their friends and in their homes. If they understand water well, they can tell their ideas to everyone.*

## **What did you learn on the day?**

*They told us so much about what you can do to protect your water, all the small small things you can do in the household. It is not only about putting no dirt in the rivers, but also about using the water that we have wisely.*

*Interview with member of staff at the Ghana Water Company, irrigation farmer and plumber*

*I saw you at our World Water Day celebration, how did you hear about the event?*

*I went there in my function as member of staff of the Water Company. I was there to represent my organization.*

## **Did you like it?**

*Yes, I was impressed, because this year the celebration was so much*

*bigger than all the other years. It was much better. And more different groups were involved. Children and everyone.*

## **What impressed you most?**

*Well, you had a lot of important people on the podium, giving speeches; there was the Deputy Minister for Water Resources, Works and Housing for example.*

## **What did you learn on the day?**

*Well, you know, I'm working for Ghana Water, do my plumbing work and I irrigate at Ve a dam. I've worked in the field of water resources for more than 20 years.*

## **That means you're a real water expert?**

*Very good! That is right. But I think for a lot of people it was good to see, how the different areas of water resources management are linked and that you have to look at everything if you want to look at water.*

*Interview Cuso Volunteer with Cinsudi (local NGO) in Bolgatanga, from Canada*

## **What did you enjoy most of the World Water Day Celebrations?**

*I really enjoyed the rain dances, because that was something different. I like this kind of rhythm and all this stamping and chanting. It really fitted well with the theme of water and culture.*

*The poster presentation was very informative because I always wondered what the researchers do up here. The pamphlet on water research was very helpful as well, now I know what they do. The pamphlet is also good because I can show it to other people if they ask and the researchers will not be strangers any more.*

*Of all the speeches I remember the opening prayer best because the priest related it so well. He captured why we need the World Water Day. He said "Father we abuse the water you have given us, forgive us". He mentioned all the ways in which water is wasted, like not repairing a leaking pipe or putting waste into the rivers and that all this is a sin against God's creation. So we need a Water Day to remember that. His advice was so concrete; he told people what they could do to actually preserve water.*

## **What is your understanding about the link between water and culture?**

*Water is the source of life and since it sustains life it would make sense if all people would respect it. Because it is so important, it forms the basis of a lot of cultures -especially in places where it is scarce like here.*

## **What did you learn on that day?**

*I learnt about the rain dance, about the researchers on the Challenge Program in northern Ghana and I learnt that there is a washing hands campaign here.*

*One speaker said that in Burkina they manage their water much better than Ghana though they have far less. That means we can achieve more in Ghana, if we just try hard.*



# National Irrigation Seminar Draws on the Outcomes of the APPIA\* Project to Set Future Directions in Irrigation

Photo: Philippe Lempérière

Engineers and farmers discussing water pumping and distribution

PHILIPPE LEMPÉRIÈRE, IWMI East Africa Office

In March 2006, IWMI and the government of Kenya co-organized a National Irrigation Seminar that largely used the outcomes of the APPIA\* project to discuss the current status of irrigation in Kenya and the way forward. The project covers Ethiopia, Kenya and five countries in West Africa (Burkina Faso, Mali, Mauritanie, Niger, Senegal). It was started in Kenya in June 2003 by Philippe Lempérière of IWMI's East Africa Office and is implemented by IWMI and Kenyan public and private sectors. The project established a typology of the approximately 6000 irrigation schemes in Kenya and assessed the performance of a sample of ten schemes representing the various types of small-holder irrigation systems. Assessments were carried out using a method which involved farmers and professionals of the irrigation sector. This method was developed by IWMI and has now been published by the FAO (van der Schans, Martin L., Lempérière, P. Manual Participatory Rapid Diagnosis and Action Planning for Irrigated Agricultural Systems (PRDA), 2006). These performance assessments generated action plans that are currently being implemented by irrigating farmers associations and their extension officers. First monitoring results show that extension officers now understand the needs and interests of farmers much better.

In the APPIA approach, various categories of stakeholders, e.g. farmers, extension staff, researchers and policymakers are in-

involved in the activities. Hence, IWMI organized a seminar for the Ministry of Water and Irrigation, aimed at providing a comprehensive picture of the irrigation sector, using the lessons learnt from APPIA. The Minister of Water and Irrigation, Mr. John M. Katuku, agreed to cover half of the seminar costs and funded the production of a video documentary on irrigation in Kenya which was broadcast on two national TV channels.

The Minister of Water and Irrigation, Mr. John M. Katuku, opened the seminar. Also present were the Vice Minister of Finance, Mr. John Kenet and the Minister of Agriculture, Mr. Kipruto A. Kirwa, who chaired the closing ceremony. Donors like the European Union, JICA, GTZ and the World Bank were also present.

The seminar was a success for two reasons:

- ◊ APPIA produced first hand information on the productivity and constraints of irrigation which is useful for policy makers.
- ◊ All stakeholders—all interest groups—ranging from farmers through researchers, to professionals with a variety of backgrounds and responsibilities, were involved in discussing development proposals. This is a direct result of the APPIA approach.

**\* APPIA: Amélioration des Performances des Périmètres Irrigués en Afrique—“Improving irrigation performance in Africa.”** APPIA combines development of methods, networking amongst professionals, comparisons across countries, and the production of information for policymakers. It has had a direct impact on the performance of selected irrigation schemes. The project contributes to strategic planning and governance of the irrigation sector—illustrating IWMI's strategic objectives of “understanding water productivity” and “analyzing high potential interventions”.

# Focus on Capacity Building: Lessons from the African Transboundary Governance Project

AMY SULLIVAN, IWMI South Africa Office

The African Models of Transboundary Governance Project has invested heavily in capacity building as a key objective. During the development of the project, NARES and other national partners identified a lack of trained social science researchers to carry out institutional analysis. The project sought to help fill the gap by devoting significant resources to identifying, selecting, training, and supervising nearly twenty university students, from a range of backgrounds and disciplines, to conduct field work in the six study countries. As the year-long field work phase comes to an end, project staff has learned a great deal about preparing students to meet project needs whilst supporting them to meet their own academic requirements and expectations at the same time.

Selected students from participating countries in the Volta (Burkina Faso and Ghana) and Limpopo (Botswana, Zimbabwe, Mozambique and South Africa) basins participated in an intensive, 5-day social science research methods training course in Ghana in June 2005. The training, designed and delivered by IFPRI and IWMI researchers, focused on preparing students to explore and analyze traditional strategies for water governance at local levels.

Training topics included principles of scientific research, institutional arrangements, field techniques, sampling, and data management.

As part of the training, students helped to establish criteria for site and case selection, as well as organize instruments for collecting data. They worked in country teams to customize tools and develop national protocols for initiating and carrying out field research. The common training of all country teams provided the basis for cross-country comparisons and networking among the researchers.

## Investment of our time is critical for building research capacity

This five day training was only the first step toward strengthening students' capacities to carry out field work and deliver quality outputs. Project staff reinforced key principles and lessons learned during the training by spending time with students in the field. This also enabled project staff to monitor students' progress in data collection and assess their strengths and weaknesses as field researchers. It also allowed them to address methodological questions and concerns as they arose, and train students in further data management in real time. Project staff also used the time in the field with students to advise them on their own research topics, methods and processes.

The Director General of IWMI, Frank Rijsberman, recently suggested that "It is our absolute core business to collaborate with partners from the South and to help develop a cadre of researchers, from the South, who do the work we do" by investing in them. Our experience in this project suggests that while financial investment in tuition and field support, for example, is important, equally so is the investment of our time. Students, like researchers, come with relative strengths and weaknesses. Assessing the former and addressing the latter has provided project staff with ample opportunity to build capacity while learning from some of the people most familiar with local circumstances. Perhaps most importantly, students in this project are increasing their analytical abilities within the context of the challenges facing their own countries and rural populations.

Students and the coordinator of the project team in Burkina Faso undergo hands-on training in data entry and management after returning from the field.



Photo: Amy Sullivan

# Improving Food Security in Southern Africa through Micro-Agricultural Water Management Technologies

DOUG MERREY, Food Agriculture and Natural Resources Policy Analysis Network (FANRPAN), [www.fanrpan.org](http://www.fanrpan.org).

## Introduction

There is reasonable, though not conclusive, evidence that “micro-agricultural water management” (micro-AWM) technologies and practices can provide a cost-effective and reasonably rapid avenue for improving food security in Southern Africa. Specifically, treadle pumps, as well as low-cost drip irrigation kits, clay pot irrigation, conservation farming practices that integrate nutrient and water management, and various water harvesting and storage technologies have a significant potential for enabling poor farmers to improve household food security and incomes. As a result, the vicious cycle of declining intake of calories and worsening nutritional and health status in rural Southern Africa can be reversed.

This is the main conclusion of a study recently completed by IWMI. The study was commissioned by the Investment Centre of the Food and Agriculture Organization of the United Nations (FAO), and the Southern Africa Regional Office of the Office of Foreign Disaster Assistance, United States Agency for International Development (USAID). FAO is assisting the African Development Bank and the Southern Africa Development Community (SADC) to design a regional investment and capacity building project, while USAID wishes to improve the effectiveness of its current programs implemented through NGOs.

The methodology involved several activities. Partners in Botswana, Lesotho, Malawi, Mozambique, Namibia, Swaziland, Tanzania, Zambia, and Zimbabwe used a terms of reference and inventory format to obtain country-level data. The partners interviewed key informants, reviewed local literature, and drew on their own experiences. IWMI also commissioned an in-depth impact assessment of treadle pumps in Malawi (see box), and a global literature review through the internet.

### Pedaling Out of Poverty in Malawi

A comparison of 50 treadle pump adopters to 50 non-adopters in two districts of Malawi showed that adopters had significantly higher incomes, better food security, and were creating additional employment. Non-adopters (using watering cans) were significantly poorer, and had a far higher risk of falling into poverty than adopters. These results are consistent with results from Kenya, Tanzania and West African countries, and strongly support the recommendation to increase support for treadle pump provision in Africa. Prof. Julius Mangisoni, University of Malawi, carried out this study for IWMI; it is currently being prepared for publication.

## Recommendations

The study makes 13 recommendations. A basic premise is that it is poor people themselves, not governments and donors, who will achieve the Millennium Development Goals (or not). Therefore, we strongly recommend supporting people’s creativity using participatory approaches, offering choices that people can adapt and combine as needed. Users should be empowered to make their own decisions. They should be given support services that reduce risk and offer basic resources. The study recommends targeting the poorest and those with insufficient food. Often these are households headed by women, or those in which women play the critical role in producing and providing food.

While not devaluing the current market-orientation of development programs, we suggest that in the short to medium term this does little to help the poorest people. We therefore recommend that far more resources be allocated to targeting and assisting the very poor. Helping them achieve basic food sufficiency will make it possible for many of them to take the next steps into market-oriented commercial production. Others will be able to use income from off-farm employment for other essential needs like school expenses. Most people will be able to improve their health and labor productivity, participate more effectively in educational pursuits and lead better lives.

Being “divisible,” micro-AWM technologies can be used directly by individuals and small groups. They offer a relatively fast and cost-effective way to achieve the MDGs. They also lend themselves to provision by the private sector. However, local markets in most SADC countries are too small for a competitive micro-AWM industry to develop. Therefore, we recommend that a regional market be created to capture economies of scale. India provides a model in this regard. Governments can also consider “kick-starting” the micro-AWM industry for a limited term by providing large numbers of subsidized units to create a market for support services including repair, spare parts, and future replacement.

NGOs and governments promoting micro-AWM technologies as part of their relief efforts should move away from this to long-term development. We have found cases where well-meaning provision of technologies like drip irrigation kits has had no impact because of the lack of longer term service provision and training. This is not a good use of scarce resources.

Finally, we strongly recommend more investment in monitoring, assessing impacts and cost-effectiveness, pilot testing innovations, and sharing the lessons learned more widely. Creating “learning alliances” among interested partners is one effective way to achieve this. We see great potential from sharing experiences between Asia (especially India) and Sub-Saharan Africa.

For more information contact: Regassa Namara ([r.namara@cgiar.org](mailto:r.namara@cgiar.org)), International Water Management Institute, [www.iwmi.cgiar.org](http://www.iwmi.cgiar.org) or Doug Merrey ([djmerrey@fanrpan.org](mailto:djmerrey@fanrpan.org)). The final report, Malawi case study and country reports are available from IWMI’s Southern Africa Office on a CD ([iwmi-africa@cgiar.org](mailto:iwmi-africa@cgiar.org)).



# National Symposium and Exhibition on Best Practices and Technologies for Agricultural Water Management in Ethiopia

SELESHI BEKELE, IWMI East Africa Office



Seleshi B. Awulachew, IWMI Regional Representative for Nile Basin and East Africa

Over 130 participants from various sectors attended a national symposium organized by IWMI, USAID, the Ministry of Agriculture and Rural Development, and the Ministry of Water Resources of Ethiopia in Addis Ababa in March 2006. The symposium had three objectives. The first, to share experiences among government, NGOs, smallholder and commercial farmers, producers/distributors of irrigation equipment and individuals in the value chain of irrigation, international donors and financial institutions and related stakeholders that are working around small-scale irrigation (SSI), rainwater harvesting (RWH) and micro-irrigation (MI) technologies. The second, to review past and current practice of rainwater harvesting, micro-irrigation and small-scale irrigation technology usage in Ethiopia. The third, to explore opportunities and mechanisms through which the uptake of knowledge, application, and dissemination and out scaling of SSI, MI and RWH technologies could be enhanced.

The themes of the symposium and exhibition were:

- ◊ Assessment of current practices of small-scale agricultural water management and irrigation development in Ethiopia
- ◊ State-of-the-art and best technologies review in RWH, SSI and MI

- ◊ Private sector participation in irrigation development and management, technologies and equipment development, service provision and agro-processing
- ◊ Policies and institutional support conditions for small scale irrigation in Ethiopia

Eighteen papers were presented, about ten irrigation equipment exhibited and two photographic exhibitions put up. Conclusions were drawn on five key areas out of group and plenary discussions: natural resources use and management; technologies; private sector and rural entrepreneurship development; policy and institutions; and capacity building.

This unique event concluded with establishing a national steering committee, which will continue dialogue among various stakeholders such as public and private sectors based on the outputs of this symposium, and will also guide the study, compilation and information system on best practices, liaise with appropriate institutions to disseminate the best practices through regular workshops and study tours, and create networks among various actors. Details will be published as proceedings and posted on the IWMI website. For further details, contact [s.bekele@cgiar.org](mailto:s.bekele@cgiar.org)

## Staff joining IWMI in its African regional offices since September 2005:

- ◊ Mr. Mehmood UI Hassan (Pakistani), Social Scientist, moved from the IWMI Uzbekistan office to Accra to take up the position as Head of Office.
- ◊ Dr. Arlene Inocencio (Filipino), Economist, moved from IWMI South Africa Office to Penang, Malaysia.
- ◊ Dr. Yasir Abbas Mohamed (Sudanese) joined IWMI East Africa Office in Addis Ababa, Ethiopia as Senior Researcher. He works in the area of his Ph.D. research on the impact of land use change on local and regional climate. He holds a Ph.D. from the IHE in The Netherlands.
- ◊ Dr. Hammou Laamrani (Moroccan) joined IWMI West Africa Office in Accra, Ghana as Researcher – Health. He holds a Ph.D. in Environment and Health.
- ◊ Dr. Pius Chilonda (Zambian) joined IWMI Southern Africa Office in Pretoria, South Africa as Sub-Regional Coordinator. He holds a PhD in Agricultural Economics.
- ◊ Dr. Anne Chaponniere (French) joined IWMI West Africa Office, Accra, as Post-Doctoral Fellow. She holds a Ph.D. in Hydrology.
- ◊ Mr. Mark Osa Akrong (Ghanaian) joined IWMI West Africa Office, Accra as Research Assistant Officer. He holds a B.Sc. in Biological Sciences.
- ◊ Mr. Ernest Mensah Abraham (Ghanaian) joined IWMI West Africa Office, Accra as Research Assistant Officer. He holds a M.Phil. in Environmental Sciences.
- ◊ Mr. Kwame Osei Boateng (Ghanaian) joined IWMI West Africa as service staff.
- ◊ Mr. Lookie Amuzu Koji (Ghanaian) joined IWMI West Africa Office in Ghana as Office Manager.
- ◊ Dr. Matthew McCartney (British) Senior Researcher moved from IWMI South Africa Office to East Africa Office, Addis Ababa.
- ◊ Ms Gayathree Jayasinghe (Sri Lankan) Researcher moved from IWMI Nairobi Office to IWMI East Africa Office, Addis Ababa.
- ◊ Mr. Michael Menkir (Ethiopian) joined IWMI East Africa Office as a Researcher. He holds a M.Sc. in Irrigation Engineering.
- ◊ Ms. Aster Denekew (Ethiopian) joined IWMI East Africa Office as IT, GIS and Database support staff. She holds a M.Sc. in GIS and Remote Sensing.
- ◊ Ms. Tsigereda Lemma (Ethiopian) joined IWMI East Africa Office as Secretary. She holds a Diploma in Secretarial Sciences.
- ◊ Dr. Fitsum Hagos (Ethiopian) joined IWMI East Africa Office as a Researcher. He holds a Ph.D. in Economics.
- ◊ Mr. Mekonnen Leulseged (Ethiopian) joined IWMI East Africa Office as Researcher. He holds a M.Sc. in Water Resources.

