



Strategic Plan

2004-2008

IWMI-at-a-Glance

IWMI is a non-profit scientific organization, and one of 15 research centers supported by the Consultative Group on International Agricultural Research (CGIAR). The Institute concentrates on water and related land management challenges faced by poor rural communities, and works through collaborative research with partners in the North and South.

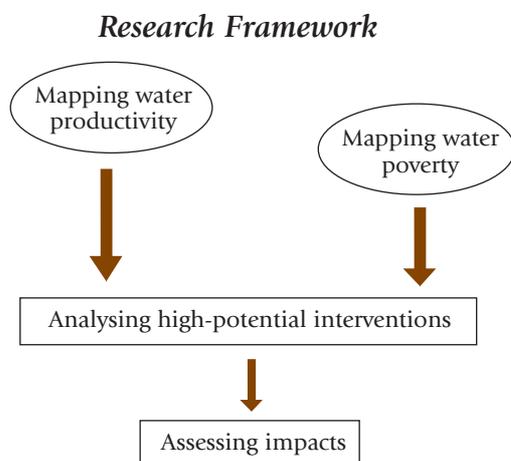
IWMI's Mission : To improve the management of land and water resources for food, livelihoods and nature.

Goals : IWMI contributes to the CGIAR's vision of "A Food Secure World for All". IWMI also contributes towards the achievement of the UN Millennium Development Goals (MDGs) of reducing poverty and hunger and maintaining a healthy environment.

Strategy for IWMI in 2008 : To be a world-class Knowledge Center on Water, Food and Environment by the year 2008

Core Values : Excellence, Impact-Orientation, Partnerships, Teamwork, Knowledge Sharing, Respect for Diversity

Overarching Research Hypothesis: Increasing river basin-scale water and land productivity alleviates hunger and poverty in a manner that maintains ecosystem services.



Research Themes

1. **Basin water management:** understanding water productivity
2. **Land, water and livelihoods:** improving livelihoods for the rural poor
3. **Agriculture, water and cities:** making an asset out of wastewater
4. **Water Management and Environment:** balancing water for food and nature

Key IWMI Statistics

	In October 2005
Estimated expenditures:	
IWMI, excluding non-IWMI-CPWF	US\$22.5M
IWMI, including all CPWF	US\$28.0M
Staff:	
Total Staff	367
Researchers	117
Research Support	181
Non-research & management	69
Percentage female researchers	30%
Percentage researchers from the South	53%

Top Ten Donors: Netherlands, WorldBank, DfID, EU, Ireland, USAID, France, Switzerland, Canada, Sweden

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Message from the Board Chair and IWMI Director General

Strategic Planning for IWMI

The Strategic Plan 2000-2005 served IWMI well. It was a critical document that provided guidance to the expansion and re-orientation of the institute. While strategic plans can be paper tigers that are forgotten soon after they are developed, our plan was taken very seriously and implemented! In late 2002, however, we felt the Strategic Plan 2000-2005 was running out of steam. The bulk of its ideas had been implemented; it no longer provided clear guidance. It was a good time to refresh our thinking. We were particularly interested to obtain the perspective of our partners on IWMI's very rapid development and expansion over 2000-2003. We therefore designed a process of external evaluation combined with strategic planning.

IWMI commissioned three senior representatives of our partner national research and extension systems in Africa, South Asia and South-East Asia to carry out an external review of the organization. The process was innovative in its focus on stakeholder workshops to provide feedback and input. The review has been published separately (IWMI Working Paper 67, see also www.iwmi.org). In parallel, but linked, we conducted a strategic planning exercise that produced this new IWMI Strategic Plan 2004-2008, adopted by IWMI's Board of Governors in March 2004.

Increasing Productivity of all Water at the Basin Level

This new strategy does not break new ground in our research agenda. The five research themes developed in late 2000, have been tightened to four new themes. Most importantly, we have sharpened rather than shifted our focus. We see IWMI's primary contribution in bringing about two paradigm shifts in the research on water, food and environment:

- **Water Productivity at Basin Level:** moving away from a focus on irrigation efficiency at field/farm level to a focus on water productivity at the basin level. This is where IWMI's comparative advantage lies—looking at the basin level scale and the integration across scales.
- **Whole Water Cycle Focus:** moving away from the outdated dichotomy between rainfed and irrigated agriculture. We will focus on the use of all precipitation—green and blue water—where IWMI's comparative advantage is an integrated natural resources management approach to enhancing the sustainable productivity of land and water for livelihoods.

Generating, Sharing, Brokering and Using Knowledge

A key plank of IWMI's new strategy is to become a world class knowledge center on water, food and environment. Our core business will not change. We remain a research or knowledge generation organization. This is a necessary but not sufficient role, however. IWMI is a research-for-development organization. It matters, therefore, not only what knowledge we generate, but how, with who and how this knowledge will be used. Research through partnership is the cornerstone of our work. The performance of IWMI researchers will be evaluated on their research outputs as well as their partnership-building skills, their contributions to capacity building and their ability to develop pathways to impact.

Changing the Culture: Change Management Projects

We successfully used a small set of change management projects to bring about change in the organizational culture. This work will continue through the new strategic plan with a new set of projects. More change is necessary—but much has been achieved. The most significant change has been progress towards a OneStaff system to overcome the deep national-international staff divide. Nothing will contribute as much to achieving the goals we set in this Strategic Plan as a positive "can-do" attitude of all our staff. The willingness and ability of IWMI staff to "challenge the process" is the best guarantee that IWMI will adapt its strategy to our rapidly changing environment.

This is Our Commitment

We set our goals high, for each and every one of us. We target diversity and gender-balance among our staff at all levels. We reward all our staff in a transparent and fair manner, we treat our partners as we want to be treated ourselves—and we focus our hearts and minds on achieving impact.

These are exciting times: we look forward to achieving the vision laid out in this Strategic Plan with all our staff and all our partners.



Remo Gautschi
Board Chair



Frank Rijsberman
Director General

Executive Summary

IWMI: a World Class Water – Food – Environment Knowledge Center in 2008

This Strategic Plan builds on our Strategic Plan 2000-2005. As many of the goals of this plan were achieved by 2003, it was decided to start consultations on a new plan at that time. The Strategic Plan 2004-2008 was developed based on a series of stakeholder interviews and focus groups in all regions where we work; a center commissioned external review and extensive consultation with IWMI staff in all regions.

The IWMI Strategic Plan 2004-2008

This Strategic Plan is organized around two central long-term goals. First, IWMI will evolve into a world-class Knowledge Center. Second, IWMI will build and maintain an organizational culture based on impact, performance and service. Refining our excellence in research, expanding our participation in truly collaborative partnerships, and creating an institutional culture of impact, performance and service will give us the organizational structure and character necessary for us to become a leading Knowledge Center focusing on water, food and environment issues.

The strategic development of four knowledge roles—knowledge generation, knowledge sharing, knowledge brokering, and encouraging the application of knowledge—will support our emergence as a Knowledge Center. We will realize these roles by:

- Conducting world class applied and policy-oriented research
- Working closely with partners and building alliances in all our research and knowledge sharing activities
- Taking responsibility for sharing the knowledge we generate
- Building research capacity among colleagues and partners
- Ensuring that our knowledge is used to improve water and land resources management for food, livelihoods and nature

Our organizational culture is based on the three priorities of impact, performance and service. This is put into action in a formal impact assessment initiative that measures and improves the quality and direct impacts of our research; in the development of individual and institutional performance indicators, targets and performance-based awards; and by regularly assessing the quality of services that the institute provides—both internally and externally.

Building on Success

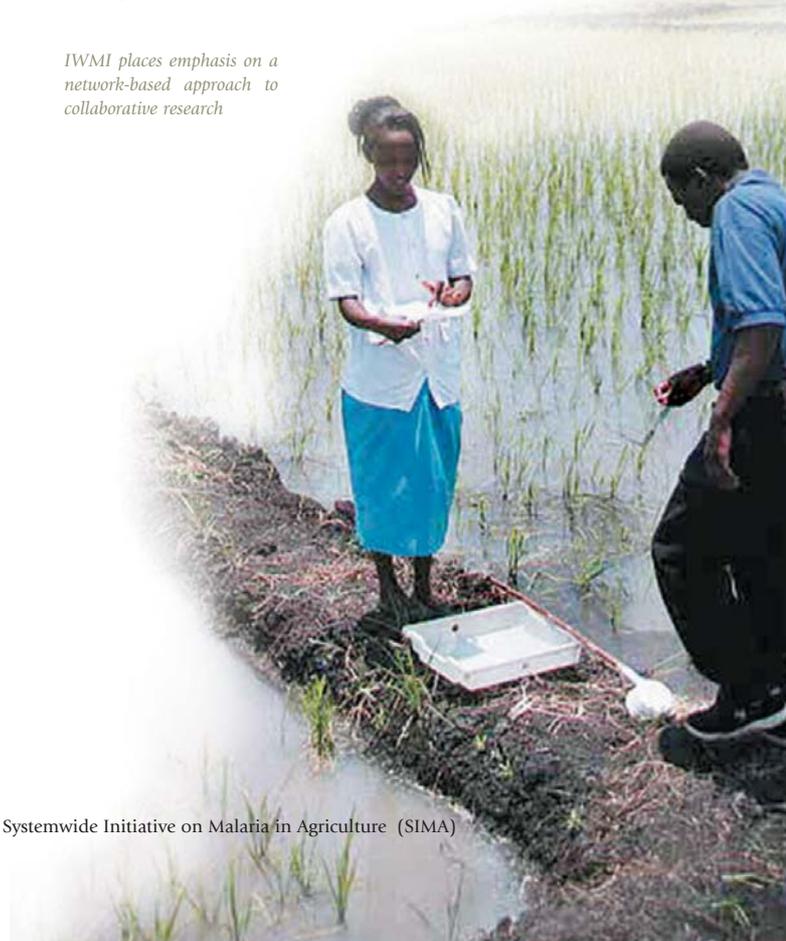
The past Strategic Plan (2000-2005) has seen a doubling of IWMI research staff to 105 PhD researchers. There has been rapid decentralization of staff to some 8 regional and sub-

regional offices spanning Africa and Asia. A number of new initiatives have brought radical changes in the way we do business. Under this strategic plan, we will build on this work, consolidating and refining these advances.

Key areas to develop

- Institutional change efforts that continue to transform IWMI into a modern organization that's impact, performance and service oriented and characterized by flexible, responsive and effective organizational structures.
- Increased relevance of the Research Agenda with research conducted under our four existing themes refined into sub-themes or key result areas.
- Emphasis on a network-based approach to collaborative research through an expanding family of partners in the South and North, supported by extensive capacity building efforts and decentralization of key staff resources to our regional offices.
- Contribution to shaping the world view of the world water crisis and of the key issues of water in agriculture through completion of the Comprehensive Assessment of Water Management in Agriculture, and implementation of the CGIAR Challenge Program on Water and Food.
- Refinement of the concept of holistic and collaborative research in Benchmark Basins and of related ideas on the development and administration of databases and other global public goods.

IWMI places emphasis on a network-based approach to collaborative research



Systemwide Initiative on Malaria in Agriculture (SIMA)

- Continued expansion in Africa, particularly West and East Africa, and India, matched by reductions in Pakistan and Sri Lanka.

Implementing the Research Agenda

IWMI generates knowledge by conducting collaborative, multi-disciplinary research on four priority research themes—primarily in a series of benchmark river basins in our priority geographic areas.

Our research agenda is our professional interpretation of global research priorities based on a process of priority setting with our national and regional partners and stakeholders.

Our thematic and regional research matrix enables us to identify emerging trends by interpreting regionally specific research findings in the context of overarching global themes. It also provides us with opportunities to inform regional research projects with extensive theme-based knowledge.

The core research agenda focuses on four research themes. These have been further refined into sub-themes—sharper focal points with corresponding research hypotheses—for each theme.

Vision of IWMI in 2008

By 2008, IWMI will be a world-class impact, performance, and service-oriented Knowledge Center, specialized in research on Water, Food and Environment.

Innovative Research

We will generate knowledge on better water and land management in developing countries. This will be done through strategic research alliances with partners in the developing world, and with research institutes in developed countries. Our research will be organized under mutually reinforcing thematic and regional components. IWMI will translate input from diverse partners into a coherent, focused and impact-oriented research agenda. We will have mechanisms and partnerships in place to ensure that this knowledge is widely shared and applied.

Knowledge for All

The knowledge we generate will be held and maintained as global public goods for the benefit of all interested users. We will contribute to global datasets as an active partner in research programs of the Global Change research community.

Benchmark Basins: Knowledge Roles Realized

Our primary research sites and field laboratories will be the benchmark basins of the CGIAR Challenge Program on Water and Food, and IWMI. Our activities in these benchmark basins such as knowledge generation and sharing through collaborative research, capacity building, and partnerships that support application of research outcomes for the direct benefit of poor farmers, will manifest our core values. Long-term programs and partnerships in these basins will enable us to develop relevant research priorities in close consultation with key partners and assess the impact of our interventions on key indicators.

Matrix Management

As a result of capacity building efforts, IWMI Project Leaders will be effectively managing all aspects of their projects and we will have achieved a synergistic balance between the thematic and regional components of our matrix management system. Matrix management will enhance the quality of research as theme based knowledge informs regional research, and regional research contributes to the identification of emerging thematic trends.

Organizational Excellence

As a result of change management efforts and other organizational innovations, IWMI will be characterized by flexible, responsive, and effective institutional structures. The policies and procedures that define our impact, performance and service culture will be actively maintained under our ISO certified Quality Management System. All members of our highly diverse and gender-balanced staff will be professional knowledge workers who are committed to IWMI's core values, vision and mission—an outcome of our active capacity building policies and programs.

Self-Assessment: Strengths and Weaknesses of IWMI in 2004

Strengths

- Well positioned to facilitate global/regional generation and exchange of knowledge on water-food-environment.
- High quality research produced through competent and motivated staff and collaborators.
- Over half of research capacity moved closer to field and clients through regional office development.
- Internationally recognized leadership in development of major initiatives that showcase the water-food-environment agenda.
- Considerable progress in knowledge, quality and human resource management, accountability and communication.

Weaknesses

- Insufficient clarity of vision/mission in IWMI staff led to unbalanced focus between knowledge generation, brokering and application.
- Inadequate understanding of IWMI impacts and impact assessment techniques.
- Insufficient consultative mechanisms for priority setting (within IWMI and with stakeholders).
- Insufficient inclusion of action/field oriented research in the research agenda.
- Inadequate results dissemination through user-friendly publications in different languages and through consultations with government policy makers.

Opportunities

- Develop more effective partnerships through implementation of collaborative research.
- Expand partnerships to include more NGO's, farmer organizations and (sub) regional organizations.
- Capitalize on information generated through cross-basin, country and regional research.
- Increase capacity building to provide more opportunities for training, knowledge transfer and application of research results.

Threats

- Loss of momentum for funding of water related issues, which fueled rapid growth in the recent past.
- Expectations from local stakeholders to achieve specific results that conflict with demands to produce global public goods.
- Restrictions on travel, meetings and living in target countries due to international conflicts and diseases.
- Unfocused collaborations and capacity building activities may affect the confidence of stakeholders.

Understanding the Water Challenge

Why is it that there is so much controversy over the true nature of the water crisis? How does all this affect poor women and men in rural areas that depend on agriculture for their nutrition and livelihoods? And what does this mean for IWMI's role? Specifically, what should be IWMI's research agenda to achieve a widely shared understanding of the world water crisis, based on sound science, and clear recommendations for governments, farmers and other water users on how resolving the water crisis can make a difference to poor people's lives?

Twenty years of discussion among water experts of the real or perceived "world water crisis" appear to have convinced a very large number of IWMI's stakeholders, if not the population at large, of the severe water problems faced by many in the world today. But even if there is a growing consensus that there is a world water crisis, there is far less consensus on the very nature of the crisis—let alone on what should be done to resolve it. To date, the "water crisis" discourse has largely focused on two issues; that is, the large number of people without access to safe and affordable domestic water supply and sanitation, and the perceived physical scarcity of water. The two issues are hardly related, however. Most global water scarcity estimates rely on per capita water availability, based on national, annual averages. While these estimates may highlight potential problem areas—usually the arid regions of the Middle East, North Africa and Central Asia—they do little or nothing to explain the lack of access to water and sanitation in large parts of the world that are often not very water scarce. The water crisis is, in fact, a highly complex phenomenon that remains poorly understood. Whether a poor urban family has access to water supply and sanitation often depends more on the institutions that govern water service provision than on the scarcity of the resource itself. Even understanding whether a farmer in Asia or Africa experiences water scarcity requires knowledge of many factors, only one of which is the quantity of the resource.

Considering water quality adds a major complicating factor. Throughout history irrigation systems have succumbed to increasing salinity levels wherever the salt balance was not well managed due to insufficient drainage or groundwater overuse. More recently, urban waste water, industrial pollution, as well as the rapid rise in the application of agrochemicals have severely limited the potential use of water available. Apart from physical quantities or qualities of water, we must also consider the role of economics in determining water availability. A key feature of the IWMI water scarcity map, for example, is what is termed "economic water scarcity", which farmers may experience in countries with abundant water resources but insufficient economic resources to develop or maintain infrastructure to make water available where and when needed. More recently,

attempts to link water and poverty have focused on many institutional issues, expressed as water poverty or water insecurity, to analyze how some farmers, such as tail-enders, may experience water scarcity within an otherwise well-serviced system.

Clearly, the true nature of the "world water crisis", its causes and manifestations, is much more complex than often portrayed. It is a function not only of physical quantity and quality but also the economic and institutional environment. It is also a function of scale.



Sanjini De Silva

At the global scale water supplies are abundant. The true state of the world's water resources only becomes apparent when we adopt a relatively sophisticated framework for analysis with well-defined temporal, spatial, and human scales. *Temporally*, precipitation patterns can and do fluctuate widely throughout and between years. Thus, annual indicators of rainfall often do not reveal potential problems. Temporal variability, for example, explains why there is much less water stress in the temperate zones of Europe and North America at much lower levels of overall water availability than in the monsoon areas of Asia. *Spatial scales* too are crucial to understanding water stress. Communities or regions within a country or basin may experience severe water stress that may not be picked up through national or even basin level statistics. Understanding the dynamic of return flows as well as the interactions between water and land and water and soil are absolutely crucial to understanding water scarcity. Finally, even at very fine spatial and temporal scales of analysis, the existence of water scarcity—or water insecurity—may not be readily observed due to

variations across *human scales*. For example, intra-household analyses of water security can show a marked difference in water scarcity experienced by male and female farmers, quite apart from the burden of fetching water, or the health impacts of poor water quality, that affect women and children disproportionately.

The Water Challenge and IWMI

The water challenges described above are formidable and require action on the part of a number of organizations on a number of fronts. As an international agricultural research center, IWMI concentrates specifically on the key water and related land management challenges faced by poor rural communities that affect their nutrition, livelihoods, and health, as well as the integrity of environmental services on which these depend. Very simply we refer to this as the “water-food-environment nexus.”

The immediate target groups of our research include the scientific community, policymakers, project implementers, and individual farmers. Through the actions of these “boundary partners” we then expect further changes in knowledge levels and behavior of actors at other levels. Ultimately, we intend for our research to have an impact on poor rural and peri-urban farmers, whose livelihoods depend on agriculture (growing crops as well as tending livestock), fisheries, agro-forestry, and aquaculture and for whom access to water for productive purposes is a key constraint—if not the key constraint—to achieving a better livelihood.

The overarching research hypothesis for IWMI is: *“Increasing river basin-scale water and land productivity does indeed alleviate hunger and poverty in a manner that maintains ecosystem services”* The development of our research agenda begins with an analysis of the water and land related constraints on food production and rural livelihoods, in the wider context of the river basin. We then evaluate and test promising technical, institutional and policy solutions to overcome these constraints. We take into account all aspects of water use in agriculture throughout the basin, the upstream-downstream interactions, the water-land interface, and the crucial linkages with the other main water using sub-sectors, i.e., municipalities, industry, and the environment. In short, integrated land and water resources management is at the core of IWMI’s research agenda.

To effectively respond to the broader research question, IWMI has refined its research framework to better reflect the broader water-food-environmental challenges. As part of the new framework, IWMI has organized its research around four priority research areas.

In addition to these four themes, IWMI is also the lead Center on two CGIAR system-wide initiatives that closely link with the institute’s research agenda: SIMA, The System-wide Initiative on Malaria and Agriculture (SIMA), which complements IWMI’s Theme 3, and the Comprehensive Assessment of Water Management in Agriculture (CA). The CA is seen as the ‘5th Theme’ of IWMI’s research agenda. As it moves toward its conclusion in 2006, the Assessment will become a synthesis and validation mechanism for much of IWMI’s research. It provides a platform for looking at innovative solutions in water for agriculture, synthesizing research results and highlighting benefits in a new worldwide knowledge base of approaches aimed at improving the quality of investments in water use for food and the environment.

IWMI is closely linked with two international initiatives focusing on the water-food-environment nexus. These are Dialogue on Water, Food and Environment and the CGIAR Challenge Program on Water and Food.

The Dialogue attempted to cross the sectoral barriers among food and environmental organizations by organizing multi-stakeholder dialogues at the regional, national and local levels. The CGIAR Challenge Program on Water and Food is hosted by IWMI. This is a new kind of international research program which brings together international, advanced, and national research centers on a level playing field—to define and implement its research agenda. The program is focused on research which aims to achieve sustainable increases in water productivity in nine key river basins— aiming to help countries increase their production of food while maintaining diversion of water to the levels of 2000.



The IWMI Research Agenda



IWMI analyses water and land constraints confronted by poor women and men in the wider context of the river basin

Poor female and male farmers who lack access to productive water and productive land in sufficient quantities to grow food and make a living are central to IWMI's research agenda. Our belief is that improving the productivity of available resources is generally more promising than developing additional resources.

This view, informs our overarching research question: *How can we help poor farmers grow more food and sustain rural livelihoods with less water in a manner that is socially acceptable and environmentally sustainable?*

Development of our agenda starts with an analysis of the water and land related constraints confronted by poor women and men, in the wider context of the river basin.

We believe that solutions reached and conclusions drawn at the field or farm level often fail to hold true at the larger basin scale. So the river basin is the central spatial scale for our analysis. We aim to investigate all aspects of agricultural water use in the basin, as well as their upstream-downstream interactions.

Our innovative use of the basin scale as the unit of spatial analysis presents some challenges. We need to improve our understanding of the nature of the water crisis at the basin scale in different agro-ecological, socio-economic and cultural settings. While existing concepts and models provide the basic tools to understand these perspectives, practical efforts to apply them are often hampered by a lack of data or of water researchers and managers with multi-disciplinary experience. To remedy this situation, we are committed to the development of water and land resource databases held in trust as global public goods, and to major capacity building efforts for our staff and partners.

In addition to contributing to a widely shared understanding of what the world water crisis means for rural development, we aim to introduce innovative solutions at both the farm and system levels.

This will be done by identifying opportunities for scaling-up solutions from field to system to basin, with the specific objective of developing appropriate policy recommendations to encourage this to happen.

Our research agenda also needs to take account of the interaction of agriculture with the other principal water using sub-sectors. This includes water for urban and industrial use, the environment and energy as well as cross-sectoral issues, including the re-use of wastewater for agriculture, the impact of agricultural water use on the environment, and the water-energy nexus.

In 2005 IWMI has refined its research framework to better reflect the broader water-food-environment challenges. As part of the new framework, IWMI has organized its research around four main themes. Their focus is further sharpened by sub-themes or key research areas.

Research Themes

- | | |
|---------|----------------------------------|
| Theme 1 | Basin Water Management |
| Theme 2 | Land, Water and Livelihoods |
| Theme 3 | Agriculture, Water and Cities |
| Theme 4 | Water Management and Environment |

Knowledge Center with an Impact, Performance and Service Culture

This strategy sets out two key principles: First, that IWMI should be in the “knowledge business”; and secondly, that IWMI must make impact, performance and service central to its organizational culture.

Strategies and actions are organized around these ideas as expressed in the following long-term goals:

1. IWMI will become a world-class Water, Food and Environment Knowledge Center, through specific attention to four key Knowledge Roles:
 - Knowledge Generation
 - Knowledge Sharing
 - Knowledge Brokering
 - Knowledge Application.
2. IWMI will build and maintain an organizational culture that is based on:
 - Impact
 - Performance
 - Service

Goal 1: To become a world-class Water, Food and Environment Knowledge Center

IWMI is more than a research organization—IWMI is in the knowledge business.

We at IWMI believe that knowledge plays a crucial role in development, and that we can contribute significantly to sustainable human development by generating, sharing, brokering and applying water-food-environment related knowledge. As an international research organization, IWMI is uniquely positioned in the water-food-environment research arena. By building on our excellence in research, we aspire to move beyond our current status as a leading research institute in our field, to become a premier international Water-Food-Environment Knowledge Center. To achieve this, we must explicitly develop and value all key knowledge functions that complement and enhance the primary role of research, or knowledge generation. IWMI is not satisfied with just doing excellent applied and policy-oriented research. We also take responsibility for sharing this knowledge with others, building research capacity, brokering effective alliances among research partners, and ensuring that our knowledge is used to produce food, generate livelihoods, and protect health and ecosystems.

Knowledge Generation:

IWMI generates knowledge through applied, policy-oriented research and long-term future oriented strategic research on our four priority themes in benchmark basins, our primary ‘research laboratories’. We carry out collaborative, multi-disciplinary research through a network-based approach. Our research agenda is our professional interpretation of global research priorities based on a process of priority setting with our national and regional partners and stakeholders.

Knowledge Sharing:

External knowledge sharing involves taking responsibility for making accessible and available the knowledge we generate, and related knowledge produced by others. Our key knowledge sharing strategies are: (1) building capacity for generating knowledge outside IWMI; (2) developing and maintaining global public goods (such as data sets, published research); and (3) producing and communicating



Making available the knowledge generated by the institute and its partners

secondary knowledge products (such as policy briefings, recommendations and information programs) that clearly convey important messages derived from primary research.

Knowledge Brokering:

In our knowledge brokering role, we help facilitate international research alliances and collaborative projects that give researchers in the South and their institutions international exposure and experience. We focus on engaging national researchers in South-South and South-North partnerships.

Knowledge Application:

As a research organization, IWMI is not well positioned to put the knowledge it generates into action. To enable

dissemination and uptake of our knowledge, we must cultivate relationships with development partners. We are taking responsibility for ensuring application of our knowledge on a sufficiently large scale by developing productive relationships with appropriate development partners (NARES, local NGOs, INGOs) and national governments.

Goal 2: IWMI will build and maintain an organizational culture based on impact, performance, and service.

The long-term implicit goal of our organizational change projects of the past few years was to redefine IWMI culture. We now want to make our core values (Excellence, Impact-Orientation, Partnerships, Teamwork, Knowledge Sharing, and Respect for Diversity) and the fundamentals of our new culture (impact, performance and service) explicit and measurable, and ensure that they are widely shared among all staff.

Under this Strategic Plan 2004-2008, we emphasize the impact of our research and other knowledge roles, the performance of all parts of the organization, and service as the key feature of the non-research part of the organization. In terms of defining performance, research staff need to be focused on impact and our non-research staff on providing excellent services to the researchers and each other.



IWMI cultivates relationships with a range of partners to ensure the application of knowledge on a sufficiently large scale.

Impact:

IWMI has instituted a formal impact assessment initiative to measure the quality and direct impacts of our research and, in close collaboration with our partners, to ensure that our knowledge reaches water users in developing countries. The initiative is designed to accomplish three primary goals: 1) improve our internal management and priority setting process; 2) ensure that our research and capacity building programs meet the needs of our stakeholders and partners; and 3) acknowledge and learn from the impacts, both positive and negative, of our activities.

Performance:

IWMI is developing indicators and targets to measure the performance of individual staff members in both research and non-research positions, as well as the performance of IWMI departments, and IWMI as a whole. In addition, we have revamped the performance appraisal system to clarify individual performance expectations and allow for more performance-based compensation and rewards.

Service:

IWMI service units provide services primarily within, but to some extent also outside, IWMI. Under this Strategic Plan, regular assessment of service needs and the quality of the services provided will enhance this part of the organization through the development of performance criteria, establishment of a baseline for measuring service levels, and setting targets for service improvement.

Managing Our Research

Matrix Management

IWMI conducts its research in a matrix structure based on research themes and regions where we operate. This approach enables us to be in touch and respond to emerging 'market trends' in various parts of the world. From the regional perspective we can feed this information back into the research agenda. From the global perspective the matrix allows us to interpret regionally specific research findings in a broader thematic context, encouraging the transfer of this knowledge between areas.

IWMI is committed to developing people's capacity and the support systems needed to fully realize the benefits of the matrix approach of doing multidisciplinary research across multiple offices. Under this Strategic Plan, we aim to achieve a better balance between theme and regional functions by strengthening the regional elements of the matrix system. We will do this by delegating significant authority to Project Leaders and by decentralizing research.

The IWMI research themes are managed by Theme Leaders, based in Sri Lanka (Global Research Division, Colombo), and Africa (Accra). The theme leaders are uniquely positioned to synthesize research findings from all regions in the context of their particular theme. To do this they interact with Regional Directors for Africa and Asia—IWMI's research managers—and Project Leaders to produce scientific outputs in the regions.

Research priorities emerge through active consideration of thematic and regional concerns and interests. Theme Leaders work with Regional Directors and Project Leaders to produce scientific outputs related to a given theme based on IWMI's

mission, niche, knowledge gaps and identification of strategic issues. Regional Directors identify regional priorities based on their comprehensive understanding of regional partners and the social, political and environmental dimensions of their region. After determining their respective priorities, Theme Leaders and Regional Directors match their agendas to arrive at IWMI's annual research priorities. The thematic and regional matrix (funds and people) comes together in projects, where the Project Leaders have the ultimate authority of spending of funds and research staff to achieve their promised outputs. Currently, however, Project Leaders are not exercising the full extent of their authority and they need to move out of the past culture of a Theme Leader-centered project management style. The Strategic Plan calls for training programs to provide Project Leaders with the tools, skills and authority they need to fulfill their new role and effectively manage their projects and project resources.

Regional office development: Decentralizing our research

2000 - IWMI's research capacity was heavily concentrated in Colombo, Sri Lanka.

2004 - Over 50% of the research capacity has been deployed to regional offices throughout Asia and Africa (with sub-regional offices in southern, West and East Africa, and South, South East and Central Asia)

By 2008, research strength will be further distributed as follows:

- Africa – 40%
- South Asia – 20%
- Southeast Asia – 20%

Further decentralization of researchers to regional offices is a priority. With regional offices nearer to stakeholders and focusing on region-specific research, research functions in Colombo have taken on a new role under the Global Research Division. This group provides research support to all offices and serves as the base for strategic cross-regional and global research programming. Most future change program activities will be piloted in this division, as will the IWMI research database. Under matrix management, in addition to their Global Research Division program work, researchers in Colombo will take part in regional activities where specific expertise is lacking in a regional office. Regional researchers will participate in Global Research Division efforts when their particular perspective and expertise is required.

This plan requires staff transfers and recruitment that emphasize regionally and nationally recruited positions, and new perspectives on partnership-based research.

Impact Assessment

Ultimately, IWMI projects and programs are intended to produce lasting impact and influence on water and land management for the benefit of food production, livelihoods and nature. IWMI recognizes the need for impact assessment measures that help us systematically evaluate the extent to which we are meeting this goal.

The emerging IWMI impact assessment framework is informed by a considerable amount of background investigation. This includes consultation with a number of CGIAR centers and other research institutes on best approaches to assess the impact of Natural Resources Management research. A comprehensive set of literature and web references has been compiled. Pilot studies have been done on past research projects on water management for malaria control and water on irrigation management transfer.

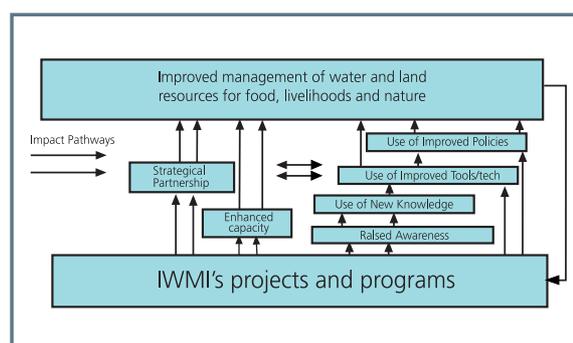
These studies will give us an idea of the impact of this research and allow us to test methods and tools for measuring different types of project impact. Implementing our impact assessment program requires both qualitative and quantitative analysis. It is not realistic to assume that within one or even ten years' time that IWMI will be able to measure the full impact of its projects and programs. But we can take concrete practical steps toward better monitoring and evaluating the direct impact of IWMI's research projects. From this we can have an indication of progress toward the institution's overall mission.

To continue to sharpen IWMI's ability to assess the value of our work, we will concentrate on: developing and implementing impact assessment procedures; and nurturing an impact culture at IWMI and with IWMI's partners.

Impact Typology Schematic

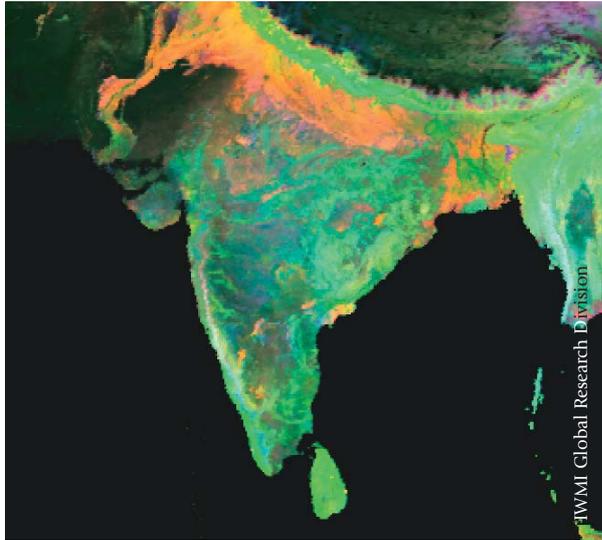
The standard impact assessment procedures created through this initiative will be integrated into IWMI's research cycle and Quality Management System. Procedures alone, however, will not instill the robust impact environment that we hope to create at IWMI.

Our impact assessment initiative will foster a performance and impact-oriented culture that permeates the institute at every level. Realizing the goal of creating an institution-wide impact culture, combined with strong partnerships and the support of monitoring processes, will provide the tools, pathways and spirit to assess and learn from the impacts of IWMI's research.



Theme 1

Basin Water Management



Context

Historically, water management for agriculture was equated with the development and operation of water systems and structures, largely for irrigation. However, the rapid growth of urban centers and industry has led to increasing competition for water across sectors. Thus, the key challenge for agricultural water management is how to increase food production for a growing population while simultaneously meeting the water quality and quantity requirements of other economic and environmental sectors.

Competition and conflicts result from different people having different water requirements (in terms of both quantity and quality). Competition also occurs between upstream and downstream users and uses. Analyzing agricultural water management at a farm- or irrigation-project level may fail to identify the impacts agricultural water use has on other water uses and on ecosystems in basin.

Analyzing water supply and demand at the river-basin level is a means to examine the interlinking hydrologic, socio-economic and environmental aspects of water management at multiple scales. A river basin is an ideal analytical unit for studying water supply and demand. The aim of integrated river-basin management is to ensure that the multiple functions and uses within a river basin can be sustained, human needs can be met and essential ecological and physical processes can be protected.

The management of water is also a political responsibility that requires full consultation and participation. Hence, effective institutions, including policies, legal and organizational frameworks are needed for the fair sharing of resources, definition of property rights, effective participation, partnership and cooperation of stakeholders, as well as conflict avoidance and management.

Overview

- A holistic approach to water management at the basin scale examines the linkages between water and land productivity, and most importantly assesses the impact of water productivity on the alleviation of poverty and hunger. This research theme aims to improve agricultural water management and enhance productivity at the basin scale by:
- Understanding the impacts of field, farm and system level improvements in land and water productivity at the basin scale.
- Providing methods and tools for planners to develop appropriate policies and supporting strategies aimed at improving productivity, rural incomes, human and environmental health.
- Analyzing, evaluating and recommending appropriate institutional arrangements to manage water resources for agriculture at a basin scale, with special emphasis on the balance between sustainable and productive use of water.
- Identifying and disseminating innovative irrigation system management approaches and irrigation technologies that increase the reliability and flexibility of water delivery.

Key Research Areas

- Sustainable water use in agriculture
- Understanding water productivity at basin scale
- Institutions, policies and economic instruments for better water management at a basin scale

Theme Objective

This theme will provide a better understanding of the trade-offs and options in agricultural water management at the basin scale and contribute to improved equity and productivity in water use through the development of appropriate tools and methodologies for analysis and management.

Theme Research Areas

Sustainable water use in agriculture

Purpose: To develop, test and apply analytical frameworks, water accounting methodologies and supporting tools to quantify and manage water resources for agriculture at a basin scale and to assist managers apply them in selected basins.

Outputs	Outcome	Impact
Appropriate water accounting methodologies and allocation frameworks developed and adapted for use in developing country basin-level water management, including: remote sensing and GIS tools, and improved hydrologic science.	Analytical frameworks, water accounting methodologies and supporting tools to quantify and manage water resources for agriculture at a basin scale developed, tested and managers assisted in applying them in selected basins.	The trade-offs and options in agricultural water management at basin scale better understood and improved equity and efficiency in water use promoted through the development of appropriate tools and methodologies for analysis and management.

Understanding water productivity at basin scale

Purpose: To understand the impacts of field, farm and system level improvements in land and water productivity at basin scale and provide methods and tools for planners to develop appropriate policies and supporting strategies to increase net basin level water productivity.

Outputs	Outcome	Impact
Development and documentation of trade-off analysis between sustainability and productivity at basin scale, and clear policy recommendations and examples to show optimal strategies and trade-offs for balanced development of rain-fed and irrigated agriculture at basin scale.	The impacts of field, farm and system level improvements in land and water productivity at basin scale understood, and methods and tools for planners to develop appropriate policies and supporting strategies to increase net basin-level water productivity provided.	The trade-offs and options in agricultural water management at basin scale better understood and improved equity and efficiency in water use promoted through the development of appropriate tools and methodologies for analysis and management.

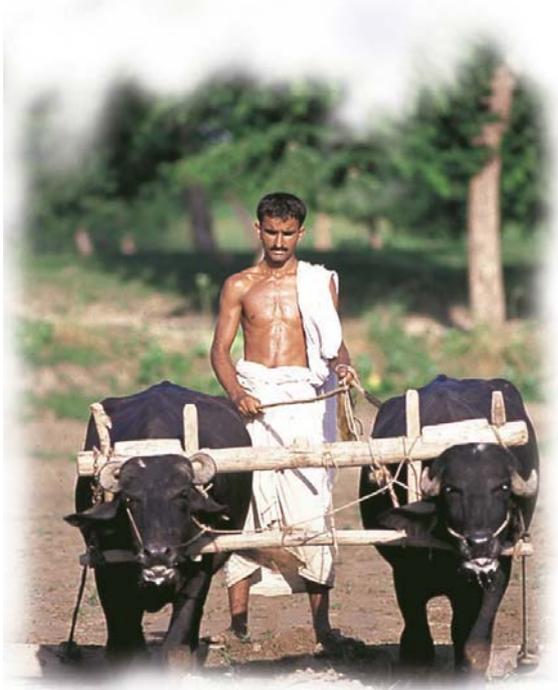
Institutions and policies for better water management at the basin scale

Purpose: To analyze, contextualize, evaluate and recommend appropriate institutional arrangements to manage water resources for agriculture at basin scale, over a range of contrasting conditions, and with special emphasis on the balance between sustainable and productive use of water.

Outputs	Outcome	Impact
Set of policies, institutional models and supporting strategies for management of agricultural water at basin scale in a variety of developing country conditions, including IWMI's benchmark, Comprehensive Assessment and Challenge Program Basins.	Appropriate institutional arrangements to manage water resources for agriculture at basin scale, over a range of contrasting conditions, and with special emphasis on the balance between sustainable and productive use of water analyzed and promoted.	The trade-offs and options in agricultural water management at basin scale better understood and improved equity and efficiency in water use promoted through the development of appropriate tools and methodologies for analysis and management.

Theme 2

Land, Water and Livelihoods



IWMI South Asia

Context

Food security remains elusive for more than one billion people worldwide. Despite the benefits of the Green Revolution, declines in household food production remain commonplace for large segments of rural communities in the tropics and subtropics. While the reasons for these declines are manifold, poor land and water management practices and policies are partly responsible for accelerating degradation of agricultural lands.

Estimates show that as much as 40% of the global agricultural area is moderately degraded and a further 9% is highly degraded, contributing to up to 13% reduction in global crop yield¹. The costs of land degradation are not only production related. They directly affect entire societies, impacting smallholder farmers and causing damage to downstream producers and to the environment. It is well recognized that intensified land use in upper catchments, largely by poor farmers increasingly forced onto marginal lands, results in increased sediment discharge and elevated nutrient loads reducing water quality and availability downstream. Developing and disseminating appropriate and affordable technologies and other infrastructures, such as treadle pumps or small mechanized pumps, low-pressure drip irrigation and small dams can improve water use and increase productivity. Improved fertility management and supplemental irrigation can significantly reduce uncertainty, and avoid chronic low productivity and crop failure that are characteristic of rainfed agriculture.^{2 & 3} These strategies have benefits across the entire basin. They bring a supply of

cleaner water and contribute to more certainty in agricultural production in rural communities. Improved land and water management practices and access to low-cost technologies bring significant opportunities to enhance resource productivity—and with it food security, rural livelihoods, and environmental sustainability

Overview

A comprehensive understanding of the complex nature of interactions between the biophysical and socio-economic aspects of a smallholder agricultural system can result in improvements to the well-being of both smallholder farmers and the environment. This research theme aims to:

- Identify and promote research on promising technologies and management approaches with potential to increase productivity and address sustainable use of soil and water resources in rainfed and irrigated systems.
- Provide tools and understanding that facilitate improved management of catchment landscapes to maximize environmental goods and services including agriculture, livestock, and fisheries production, biodiversity, carbon sequestration, and supplies of clean water.
- Expand lessons learned from Bright Spots—where smallholders have successfully rehabilitated degraded agro-ecosystems and improved livelihoods.
- Test and adapt promising management systems that restore resource quality and maximize sustainable use of low-quality soils and water.

Key Research Areas

- Intensifying Low Productivity Systems
- Multiple Use Catchments and Systems
- Rehabilitation of Degraded Lands

Theme Objective

This theme will identify and test high-potential 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 socio-ecological landscapes.

References

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2. Rockström, J. and Falkenmark, M. 2000. Semi-arid Crop Production from a Hydrological Perspective- Gap between Potential and Actual Yields. *Critical reviews of Plant Science* 19(4):319-346.
3. Rockström, J., Barron, J., and Fox, P. 2003. Water productivity in Rainfed Agriculture. Challenges and Opportunities for Smallholder farmers in Drought -prone Tropical Agrosystems. In: *Water Productivity in Agriculture: Limits and Opportunities for Improvement* (Eds) Kijne, J.W.; Barker, R.; and Molden, D.J. Wallingford, UK. Cabi Publishing.

Theme Research Areas

Intensification of Low Productivity Systems

Purpose: To identify and promote research on promising technologies and management approaches with potential to increase productivity and address sustainable use of soil and water resources in rainfed and irrigated systems.

Outputs	Outcome	Impact
Knowledge of technologies and management approaches that can increase productivity and socio-ecological resilience of poor farmers, particularly their ability to adapt to changes in their environment including spatial and temporal variability of rainfall.	Increased understanding of promising technologies and management approaches that increase productivity and address sustainable use of water resources in rainfed and irrigated systems which positively influences investment, management and policy decisions.	Farmers benefit from interventions that conserve resources and increase land and water productivity for improved livelihoods, health and equity across the continuum of water management options.

Multiple use Catchments and Systems

Purpose: To provide tools and understanding that facilitate improved management of catchment landscapes to maximize environmental goods and services including agriculture and livestock production, biodiversity, carbon sequestration, and supplies of clean water.

Outputs	Outcome	Impact
Strategies developed that improve water productivity and maintain landscape integrity in multiple water use systems and catchments to preserve ecosystem services including sustainable livelihoods.	Tools and understanding that facilitate improved management of community water resources and catchment landscapes to maximize environmental goods and services used by resource managers and policymakers.	Farmers benefit from interventions that conserve resources and increase land and water productivity for improved livelihoods, health and equity across the continuum of water management options.

Rehabilitation of Degraded Lands

Purpose: To contribute to rehabilitation of degraded lands by assessing trends and opportunities in land and water degradation, facilitating the expansion of "Bright Spots", and testing local adaptation of state-of-the-art management systems that restore resource quality and maximize sustainable use of low-quality soils and water.

Outputs	Outcome	Impact
Greater understanding of the impacts of soil degradation on water availability and water productivity, and strategies to reverse degradation in sandy tropical soil and salinity prone lands developed.	Interventions to rehabilitate degraded lands, expand "Bright Spots", and increase local adaptation of management systems that restore resource quality and maximize sustainable use of low-quality soils and water, disseminated to donors, farmers and other policy-and decision makers.	Farmers benefit from interventions that conserve resources and increase land and water productivity for improved livelihoods, health and equity across the continuum of water management options.

Theme 3 Agriculture, Water and Cities



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Context

It is expected that 60 percent of the world's population will live in urban areas by 2030, and that most urban growth will occur in less developed countries, such as Sub-Saharan Africa. Local policymakers have started to respond to this demographical shift but cannot keep pace with the urbanization rate. Their major challenges are the provision of sufficient food and appropriate sanitation for millions of urban dwellers. Both needs are obviously interlinked with significant implications for the urban and peri-urban environment.

A major bottleneck is adequate treatment of wastewater, which is in most developing countries severely constrained by limited financial resources. As such, millions of poor farmers in and around the growing cities depend on water of marginal quality for irrigation as they may have no better alternative or because wastewater may be the only affordable or reliable water and nutrient source. IWMI accepts that the agricultural use of untreated water is undesirable from a health and environmental viewpoint, but recognizes that it is a livelihood reality in many poor countries that cannot afford the investment and maintenance cost of treatment plants for most or all of their primarily domestic effluents. As such, IWMI takes a more balanced view of the agricultural use, especially of microbiologically polluted water in a developing country context, focusing on both costs and benefits in terms of the health, environmental, food-chain, and livelihoods implications of the practice.

Overview

This research theme addresses urbanization in the context of low-income countries and its challenges for poverty alleviation, urban food supply, sanitation and environment. The theme focuses on:

- Recommendation for safe and productive uses of wastewater and sludge—based on verified low-cost options to reduce human health impacts.
- Assessing options for urban-rural nutrient cycling and ecological sanitation as well as new linkages and synergies between the agricultural and sanitation sectors.
- Enhancing the sustainability of urban and peri-urban farming systems.

Key Research Areas

- Enhancing the safe and productive use of wastewater in irrigated agriculture
- Managing urban demands on agriculture, water, sanitation and the environment

Theme Objective

This theme will identify and test interventions for the rapidly growing sector of urban and peri-urban agriculture that take advantage of urban resources while protecting environmental and human health.

Theme Research Areas

Enhancing the safe and productive use of wastewater in irrigated agriculture

Purpose: To make an asset out of wastewater through efficient and viable interventions along the contamination pathway to reduce health risks for farmers and consumers while maximizing its benefits for farm households and society.

Outputs	Outcome	Impact
Best practices and policy recommendations to support safe and productive wastewater use in urban and peri-urban agriculture.	Wastewater being considered as an asset based on efficient and viable interventions along the contamination pathway to reduce health risks for farmers and consumers while maximizing its benefits for farm households and society.	Reduced health risks for consumers and farmers and increased recognition of wastewater use as common reality.

Managing urban demands on agriculture, water, sanitation and the environment

Purpose: To minimize negative impacts of city growth on agricultural water demand and the environment via water and nutrient recycling, enhanced natural process, stakeholder involvement, capacity building and policy support.

Outputs	Outcome	Impact
Knowledge base on urban water and nutrient demands, waste and wastewater generation and feasible options for water reallocation and solid and liquid waste recycling.	Options to reduce negative impacts of city growth on agricultural water demand and the environment via water and nutrient recycling, enhanced natural processes, stakeholders involvement, capacity building and policies.	Improved rural-urban linkages and resource allocation in view of water and nutrients.

Biodiversity



Sanjini De Silva

Ecosystem services



Frank Kijberman

Finding ways to co-exist



Global Research Division



Hugh Turral

Agriculture

Industry

Context

Healthy and resilient aquatic and terrestrial ecosystems provide a diverse range of services to humans that are essential in securing food and livelihoods security, especially of the rural and peri-urban poor. However, such ecosystems typically remain poorly integrated within the land and water resources management systems of basins. Further, the factors required for the maintenance of ecosystem integrity and resilience are seldom met, and the overall social and economic value of healthy ecosystems to people living in basins across the world are underestimated. As a result, many ecosystems, in particular inland and coastal wetlands, are subject to increasing degradation, with serious attendant implications for human well-being, especially in the long term. Agriculture and irrigation, in particular, have been singled out as major drivers of change.

Environmental concerns have often been neglected in the rapid move towards development. Yet, unless issues of environmental sustainability are firmly placed on the water and land resources, and agricultural agendas, we risk marginalizing a critical element of the broader landscape that supports agriculture and pathways out of hunger and poverty.

The new theme, Water Management and Environment focuses on the integration of ecosystems and their water requirements in basin water resources development and management; enhanced integration of policies and practices of the water resource, agriculture and environmental sectors; and improved recognition of the economic value of ecosystems services and their contribution to land and water productivity, and hence, food and livelihoods security.

Overview

Increased emphasis within IWMI's research agenda on the ecological aspects of water and land resources development and management in river basins, also taking into account lakes and aquifers, arises from the recognition of the pressing need to consider water and all its uses (agricultural, domestic, energy, industrial, and environmental) in a broader, more balanced and integrated context. The theme focuses on:

- greater incorporation of ecosystems and their water requirements in basin water resources development and management processes.
- enhanced integration of the policies and practices of the water resources, agriculture and environment sectors.
- increased recognition of the social and economic value of ecosystem services and their contribution to land and water productivity, and hence, food and livelihoods security.

Key Research Areas

- Intensifying Low Productivity Systems
- Multiple Use Catchments and Systems
- Rehabilitation of Degraded Lands

Theme Objective

This theme will identify and test high-potential 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 socio-ecological landscapes.

Theme Research Areas

Addressing environmental water requirements in basins

Purpose: To develop, test and apply best practice frameworks that enable explicit inclusion of the environment as a sector in basin water resources development and management, and within which methodologies are further developed and applied to determine and implement the water requirements of aquatic ecosystems.

Outputs	Outcome	Impact
Improved best practice frameworks, methodologies, technical guidance and policy recommendations for addressing environmental water needs in basins	Environment explicitly included as a sector in basin water resources development and management. Best practice approaches for determining the water requirements of aquatic ecosystems and implementing environmental allocations are adopted, further developed and applied.	Increased recognition of the need to allocate water to the environment to ensure sustainable delivery of ecosystems services for people. Improved integration of environmental water needs in water resources planning and management at international, national and basin scales. More equitable and sustainable allocation of basin water resources.

Enhancing benefits in agriculture-wetlands interactions

Purpose: To identify, contextualize and promote the application of improved policies and practices for water management in agriculture, across the spectrum of large-scale irrigation to small-scale rain-fed systems, that simultaneously increase agricultural production, reduce poverty and minimize wetland degradation.

Outputs	Outcome	Impact
Best practice guidelines, methods, quantitative knowledge base, capacity and policy recommendations supporting integrated and balanced management of agriculture and wetlands.	Improved policies and practices for environmentally sustainable water management in agriculture identified, documented and promoted for uptake across the spectrum of agriculture-wetlands systems.	Enhanced benefits from agriculture-wetlands interactions that contribute to agricultural production and poverty alleviation while minimizing wetland degradation and loss of beneficial ecosystem services.

Valuing contributions of ecosystem services to livelihoods

Purpose: To assess and demonstrate the total economic value and contributions to basin land and water productivity and human well-being of the diverse range of services generated by ecosystems, and improve understanding of the trade-offs with food production, so as to ensure sustainable benefits for people and ecosystems.

Outputs	Outcome	Impact
Quantitative assessments of the economic value and contributions of the diverse range of ecosystem services to basin land and water productivity, poverty alleviation and livelihoods strategies. Improved tools for tradeoff analysis and strategies to maximize benefits.	Economic value and contributions to basin land and water productivity, poverty alleviation and livelihoods strategies of ecosystem services demonstrated, and understanding improved of trade-offs with agricultural productivity, so as to ensure sustainable benefits for people and ecosystems.	Greater recognition of the overall significance, role and value of ecosystem services to livelihoods in water resource and agricultural assessments. Improved understanding of implications of tradeoffs between agricultural productivity and other services.

Comprehensive Assessment of Water Management in Agriculture



Comprehensive Assessment of Water in Agriculture

Overview

The Comprehensive Assessment of Water Management in Agriculture aims to improve water investment and management decisions to meet poverty, hunger, and environmental sustainability objectives in the near future and over the next 25 years by:

- Analyzing the costs, benefits, and impacts of the past 50 years of water development for agriculture.
- Assessing the water management challenges communities are facing today.
- Examining the solutions people have developed in response to water management challenges.

Context

Finding solutions to the water-food-environment challenges requires more than the generation of new knowledge. It requires an assessment of past successes and failures in water and rural development. The CGIAR's Comprehensive Assessment of Water Management in Agriculture (CA), a system-wide initiative led by IWMI, has taken stock of how water has been managed over the last 50 years and the potential impact of these past practices on food and environmental security. Its goal is to assess and strengthen the knowledge base on the water-food-environment nexus and promote its use in developing consensus on appropriate investment strategies.

The framing research question for the CA is "*How much water will be needed for agriculture?*" More water for agriculture could threaten important ecosystems and the sustainability of global food production systems. Less water for agriculture could lead to increased malnutrition and increased food insecurity. Finding a balance between these two objectives is paramount to solving the water crisis. The CA seeks to provide insights into the way forward and offer guidance to policymakers and stakeholders in making informed decisions.

The CA research agenda closely complements IWMI's research goals, with many IWMI projects contributing to, and in some cases receiving support from, the Comprehensive Assessment. These include research on water productivity, integrated water resources management, rainfed agriculture, land and water degradation, groundwater governance, irrigation impacts, and sustainable wetland management. In addition, the CA research agenda is further augmented by the wealth of expertise and projects carried out by CA partner organizations.

Key Research Areas

- Looking at options for improving water productivity in agriculture
- Studying the past benefits, costs and impacts of irrigated agricultural development on food security, livelihoods, and the environment
- Assessing agricultural water requirements for future food security and environmental sustainability goals, while providing guidelines for policymakers

Theme Objective

To improve poor people's lives and health and protect important ecosystems, the CA will strengthen the knowledge base on water-agriculture-livelihoods-environment. Through this it will influence investment and management decisions—at the policy and local community levels—over the coming 25 years.

Research Areas

Supporting assessment research to fill crucial knowledge gaps and developing new and improved conceptual and analytic tools for assessment

Outputs	Outcome	Impact
Filling in knowledge gaps in assessing benefits, costs and impacts of water management in agriculture.	An assessment of current status of water management in agriculture to recommend solutions and better management in the future.	Better investment and management decisions for water in agriculture for enhancing livelihoods and maintaining environmental integrity.

Strengthened capacity for students and national partners to undertake assessments, enhance their knowledge and contribute to the planning and decision making process in water management.

Outputs	Outcome	Impact
Training of MSc and PhD students as well as capacity building of NARES partners.	Water stakeholders will apply tools to improve the situation in their respective areas. Involvement of national partners in local research, planning and policy decisions in water management to attain food security while keeping in mind livelihood and environmental issues. This will lead to the contribution of national and regional knowledge into the global context.	Enhanced knowledge and technology application at national and community levels as well as a holistic synthesis including global, regional and national perspectives.

A Comprehensive Assessment of Water Management in Agriculture, including key messages backed by research-based evidence and conceptual and operational frameworks designed for assessing multiple water use systems in smallholder farming communities.

Outputs	Outcome	Impact
Completion of the Comprehensive Assessment (CA Synthesis Phase).	A guide for investment and management decisions in the near future considering their impacts over the next 50 years in order to enhance food security and environmental security in support of the achievement of the MDGs.	Influence policymakers and investors to make better informed investments in water as per the recommendations made.

About the Comprehensive Assessment

The CA is governed by a Steering Committee composed of senior researchers from IWMI (convening center), ICARDA, ICRISAT, IFPRI, IIRI, Worldfish, FAO, Novib, and Department of Water Affairs and Forestry, South Africa.

Partners

The Comprehensive Assessment works with a wide network of partners throughout the south as well as in the north. In total, the CA works with over 150 partners, consisting of

approximately 45 universities, 50 international and national research institutes, 40 government agencies and 20 NGOs.

Putting the Strategic Plan into Action

To achieve our goal of becoming a Knowledge Center, IWMI's organizational structures and mechanisms must be flexible, responsive, diverse, accountable, efficient and effective.

The successful implementation of change management projects between 2000 and 2003 enabled IWMI to transform its core business processes toward becoming a more modern and efficient organization. This Strategic Plan builds on this, with a further round of change management projects and other organizational innovations.

Innovation and Continuous Improvement

Organizational change projects are the foundation of our transition to becoming an impact and performance oriented Knowledge Center. This round of change management projects focus on the Knowledge Center Initiative, Impact Assessment, Quality Management System, Project Management, Document Management and Strategic Staffing. IWMI also actively participates in the integration and reform of the CGIAR.

Knowledge Center Initiative

The Knowledge Management Initiative between 2001 and 2003 built a structure and started IWMI's thinking on knowledge sharing and management approaches. This initiative resulted in the creation of IWMI's Information and Knowledge Group. It brings together science publishing,

Important outcomes of the Knowledge Center Initiative will be a knowledge strategy for the institute, the harvesting and synthesis of best practices that promote a knowledge sharing culture and a learning organization, and taking the first steps toward institutionalizing a knowledge sharing culture in IWMI. This initiative also encourages cross functional teams to come together as a part of IWMI's daily work.

Impact Assessment

The Impact Assessment Initiative is designed to improve our internal management and priority setting process; ensure that our research and capacity building programs meet the needs of our stakeholders and partners; and acknowledge and learn from the impacts, both positive and negative, of our activities. Formal implementation of the Impact Assessment initiative began in 2002. Initial achievements include networking with other organizations, literature reviews, pilot studies, and the development of an impact typology for the organization.

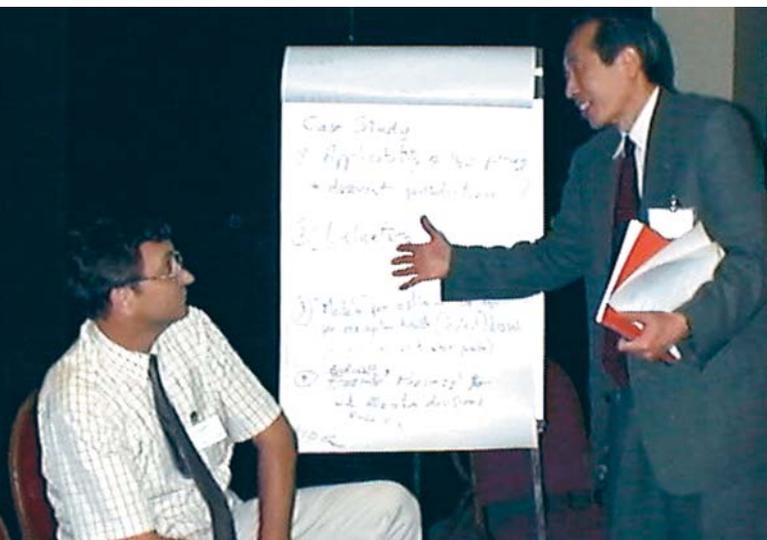
During this Strategic Planning period, we will institutionalize impact assessment throughout the organization as we develop and implement supporting procedures and guidelines, and nurture an impact culture within IWMI and with our partners.

Quality Management System

Through our QMS project, we are taking a systematic approach to increasing efficiency within the institute. The project is expected to lead to ISO certification. The QMS project aims to:

- Increase effectiveness and efficiency of all processes that contribute to the realization of research outputs.
- Create understanding and transparency of all key processes within the organization.
- Design an efficient way to carry out generic tasks through analysis, development and formal documentation of procedures.

During this Strategic Plan period, we will implement QMS institute-wide, introduce and provide training on monitoring and measuring, adopt a customer focus approach, conduct a customer satisfaction survey to define our baseline and set targets for future improvement on a regular basis, and implement internal and external quality audits.



The Knowledge Center Initiative promotes a learning culture and synthesis of best practices

marketing communication, ICT, web team and library—to provide a common set of services to improve the organization of information and access to IWMI's research.

The next step is IWMI's Knowledge Center Initiative. This is a cross-institute coordination effort that brings together a number of activities needed to put the knowledge roles defined by this Strategic Plan into action.

Project Management

The Project Management change management project will focus on three main areas for improvement: improving Project Leaders' skills and tools, streamlining information requirements and project portfolio management. Project Leaders at IWMI have varying levels of project management skills depending on their individual experiences and backgrounds. The wide variety of types and complexity of projects also demands different project management needs. A basic level of skills and access to useful tools for all Project Leaders throughout IWMI will be promoted.

By linking databases and streamlining reporting requirements, better access to project related information will be achieved and Project Leaders will be less burdened with recurrent information requests. In addition the management of the project portfolio will be facilitated by storing basic information of each project in a database.

Document Management

The Document Management Project aims to put in place an information management system supported by an efficient system for storing, accessing, and searching for institute documents and correspondence. The project will develop a system that gives permission levels for document access, version control and similar features. It will enable staff to collaboratively manage, deliver and archive the content that drives IWMI's business operations from documents and discussions, to e-mail, web pages and records—using a common platform and repository.

Strategic Staffing

The exercise will help IWMI evaluate the current skill sets/disciplines across the institute against the current projects/requirements and forecast the skills/disciplines required against the agenda for the future.

Participation in the Integration and Reform of the CGIAR

IWMI's emerging culture holds active partnerships, continuous improvement and learning high on its list of priorities. It also values activities that are a catalyst for change in how the CGIAR centers can do business more effectively by working together. Some examples are:

- IWMI is the current leader of the Consortium for Spatial Information. Among other activities, 15 centers are working together to create a metadata inventory and a common set of data standards. This provides access to all the CGIAR's spatial information as a common body of information.

- The electronic publishing project has created a community—among 13 CGIAR centers—of publishers, information managers and ICT specialists that have agreed on common approaches to publishing. This work will create one body of commonly organized information for all the CGIAR's published science and related information—giving users worldwide infinitely easier access to the knowledge we produce.
- IWMI is one of five founder members of the CGIAR's strategic advisory service for Human Resources, along with WorldFish, ILRI, CIMMYT and IPGRI. These partner centers are building a common human resources agenda, centered around staff exchanges, one staff policy, share capacity building goals, and a joint leadership development program for promising young professionals.

Building People's Capacity and Performance

Professional Development

Following a training-needs assessment, a significant IWMI-wide training program was introduced in 2003. Key elements include: the Leadership Development Program (LDP) which targets high potential individuals, soft-skills training (communication, presentation skills, project management and leadership, teambuilding), and expanded technical skills training. Formal and informal mentoring activities encourage senior researchers to mentor younger staff members and an executive coaching program for Management Team members and selected researchers is also in place.



IWMI's Leadership Development Program (LDP) in session. High potential staff are trained across the institute through formal courses and mentoring by senior staff, to facilitate their accelerated growth within the organization.

Building Diversity

Respect for Diversity is one of IWMI's core values. Since 2000, we have succeeded in increasing the percentage of Southern researchers from less than 30%, to our current North: South ratio of 50:50. With a research staff that is only 21% female and very few women at senior level positions, we are still working to attain gender balance at IWMI.

Under this Strategic Plan, we continue to expand our efforts to remedy this imbalance by targeting recruitments to attract female researchers from the South, designing new personnel policies, which will attract female researchers and senior women to IWMI, and actively developing female staff for management positions through development of leadership and management skills.

Employee Satisfaction Survey

In October 2003, IWMI conducted its first Employee Satisfaction Survey as an input to this Strategic Plan. While the survey indicated high levels of staff satisfaction in a number of key areas, the results also revealed the need for improvements in internal communication, implementation of the recently introduced performance appraisal system, and discomfort in voicing opinions on the part of some staff. In general, researchers showed the lowest level of satisfaction.

We will address issues requiring attention through an action plan that emphasizes better communication and improved work planning, among research staff in particular. Targets for improvement will be based on the results of the survey and commonly accepted satisfaction levels. Improvements will be assessed through the implementation of regular Employee Satisfaction surveys.

Customer Satisfaction Surveys

An institute-wide customer satisfaction survey was done in October 2003, aiming to gather customer feedback on the levels of satisfaction by customers, of the internal services provided by all IWMI service departments – Information and Knowledge Group, Finance and Administration, Human Resources, Purchasing, Transport, etc.

Results were circulated and published on the IWMI Intranet in February 2004. Since then all units concerned have analyzed the results, consulted with customers and prepared action plans to improve service levels against this benchmark. Measurement of the progress of services will be made in periodic informal 'snap polls' and more formal assessments of the services.

Incorporating Gender Concerns in Research

For more than a decade, IWMI has produced leading publications in the field of gender and irrigation. During this Strategic Plan period, we will continue gender-focused research, with special attention to gender aspects of Integrated Water Resources Management under our research themes.



Sanjini De Silva

IWMI will monitor the incorporation of gender issues in all areas of research. Photo shows the Tich market in Ghana.

Recognizing that research on gender is still relatively isolated within IWMI, we will develop mechanisms for mainstreaming incorporation of gender issues into research across IWMI themes. To this end, for each theme we will identify gender related topics requiring research attention, and we will monitor incorporation of gender issues in all areas of research. To ensure inclusion of gender issues, reporting on gender aspects of research will be integrated into the tasks of Project Leaders, Theme Leaders and Regional Directors.

Capacity Building

IWMI's capacity efforts to date have centered on IWMI Ph.D. Scholarship and Post Doctoral Fellowship programs, and on a collaborative approach to our research projects involving young people and researchers from the South.

The capacity building scope expands under this strategy to include exploring options for translating our research into a form suitable for different users—policymakers, development organizations and field-level information. Here, the approach is to work identify specialist partners or networks who can advise or implement these activities.

Capacity building programs help us meet our goals of realizing a network-based approach to collaborative research and expanding the role of Southern researchers in our research efforts.



IWMI adopts a collaborative approach to research projects involving young people and researchers from the South.

Knowledge Sharing and Strategic Communication at IWMI

Strategic communication activities allied with knowledge sharing practices will play a key role in improving the value and relevance of IWMI's research over the coming five years. This activity is driven by IWMI's communications professionals who have started to explore new approaches by using marketing communication techniques to make research outputs more effective. A core activity of this group is the managing and marketing of IWMI's key information assets: The Research Report series, Water Policy Briefing series, corporate products such as the Annual Report and Strategic Plan and the IWMI website. Media communications and communications work for regional offices are also part of the activities carried out by this division.

This group is actively involved in the study and facilitation of pilot projects with researchers on how to link knowledge sharing into research and how to embed knowledge sharing activities into the research cycle and thinking process. The group is identifying the skills needed by researchers and the techniques and services that can be proposed by communications professionals. Through this initiative, tools and processes will be created for customer interaction as well as an analysis of feedback. Policy communication is also being looked at, to determine the best approach for IWMI to understand policy processes and help policymakers make informed decisions at international, regional and national levels.

Communications Activities come under three broad categories:

Corporate Communications which projects IWMI's corporate identity and showcases the institute's research and corporate culture.

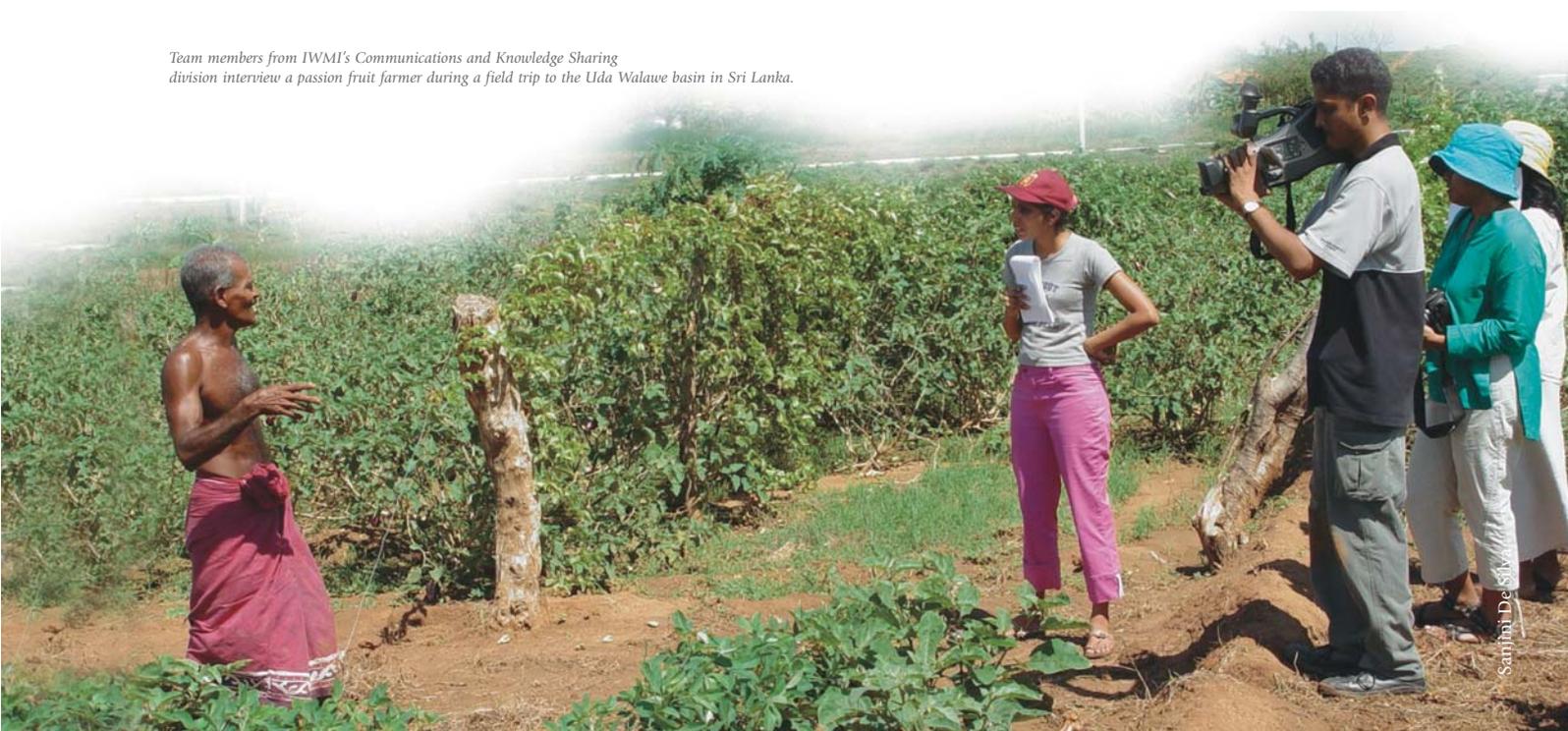
Research Communications which highlights the depth and scope of IWMI's research.

Web Communications which includes the management of IWMI's website and web resources



IWMI's annual Knowledge Fair brings together researchers from Asia and Africa as well as non-research staff to exchange ideas and share information across the Institute.

Team members from IWMI's Communications and Knowledge Sharing division interview a passion fruit farmer during a field trip to the Uda Walawe basin in Sri Lanka.



Benchmark Basins

Research in benchmark basins is conducted through collaborative work with networks of partners that are closely linked to the stakeholders in each basin. Both participation in the CGIAR Challenge Program on Water and Food benchmark basins, and the development of our own smaller-scale IWMI benchmark basins, offer rich opportunities for fostering knowledge sharing partnerships.

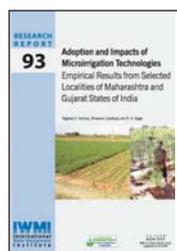
IWMI will use the CP benchmark basins as experimental sites for transferring knowledge to users through our work with development partners such as CARE, CRS and local organizations. The IWMI benchmark basins will enhance our knowledge sharing capacity by enabling us to develop closer and more long-term working relationships with research partners and stakeholders.

Global Public Goods

Global Public Goods are goods with a global or near global value that are freely available to the public. Global public goods that can help support sound management of natural resources include: global datasets and maps, models, technologies, policies with international application, and the results of the Comprehensive Assessment.

Spatial and temporal databases on natural resources and their management and use, have the potential to become the primary carriers of the global public goods assets held in trust by the CGIAR natural resources management centers. To develop this potential and ensure the public goods nature of our outputs, IWMI will participate in the following during this Strategic Plan period: development of databases for the

IWMI benchmark basins; implementation of a data and information management strategy for the Challenge Program benchmark basins; development of water and food related global datasets; and development and maintenance of our Water and Climate Atlas and the Irrigation System Performance Benchmarking website.



IWMI research outputs are freely available to all potential users. Every year the institute publishes and distributes research reports, working papers and policy briefings to researchers and research libraries in developing countries, as well as to policy advisers and others in the development community.

Financial and Staffing Scenarios

Two scenarios have been developed that project two development paths for the organization: Scenario 1, consolidating the rapid advances made in the past few years at roughly the 2003 level of financial resources, Scenario 2, around 30% additional growth over the next 5 years. The key variables characterizing these scenarios are given below.

Variable	Scenario 1 in 2008	Scenario 2 in 2008
1. Total funding (IWMI core, without CP flow through)	20 million US\$	26 million US\$
2. Total researchers	106	150, primarily by adding regional and national positions
3. Further decentralization	70% in regional offices	80% in regional offices
4. Researchers from South	50-55%	60-66%
5. Professional development	150 US\$/yr	300K US\$/yr
6. Capacity Building Budget	300K US\$/yr	500K US\$/yr
7. Investment in Knowledge role development	300K US\$/yr	500K US\$/yr
8. RS/GIS investments	50K US\$/yr	150 US\$/yr

Balance Between Different Researcher Categories

The staffing scenarios presented in the tables below show some shifts in the balance between Principal Researchers / Senior researchers / Researchers and International / Regional / National. The rationale behind the distribution is the shift from a slightly top heavy situation, to a more balanced situation with more researchers in comparison to principal and senior researchers and secondly more recruitment nationally and regionally reflecting the future importance and growth of the regional offices.

Scenario 1							
	2003	2004	2005	2006	2007	2008	
Internationally Recruited							
Principal Researchers	22	19	19	18	17	17	
Senior Researchers	19	19	19	18	18	18	
Researchers	18	18	18	18	18	18	
Post Doctoral Fellows	19	19	19	19	19	19	
Regionally Recruited Researchers							
Senior Researchers	6	6	6	6	6	6	
Researchers	5	5	5	6	6	6	
Nationally Recruited Researchers							
Researchers	17	20	20	21	22	22	
Total	106	106	106	106	106	106	
Scenario 2							
	2003	2004	2005	2006	2007	2008	
Internationally Recruited							
Principal Researchers	22	19	19	18	17	17	
Senior Researchers	19	19	19	18	18	18	
Researchers	18	18	18	19	19	19	
Post Doctoral Fellows	19	20	21	23	24	25	
Regionally Recruited Researchers							
Senior Researchers	6	6	7	8	9	10	
Researchers	5	8	11	14	17	20	
Nationally Recruited Researchers							
Researchers	17	22	26	30	35	40	
Total	106	112	121	130	139	150	

Financial Scenarios

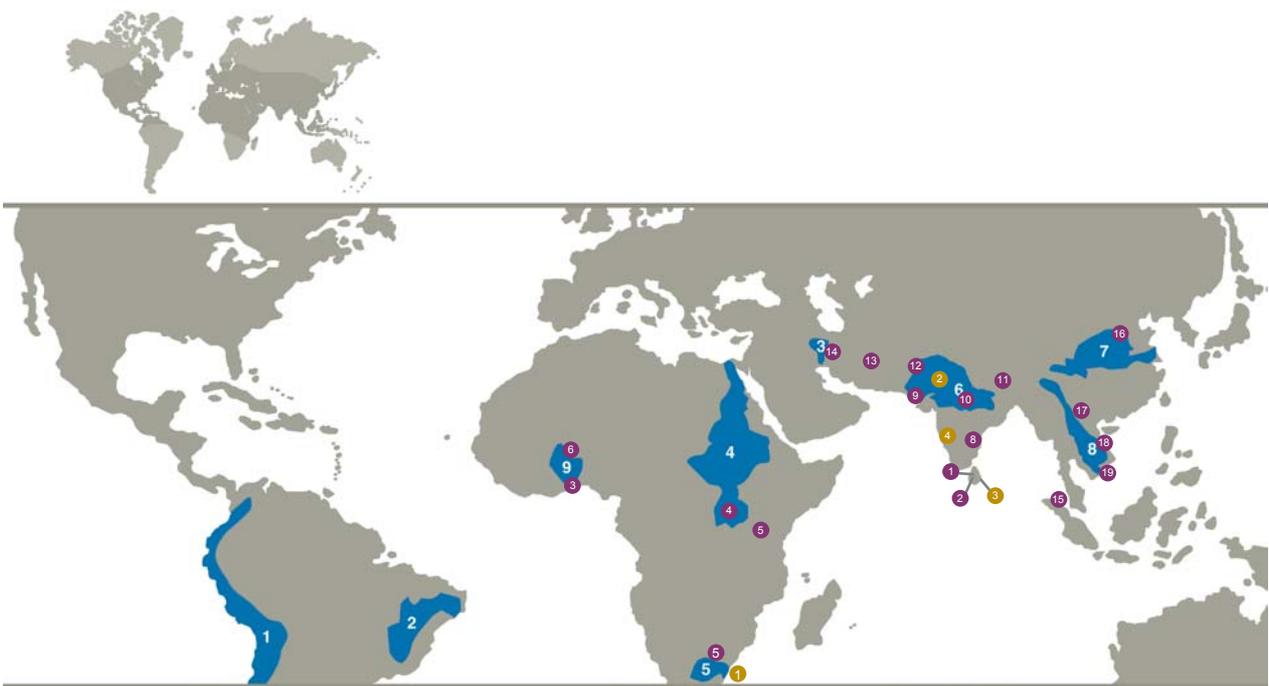
Financial Overview 2004 - 2008 Scenario 1

	2003	2004	2005	2006	2007	2008
Researchers (total cost)						
Internationally recruited						
Principal Researchers	3,520	3,040	3,040	2,880	2,720	2,720
Senior Researchers	1,995	1,995	1,995	1,890	1,890	1,890
Researchers	1,440	1,440	1,440	1,440	1,440	1,440
Post Doctoral Fellows	760	760	760	760	760	760
Regionally Recruited Researchers						
Senior Recruited	300	300	300	300	300	300
Researchers	175	175	175	210	210	210
Nationally Recruited Researchers						
Researchers	255	300	300	315	330	330
Consultants	400	400	400	400	545	545
Outsourced Resources (NARES etc)	750	750	750	965	965	965
Direct Research Personnel Costs	9,595	9,160	9,160	9,160	9,160	9,160
Research Operational Costs						
Headquarters and Regional Offices	3,139	3,574	3,574	3,574	3,574	3,574
Challenge Program	4,500	4,500	4,500	4,500	4,500	4,500
Headquarters						
Management and administration expenses including depreciation	3,266	3,266	3,266	3,266	3,266	3,266
Total	20,500	20,500	20,500	20,500	20,500	20,500

Financial Overview 2004 - 2008 Scenario 2

	2003	2004	2005	2006	2007	2008
Researchers (total cost)						
Internationally recruited						
Principal Researchers	3,520	3,040	3,040	2,880	2,720	2,720
Senior Researchers	1,995	1,995	1,995	1,890	1,890	1,890
Researchers	1,440	1,440	1,440	1,520	1,520	1,600
Post Doctoral fellows	760	800	840	920	960	1,000
Regionally Recruited Researchers						
Senior Researchers	300	300	350	400	450	500
Researchers	175	280	385	490	595	700
Nationally Recruited Researchers						
Researchers	255	330	390	450	525	600
Consultants	400	400	400	500	500	500
Outsourced Resources (NARES etc)	750	750	750	850	850	850
Direct Research Personnel Costs	9,595	9,335	9,590	9,900	10,010	10,360
Researchers (total cost)						
Headquarters and Regional Offices	3,139	33,149	3,294	3,734	4,074	4,224
Challenge program	4,500	700	7,350	7,500	8,050	8,500
	7,639	10,149	10,644	11,234	12,124	12,774
Headquarters						
Management and administration expenses including depreciation	3,266	3,266	3,266	3,366	3,366	3,366
Total	20,500	22,750	23,500	24,500	25,500	26,500

IWMI's Global Network



IWMI Offices

1. Headquarters
2. Global Research Division
3. Regional Office for Africa
4. Sub Regional Office for Nile Basin & Eastern Africa
5. Sub Regional Office for Southern Africa
6. Ghana - Second Office
7. Kenya – Project Office
8. Sub Regional Office for South Asia
9. IWMI-TATA Water Policy Program Anand Field Office
10. Regional Office for Asia
11. Nepal Office
12. Pakistan
13. Central Asia Office, Uzbekistan
14. Iran
15. Sub Regional Office for South East Asia
16. China
17. Laos
18. Vietnam
19. Cambodia

IWMI Benchmark Basins

1. Olifants basin - South Africa
2. Rechna Doab basin - Pakistan
3. Ruhuna basin - Sri Lanka
4. Krishna basin - India

Challenge Program on Water & Food (CPWF) Benchmark Basins

1. Andes
2. Sao Francisco
3. Karkeh
4. Nile
5. Limpopo
6. Indo-Gangetic
7. Yellow River
8. Mekong
9. Volta

The Challenge Program Water and Food (CPWF) Program is led by IWMI and implemented in 9 benchmark basins.

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