

Streams of innovation

Improving people's lives
through research on
water and food



Acknowledgements

The organization of the 3rd International Forum on Water and Food is a massive undertaking with a number of moving parts. Setting the right mood, organizing multiple parallel sessions and ensuring that participants are taken through a learning process (rather than just formal scientific presentations) take months of preparation.

Here we would like to acknowledge some of the key actors who supported the organization of the IFWF. We are grateful to the Food, Agriculture and Natural Resources Policy Analysis Network (FANRPAN) and the International Water Management Institute (IWMI) South Africa office for hosting the event in South Africa and making sure all local protocols were observed. We are grateful to the St. George Hotel of Tshwane, South Africa for their excellent service and their hospitality in allowing us to take over the hotel grounds for the Forum.

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Foreword

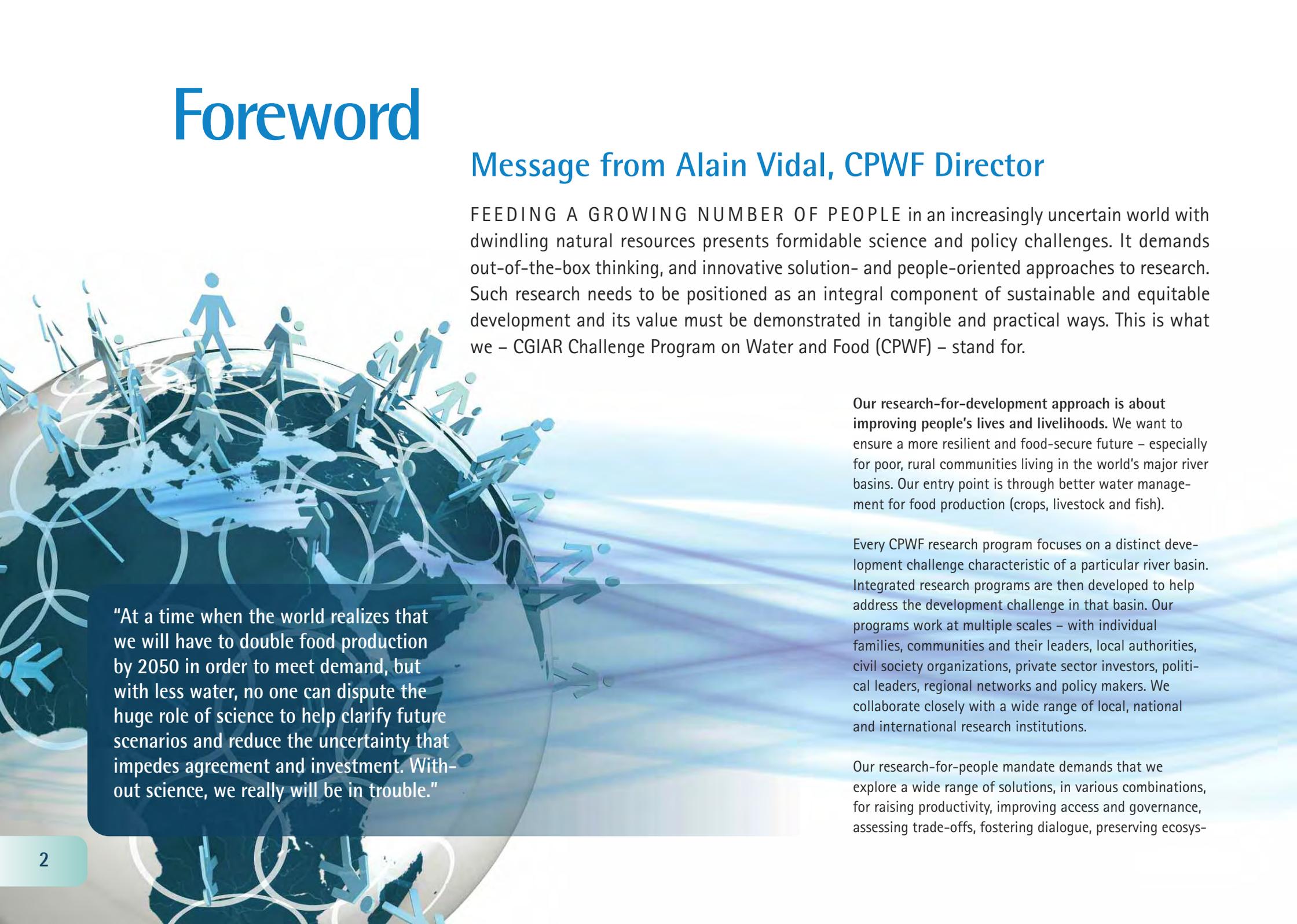
Message from Alain Vidal, CPWF Director

FEEDING A GROWING NUMBER OF PEOPLE in an increasingly uncertain world with dwindling natural resources presents formidable science and policy challenges. It demands out-of-the-box thinking, and innovative solution- and people-oriented approaches to research. Such research needs to be positioned as an integral component of sustainable and equitable development and its value must be demonstrated in tangible and practical ways. This is what we – CGIAR Challenge Program on Water and Food (CPWF) – stand for.

Our research-for-development approach is about **improving people's lives and livelihoods**. We want to ensure a more resilient and food-secure future – especially for poor, rural communities living in the world's major river basins. Our entry point is through better water management for food production (crops, livestock and fish).

Every CPWF research program focuses on a distinct development challenge characteristic of a particular river basin. Integrated research programs are then developed to help address the development challenge in that basin. Our programs work at multiple scales – with individual families, communities and their leaders, local authorities, civil society organizations, private sector investors, political leaders, regional networks and policy makers. We collaborate closely with a wide range of local, national and international research institutions.

Our research-for-people mandate demands that we explore a wide range of solutions, in various combinations, for raising productivity, improving access and governance, assessing trade-offs, fostering dialogue, preserving ecosys-



"At a time when the world realizes that we will have to double food production by 2050 in order to meet demand, but with less water, no one can dispute the huge role of science to help clarify future scenarios and reduce the uncertainty that impedes agreement and investment. Without science, we really will be in trouble."

tem services, and seeking opportunities for water users to share water-related benefits as well as water itself.

The 3rd International Forum on Water and Food (IFWF3), held in South Africa, demonstrated the robustness of the CPWF research approach. There were frequent debates about what exactly research-for-development means, where the boundary between research and development lies, the vital interface with policy and the role that communications play. IFWF3 asked how we can become even more effective in taking action, while we focus on developing and implementing innovations and solutions.

The CPWF research approach demonstrates how we twine scientific innovation with decision making. From a scientific perspective, IFWF3 highlighted the need to link technical options for intensifying and diversifying farm systems with markets and infrastructure development. Likewise, CPWF researchers, particularly in Africa, have embraced the resilience approach and are showing how resilience thinking can be useful in defining local development options and consequences. CPWF basin-based research also feeds into the emerging body of global resilience research.

From a development perspective, we challenged our basin research teams to present dynamic approaches for how they are communicating and engaging in development processes. IFWF3 highlighted some areas where we need to improve, for example:

- We need to work harder to develop and communicate solid evidence that demonstrates the desired impacts on household livelihoods and food security.
- Our research teams should invest even more in getting to know and understand the people with whom they are working – including their expectations, hopes, fears and aspirations.
- We need a greater focus on gender equity if we are to ensure the relevance of our research.

Looking to the future, I am confident that the outcomes from IFWF3 will help contextualize the collaborative work and impact of CPWF, as well as feed into the new CGIAR Research Program on Water, Land and Ecosystems.

This report synthesizes the main outcomes and issues generated at the IFWF3 and serves as a benchmark for where CPWF is midway through its 2nd phase.



“We will continue to work hard to keep water and food issues at the heart of debates on climate, poverty and sustainability in a rapidly changing world.”

Introduction to IFWF3

SHORTLY BEFORE the 3rd International Forum on Water and Food (IFWF3) convened in Tshwane, South Africa during November 2011 demographers at the United Nations announced that the world population had surpassed seven billion. Shortly after IFWF3, world leaders gathered in Durban, South Africa for COP17 to focus on climate change challenges. These events underscored the relevance, and urgency, of the issues that CPWF and its partners are addressing.

CPWF's first international forum took place in Vientiane, Laos during 2006, followed by a 2008 gathering in Addis Ababa, Ethiopia. Building on these events, IFWF3 was designed to further strengthen confidence, vision, identity, networks and collaboration across the CPWF community – including not only CPWF researchers, but also partners from government, NGOs and many more sectors.

IFWF3 was organized and facilitated by CPWF and co-hosted by the International Water Management Institute (IWMI) and the Food, Agriculture and Natural Resources Policy Analysis Network (FANRPAN). It brought together close to 300 participants representing some 38 countries.

Researchers from the natural and social sciences, research managers, investors, NGOs, leaders of agricultural and water management organizations, policy makers, decision-makers as well as journalists and social media reporters from around the world converged on Tshwane for the Forum. Women (80 participants) and young professionals had a stronger presence than ever before, and because the event was held in Africa, policy makers and decision-makers from the Limpopo, Volta and Nile River Basins were well represented.

The Forum specifically set out to capture and capitalize on emerging evidence and insights from CPWF researchers and partners who are working within and across six river basins.

Delegates shared insights about making farming more resilient and sustainable – focusing on how research can help ensure future food security and contribute to improved livelihoods for millions of the world's poorest and most vulnerable people who are living in mountain villages, dry savannas, bio-diverse wetlands, or densely populated river deltas and coastal zones. They highlighted the many emerging challenges facing these regions in terms of future food security, and examined the often complex linkages between food and water. They explored how a combination of process, institutional and technical innovations can help address these challenges, including the potential to scale up and scale out solutions. The social and human dimensions of agricultural research, including the importance and value of indigenous knowledge, also came under the spotlight.

Inventive ways of making scientific knowledge and solutions relevant and accessible to partners and stakeholders – ranging from poor farmers to policy makers – was a key



theme throughout the event. From the Forum, a number of key messages have emerged, which will shape how CPWF works over the coming years. This report is for the most part structured around these messages.

Main message: Despite challenges in many river basins, overall the planet has enough water to meet the full range of people's needs and ecosystems' needs for the foreseeable future, but equity will only be achieved through judicious and creative management.

- **Key Message 1:** Wise use of our water resources for strengthening rural livelihoods and ecosystem services requires using water more productively while simultaneously sharing water and its benefits more equitably.
- **Key Message 2:** Higher water productivity and greater social equity can be obtained only through a radical change in policies and institutional arrangements both in developed and developing nations.
- **Key Message 3:** The CPWF research-for-development strategy identifies and promotes the policies, institutional and technological innovations required in order for people in developing countries to increase water productivity and ecosystem services in an equitable and sustainable manner.

[These key messages are expanded upon on page 11.](#)

Forum insights

The CPWF research-for-development approach is beginning to yield positive outcomes in the six basins it works. It is too early to demonstrate definitive impacts and outcomes. Yet some of the insights and lessons that emerged from IFWF3 can be summarized as follows:

Science-oriented insights

- Resilience thinking has the potential to provide CPWF a deeper understanding of where to intervene in systems to **improve development**. However, the pressing challenges of water and food in poor countries seldom requires building resilience of current systems, but rather unlocking the potential for transformation towards more desirable pathways of development.
- Agricultural water management interventions may provide **leverage for transformation**, but the change process also entails risks (such as marginalization of certain groups, loss of a set of ecosystem services), particularly considering that one development pathway that is desirable for some might not be that for all. It is important to understand and identify associated short/long term trade-offs, and analyze alternatives to those who lose out. Issues of power also need to be considered.
- **Global drivers of change** (demographic/social, economic, political/institutional, environmental and technological) are very important, act at distances well beyond individual river basin boundaries and are outside our (direct) influence. Despite information gaps and uncertainties about how some global drivers evolve, programs must invest more in understanding their impacts and how they interact. CPWF needs more clarity on how global drivers influence development challenges within and beyond river basins.

- Many **options for intensifying and diversifying farm systems** involve linking up with market value chains for high-value crops, livestock, fish or shrimp.
- Models and spatial analysis are powerful tools for understanding processes and the consequences of change – but it is important to understand the **limits of modelling approaches**.
- CPWF conducts interdisciplinary research to address complex issues. In so doing, it has found that meshing social science with the biophysical tools can be a winning combination, which requires **closer interaction between biophysical scientists and social scientists**.
- It is crucial to **measure and demonstrate improvement of livelihoods** in the different projects that are working at the field level.

Policy, development and communications insights

- Agricultural research-for-development must actively engage with and inform the policy arena. Policy makers need the **evidence, insights and honest brokerage that the research-for-development community offers**.
- **Addressing gender imbalances** is critical to address inequities and ensure research takes into account a diversity of perspectives. The issue is not that gender should be included because it is mandated, but that having a gender perspective will ensure the research CPWF carries out is more relevant and robust.
- **Key partners** in the process of research-for-development must be involved from the outset, not only to make the research more effective, but also to broaden development impacts across society.
- **Benefit sharing is a political process** that involves bringing different stakeholders together to share water resources and their benefits in different ways. Such

an approach combines scientific understanding, ecosystems and socio-political realities such as traditional use, rights-based approaches and governance issues.

- **Social, economic, political and cultural forces** should always be considered during research-for-development projects.
- **Multi-stakeholder platforms** can be an effective mechanism for delivering research into development. However, they are resource intensive, need to be maintained, can be personality-driven and depend on mutual trust facilitated by a neutral, respected broker.
- It is imperative to **make research outcomes and evidence visible, accessible and available**.
- In all activities, it is **vital to integrate communication-for-development** within research-for-development.
- Young professionals play a crucial role in research for development as they can work across sectors, have more time to engage stakeholders, make a substantial contribution to fieldwork research.

“The Forum focused our minds on the important role that CPWF research should and will take in shaping new policies. This is a major step forward – given that decision-makers are calling on CPWF and its partners to step up to this challenge.”



– Amanda Harding,
Forum convener and
CPWF management team

About the Challenge Program on Water and Food (CPWF)

Since its launch in 2002, CPWF has matured into a comprehensive global research effort on water and food. CPWF research has included over 100 research-for-development projects and involved more than 400 partners. This work is done in river basins where 1.5 billion people – amongst whom half of the poorest people on Earth – live.

Research-for-development, in the context of CPWF, brings together a broad range of scientists, development specialists, policy makers and communities to address the challenges of food security, poverty and water scarcity. The organization emphasizes the continuum of research and development according to five core principles:

1. Adaptive management
2. Capacity building
3. Gender and diversity
4. Partnerships / interdisciplinary research
5. Accountability

CPWF's research-for-development approach emphasizes the importance of focusing on well-defined development challenges in specific areas, for example a river basin or an eco-region, or for a specific group, such as poor women in rural areas.

The link between research and development is further strengthened by CPWF's theory-of-change that demands commitment on the part of researchers to produce relevant results that are of use to its partners and key stakeholders. Researchers have to clarify exactly how they expect their work to change people's knowledge, attitudes and skills and how this will trigger innovation processes. The kind of innovations that researchers are aiming for

range from the people-to-people spread of technology to institutional and policy changes.

Topic Working Groups are communities of practice within CPWF that address specific food and water challenges that cut across basins. They aim to facilitate cross-basin learning and research, and help build capacity within basins. Current Topic Working Groups include, with others emerging:

- Resilience in Water and Food Systems
- Spatial Analysis and Modelling
- Learning to Innovate
- Global Drivers of Change

IFWF3 provided a platform to showcase and discuss the many innovative solutions proposed by the CPWF. Some were high-level, others very practical. Some were backed by solid science, while others emerged from the grassroots experiences of researchers and partners working in the river basins.

IFWF3 represents the half-way mark of Phase 2 of the CPWF. It was therefore a key opportunity to assess progress and take stock of the Program's emerging challenges, outcomes and impacts.

The current CPWF Research program focuses on six rivers basins (Andes system of river basins, Ganges, Limpopo, Mekong, Nile and Volta). Basin research programs interlink technical, social and political issues at different scales and levels to ensure greater uptake of research addressing one specific development challenge.





The major river basins where the CPWF is currently active are the Andes system of basins, Ganges, Limpopo, Mekong, Nile and Volta.

Forum structure and design

IFWF3 focused on pertinence and appropriateness of how CPWF's research was addressing water and food challenges in different river basins. The Forum objectives were to:

- Assess CPWF progress and define outcomes to date.
- Share lessons and stories – from successes and failures – across six unique basin programs.
- Ensure that CPWF research is having an impact on the key challenges related to poverty reduction, food security and environmental security.

Key questions that guided the Forum

IFWF3 was driven by two leading questions, echoed in each of the sessions, namely:

1. How does our work on water and food provide new answers to the dominant development challenges of poverty, food security and the environment?
2. What does CPWF research-for-development have to offer that is new in addressing the water and food crisis?

The four key questions guiding each parallel session at the Forum were:

1. What is new and innovative emerging from your session?
2. What needs to happen to carry these ideas forward?
3. What are the messages and lessons emerging from/for research-for-development?
4. What are the messages for any specific target groups, and specifically for Africa?

An outcomes-focused Forum agenda

The Forum was designed to ensure extensive exchange of information, exploration of new ideas and evidence-based conversations. The program design reflected CPWF's multi-disciplinary, participatory and iterative approach to research. Some key features included:

- Key messages and significant results were recorded at each session.
- A Policy Impact Panel (PIP)¹ attended all sessions, participating fully in the Forum, and extracted how CPWF can better impact and engage different stakeholders.
- Topic Working Group sessions acted as entry points to exchange across basins.
- Gender and the role of young professionals featured at plenary sessions and dedicated sessions.
- Debates and interactive panel discussions were staged to get delegates thinking critically and engaged with the issues.
- Capitalizing sessions highlighted opportunities for improvement across and beyond basins.
- A daily "Share Fair" showcased poster displays, presentations, participatory videos, storytelling and even the use of strategy games to communicate science and engage stakeholders.
- Capacity building events before, during and after the Forum focused on equipping a group of participating journalists with new skills to report on water and food issues, as well as intensive social media training for a group of volunteers from each of the basins.

"At IFWF3 it became clear that our research approach is a winning strategy, because it provides answers that are expected by our beneficiaries and that they can use."

– Sophie Nguyen-Khoa,
Ex-CPWF Associate Research Director



¹ On the IFWF3 Policy Impact Panel: Chair Lindiwe Sibanda (CEO, FANRPAN), Marta Echavarria (Director, EcoDecision), Audrey Nepveu (IFAD), Reggie Tekateka (President, Africa Network of Basin Organisations), Javier Ekboir (Coordinator, ILAC), Zainul Abedin (IRRI, Bangladesh), Sokhem Pech (M-Power), Katharine Cross (IUCN)

Setting the scene

The grand challenge for humanity

KEYNOTE SPEAKER JOHAN ROCKSTRÖM outlined why water and food is the basis for human prosperity and hence the grand challenge for humanity. Rockström, who is the Director of the Stockholm Environmental Institute, as well as chair of the science advisory committee of the CPWF, spoke about the new geological epoch – the anthropocene – where we, humans, have become a dominant geological force on planet Earth.²

Rockström's presentation raised new concerns regarding the vulnerability of global ecological systems and our ability to feed the world population into the future. He provided the context for the importance of continued research to address the broad challenge of sustainable water resource management and intensified agriculture in a rapidly changing world as follows:

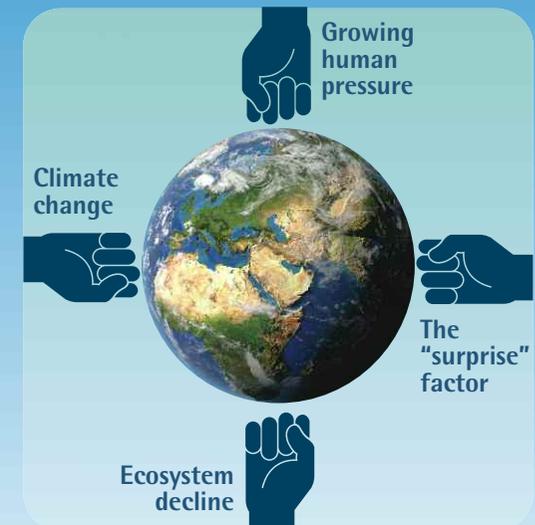
- The pressure on our increasingly crowded planet is a "quadruple squeeze" that jointly changes the landscape for human development and delivers formidable challenges in terms of global sustainability. The four key factors are:
 - **Growing human pressure:** A world population of currently more than 7 billion is heading for 9 billion, with the richest 20% of the world population using 80% of resources, and therefore pressure on resources is increasing as we move towards more affluence for larger parts of the world population.
 - **Climate change:** There is evidence that our planet is more vulnerable to change than we previously thought and that change is occurring faster in the real world than we had predicted. Changes such as sea level rise, ice melts and changing rainfall patterns

are impacting on societies and specifically, agricultural systems.

- **Ecosystem decline:** We have entered into a phase of unprecedented undermining of ecosystem functioning and loss of life-supporting ecosystem services and biodiversity.
- **The "surprise" factor:** Ecosystems can change gradually, but we now also know that we can abruptly push systems across thresholds into irreversible situations.



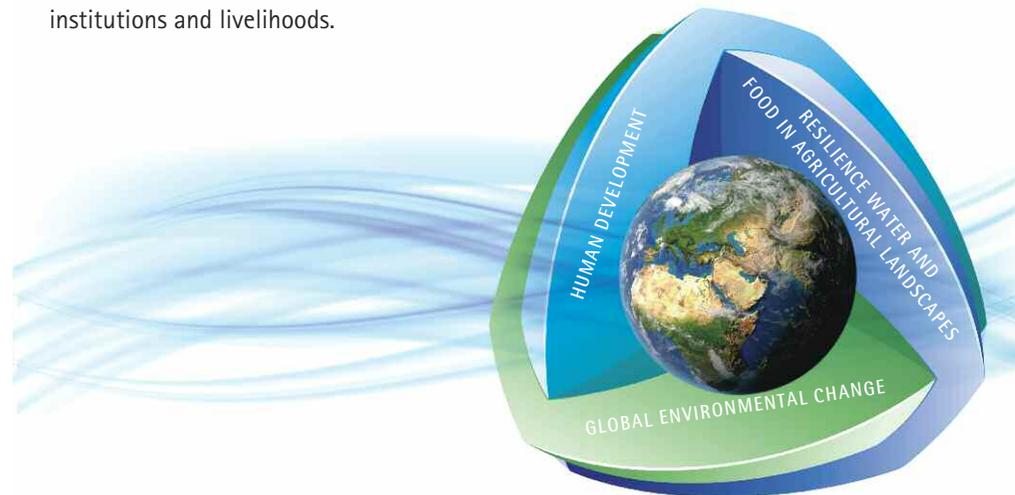
Rockström challenged IFWF3 delegates to think about how their science could help to turn crisis into opportunity – by new thinking about water resource management, managing moisture feedback and water resilience.



The "quadruple squeeze" of population growth, climate change, ecosystem decline and unpredictability that is pushing planet Earth towards potentially catastrophic tipping points.

² First postulated by Nobel Laureate Paul Crutzen in 2002

- We have a climate crisis (global change) and an ecological crisis (ecosystem decline) interacting with a social challenge (growing human pressure). We see more and more evidence that we are hitting the hard ceiling of environmental processes at the planetary scale. If we push the pressures on the planet much further, we cannot exclude the possibility of catastrophic tipping points.
- We are heading towards a new green revolution that has to meet global sustainable development goals, while producing more food and wealth, and doing that in ways that are more robust to unavoidable shocks and stresses. This is a tremendous challenge, but it can be done and presents a very promising agenda for future CPWF research. For example, sustainable intensification on current cropland can help to sustain biodiversity and ecosystem functioning in adjacent areas. This is possible with current technologies and working with integrated solutions on governance, institutions and livelihoods.



The new research challenge is to connect human development with global change and agricultural resource management for improved livelihoods and development.

New thinking about food and water

Simon Cook, Coordinator of the CPWF Basin Focal Projects (2006 – 2010) and newly appointed director of the CGIAR Research Program on Water, Land and Ecosystems, synthesized the findings from the BFP project and outlined a global view on water, food and poverty from the ten river basins.

Despite the widely held view that the world is heading for major water scarcity and food insecurity that would inevitably lead to poverty and political disturbances, a different picture has emerged from CPWF's Basin Focal Projects. CPWF findings to date indicate that efficient and equitable use of water, not scarcity, is the core concern in major river basins around the world. In most regions, water management is a political and governance challenge, rather than exclusively a resource concern.³

Key findings, presented by Cook at IFWF3, include:

- While there are many problems and challenges, major river basins of the world can support future population growth to 2050, BUT ONLY if the natural resources provided by those river basins are used more effectively. The way these resources are managed and shared is critical.
- While water scarcity is an issue in many poor communities, their inability to store, share and use water efficiently and fairly is often a bigger problem. There is massive scope for improved water productivity in all river basins, especially in Africa.
- There is an urgent need to move towards more balanced development in river basins where developers consider multiple users and their diverse needs. This requires a new kind of collective and collaborative politics – and it is possible!

CPWF's recently published, exhaustive study of 10 river basins⁴ shows that despite all of the pressures facing large river basins of the developing world today, there are relatively straightforward opportunities to satisfy development needs and alleviate poverty for millions of people without exhausting our most precious natural resource – fresh water.

³ Defining the limits of agriculture, <http://waterandfood.org/2011/12/21/defining-the-limits-of-agriculture/>

⁴ Simon Cook, Myles Fisher, Tassilo Tiemann & Alain Vidal, Water International, Volume 36, Issue 1, 2011, Special Issue: Water, Food and Poverty in River Basins, Part 2: Cross-Basin Analysis and Synthesis <http://www.tandfonline.com/doi/abs/10.1080/02508060.2011.541018>

Forum outcomes – moving towards solutions

THE HEART OF THE FORUM was in the three days of intensive discussions where basin-level research programs were highlighted and cross-basin issues such as global drivers, spatial analysis and modelling, resilience and livelihoods, and learning to innovate were debated.

Solution-driven strengths of CPWF research, highlighted by the Policy Impact Panel at IFWF3, include:

- A research-for-development approach that is pluralistic, development-focused and balanced with sound science.
- A focus on solutions where all stakeholders win (such as benefit sharing)⁵ in addition to the usual solutions where some stakeholders win and others lose (trade-offs).
- Increasing productivity in relation to social and ecological resilience.
- Established expertise in impact pathways and recognition that processes followed by innovation research are as important as innovation solutions created for implementers.
- CPWF is widely recognized as an honest knowledge broker, a builder of partnership and of empowerment, engaging partners from the outset and giving credence to the human face in research.

The following recommendations were made to build on current CPWF research strengths:

- Invest more effort in engaging and empowering partners.

- Allocate more resources to communication-for-development approaches and dialogue.
- Create platforms where partners/stakeholders are enabled to tell their stories.
- Monitor and evaluate institutional change according to pre-defined benchmarks and impact measures.
- Regularly review Topic Working Groups to ensure that they remain effective and relevant.

Increased productivity for food security and livelihoods

Increasing productivity to ensure a more resilient and food-secure future for rural people living in the basins in which CPWF works was a recurring topic throughout IFWF3. Gender, livelihoods thinking, linkages to markets and improving water productivity were highlighted as key considerations.

Gender matters for water and food

Gender issues in development go beyond gender per se, and relate to citizen engagement and social justice, where

“Let research be guided by three core principles: credibility, relevance, and legitimacy. Science is often credible, but it can move too slowly to be relevant, and lack the engagement with stakeholders necessary to be legitimate. The key is who we bring with us.”

– Simon Cook,
Head, CPWF Basin Focal Projects



⁵ Andes-Mekong session: Sharing Experiences on Means to an End, Session Leads: Miguel Saravia, CPWF Andes Basin Leader and Kim Geheb, CPWF Mekong Basin Leader <http://waterandfood.org/ifwf3/?q=content/andes-and-mekong-hydropower-and-benefit-sharing-mechanisms>

the real war on poverty is fought. IFWF3 included a focus on how to systematically integrate a gender perspective into water and food research-for-development, in recognition of the central importance of gender and diversity to its research-for-development program.

In CPWF, gender is perceived as not receiving the attention it should. There is a perception that there is a poor understanding of gender in the program and how to practically move from rhetoric to action in this area. Researchers often have limited exposure to available tools to incorporate gender perspectives in their research.

The Forum concluded that there is a need to move from discussion to action in order to address gender imbalances in CPWF research programs. Suggestions included:

- Address gender more deliberately and not just in terms of ratios.
- Include gender considerations at implementation level.
- Make a strong attempt to appoint more women in management and decision-making roles.
- CPWF should pioneer a pro-active gender perspective in Agriculture Research-for-Development for CRP5.

Instilling livelihoods thinking

Interest in and support for focusing on sustainable *livelihoods thinking* were brought up in the introductory and parallel sessions. The Policy Impact Panel also called for more quantitative information on how CPWF addresses livelihoods issues and for the allocation of more resources for partner engagement, communication and empowerment. Livelihoods approaches are a way of thinking about the objectives, scope and priorities for development – placing people and their priorities at the center of development. They focus poverty reduction interventions on empowering the poor to build on their own opportuni-

ties, supporting their access to assets, and developing an enabling policy and institutional environment.

IFWF3 delegates agreed that:

- Livelihoods approaches should be people-centered, responsive, participatory, multi-level, sustainable and dynamic.
- Selecting appropriate livelihoods approaches for specific projects and communities is a good way to guide the design of strategies to improve productivity.
- Solutions about livelihoods cannot be *imposed* on local communities.

ANDES

CASE STUDY: A study from the Andes outlines the relevance of social capital in understanding and negotiating conflict around water management. The study analyzed relationships among the different actors in hydrological management and provides deeper understanding of existing and latent conflicts around water management that could impede the implementation of benefit sharing mechanisms. So far, conflicts between the community and a hydroelectric company in the area regarding management of water resources are strong and are perceived as unsolvable. It was assumed that the community had a strong bond, but it was later realized that what really exists is strong families ties, followed by neighborhood ties linked to the specific area of the village. Community ties within this community are not as strong as first thought. This was important to understand in order to see where and how the community would work with other stakeholders without marginalizing certain groups within the community.⁶

“We have to ensure that farming systems are both sustainable and resilient, but resilience itself is not necessarily a good thing. Some systems are very resilient, but at a very low state of production. We need to aim for resilience at a high level of productivity.”

– Andre van Rooyen, ICRISAT, Limpopo Basin



“Gender is often retrofitted to projects. Gender is about the power relationships but unfortunately, gender is often identified as a cross-cutting theme. Cross-cutters often don't have budgets and they are crossed-out.”

– Everisto Mapedza, IWMI

⁶ Relevance of social capital in understanding and negotiating conflict around water management in a micro basin in the Andes region http://cgspage.cgiar.org/bitstream/handle/10568/10430/ALiSh001_ns.pdf?sequence=1

Improving water productivity for food security and resilient systems

Managing, using and storing water and other resources provided by river basins more effectively – especially in Africa – can go a long way to improving food security and resilience. Livelihoods, in African basins especially, are dependent upon rainwater and yet rainwater management remains a relatively untapped solution. **Researchers found that in Africa only about four percent of available rainwater is captured for crops and livestock, showing the huge potential for future growth.**

Some 90% of agriculture is dependent on rainwater; therefore many opportunities exist for improving productivity by integrating water, land and livestock. On the other hand, many of the systems, particularly in Africa, are highly fragile and there is a need to understand how these systems will respond to different shocks such as drought, political or social change and climate variation. This is where resilience approaches are important to understand how to respond and adapt to such changes.

Small-scale reservoirs for multiple uses were identified as a particularly promising technology around which a rainwater management framework might be built. Such reservoirs provide dry season water supply for livestock, fisheries, crops or other productive uses.

LIMPOPO

CASE STUDY: The soil is the link between the atmosphere (climate) and production (plants or crops). Proper land use is part of successful farming and relies on proper matching of land qualities with land use requirements. A presentation at IFWF3 outlined how researchers in the Limpopo Basin used the Zimbabwe Soil Classification system to assist in site selection for the implementation of rainwater harvesting techniques in Insiza, Zimbabwe.⁷

⁷ Site selection for implementation of rainwater harvesting techniques in Insiza, Zimbabwe http://cgspace.cgiar.org/bitstream/handle/10568/10444/LRwSe002_ns.pdf?sequence=1

⁸ Constraints and opportunities in rainwater management in crop-livestock systems of Volta Basin in Ghana and Burkina Faso http://cgspace.cgiar.org/bitstream/handle/10568/10402/VRwSe002_Final_RD_1310.pdf?sequence=1

VOLTA

CASE STUDY: In the Volta Basin, the productivity of small-scale reservoirs, built by major donor investments over a long time, were studied by CPWF during Phase 1. These CPWF research projects have now matured and water productivity improvement activities are being expanded around the original projects. This work is being done particularly in the drylands of Ghana and Burkina Faso to improve the resilience and livelihoods of the people and ecosystems in this area. Livelihood options and the indigenous knowledge of the rural communities largely shape rainwater management practices and may require firming up joint learning and sharing between technical, institutional and policy actors to make the system more productive.⁸



NILE

CPWF experience in the Nile Basin has shown that rainwater management strategies can be successfully implemented only when there is strong integration of components and strong collective action. One example of a success story in this regard is from the Ethiopian highlands where landscape productivity was improved through protecting the hillside 'water towers'. Through exclosures, degraded hillsides produce up to three tons of biomass in the third season, which could be used for livestock feed, fuelwood, and other uses. Protected hillsides, along with soil and water conservation bunds and tree planting, facilitated water infiltration, increased the water budget of the system and enabled the re-emergence of dried springs in less than 10 years' time. The agricultural productivity of these landscapes has improved due to improved soil fertility status of the landscapes thanks to the reduced erosion and more production of manure. The systems also created strong spirit of collective action with stronger by-laws for wider implementation of rainwater management strategies. The Nile Basin Development Challenge is documenting and modelling this experience for wider use.



“Rainwater management strategies have the potential to lift many parts of Africa out of poverty. However, they need to be linked to market incentives. It was one thing to talk about landscape management and conservation but it has to have tangible outcomes for local farmers”.

– Tilahun Amede, Nile Basin Leader

Productivity successes in the Ganges

Climate change is subjecting the coastal Ganges Basin to increased flooding and salinity. Flooding can have devastating consequences but flooding is both a concern and an opportunity. Saline intrusion can cause widespread crop damage, and contaminate groundwater supplies. CPWF has driven several successful productivity improvement projects in this area. Focusing on strengthening water governance and management – as well as intensified and diversified agricultural and aquaculture systems, the projects have turned these challenges into opportunities.

GANGES

CASE STUDY: Despite apparently hostile living and farming conditions, communities in the Ganges Basin have improved food production by using adaptation mechanisms that include the introduction of high-yielding rice varieties with multiple traits for intensive cropping. They have also learned from earlier work in the Mekong Basin. During low river flows between November and May, saline water may penetrate as far as 270 km upstream on the Ganges River and affect an area of around 800,000 ha, causing some US\$586 million in agricultural losses annually. The saline intrusion comes with an additional consequence of conflict – shrimp fishermen benefit from the brackish water brought on by saline intrusion, but rice farmers suffer as a consequence. CPWF experience in the Mekong Delta has shown that these conflicts can be mitigated through the introduction of saline tolerant rice varieties, embedded within a broader saline management system that relies on sluice gates and predictive modelling.

GANGES

CASE STUDY: In the Chitolmari sub-district of Bangladesh, various farming system innovations have already been implemented by farmers, allowing households to adapt to increasingly high salinity levels in some seasons. A few years ago, farmers in this region practiced only a single rice crop in the monsoon period; now they are cultivating various combinations of shrimp and fish during the monsoon and producing rice in the dry winter season. Instead of being kept fallow, farmers are using raised dykes (bunds between the rice plots) for cultivation of vegetables. In the cooler dry season, dykes are being used to grow winter vegetables, and by raising dykes high enough above the water, farmers are able to reduce the impacts of salinity on dyke soils. Growing volumes of vegetables in the region are stimulating local distribution markets from which traders take the farm produce to urban markets.

More success stories reflecting productivity improvement shared during the IFWF3 sessions include the introduction of the Aus–Aman cropping system for increasing cropping intensity in southwest coastal Bangladesh and improving drainage for cropping intensification in the poldered coastal zones of Bangladesh. Follow up research has proved that the livelihood conditions have improved and income of polder communities has increased as a result of intensification of food production. Mapping too has played an important role in extrapolating domains for technology targeting in the Ganges coastal zone.



Institutional reform

A shared issue across all six CPWF river basins is that the setup and effectiveness of institutions operating in the basin are critical determinants of the development trajectory and capacity to adopt innovations. New collaborative institutional arrangements (new collaborative politics) are necessary that cross sectors and national boundaries, addressing unequal development and governing ecosystems for a range of purposes including support to technical solutions.

However, it is also clear that there is huge variation among the basins in the actual details of the institutional setup, from local to district, national and international levels, and in the priority issues that need to be addressed to enhance the impact of the CPWF research-for-development program. It was clear that CPWF Basin programs are using a range of approaches to link research to institutional change processes including: benefit sharing mechanisms, strengthening multi-stakeholder platforms, analyzing governance related structures and looking at external drivers of change.

Working towards a coherent river basin management approach

River basins are managed in a fragmented way when the water needs of different sectors – agriculture, industry, environment and mining – are considered separately rather than as interrelated and interdependent. In many cases this requires a complete rethink of how governments coordinate across ministries so that ecosystems are managed for a range of benefits, rather than emphasizing one sector over another.⁹

MEKONG

CASE STUDY: In the Mekong, hydropower development is the single largest intervention along all major rivers within the Greater Mekong Basin. In Vietnam, CPWF is looking at how to show the different economic values of reservoirs. In the Yali Reservoir, researchers were able to demonstrate the value of existing uses of water in the reservoir. It impacted the policy making process and these other uses by local communities are now recognized as important, such as agriculture, fisheries and tourism, in addition to hydropower generation.

Benefit sharing mechanisms

Benefit sharing mechanisms (BSMs) are strategies to share the benefits resulting from the development of the water resources in order to satisfy the needs of the concerned populations. BSMs are institutional innovations whereby water-related benefits are shared between different groups for mutually agreed ends and purposes. They are not just a technical tool, but rather a social, economic and cultural instrument to create agreements that support sustainable development in the basin. For example, this could happen in places where downstream water users invest in improved upstream land and water management, to the benefit of both upstream and downstream communities.

In many parts of the Andes, the seasonal availability of water and its quality are problems. Due to land use and cover changes, base flows have changed, and pollution increased. Together with inefficient allocation, this frequently reduces poor people's access to water.



⁹ Water, food and poverty: Beyond the limits <http://waterandfood.org/2011/10/01/water-food-and-poverty-beyond-the-limits/>

CPWF believes that there is a development challenge idiosyncratic of Andes river basins: how to share the costs and benefits of water resource development and water conservation between (relatively wealthy) downstream urban water consumers and (relatively poor) upstream rural communities. Related to this is the challenge of developing benefit sharing mechanisms that encourage investments to improve agricultural productivity and livelihoods resilience in rural areas.

ANDES

CASE STUDY: One of the Andes projects is working directly with the Ministry of Environment (MINAM), Peru in collaboration with WWF Peru, CARE, and the International Center for Tropical Agriculture (CIAT). The project learned that research activities should be agreed upon with decision-makers supportive of setting up BSMs in the identified study sites prior to implementation. This is crucial if the research is truly to play an important role in influencing development activities. However, this is not straightforward and requires strong lobbying from project representatives, as well as a clear explanation of how the results are going to be (or were) achieved. Finally, it needs to be made clear to project stakeholders how these results are directly applicable to designing BSMs. However this poses challenges to the way research is conducted, in the sense that the research management should go beyond planning the execution of certain methods, and actually seek to position research activities in ongoing decision-making processes. Also, given that interests, priorities and realities vary across the project sites, research activities need to adapt methods and approaches to these particular contexts.

Global drivers: Tackling uncertainty

Understanding how global processes link to local ones helps to ensure positive interventions that improve environmental resilience. Relevant global processes include demographic change, economic growth, the development of policy frameworks and political processes, urbanization, infrastructure development, climate change, and many others. Consideration of the drivers is essential, but so too is an intelligent harmonizing of frameworks such as multiple use systems, integrated water resources management, and ecosystems service.

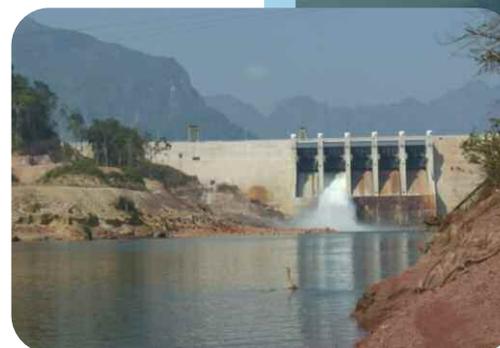
Tackling uncertainty through adaptive research-for-development approaches will be crucial to future success in achieving the aims of CPWF, despite the challenges presented by global drivers. There is a need for an adaptive process embedding learning in the research design and implementation. Given the complexity of the agro-ecosystems under study, it is difficult, if not impossible, to get it right at first.

During the Global Drivers session, participants discussed the importance of being prepared for uncertainty, of knowing not just the known unknowns, but even being aware of the unknown unknowns!

They concluded that the best way to manage uncertainty is to accept that it may imply multiple risk-taking strategies and some fuzziness in data and analysis. It is also important to be explicit about the uncertainties and, if possible, estimate the uncertainties.

“Responding to changing environmental drivers especially climate variability and change requires adaptive capacity, perhaps focused as more local capacity, softer intervention, decentralization, efficiency of use, diversification of livelihoods and social capital as opposed to built capital.”

– Mark Mulligan,
Kings College London and partner in the Andes Basin



GANGES

CASE STUDY: In the Ganges, modelling tools have been extremely useful in understanding unfolding environmental processes and linking these to global processes. CPWF commissioned a related project to a local institution, which has been researching these issues for many years. Due to the successful application of spatial analysis and modelling by the local institution, the Ganges Basin team now has a good understanding of the interrelated issues of seasonal water scarcity, salinity, tidal flows, submergence, drainage and sedimentation. They have even identified opportunity in the midst of change. This includes several opportunities to intensify and diversify production systems in a range of diverse environments, while being mindful of the fragility of ecosystems and the need for resilience.

Platforms as mechanisms to build trust and promote dialogue

Local innovation platforms and policy-level, multi-stakeholder platforms are emerging as key engagement tools across many basins which help facilitate dialogue amongst different actors and strategic partnerships. In each basin different types of platforms are being initiated. In the Nile, local innovation platforms are being developed to enhance innovation at the local level and feedback issues on land management to higher levels¹⁰. A national platform to share experiences in rainwater management and land conservation has also been established. In the Limpopo and Volta Basins, market-driven local platforms are being developed to spur local production systems. In the Mekong, platforms for dialogue on hydropower have been established to bring together dam developers, investors, environmental groups and communities.

It was found there is no 'blueprint' for doing multi-stakeholder platforms; one of the strengths of these approaches is the way they allow for things to change along a MSP process. Two-way dialogues between what research uncovers and what policy makers or local communities demand are important parts of what we want to achieve; the importance of the 'capacity to listen' is something that needs to be better understood; opportunism is an important aspect of 'adaptive management' and mechanisms often inhibit this.

MEKONG

CASE STUDY: In the Mekong, the CPWF is using the Hydropower Sustainability Assessment Protocol (HSAP) as a tool to bring actors together. HSAP assesses a hydropower project at any stage in the project life cycle against a set of sustainability criteria. It provides a systematic and objective approach to scoring sustainability performance based on a review of evidence. The tool has been tested in Cambodia, China and Vietnam with stakeholders, who are usually divided based upon an entrenched position and being able to discuss issues using agreed upon criteria.



“Compared with Geographic Information Systems (GIS), spatial analysis and modelling (SAM) actually focuses on what is planned with the data collected, how to analyze it and for what purpose. It is not just hydrological modelling, but works in combination with emergent understanding of how human systems define and shape their landscape and land interventions. In practice, this work can prove very useful for predicting the impact of a given landscape intervention.”

— Catherine Pfeifer, Nile Basin Partner working for the International Livestock Research Institute (ILRI) and the International Water Management Institute (IWMI) in Addis Ababa, Ethiopia

¹⁰ <http://nilebdc.wikispaces.com/innovationplatforms>

CASE STUDY: In the Limpopo, innovation platforms (IPs) are well advanced approaches for addressing local production issues. These platforms bring together livestock producers, researchers, private sector entrepreneurs, representatives of civil society and the government to help facilitate adoption of new technologies. IPs are different from a 'committee' as the stakeholders in an IP are not fixed at any given time. Different stakeholders can be involved at different times, depending upon the issues to be discussed. The challenge being addressed largely rests on defining who should be involved. While no one should be excluded, not everyone should be involved at the same time. While such multi-stakeholder forums are successful in increasing efficiency in smallholder agricultural systems, the researchers postulated that they also contribute significantly to increasing resilience within the socio ecological system. In addition, innovation platforms identify pressure points, devise solutions and, through an iterative process of testing and evaluating, facilitate the integration of improved production and marketing strategies.¹¹



The research for development approach and adaptive management

CPWF research is pushing the limits of the research-for-development approach in terms of how the program is organized.

Focusing on research uptake and impact

The Forum reinforced the need to link research outputs to actual development outcomes using the CPWF impact pathway approach.

IFWF3 participants agreed that the process of putting research into action was complex but crucial, and that ultimately, impact is the measure of success and relevance. New insights about ensuring impact that emerged at the Forum can be summarized as follows:

- CPWF research-for-development must be aligned with existing policy frameworks at national, basin and regional levels, requiring a good understanding of institutional structures and policy development processes.
 - Along these lines, programs need to consider the range of incentives and platforms that ensure the engagement of decision-makers at all scales and clearly define basin level policy targets. They also need to strengthen the leadership capabilities of researchers.
- CPWF needs to ensure that the economic consequences of its research are considered, tracked and documented. The program will have to show evidence of household level changes, take into account the broader internal and external economic realities in the respec-

"Research is relevant because it asks questions, but it has to address a problem that would lead to an action."



– Stella Williams,
keynote speaker,
Obafemi Awolowo
University, Nigeria

"If you want to achieve a specific policy change, you need a targeted message. Ask yourself: What is the most important message that we must give to the minister? Policy makers don't want lengthy scientific reports. They need clear, distilled key messages and evidence that they can use as a basis for policy making."

– Julian Gonsalves,
knowledge management consultant

¹¹ Learning to Innovate session: André van Rooyen: Using Innovation Platforms for Development and Engineering Resilience into Socio-ecological Systems, http://results.waterandfood.org/bitstream/handle/10568/10507/LiSe001_ns.pdf?sequence=1

tive basins, and better integrate the evolving international economic context into its thinking.

- CPWF can add tangible value through better communication of evidence-based research, as well as better communication of progress and impact. This includes producing accessible research findings that provide evidence in a digestible format.

Topic Working Groups help raise basin issues to global level

IFWF3 highlighted the importance of cross-basin learning and linking local level experiences to a wider level. It was agreed that cross-basin exchanges can be used for a range of purposes such as: sharing experiences, developing international public goods and linking local processes to global debates. Through this, the CPWF Topic Working Groups were validated as an important aspect of the CPWF approach.

The Resilience session showed the importance of taking a global level concept and grounding that theory in local reality. The Multiple Use Systems (MUS) session demonstrated the need to further document and show the importance of MUS systems in a range of contexts and situations, while the Spatial Analysis and Modelling and Livelihoods sessions showed that researchers are interested in sharing and exchanging tools and techniques to enhance their own learning.

Building bridges: Strengthening partnerships and working across boundaries

One of CPWF's strengths is the diverse range of partnerships it has nurtured. This was evident in the range of disciplines, sectors and professions that participants came from. Likewise, many of the projects are not run by CGIAR centers but by national and regional research organizations, thus legitimating research in local processes. The importance of partnerships – broadly identified as research partners, implementing partners and advocacy partners – featured prominently throughout IFWF3.

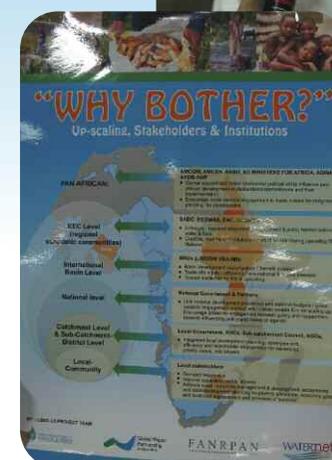
The CPWF recognizes that it is a research-for-development program and not a development program. It has for a long time, therefore, targeted 'next users' in its work – the development agencies and professionals who can carry forward CPWF's work, and achieve widespread impact. Cooperation with the private sector was highlighted as needing more attention. Many big companies have corporate social responsibility programs and CPWF needs to tap into those.

A poster from CPWF highlighted the importance of getting contracting right in the partnership process to ensure transaction costs are effective. Some of the lessons included:

- Build programs around compelling development challenges with a clear theory of change.
- Work with theory of change from the beginning, in planning, priority setting, monitoring, communications and evaluation.
- Invest time and resources in proposal development. After contracts are signed, there is less room to maneuver. A shared vision of change is fundamental to continued flexibility.

“Development practitioners looking for genuine and sustainable change want to understand not just the technical solution but also the processes for how these can be scaled up. They are looking for the tools and approaches and not just magic bullet solutions.”

– Audrey Nepveu de Villemarceau, International Fund for Agriculture Development (IFAD)

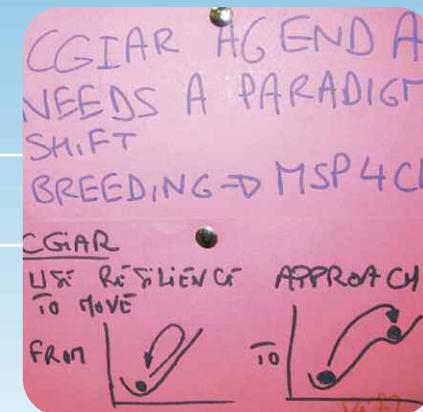
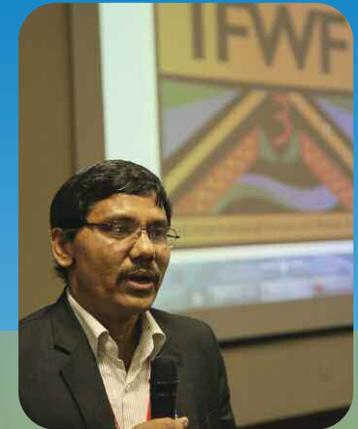


- Think creatively about partnership, beyond the usual suspects, and use network maps.
- Be clear about partnership and budget sharing expectations right from the start.
- Use a combination of competitive and commissioned processes to build coherent research-for-development programs.
- Set funds aside for emerging opportunities and knowledge management, especially exchange visits and cross-site learning.
- Plan for flexibility in project and program work plans, within contractual restrictions – but stay true to your principles.

Participants also recognized that there remains room for improvement in regards to interdisciplinary research. There are inherent challenges related to interdisciplinary research e.g. 'language', cost, and timing. It was also clear there still needs to be integration between 'science' and 'process'. On the one hand, not all scientists are comfortable being directly involved in development processes. On the other, it was recognized there was a need to ensure that science is relevant and can be integrated into development processes. In this sense there is a need for communication staff and facilitators to be able to link science and development processes.

"Some of the key challenges in conducting interdisciplinary research include the fact that social scientists and biophysical scientists do not always speak a common 'language', that there's a power dimension to it and that perhaps the biophysical scientists feel that natural science is the hard-core science and the social science secondary. There is not always a facilitator to manage these different disciplines. So to address this, we considered a matching method where the different disciplines work independently but there's an interface at which they integrate the different types of results. Another suggestion was tracking together, where scientists from the different disciplines meet at regular intervals and go into the field together."

– Sonali Senaratna Sellamuttu,
IWMI and Mekong Project Leader



Special themes at IFWF3

SEVERAL SPECIAL THEMES were embedded throughout the IFWF3. There was a clear focus on Africa, while young professionals were given dedicated space on the Forum agenda. Communicating science, and specifically using storytelling as an engagement tool, featured throughout the four days. The following section highlights some of the lessons and messages that emerged from these special themes.

Messages for Africa

Even though lessons from all the basins are considered equally important, the Forum was held in Africa and special focus was placed on the continent. IFWF3 participants concluded that managing, using and storing water and other resources provided by river basins more effectively – especially in Africa – could go a long way to improving food security and resilience.¹²

There is a need for knowledge synthesis and sharing of findings on various rainwater management experiences in the three African basins – and this is becoming even more important in the face of climate change.

The strong focus on rainwater management showed the strength that the Volta, Nile and Limpopo Basins have in working together. Establishing an African rainwater management platform could be useful – particularly for policy influence.

Key action points for Africa

- Improve water productivity, and especially manage rainwater more effectively.
- Focus research on managing most likely impacts of change.
- Adopt agriculture systems appropriate to local contexts.
- Don't allow international groups to impose solutions.
- The time is now to adopt and develop a system that will ensure that research-for-development impacts on policy on water and food.

"A focus on rainwater management strategies such as restoring or enhancing ecosystem services, insuring multi-functionality and building resilience is important since payments-for-environmental services are emerging as a key incentive for environmental management. If there are ecosystem services, it's possible to create economic opportunity, even in an apparently inhospitable area."

– Mulugeta Lemenih, Africa Initiative

"Climate-smart rainwater management requires an integrated strategy that enables actors to systematically map, capture, store and efficiently use green and blue water in a landscape for productive and domestic purposes and for ecosystem services. We can decrease unproductive water losses, improve the water productivity and capitalize on harvesting principles. Combining water management with land and vegetation management, we can improve water productivity at various scales."

– Mathias Fosu,
Savanna Agricultural Research Institute (SARI)

¹² The African Basins Initiative; Rainwater management for Food Security and Resilient Systems, Tilahun Amede (Nile Basin leader) <http://www.slideshare.net/CPWF/the-african-basins-initiative-rainwater-management-for-food-security-and-resilient-systems>

The voice of young professionals

A feature of the IFWF was in providing formal space to young professionals to actively participate. They were given their own sessions during the opening and final day plenaries and they created their own program and agenda to get the most out of the Forum sessions. This was a lively demonstration of the value CPWF places on young professionals and the potential future pay-off from investing in their active participation in research-for-development.

More than ten students in local and international institutions are involved in Andes Basin Development Challenge projects. In the Limpopo Basin, young professionals are involved in the design and management of small water infrastructures and skills transfer. An important contribution of young professionals in the Nile has been the bridging of research with local communities and policy-and decision-makers.

In the Mekong, integrating productive functions with hydropower dam development is crucial. Here young professionals help bridge democratic processes for consensus building around hydropower and engage a new generation which is more socially and environmentally conscious.

During the panel discussion, everyone agreed that young professionals are comfortable with social networking and know how to use online tools.¹³

It was agreed that CPWF will further support the establishment of a network so that young professionals within each of the Basins has its own space for debate, consultation and mentorship.

Insights from a panel discussion about and amongst young professionals include that they:

- Enhance and energize innovation research.
- Break down sector-based silos.
- Have more time to engage stakeholders and hence act as an important bridge between parties.
- Know how to use social networking and other online tools to benefit research.
- Are more present 'in the field' and make a sizable contribution to implementation research.
- Are open-minded and can address challenges such as gender with ease.
- Act as role models for younger generations.

The young professionals' event was a significant step towards ensuring continuity of knowledge sharing and fostering learning among emerging professionals. Their engagement at the Forum created an opportunity for them to identify opportunities and possible mentors among the older delegates.



¹³ Young professionals Facebook page <http://www.facebook.com/pages/CPWF-Young-Professionals/227355890654519>

Young professionals' challenge to the CPWF:

Young professionals have the potential to make significant contributions to development at various levels. However, the prevailing trend in development organizations and initiatives does not prioritize their meaningful engagement.

As such young professionals' contribution to research and research-for-development in particular, is not optimized.

It is critical that development initiatives groom students and emerging professionals to contribute meaningfully to research-for-development.

The CPWF, with its Basin Development Challenges, presents a great opportunity for emerging professionals to generate innovative research ideas that can add value to targeted development transformations.

Communication matters

In order for research-for-development to be meaningful and effective it must communicate its insights and results at many different levels, ranging from gatherings of women in small, rural villages to inter-governmental negotiating tables. When research is specifically designed to encourage and inform stakeholder dialogue and engagement, its power and effectiveness is multiplied. Publishing research findings in scientific journals is necessary. Only in this way can the relevance and credibility of CPWF science be reviewed. While publishing may be necessary it is not sufficient.

Other actions are needed to support researchers who are serious about using results to help reduce poverty and increase water and food security. Strategic communication needs to be embedded at every stage of the research process. Communications planning goes hand-in-hand with research planning. Research leaders must allocate resources – time, skills and money – to communication.

Program leaders need to clarify why they are communicating (what they are hoping to achieve), who they have to communicate with (range of stakeholders), what they need to communicate (key messages) and how they will achieve this (tools, tactics and partners). They also need to integrate active listening into their communication plan in order to make sure the views, expectations and concerns of stakeholders feed back into their research.

"Politics and research should not be separated. Politics drives research and influences the funding. That could be a good thing. Most of the world's big technological innovations have come from political movements. The Millennium Development Goals are an example of how the politics has influenced research positively."

– Julia Reis, IFWF3 young professional speaking on YouTube during the Forum <http://youtu.be/w9ZJCTOMgqc>

"Young professionals, work hard to claim your space! Do not be modest. 66% of the population of Africa is youth. Nothing happens for youth without youth. Claim your space in management, deliver keynotes and participate throughout the value chain. Do not restrict yourselves to what is already happening but say 'this is what we would do if we were in charge!'"

– Lindiwe Sibanda, IFWF3 Policy Impact Panel and Director FANRPAN South Africa



Key lessons for making science outcomes relevant and accessible:

- Effective dissemination of research findings is crucial for impact, but scientists should pay more attention to how they communicate their work, focusing on style as well as content.
- It is important to identify themes and communication threads from on-going research.
- Research outputs should be clear and should be translated into interventions or action that people can use.
- Be clear about what matters and **say it at the right time to the right people in the right way.**
- **Emotions and mind sets count** when working towards enhancing resilience in communities.
- The communication pathway needs to go all the way to the community. This includes **translation of key findings into local languages.**
- **Communications training is invaluable** – both for young and senior researchers – especially on communicating research to policy makers.

To make the knowledge accessible and relevant to a variety of audiences, communication style is as important as content. Unless the communication is compelling and easy to grasp, it is a waste of time. Researchers need to learn how to distil research outcomes to clear messages and concise policy briefs.

To have impact, research must lead to action. Researchers must therefore re-package research outputs as interventions that can be adopted and replicated.

As researchers think about how to present information, they should reflect on how different audiences may prefer to be engaged. Researchers often spend time and money on conventional outreach materials, such as brochures and posters, when interactive tools, such as storytelling and participatory videoing, may be far more effective for specific target groups.

The mass media remains an important communication channel and researchers must work proactively to establish good relationships with key journalists in their region. It is important that journalists – and other communication partners – have a solid understanding of the research so that they will be able to communicate it in a credible way.

Capacity building in research communication is required for young researchers, but also for senior researchers who need help with communicating research to policy makers.

NILE

CASE STUDY: Participatory video is a collaborative communication tool that empowers communities to capture their own stories in video format. It gives a voice to communities and helps to bridge the gap between indigenous knowledge and conventional science. These videos are then used to convey these communities' messages to other interest groups, including specifically targeting decision-makers. The Nile BDC is currently using participatory video to ensure innovation platforms at the district level are taking into account local needs and get accurate view of different perspectives at the village level.



“Participatory videos give community members a sense of involvement and ownership of the research. It also teaches them a useful new skill. This is an excellent example of research with and for people on the ground.”

– Beth Cullen, ILRI, Nile Project Partner

“Make more evidence available, accessible and digestible. Identify credible messengers and equip them accordingly with messages for advocacy.”

– Reggie Tekateka, Policy Impact Panel and President of the Africa Network of Basin Organizations

Storytelling as an engagement tool

Research-for-development lends itself readily to storytelling: during the course of research, challenges are redefined, innovations evolve, unanticipated discoveries are made, and problems are overcome. Wry twists of plot are not uncommon. Throughout the Forum storytelling was used as a way to explain the outcomes and emerging impacts from research in a more engaging and popular way. This showed that research experiences and insights can be shared as a narrative.

Lessons on “good stories”:

- Stories work best when they are told “live” from one person to another.
- Researchers should capture storylines and changing scenarios that emerge during the research process, since these can be invaluable tools to communicate the relevance and meaning of the research at a later stage.
- A good storyteller establishes a strong connection with the audience by thinking about what the audience cares about and what they would like to hear. Ideally, they should feel that the story is really about them or for them.
- A good story hooks the listener right from the start, without giving away too much, and then takes them on a journey.
- Good stories live on long after they were first told.

“Storytelling helps us understand the world around us. It speaks to a basic human connection and works for people all over the world. It also has the potential to change the listeners and inspire them to action.”

– Marianne Gadeberg, CPWF Mekong

A story from IFWF3

Forum delegates were challenged to tell stories-for-change inspired by their insights from the Forum, focusing on specific individuals and/or institutions. As a representative from an NGO, Brooks Keene, a water policy adviser at CARE, presented this story to CPWF:

“We came knowing we’re a bit different... knowing that we’re an NGO in a sea of researchers. We came wondering what we would learn and what we could contribute. We learned that we cannot be parochial; we cannot think small. Johan Rockström’s presentation is a wake-up call for us to think big, think nationally, think globally, and think in terms of tipping points for whole ecosystems. It’s a call for thinking seriously about resilience, rethinking the concept of development as an increase in consumption or GDP. It’s not something that comes naturally to an organization like CARE that wants to address the immediate needs of poor people. But having this global frame, we need to act locally. And we think that we have not done a good enough job of using your learning or partnering with you to define it. And now, what do we think we can contribute? The biggest thing is for you to keep your eyes on the big picture. You are trying to learn about one of the great challenges of our time. And so the challenge for you is to make small pieces of research into a story that can not only influence policy makers, civil society, and the private sector, but to do it in a context where you will inevitably be coming into conflict operating under consumptions – not resilience – based economics. And so you need to move not only from research to communications, but to go beyond to building political will from the grassroots, while also influencing decision-makers at the top. Work being done on multi-stakeholder platforms can be a good foundation going forward. Our recommendation for you is to make sure you are investing enough in translating research into increased resilience for communities through changes in practice and policy of key decision-makers.”



The power of social media

In addition to using the tools of "traditional" media (science writing training workshops, media briefings, interviews and an eight-page post-Forum magazine) IFWF3 focused heavily on using and mobilizing social media to spread the word about CPWF's food and water research.

Twenty social media volunteers attended the Forum and reported via a live Twitter stream, Facebook, blogs, YouTube, and podcasts. Their efforts were complemented by a team of 90 additional social media enthusiasts around the world. With an average of 700 to 1,000 Twitter updates broadcast daily, the team reached up to a million people every day.



A few tweets from IFWF3

"Taking new knowledge from research to impact requires advocacy and political will – not necessarily more research." – Rivka Kfir, Water Research Commission

*"Mixed group, Men's group & women's group to discuss gender in CPWF, nice experiment!"
@JavierBacaDeza, IFWF3 social media team*

*"Learned so much from IFWF3 forum just by following twitter & blog updates.
Congrats on your excellent live coverage." @Katrina25*

*"Some great blog posts and tweets coming out of the Int'l Forum on Water & Food"
@BonnieKoenig*

*"K Cross: need to expand our definition of research – and include all stakeholders in the research process"
@elmibester, IFWF3 social media team*

*"I feel like I'm piloting an A380, but CPWF & issues we are looking at are much more complex:
water food poverty" @wildesering, IFWF3 social media team ¹⁴*



Keeping the stream flowing – becoming part of the solution

IFWF3 EMPHASIZED THE KEY ROLE OF WATER AND FOOD research-for-development in developing streams of innovation to contribute to solving a mounting global food and water crisis. The Forum featured examples of new knowledge and insights from CPWF programs that are helping improve the lives of poor and vulnerable people. It showed the value of 'out of the water box' thinking and of being able to adapt to rapid change in complex social-ecological systems.

Taking place in the midst of the implementation of programs – halfway through the second phase of CPWF – the Forum helped take stock of where CPWF is as an organization. Evidence from the Forum confirmed that CPWF is on the right track, but also highlighted areas requiring special attention.

The Forum demonstrated that CPWF is an effective program with a valid approach to research-for-development, that it delivers real benefits to poor and vulnerable people in different river basins, and that it has gained recognition as an honest broker on the international development stage.

Development impacts of the CPWF are generated through relevant and credible science. To maintain momentum in development, the relevance and credibility of the Program's science must be regularly and systematically reviewed.

Throughout IFWF3, the value and significance of effective dialogue and compelling communication of science in adding value and impact to research was underlined. Research teams were urged to address gender issues in their programs, carve out a more prominent role and voice for young professionals, ensure that interventions are adapted to relevant political and governance contexts, and create relevant platforms to engage various stakeholders, partners and relevant communities. Program leaders must be able to strategically identify research-for-development priorities and support innovation opportunities. They should identify and then trigger levers of change.

By further demonstrating the effectiveness of its research-for-development approach, CPWF can continue to play a central role as a powerful "pump" to keep the streams of innovation moving so that research continues to directly address water and food related problems.

"When working with people and enabling change, it is key to understand their emotions, hopes and fears. Emotions count when enhancing resilience in communities."

– Jacky Goldin, IFWF3 delegate



For more on CPWF and IFWF3, visit:

- CPWF web site: <http://waterandfood.org/>
- IFWF3 web site: <http://waterandfood.org/ifwf3/>
- Forum blog: <http://waterandfood.org/ifwf3/?q=blog>
- Facebook: www.facebook.com/waterandfood
- Pictures: www.flickr.com/cpwf
- Videos: www.youtube.com/user/cpwftv
- Podcasts: www.cpwf.podomatic.com
- Presentations: www.slideshare.net/group/ifwf3



List of Acronyms

AR4D	Agricultural Research for Development
BDC	Basin Development Challenge
C4D	Communication for Development
CIAT	International Center for Tropical Agriculture
CPWF	CGIAR Challenge Program for Water and Food
CRP	Consortium Research Program
FANRPAN	Food Agriculture Natural Resources Policy Analysis Network
ICRISAT	International Crops Research Institute for the Semi-Arid Tropics
IFAD	International Fund for Agriculture Development
IFWF	International Forum on Water and Food
ILRI	International Livestock Research Institute
IWMI	International Water Management Institute
IWRM	Integrated Water Resources Management
L2i	Learning to innovate
MUS	Multiple Use Systems
OC	Organizing Committee
PIP	Policy Impact Panel
R2P	Research to Policy
R4D	Research for Development
RWM	Rain Water Management
SAM	Spatial Analysis and Modelling
TWG	Topic Working Groups



CGIAR Challenge Program on
WATER & FOOD
Andes • Ganges • Limpopo • Mekong • Nile • Volta

About CPWF

The Challenge Program on Water and Food was launched in 2002 as a reform initiative of the CGIAR, the Consultative Group on International Agricultural Research. CPWF aims to increase the resilience of social and ecological systems through better water management for food production (crops, fisheries and livestock). CPWF does this through an innovative research and development approach that brings together a broad range of scientists, development specialists, policy makers and communities to address the challenges of food security, poverty and water scarcity. CPWF is currently working in six river basins globally: Andes, Ganges, Limpopo, Mekong, Nile and Volta.

The CPWF is part of the CGIAR Research Program on Water, Land and Ecosystems. This new program combines the resources of 14 CGIAR centers and numerous partners to provide an integrated approach to natural resource management research, and to the delivery of its outputs. The program focuses on the three critical issues of water scarcity, land degradation and ecosystem services, as well as sustainable natural resource management. It will also make substantial contributions to improved food security, poverty alleviation and improved natural resource management.

Learn more

CGIAR Challenge Program on Water and Food

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Learn more about CPWF at: www.waterandfood.org



**Research
Program on
Water, Land and
Ecosystems**

The IFWF was organized in collaboration with

FANRPAN
Food, Agriculture and Natural Resources Policy Analysis Network

IWMI
International
Water Management
Institute