



# THE STORY BEHIND THE SUCCESS

Ten case studies identifying what led to uptake  
of research for development

Joanna Kane-Potaka

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of research for development

Joanna Kane-Potaka



International Water Management Institute (IWMI) / International Crops Research  
Institute for the Semi-Arid Tropics (ICRISAT)

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*The author:* Joanna Kane-Potaka is currently Director, Strategic Marketing and Communication, at the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), based in Hyderabad, India. At the time of undertaking these ten case studies, she was Director, Communications and Marketing, Information and Knowledge Group, at the International Water Management Institute (IWMI) in Colombo, Sri Lanka. These case studies were undertaken as part of her dissertation towards a Master of Science in Global Marketing, and are adapted here for this publication.

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### Case study 1

Dr. Andrew Noble, Program Director – CGIAR Research Program on Water, Land and Ecosystems (WLE), IWMI, Colombo, Sri Lanka (formerly Regional Director, IWMI Southeast Asia and Central Asia)

### Case study 2

Dr. Tushaar Shah, Senior Fellow, IWMI, Anand, India

Dr. Madar Samad, Emeritus Scientist, IWMI, Colombo, Sri Lanka (formerly Regional Director (South Asia))

Dr. Bharat Sharma, Principal Researcher and Coordinator – IWMI India, New Delhi

### Case study 3

Dr. Mark Giordano, formerly Theme Leader – Water and Society, IWMI, Colombo, Sri Lanka

Dr. Aaron T. Wolf, Professor of Geography, College of Earth, Ocean, and Atmospheric Sciences, Oregon State University, USA

### Case study 4

Dr. Karen Villholth, Senior Researcher – Groundwater Management, IWMI, Pretoria, South Africa

### Case study 5

Dr. Madar Samad, Emeritus Scientist, IWMI, Colombo, Sri Lanka (formerly Regional Director (South Asia))

Dr. Bharat Sharma, Principal Researcher and Coordinator – IWMI India, New Delhi

Dr. Tushaar Shah, Senior Fellow, IWMI, Anand, India

Dr. Palanisami Kuppannan, Principal Researcher, IWMI, Hyderabad, India

### Case study 6

Dr. Sonali Senaratna Sellamuttu, Senior Researcher – Livelihood Systems, IWMI, Vientiane, Lao PDR

### Case study 7

Dr. Andrew Noble, Program Director – CGIAR Research Program on Water, Land and Ecosystems (WLE), IWMI, Colombo, Sri Lanka (formerly Regional Director, IWMI Southeast Asia and Central Asia)

### **Case study 8**

Dr. Meredith Giordano, Principal Researcher (formerly Co-Project Manager, AgWater Solutions), IWMI, Colombo, Sri Lanka

Alexandra Evans, formerly Strategic Science Uptake Coordinator, IWMI, Colombo, Sri Lanka

Elizabeth Weight, Global Science Uptake Coordinator, IWMI, Colombo, Sri Lanka

### **Case study 9**

Dr. Chu Thai Hoanh, Principal Researcher – Water Resources, IWMI, Vientiane, Lao PDR

### **Case study 10**

Dr. Frank Rijsberman, CEO, CGIAR Consortium (formerly Director General, IWMI, Colombo, Sri Lanka)

Dr. Max Finlayson, Director, Institute for Land, Water and Society, Charles Sturt University (formerly Theme Leader – Water Management and Environment, IWMI, Colombo, Sri Lanka)

Dr. Matthew McCartney, Principal Researcher – Hydrologist and Office Head, IWMI, Vientiane, Lao PDR

It should be noted that the individuals acknowledged above are those who were interviewed for these case studies. Others who were involved in the research and uptake efforts that contributed to successful adoption of the recommendations are listed in a footnote at the end of each case study.

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# Acronyms

## Organizations

CGIAR	A global research partnership for a food secure future
CIDA	Canadian International Development Agency
CPWF	CGIAR Challenge Program on Water and Food
DFID	UK Department for International Development
FAO	Food and Agriculture Organization of the United Nations
GIDA	Ghana Irrigation Development Authority
FWN	Farmer Wisdom Network
ICAR	Indian Council of Agricultural Research
IDRC	International Development Research Centre
IFPRI	International Food Policy Research Institute
IRRI	International Rice Research Institute
IUCN	International Union for Conservation of Nature
IWMI	International Water Management Institute
LDD	Land Development Department
ODI	Overseas Development Institute
PRADAN	Professional Assistance for Development Action
PSI	People's Science Institute
SAGCOT	Southern Agricultural Growth Corridor of Tanzania
Sida	Swedish International Development Cooperation Agency
SIWRP	Southern Institute for Water Resources Planning
SRIJAN	Self-Reliant Initiatives through Joint Action
SRTT	Sir Ratan Tata Trust
SEI	Stockholm Environment Institute
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
USAID	United States Agency for International Development
WHO	World Health Organization
WI	Wetlands International

## Other

IOP	International Organization Partner
R4D	Research for Development
M&E	Monitoring and evaluation
NGO	Nongovernmental organization
STRP	Scientific and Technical Review Panel (Ramsar Convention on Wetlands)
VRAP	Vietnam River Systems and Plains

## Summary

With the increasing scrutiny of the effectiveness of development aid, more attention is being paid to ensure investments in ‘research for development’ (R4D) are acted upon and lead to positive impact. The typical ‘outputs’ produced by R4D organizations may be, for example, new technologies, improved practices, software models, data, general information or policy recommendations.

Efforts and strategies to achieve the adoption of R4D outputs and ultimately positive impact is an emerging new field and still evolving. This has been recognized in the literature review to be presented under a variety of other terms ranging from, for example, ‘research into use’, ‘uptake strategies’, ‘action research’, ‘theories of change’, ‘extension’, ‘outreach’, ‘science communications’ and ‘marketing’. Using ‘uptake’ as the term to represent any of these approaches, it is defined here very broadly as any efforts undertaken in an attempt to achieve adoption of research recommendations and solutions.

This study is a contribution to this discourse. The aim of this study was to identify some common elements and approaches used to ensure successful uptake of R4D initiatives. This was achieved through the review of 10 case studies selected from successful R4D projects undertaken by the International Water Management Institute (IWMI).

Perception interviews were conducted with the project leaders to understand what uptake initiatives were undertaken and how this contributed to the uptake. These case studies were then cross-analyzed, by comparing across the case studies, to identify ways for R4D organizations to improve their adoption of R4D solutions, through better applied uptake approaches.

The study found a variety of uptake approaches that were appropriate and effective in leading to the adoption of R4D outputs. These included proactively developing uptake strategies. As part of these strategies, it was also valuable to incorporate monitoring and evaluation processes that regularly fed back into the uptake planning. This needed to be complemented by the flexibility of resources (staff time, plans and budgets) to adapt as needed.

It was also important that implementation of the uptake strategy was undertaken during the research phase and integrated with the research, so that the two were not mutually exclusive.



**“ The aim was to identify some common elements and approaches used to ensure uptake of R4D initiatives ”**

The engagement of stakeholders and relationship building was critical in all the case studies, contributing not only to achieving better uptake of the solutions but also to producing better research results. This was not as simple as ensuring that there was stakeholder engagement, but included consciously identifying which stakeholders to involve, when to engage, how to engage with them and the appropriate level of engagement. The levels of engagement identified progressed from input to collaboration, partnership, leadership and ultimately ownership. Stakeholders who took ownership of the research results and solutions became ambassadors and continued the uptake efforts even after the life of the project.

Communications, internally and externally, was important, along with the use of appropriately designed information, ranging from scientifically backed technical publications to clear infographics in poster form.

Cultural factors had to be taken into account for designing the uptake approach. This often involved having local/national specialists and advocacy groups as the main channels to communicate research results in order to gain acceptance in local settings.

Other factors that influenced the adoption of R4D outputs included the reputation of the R4D organization being independent and scientifically credible, and the issues, in question, being high on the agenda of stakeholders.

Overall, uptake was recognized as a discipline in its own right that needed to be integrated with the other scientific disciplines; working together can help ensure R4D recommendations are adopted.

**“Uptake is defined here as any efforts undertaken in an attempt to achieve adoption of the research recommendations and solutions”**





### The issues

Two forces were identified that both support and contradict the value of ‘research for development’<sup>1</sup>. National and international reviews have criticized some development aid spending for being ineffective and recognized the need for scientific evidence-based development. However, the ‘research for development’ efforts and recommendations often struggle to be noticed and adopted, and as a result are also under pressure to realize positive development impacts from their research.

Given this dichotomy and the critical need to ensure development impacts are achieved, this study was devised to contribute some insights into the uptake of ‘research for development’ solutions, by identifying approaches and lessons learned of some successful case studies.

### Current adoption of uptake approaches

A literature review of the current adoption of uptake approaches was conducted and is included in Appendix 1.

As noted in Appendix 1, different models and terminologies are used for ‘uptake’ or for that undertaken for the purpose of uptake. Many of these, collated from the literature search on this subject matter, include dissemination, research communications, outreach, extension, impact pathways, outcome mapping, uptake strategies, knowledge sharing, knowledge management, learning selection model, technology transfer, theories of innovation, theories of change, research into use, complex adaptive systems, learning selection model, knowledge translation, innovation systems and others. Shaxson (2010) noted that, there is no settled language for R4D research communication and uptake.

Uptake has been defined here very broadly as any efforts undertaken in an attempt to achieve adoption of the research recommendations and solutions. The term that is used for any quoted literature source will also be noted by placing it within parenthesis after the term ‘uptake’ is used. Also identified in the literature review, is that very few R4D organizations undertake their uptake efforts as one coordinated ‘strategy’.

This is partly due to uptake not being recognized as an important discipline in the R4D sector. However, the need for adoption of the research recommendations and hence eventual positive humanitarian impact is recognized, and increasing pressure is being bestowed upon R4D organizations by the donors who fund the research to achieve this.

### Purpose of the study

#### Aim

The aim of this study was to identify appropriate uptake elements and approaches for the adoption of scientific research results. This is being analyzed specifically for R4D organizations.

<sup>1</sup> ‘Research for development’ is scientific research that is focused on providing evidence-based information for solutions that can assist with economic, social or environmental advancement of developing countries.

## Objectives

To identify the appropriate uptake elements and approaches, three specific objectives were focused on:

- 1) Identify successful R4D marketing strategies.
- 2) Understand why these strategies were successful.
- 3) Identify ways for R4D organizations to improve the adoption of research results through better marketing.



**“It was important to ensure that a wide variety of R4D projects were analyzed”**

## Research questions

The following research questions need to be answered to satisfactorily respond to the aim and objectives:

- a) What uptake efforts were undertaken (strategy, tools and activities) and how effective were they in achieving adoption?
- b) How were the uptake efforts implemented and how did this influence the adoption?
- c) When were the uptake efforts undertaken (during the research phase, launch or post-research phase) and how did this influence adoption?
- d) What was unique about the environment that contributed to the uptake efforts being successful?

## Methodology

### Case studies

It was decided to espouse a case study approach – selecting cases where R4D outputs were adopted and recognized as a major success. From these case studies, the uptake efforts could be identified and analyzed for their effectiveness.

### Case study validation

Case studies that were conducted by IWMI<sup>2</sup>, a R4D organization, were selected. Ten case studies were selected to make the generalizations more compelling. It was also important to ensure that a wide variety of R4D projects were analyzed, to be able to test the effectiveness of the uptake efforts in as diverse situations as possible. Variables identified to be used to select the case studies, to ensure diversity, were a variety of:

- geographic locations, by the country and continent, to allow for different environmental contexts with regards to the political, economic, social, technological, environmental and legal aspects;
- stakeholders, including target audiences and end-beneficiaries, which should also allow for a greater variation in target audiences;
- sectors and R4D issues; and
- sizes of the initiative, by length of time and size of project team, to cater for different scales in uptake budgets and efforts.

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<sup>2</sup> IWMI has been in operation for 27 years and is an internationally recognized organization, having been awarded the 2012 Stockholm Water Prize, which is the world's most prestigious award for outstanding achievements in water-related activities. The Institute has offices in 10 countries and projects in many more (IWMI 2012a). IWMI is a member of CGIAR, an international consortium of agricultural research centers, which is generally recognized as the world's largest organization of public agricultural research centers, having a research budget of more than USD 700 million per annum (CGIAR 2011).

The application of these variables led to a wide variety of case studies as listed in Table 1 and summarized as follows:

- Five countries from Africa, four countries in Asia and four case studies targeting the global market.
- Stakeholders being targeted, including (with the number of projects targeting each stakeholder group shown within brackets): governments (4), development agencies (3), farmer groups (3), nongovernmental organizations (NGOs) (2), international conventions (2), private industry (1), investors (1) and local authorities (1).
- Six sectors engaged, including health, energy, security, emergencies, environment and technologies, in addition to IWMI's traditional sectors of water, agriculture and irrigation.
- Five of the projects defined as small/medium and five with at least one variable classifying it as large.

**Table 1: Diversity of selected case studies**

Case study	Country	Target stakeholders	Issue and relevant sector(s) <sup>1</sup>	Size: Length of time of the research phase	Size: Team size
1. Changing to biofuel crops makes productive use of contaminated water	Thailand	National government	Health	Small/medium	Small/medium
2. Innovative electricity scheme sparks rural development	India	Gujarat (state) government	Energy (electricity)	Small/medium	Small/medium
3. Transboundary water issue prompts cooperation	Global	Development agencies and governments	Security	Small/medium	Small/medium
4. Helping restore the quality of drinking water after the tsunami	a) Sri Lanka b) Global	NGOs and development agencies	Emergency	Small/medium	Small/medium
5. Managing groundwater sustainably for irrigation	India	Government (national and state)	Irrigation	Large	Large
6. Evaluation of the use of wetlands for poverty reduction	Global	International convention	Environment	Small/medium	Small/medium
7. Improving soils and yields	Thailand	Farmers	Agriculture	Large	Small/medium
8. Technologies for better on-farm water management	Ethiopia, Tanzania, Ghana, Zambia, Burkina Faso and India	Private industry, NGOs, the government, development agencies, investors and farmers	Technologies	Large	Large
9. Access to shared water resources between shrimp and rice farmers	Vietnam	Farmers, local authorities, the government	Agriculture	Small/medium	Small/medium
10. Influencing the use of wetlands globally	Global	International convention	Environment	Large	Small/medium

<sup>1</sup> IWMI's work is always related to the water and agriculture sectors. This column lists the other issues and relevant sector(s).



## **Perception interviews with project leaders**

After a detailed analysis of uptake approaches currently undertaken, it could be noted that there was a trend towards acceptance that uptake of solutions were not necessarily a linear causal effect. There can be many factors that contribute to influence uptake over time, and the complexities of any social situation need to be taken into account. As a result, an interpretivism approach was taken to further study what leads to uptake of research for development solutions. Interpretivism caters for more unpredictability by trying to understand and interpret human behavior, rather than just identifying direct or linear causal links. This is an approach where the meaning behind any action needs to be understood (Saunders et al. 2011, 115).

To be able to capture the reasoning behind any actions, a qualitative approach was applied through the use of 'perception surveys'. It was decided to tap into the firsthand knowledge of the project leaders and key scientists who implemented the uptake approaches and who often worked hands-on alongside the targeted stakeholders.

## **Validation and limitations of perception interviews**

The major limitation was the reliance on 'perceptions' of project leaders. To cater for this bias, the survey was based on verbal qualitative interviews allowing for in-depth questioning, including the validity of any deductions. It is also noted that most interviewees were very confident of their perceptions and had worked closely with the stakeholders, having an in-depth understanding of the environment and views of stakeholders. This often close working relationship with stakeholders meant that the interviewee perceptions were more than a rationalist approach of their opinions, but instead were based on higher level/external observation and reasoning.

There was a level of empiricism where their perceptions were based on internal observations and experience. Interestingly, the project leaders were found to be quite conservative about how much the project and their efforts had influenced stakeholders.

These perception surveys were further validated through triangulation. This included: reviewing reports when activities had been documented; all interview notes were sent to the interviewees for checking; and most case studies had more than one person interviewed, in instances where there were other key people identified to have played a major role. In the future, stakeholder surveys could also be used to further validate the results along with a more sophisticated empirical approach being applied to further test and quantify the cause-and-effect relationship.

## **Method of analysis**

Qualitative data can be challenging to collate and analyze. Saunders et al. (2011, 490) note that, it is possible to group data into three main types of processes: summarizing/condensing; categorizing/grouping; and structuring/ordering. Summarizing reduces the text to the key points. Categorizing fragments groups the data according to some logical categories which help in analyzing the data. Structuring presents the data in a sequential narrative form and places it in context.

## ***Structured approach – identifying the sequence of events***

A combination of analysis approaches were selected for this study. The first step was to use the structured

approach to write each case study in a narrative flow explaining the sequence of events that took place. This was necessary for clearer recording of the information collected, as well as being able to then better analyze the information.

### ***Categorization – drawing out lessons learned from each case study***

After this step, it was possible for the information collected to be analyzed, case by case, by drawing out lessons learned for each case study. This is a form of categorization, and the categories were developed from an inductive approach that identified different uptake efforts and approaches that contributed towards adoption.

### ***Hierarchical categorization – comparisons across case studies***

A third step was then undertaken as part of the analysis where a more hierarchical categorization was developed, which compared the categories across the case studies. This final and higher-level analysis is detailed here.

Different variables were used to cross-compare and identify similar situations that influence the effectiveness of uptake efforts and approaches, as well as to identify common elements of these uptake efforts and approaches that were believed to be effective.

The cross-analysis is first achieved by undertaking an evaluation through each of the research questions: what, when and how. This includes: what uptake efforts were undertaken that were effective; when was the uptake undertaken; and how was the uptake implemented. As part of each of these research questions, another query was also raised - what was unique about the environment that influenced any decisions made or actions taken.

For the question, 'what uptake efforts were undertaken?', any of the uptake tools, activities or approaches that were used and believed to be effective were collated into one list and then compared and analyzed.

For the question, 'when was the uptake undertaken?', four phases were identified from the case studies: pre-research, research, launch and post-research. The case studies were then collated according to these four phases and analyzed.

The question, 'how was the uptake implemented?', was analyzed by also trying to understand the internal elements that were needed to support any uptake efforts. The McKinsey 7-S model (Waterman et al. 1980) was used as a broad guide for identification. This is a model that recognizes the key internal elements that are needed for a strategy to be implemented and goals to be achieved. It requires the appropriate set up and alignment of seven internal elements - a strategy, structure, systems, shared values, skills, style and staff.

As a result, any internal elements, along with any external environmental elements (outside of the control of the researchers) that influenced the adoption, were collated from the case studies and analyzed.

Overall, this is an exploratory study and was able to inductively come up with theories on appropriate efforts and approaches that can be used for the successful uptake of R4D solutions.





This chapter provides a detailed summary of each of the case studies selected for this study. This information is summarized from the perception interviews held and, where noted, also supplemented with information from documents provided by the interviewee.

### **Case study 1: Changing to biofuel crops makes productive use of contaminated water**

#### **The research and the adoption**

An area in northern Thailand had abnormally high levels of kidney malfunctioning among elderly people. Surveys, sampling, laboratory testing and mapping found high levels of cadmium in the agricultural soils of this area, which resulted in the cultivated rice having cadmium levels higher than the international standards set by the Food and Agriculture Organization of the United Nations (FAO)/World Health Organization (WHO).

IWMI was able to show scientific evidence that the source of water for the rice irrigation system, passed through an area naturally rich in cadmium and zinc minerals. The water picked up sediments and deposited them in the irrigated fields, thereby resulting in these high levels of cadmium.

Further research involved undertaking feasibility studies to find alternative agricultural uses for the land. IWMI had an analysis of the problem as well as a recommended solution to prevent consumption of the contaminated rice. The solution involved assisting farmers to convert their farms into non-consumable produce, in particular, by growing sugarcane for ethanol use.

Four years after the research findings were presented, the Thai Government took IWMI's advice on the solutions recommended and, with the Institute's assistance, undertook a two-year detailed analysis of the options. During this period, the government bought all the contaminated rice from the farmers and destroyed it to ensure that it did not enter the market.

They also placed bans on the movement of rice and paid compensation to the people who had acquired a kidney disease as a result of consuming the contaminated rice. Compensation was also paid to approximately 2,000 farming households to help them switch from rice cultivation to alternative livelihoods. Loans from a mining company and the government were also used to build an ethanol plant.

#### **The uptake efforts undertaken**

No specific strategy was documented. However, a conscious effort was made to influence the government to adopt IWMI's recommendations.

IWMI reported its initial research findings to the Government of Thailand; these findings were presented as a report with scientific backing, and the Institute had personal briefings with government officials to discuss the situation. For four years, IWMI submitted its regular required annual reports to government officials highlighting the problem of cadmium contamination and possible actions to be taken.



### **IWMI had dedicated years to developing relationships within Thailand**

IWMI worked with government agencies from the outset, as joint partners on the research project. For example, IWMI helped to improve the conditions of the laboratories of government agencies, so that they were better equipped to routinely evaluate soil samples for heavy metals, train staff in the collection and handling of field samples, and introduce protocols for analyzing samples and quality control procedures. This was critical in ensuring that data generated through the study was robust and defensible.

IWMI had dedicated several years of developing and forging relationships with Thai counterparts, through collaboration on joint research projects of mutual interest and also assisting them on partnered projects. There had been a two-way relationship where both organizations had helped each other as opportunities arose. There was a relationship of equal importance and status, and IWMI had embedded itself in the Thai Government system and had become one of the cogs. IWMI offices were in close proximity to government agencies, which assisted with the relationship building. IWMI's sound scientific knowledge contributed towards its reputation and relationship with the Thai Government. The relationship was built on trust, which took time and continued commitment.

Even with all these efforts, the uptake activities were not successful in attaining the government's attention to act on the problem. Information from IWMI's work was eventually picked up by the media, and it suddenly became a very public and controversial issue. This caused immediate reaction

from the Thai Government, which then took the initiative to ensure that there was a solution. It was only then that IWMI was able to influence the solution that was adopted.

IWMI's philosophy is to achieve impact through working in partnership, and supporting national and local authorities. As a result, IWMI could not alert the media about the situation, as this would have destroyed the relationship and trust built-up with the Thai Government over many years and also put a stop to other potential achievements. Instead, IWMI had a plan in place in the event that the story was unearthed and there was negative publicity.

Once the story was in the media, people quite quickly started filing compensation cases with the assistance of local NGOs. Many people blamed the local mine for the contamination, which was not the cause of the problem. These issues put more public pressure and internal pressure on the government to find a solution to the problem.

Thailand is one of the largest exporters of rice in the world. This is another reason for the government having to react quickly once the issue was highlighted in the media. Although none of the rice from the contaminated areas entered the export market, this issue could have damaged the reputation of Thai rice being safe to consume and could have significantly affected future trade in this commodity.

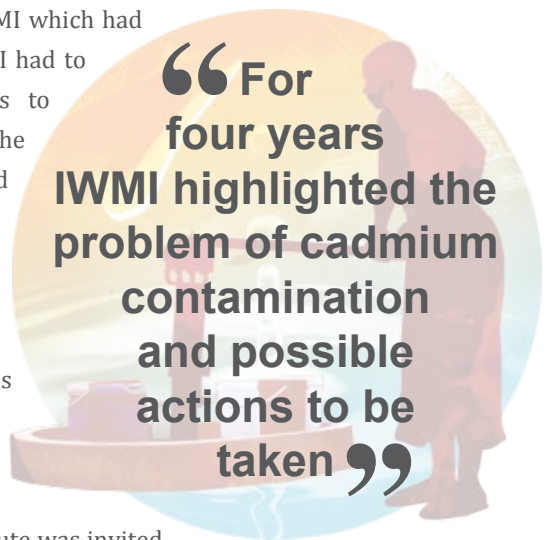
The government agencies first assumed that it was IWMI which had alerted the media about the problem. As a result, IWMI had to hold exhaustive meetings with government officials to reassure them that the Institute had not contacted the media, and that they had been following the expected channels of reporting directly to government agencies.

The government then put a senate committee together to review the situation. IWMI was called before the senate committee, which accepted the Institute's analysis of the situation. Because of the relationship and trust that IWMI had built-up over the years with the Thai Government, and since the Institute had worked with government agencies to analyze the situation, the Institute was invited to present the sound scientific backing and information it could provide on this issue and to offer advice.

For another two years, IWMI assisted government agencies to undertake trials on alternative livelihood options and trained staff in the necessary processes.

### Lessons learned

- The long-term relationship building, although critical, was not sufficient on its own. This was important in the second phase, when the government was in a situation where it had to act for political reasons. That is, the issue needed to be on the political agenda for the government to act. This only happened after the media picked up on the problem; only then were IWMI's uptake efforts fruitful.



- Relationships were critical; they were built on trust and developed over a long period of time. As a result, it required the long-term relationship building before the research could be conducted, as well as during the project. This is something that requires corporate recognition, internal culture, commitment and resources to achieve.
- The project highlighted the value of not just relationships but also of partnerships, i.e., organizations having worked together and helped each other out. IWMI was embedded in the Thai Government system and had become one of the cogs. Analysis and finding solutions were also carried out together.
- IWMI has based its corporate 'influencing' strategy mainly on relationships and partnerships, as well as scientific evidence. It does not influence through advocacy and negative pressure through, for example, the media and general public. Taking an advocacy approach would have destroyed the relationship and trust that IWMI had built-up with the Thai Government over many years, and hindered future relations.
- IWMI's sound scientific reputation influenced its recommendations being taken more seriously.
- Scientific backing of the analysis and solutions were important for them to be acted upon. The only information materials used were the formal reports from the research, which were important to provide the scientific verification.

### **Key factors that led to impact**

- The issue being on the political agenda for the government to act.
- Relationships that were built on trust and over a long period of time.
- Building partnerships and working together in undertaking the analysis and finding solutions.
- The R4D organization based its corporate 'influencing' strategy mainly on relationships and partnerships as well as scientific evidence.
- Scientific credibility of the R4D organization.
- Scientific backing of the analysis and solutions.

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*Note:* This case study was based on perception surveys with key project staff and further supported with published material. It is recognized that there was a larger group of key individuals involved in this project, whose contributions assisted towards the successful uptake of the solutions recommended.

Perception interviews conducted with:

Dr. Tushaar Shah, Senior Fellow, IWMI, Anand, India

Dr. Madar Samad, Emeritus Scientist, IWMI, Colombo, Sri Lanka (formerly Regional Director (South Asia))

Dr. Bharat Sharma, Principal Researcher and Coordinator – IWMI India, New Delhi

Also based on IWMI 2012b.

Key individuals involved in this project and whose contributions assisted towards the successful uptake of the solutions recommended are:

Dr. Andrew Noble, Program Director – CGIAR Research Program on Water, Land and Ecosystems (WLE), IWMI, Colombo, Sri Lanka (formerly Regional Director, IWMI Southeast Asia and Central Asia)

Dr. Robert Simons, Lecturer, Cranfield University, Bedford, UK

Dr. O. Sukreeyapongse, Senior Research Scientist, Land Development Department, Bangkok, Thailand

Dr. Narin Chinabut, Land Development Department, Bangkok, Thailand

Dr. Pichit Pongsakul, Head, Soil Chemistry Department, Department of Agriculture, Kasetsart University, Bangkok, Thailand

## Case study 2: Innovative electricity scheme sparks rural development

### The research and the adoption

Electricity to farmers in the Gujarat State of India was subsidized, which resulted in a high usage of electricity – especially for pumping groundwater for irrigation. This led to aquifers being dangerously close to depletion and soaring farm power subsidies. This excessive use of electricity along with rampant illegal theft of power by farmers led the Electricity Board to be on the verge of bankruptcy, and caused power cuts/trips and reduced voltage for non-farm consumers. This, in turn, resulted in the electricity supply of farmers not always being regular. As a result, the farmers did not always have the electricity they needed to pump groundwater for irrigation, so they didn't diversify their agriculture, and even their regular crops were dying.

Villages did not have a regular supply of electricity. Farmers and their use of electricity were seen as the main hindrance to this. Over time, pressure mounted on the government (ministers and Electricity Board) to ensure that the villages had a regular supply of electricity. However, the farmers had a very strong lobby group. The government's immediate concern, and hence priority, was to solve the issue of electricity access to the villages while not upsetting the powerful farmer lobby group. The ministries began to pressurize the Electricity Board to find a solution.



### Villages did not have a regular supply of electricity

IWMI had never specifically been asked to be involved in, or work on, a solution in Gujarat. However, a lead scientist with IWMI had been researching the water-energy nexus for about 10 years, even during his position prior to being with the Institute. He was one of the very few people to have carried out research in this field. When the water-energy nexus became the key issue in Gujarat politics, it was an opportunity for this IWMI scientist to put his experience and scientific ideas into practice.

Approximately 8 months was spent undertaking the initial research of the water-energy nexus as applied to the Gujarat situation. This involved a team of IWMI scientists, with students also engaged later on. A thorough economic analysis was undertaken, which included defining the problem and identifying a practical, doable solution.



The most widely recommended solution by professionals and donors (e.g., the World Bank and Asian Development Bank) was to meter tube wells and charge farmers a consumption-based power tariff. This had earlier been one of the key factors to have brought down the government in the states of Andhra Pradesh and Madhya Pradesh, as farmers were a powerful lobby group.

IWMI looked for a solution that was politically acceptable and suggested rationalizing the power sector to influence better management of groundwater, as well as farm power subsidies. This included a flat rate tariff to be set combined with restrictions on power supply through:

- a) intelligent rationing of power supplies to farms to match the farmers' needs as closely as possible;
- b) supplying full voltage and uninterrupted power to farms during these rationing hours; and
- c) rostering power to different villages following a strict time schedule.

To achieve this, electrical feeder lines had to be separated for agricultural and non-agricultural uses. The solution was developed taking into account the political environment and hence what was politically practical to implement. The Gujarat Government adopted this solution recommended by IWMI and invested USD 260 million to achieve this. It has since been hailed as a major success and other states in India have followed suit. IWMI and its key scientist involved did not initially get recognized for developing this solution, as key politicians were ambassadors and took ownership of the solution.

### **The uptake efforts undertaken**

No formal uptake strategy was documented. The lead scientist of this research believed that he had a workable solution and made major efforts in trying to convince the Government of Gujarat to adopt this solution. His approach included:

- targeting key selected high-level government officials in the relevant ministries and authorities;
- taking a consultative approach in asking for input and organizing discussions around the proposed solution; and
- capitalizing on as many opportunities as possible to give presentations on the topic.

Once the initial research was completed, the lead scientist sent a draft of what later became an IWMI Research Report to the Gujarat Minister of Energy and Chair of the Gujarat Electricity Board requesting their feedback. No response was received from either party. Additionally, he talked with managers at the Electricity Authority.

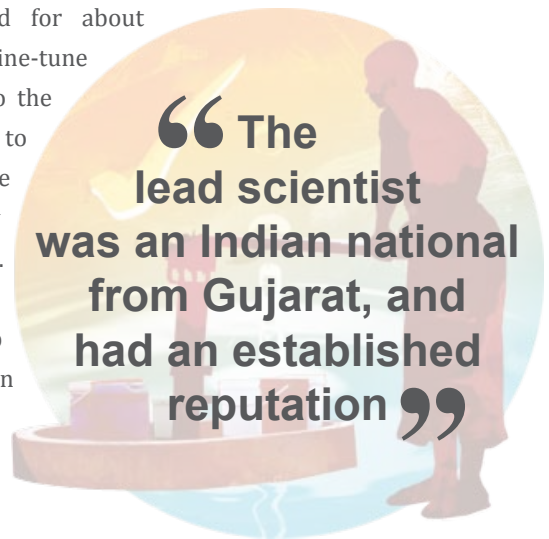
There was a continual consultation with stakeholders through dialogue and discussion being conducted. This started with IWMI scientists who helped to challenge and check any of the rationale used in developing the solution, including the political practicality. IWMI held many small seminars and workshops. Different sectors needed to be involved, so IWMI invited stakeholders ranging from academia to the government. These were typically one to one-and-a-half day workshops and were conducted in a discussion style so as to promote an open debate.

The good reputation of the lead scientist and of IWMI for its scientific work aided initiation of successful workshops, and drew requests to present at conferences and seminars. All this contributed to greater and wider awareness of the proposed solution. The lead scientist was an Indian national from Gujarat, and had

an established reputation among the scientific community and government officials; this aided acceptance of his suggestions.

The discussion and consultative process continued for about two and a half years and were used to continue to fine-tune the solution. Sometimes this required going back into the field to further research the farmers' requirements or to undertake more scientific analysis. Flexibility in the time and resources committed to this research was necessary to be able to revisit issues and undertake more research.

The interest from the broad stakeholder group continued, as this was a topical issue, and the solution was innovative and was recognized as a possible practical solution to the problem. However, nobody in relevant authoritative positions wanted to take up the solution and be an ambassador for this approach.



The lead scientist was already closely involved with the Gujarat Government and was a member of a number of committees. This helped him with creating connections, and also building a good reputation for his local understanding and scientific background.

The lead scientist eventually shared the paper (detailing the proposed solution) with a close associate of his who had direct access to the Chair of the Gujarat Electricity Board. The associate forwarded the report to the Chair of the Gujarat Electricity Board and followed through with his personal support for the solution. The Chair then took notice of the report and its recommendations. The leadership found IWMI's recommendations useful in achieving a larger public policy goal which went well beyond what the Institute's researchers had considered, i.e., to provide a full-time power supply to villages. Without metering tube wells and charging farmers, the cost to deliver power would have led to a massive increase in farm power subsidy. IWMI recommendations emerged as the second-best feasible way of providing villages with a 24 x 7 power supply without bankrupting the service provider.

About two and a half years from when the initial research was undertaken, the Gujarat Government eventually decided to implement the solution and IWMI scientists heard about this decision through sources outside the official channels. By then the government had taken ownership of the solution, and IWMI was given no formal recognition for developing the solution by the head positions within the government.

## Lessons learned

Critical elements that contributed to this solution being adopted by the government are as follows:

- This was a solution to a problem already high on the political agenda. The political priority of the existing problems was a core reason why the research was undertaken. Identifying R4D priorities with the topical priorities of stakeholders in mind will be important for influencing adoption.

- Personal contacts with the target stakeholder. Sending a report to key government officials requesting their input and discussion on the problem and the proposed solution received no reaction, even though this was contributing to one of the issues highest on their agenda, with the potential to bring down the government. Sending the report through a personal contact who had close connections with the targeted policymaker achieved success, with the policymaker giving attention to the report and eventually being an ambassador for the solutions recommended in it.
- Having a senior government person as an ambassador for the solution. The turnaround in the government finally taking notice of the recommended solutions happened when one senior-level government official saw the value in the solution and became an ambassador for this, undertaking the necessary lobbying to adopt this solution.
- The ambassador, and later the government, having ownership and taking credit for the solution. In this case, the government was not involved in the initial research or overall concept for the solution. However, IWMI and the lead scientist involved were focused on achieving adoption of the solution and were not promoting themselves. As a result, the Gujarat Government was able to take ownership and the credit for having implemented a workable solution.
- The solution needed to look at all the interrelated issues involved and not just focus on the issues of concern to the research institute. IWMI's mandate is concerned with agricultural water management and, in this situation, the overexploitation of groundwater resources and the need for a sustainable irrigation solution. If IWMI had stayed focused solely on identifying a solution to groundwater exploitation, it may not have been successful in finding a solution to the irregularities of electricity supply to farmers. By sticking to its mandate, IWMI would not have solved the surrounding factors that were influencing agricultural water management and it is highly unlikely that the issues concerned would have reached the attention of the policymakers, since these were not their priority. The solution presented here was considered particularly innovative because it was able to view the problems from a new perspective and was not uni-sectorial.
- The solution developed also needed to be politically feasible. The solution put forward did not focus on just an optimal scientific solution. It took into account the political situation, i.e., what would be acceptable to the strong farmer lobby groups, the government and the local villagers, and hence was politically feasible to implement. It is recognized that scientific research that aims to influence policy needs to include the political environment and not only be a technical or even a social solution.
- Clear scientific evidence supporting the solution and its political implementability were necessary. This scientific backing was critical to ensuring that the government accepted the solution, especially including research evidence that the solution would be politically acceptable to the key stakeholder groups.
- Stakeholder consultations through discussion workshops helped in continuing to fine-tune the solution. This case was not a situation of undertaking research, writing a research report and then presenting the solution. Although IWMI researchers were the core contributors in developing the initial draft solution, there was continual fine-tuning of the physical and political feasibility of the solution. It is unknown if these workshops contributed to individuals within the government supporting the solution, however they did contribute to the creation of a better solution that was able to provide good rationale for the different political concerns.
- Widespread proactive communications about the solution increased the awareness. In addition to the

stakeholder consultations, the research staff taking as many opportunities as possible to give presentations at conferences or to individuals contributed to creating a broad awareness of there being a group that was seeking an alternative solution.

- Flexibility in the time and resources committed to research was necessary. As continued fine-tuning of the solution was needed to satisfy different concerns of stakeholders, it was important that the research team had flexibility on their own time commitments and financial resources to be able to cater for this.
- Persistence and long-term commitment over many years was needed. It took approximately two and a half years from when the initial research was undertaken to when the government finally decided to implement the solution. Persistence and continued follow-up was needed to achieve success.
- All information material was specific to this issue in the state. The research undertaken and the information material prepared were all based on the problems identified in Gujarat. This meant that the material was not theoretical but was specific to the needs of this state. This was necessary for adoption by the government.

### **Key factors that led to uptake**

- The problem already being high on the political agenda.
- Maintaining personal contacts with target stakeholders.
- Having a senior-level government official as an ambassador for the solution.
- Ownership and credit for the solution being taken by the ambassador and uptake group.
- Interrelated issues were taken into account by the R4D organization.
- The solution was politically feasible to implement.
- Scientific evidence supporting the solution was important for gaining political acceptance.
- Stakeholder consultations helped in continuing to fine-tune the solution.
- Proactive communications about the solution increased awareness.
- Having flexibility in the time and resources committed to research.
- Persistence and long-term commitment until the solution was finally implemented.
- Information material produced was specific to the issue in the state.

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*Note:* This case study was based on perception surveys with key project staff and further supported with published material. It is recognized that there was a larger group of key individuals involved in this project, whose contributions assisted towards the successful uptake of the solutions recommended.

Perception interviews conducted with:

Dr. Andrew Noble, Program Director – CGIAR Research Program on Water, Land and Ecosystems (WLE), IWMI, Colombo, Sri Lanka (formerly Regional Director, IWMI Southeast Asia and Central Asia)

Also based on International Water Management Institute, IWMI-TATA Water Policy Program 2003; IWMI 2011; and Shah et al. 2004.

Key individuals involved in this project and whose contributions assisted towards the successful uptake of the solutions recommended are:

Dr. Tushaar Shah, Senior Fellow, IWMI, Anand, India

Dr. Christopher Scott, formerly Principal Researcher and Regional Director – South Asia, IWMI

Avinash Kishore was a Junior Consultant of the IWMI-TATA Water Policy Research Program

Abhishek Sharma was a Junior Consultant of the IWMI-TATA Water Policy Research Program

## Case study 3: Transboundary water issue prompts cooperation

### The research and the adoption

There was a need to identify and prioritize the areas most prone to security threats due to current or potential conflicts over water, i.e., whether shared water resources were likely to cause war. Nearly 300 river basins that were shared across countries were reviewed to identify whether shared water resources were, or could be, the cause of conflict. A very systematic approach was taken, which uniquely combined hydrological data and political information. It was not seen as a 'political' statement.



Photo: Ikuru Kawajima

### Research showed that sharing water resources prompted cooperation

The research, undertaken by IWMI and Oregon State University, showed a counterintuitive situation proving that having shared water resources was not the cause of conflict but was often the victim of other conflicts or, as was the situation in two-thirds of the cases, shared water resources were the source of stimulating cooperation. Also, the important role that institutions play in facilitating cooperation was highlighted.

Results of this research resonated almost immediately; at least amongst water professionals. There has been a major shift in how transboundary water issues are talked about and approached by scientists, development agencies and governments. For example, the use of language in relation to this has changed from phrases, such as ‘water conflicts’ and ‘water wars’, to descriptions, such as ‘concerns over water sharing’.

The work has also resulted in a shift in how research and development in this field are undertaken, including changes in the investment on transboundary waters – changing where money is invested and the approaches taken.

### **Influencing science**

This research provided new information that challenged past views. It changed the discourse within the scientific community. There has been a high level of citations on the series of articles written as part of this project, by the scientific community as well as governments and development donor agencies. New studies in this field have also been stimulated by this new thinking that has challenged past assumptions. Requests to continue this research work have followed on, e.g., from US agencies, the United States Agency for International Development (USAID) and the International Food Policy Research Institute (IFPRI).

### **Development impact**

The research results changed past thinking, and advice given and recommendations made by many agencies. Focus shifted from conflict resolution to appropriate creation of institutions to manage transboundary water resources. Almost all, if not all, of the large development agencies, e.g., in Europe, USA and the United Nations, now focus on the institutional capacity and fostering dialogue within countries that share water resources. This is a new focus and is undertaken along with the traditional investment in infrastructure. The United Nations Educational, Scientific and Cultural Organization (UNESCO) has developed a program on water cooperation, a new approach partially informed by these research results.

### **Broader impact**

Approaches to shared water resources within developed countries have also been influenced by these research results. For example, the USA is now contributing to better capacity building as well as organizing conversations between relevant transboundary parties earlier on in the process. Foreign security policy has been impacted by these research results, including the US security foreign policy framework.

The discourse within the general media has also been influenced by this research. However, journalists and politicians still ‘play up’ the conflict issues and use terms such as ‘water wars’ to attract attention. The lead scientists of this research continue to be asked to present and contribute to discussions and events on this topic. One scientist was interviewed in the newly released video, *Last call at the oasis*, produced by the same organization that created *The inconvenient truth*.

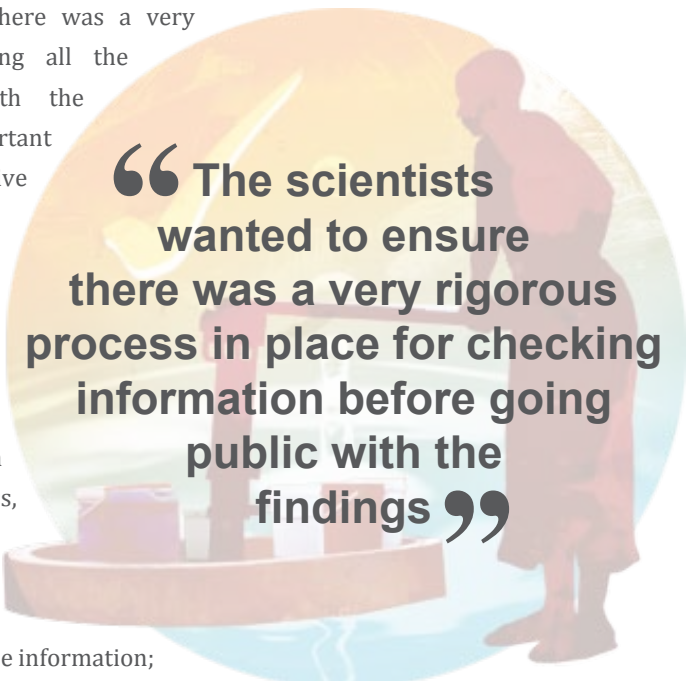
Now, there is even further advance on this thinking, with new views being presented that not all cooperation is good and not all conflict is bad. These views may challenge the results of this research, but they could, however, be seen as having been stimulated from this research.

## The uptake efforts undertaken

The researchers did not undertake any uptake efforts during the research phase. The team spent about two and a half years collecting and analyzing the data, and they were uncertain what findings there would be or even if there would be anything of any significance. It was only near the end of the data analysis stage that it became clear that they actually had some findings that were counterintuitive to current thinking and could be more broadly relevant.

The scientists also wanted to ensure there was a very rigorous process in place for checking all the information before going public with the findings. This was particularly important since the findings were counterintuitive and challenged current beliefs.

No formal 'strategy' for uptake of the results or outputs was consciously designed. On the surface, this case had successful adoption given minimal/no uptake efforts during the research stage. However, the immediate success, particularly in the US, was assisted by two 'partnership' related elements that were in place ahead of time. These were that one target audience was the requester of the information; and the project leader was a consultant for many organizations in this field, e.g., the World Bank.



**“ The scientists wanted to ensure there was a very rigorous process in place for checking information before going public with the findings ”**

There was also an effort to undertake a series of activities to disseminate the information. The final output was a set of scientific papers. These varied from non-open access scientific journals to papers in more popular press and open access media. They included a scientific article in the journal, *Water Policy*, and articles in the more broadly popular outlets of *Foreign Policy*, *State of the World*, and in publications by the United Nations Educational, Scientific and Cultural Organization (UNESCO) and the International Union for Conservation of Nature (IUCN). The more popular press was viewed as making the largest difference to creating awareness of the findings and adoption. However, publishing in a peer-reviewed scientific journal was still viewed as being important to give some scientific credibility to the research findings. Also, publications produced in partnership with other organizations led to these organizations undertaking uptake efforts. For example, IUCN made efforts to promote its book, *Share: Managing waters across boundaries*, which included a chapter on transboundary institutions.

Targeted communications were undertaken through meetings and presentations with potential users (e.g., the USA Government). Mass communications were also undertaken, to the broader scientific and development community through presentations at appropriate conferences.

Contacts and partnerships were important. The initial request to undertake this research was made through key contacts and one of them was also a stakeholder.

The timeliness of the issue being placed higher on the agenda was believed to assist in this research receiving wide attention. However, the reputations of individual scientists or their institutions were not believed to have made a significant difference to adoption of the solution, as neither had a pre-built reputation as leaders in this field. The analytic methodology used was seen as being more influential.

## Lessons learned

An uptake strategy was not developed or consciously thought through/planned. However, many uptake activities were undertaken. From the experience, the lessons learned are as follows:

- The research took a systematic and non-political approach which helped for better acceptance by governments. It was appreciated that the analysis was very systematic and factual, uniquely combining hydrological data and political information; and the reports did not take an advocacy or political approach. It was also believed that this helped in the results being accepted and adopted.
- The thorough scientific methodology contributed a much stronger role in acceptance of the research results than the reputations of the scientists and organizational affiliations. It was not believed that the reputations of the scientists and organizations played any significant role in the acceptance and uptake of the research results. However, there was a snowballing effect for the scientists to become more recognized from this work.
- Publishing in both scientific journals and the more popular scientific press were important, each having a different but complementary purpose. Publishing in a peer-reviewed scientific journal was viewed as being important to give some scientific credibility to the research findings. Publishing in more popular and open access professional outlets was seen as making a major contribution to building awareness of the research findings and leading to adoption of the solution. It was believed that publishing in a high-level non-open access journal alone would not have achieved this.
- Publishing through other organizations allowed for ownership, and more use and promotion of the information by these other organizations. These research results were initially published by the authors in a scientific journal. However, after this, various opportunities were capitalized on to rewrite the material as book chapters or in other forms published by other organizations. This led to additional promotion of the work through the other publishers/organizations.
- Targeted communications in combination with mass communications were used and believed to be effective. Targeted communications were based on meetings and presentations with key people whose organizations were important prospective users of the information. Mass communications filled the purpose of building broader awareness of the findings that would not have been possible to achieve by individual visits.
- Personal contacts were able to be tapped into to undertake targeted communications.
- Timeliness of the issue being placed higher on the agenda was believed to have assisted in this research receiving wide attention.
- Uncertainties as to whether there would be any new or significant findings from the research, led the scientists to be hesitant to promote their work during the research stage. Building a following and creating interest in such research may be more difficult and a high reputational risk, especially in



projects that are more ‘blue sky’ or uncertain to have specific outcomes. In these cases, collaboration may still be possible with more appropriate promotion and adoption methods being selected after the results are known. In this case study, it was only near the end of the data analysis phase (about two and a half years from commencing the research) that it became clear there were some significant new findings. As these findings were counterintuitive to thinking at the time, the scientists also wanted to ensure that there was a very rigorous process in place for checking all the information before going public with the findings.

- Having incentives for scientists to also publish in open access outlets and achieve impact from their work will help in more uptake efforts and likely impact. Currently, many scientists are rewarded for publishing in high-level scientific journals, which are typically non-open access. It is unlikely that this will reach the intended audience or portray the information and messages in the most appropriate way needed by a broader, but still professional, audience.

### **Key factors that led to uptake**

- Having a systematic and non-political approach to the research.
- A thorough scientific methodology was more important than the reputation of the scientists or the organizations.
- Articles in respected peer-reviewed scientific journals helped to give scientific credibility to the research.
- Publishing in more popular and open access professional outlets helped to build awareness.
- Publishing through other organizations to allow for ownership and wider promotion of the research findings.
- Targeted communications in combination with mass communications.
- Personal contacts were tapped into to undertake targeted communications.
- Timeliness of the issue being placed higher on the political agenda.
- Incentives for scientists to also publish in open access outlets and achieve impact from their work.

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*Note:* this case study was based on perception surveys with key project staff. It is recognized that there was a larger group of key individuals involved in this project, whose contributions assisted towards the successful uptake of the solutions recommended.

Also based on IWMI 2010d.

Key individuals interviewed and whose contributions assisted towards the successful uptake of the solutions recommended are:  
Dr. Mark Giordano, formerly Theme Leader – Water and Society, IWMI, Colombo, Sri Lanka  
Dr. Aaron T. Wolf, Professor of Geography, College of Earth, Ocean, and Atmospheric Sciences, Oregon State University, USA

## Case study 4: Helping restore the quality of drinking water after the tsunami

### The research and the adoption

In December 2004, a major tsunami hit Sri Lanka, killing approximately 31,000 people. The tsunami contaminated the drinking water in the open wells of affected areas, as well as causing widespread salinity in the groundwater. The immediate solution that was adopted to mitigate the problem was to pump the water out of the wells and discharge it in close proximity in an attempt to clean the well water. This, however, caused the saltwater to seep back down to the groundwater, prolonging the contamination problem. Organizations and people were desperately trying to help in this emergency situation and were pumping out the well water where possible. Since the situation involved providing physical assistance, it gave the helpers a tangible sense of achievement.



Photo: IWMI

**The tsunami contaminated drinking water in wells with saltwater**

However, based on disciplinary knowledge (hydrology and chemical engineering), and in collaboration with various scientific and humanitarian partners, a senior IWMI scientist put together a solution for remediating the situation and cleaning the well water during the emergency situation. Subsequently, a set of guidelines for cleaning well water after a tsunami was developed, which advocated for limited pumping combined with natural flushing of the salty groundwater through rainwater replenishment. This was particularly feasible as the rainy season had started just prior to the tsunami. These guidelines

were disseminated, through a host of channels during the immediate relief efforts to actors and relief workers on the ground, at a time when the only other alternatives for drinking water supply were from imported bottled water, desalinated water or from trucks carrying water from unaffected areas. The guidelines were adopted by most organizations and governments that were helping out during the emergency period in Sri Lanka.

The work was developed on an ad hoc basis, due to the urgency of the situation. Helpers and funding were identified as opportunities arose. These were all made possible by the scientist's networking. For example:

- people from the university on the east coast of Sri Lanka assisted with the monitoring of the well water;
- a professor in the US, who was Sri Lankan by birth, wanted to help with the emergency relief efforts and organized funding from a science academy and traveled to Sri Lanka with a group of US professors. The IWMI scientist met them and was able to access specialized instruments for monitoring the wells;
- a small amount of funding was sourced from the Canadian International Development Agency (CIDA) and from CARE. The usual funding process could not be undertaken as there was not enough time in an emergency situation; and
- an Italian NGO, who the scientist had communicated with through this work, also provided some funding to assist with the analysis of the water quality.

Further research on this continued even after the main emergency period was over, based on the experience and the Sri Lankan case study. New science developed from this with a better understanding of tsunamis and groundwater. Modeling and simulation of the saltwater-groundwater interaction during and after the tsunami was undertaken. This had never been achieved before on a large-scale and with a real live case study. The results further increased the insights into the processes and the timescale for the restoration of water quality in the affected areas.

It was not identified or expected at the beginning that the efforts were also going to lead to new scientific information. As a result, IWMI was not paying a lot of attention until later when it became clearer that there was new scientific thinking coming out from this work. This shows that being driven by a development problem in need of a solution, as opposed to a research problem, can still lead to new science.

The follow-on benefits of this work were that, for the first time in Sri Lanka, it brought attention to the management and vulnerability of groundwater, and to the fact that people depended on it. Also, WHO officially endorsed the well-cleaning protocol recommended by the IWMI scientist as part of its series of Emergency Guidelines.

## **The uptake efforts undertaken**

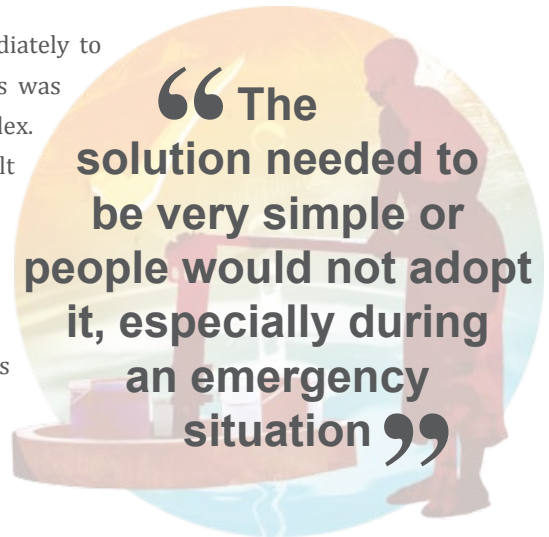
### ***During the emergency***

A strategy for uptake was not planned or documented. However, the IWMI researcher worked through a logical process and capitalized on opportunities.

Guidelines for cleaning wells were created in the form of a flyer. These guidelines were targeted to the organizations and government bodies that were helping out during the emergency period. The guidelines needed to be simple drawings and explanations that could be easily understood by a layperson. Drawings that showed the links between the well water and the groundwater were very important, so that people could understand why the new guidelines should be followed. Common water quality data-collection protocols and templates for testing the well water were also developed in collaboration with active partners.

The scientist went to the areas affected almost immediately to assess the situation and see how she could help. This was critical in assessing the true situation, which was complex. Early data confirmed the theoretical behavior of the salt plume in the soil and groundwater.

The solution needed to be very simple or people would not adopt it, especially during an emergency situation. Explaining the details, complexities and many variables involved in the solution would not have been effective in getting people's attention and it would have been difficult for many people to understand.



In addition, the solution needed to be developed and presented as soon as possible along with implementation tools. It took the scientist about two months to undertake the analysis, and to develop solutions and guidelines for the problem. During this time, she continued to develop networks and communicate with people on the issue.

Using other 'carriers' of the information and networks was critical; the scientist knew that she could not reach all the organizations/governments and people affected by the tsunami. She solicited helpers where possible, including people from universities and other IWMI staff, and worked to persuade the organizations and governments to take on the recommended guidelines in their work.

The scientist developed her own list of contacts and kept adding to this, which helped to keep in touch with these people about the guidelines. To build this list of contacts, she needed to find out who was working where and with whom. So many organizations and people were entering Sri Lanka to help with the emergency situation and it became almost impossible to track everyone. Also, not everyone could be convinced of the solution being presented. So, the scientist worked closest with the organizations who were the early adopters, as well as trying to convert the largest, most-active organizations. Eventually, these organizations were contacting the scientist for advice and she found herself at the center of organizing many relief efforts.

The scientist collaborated with organizations and individuals at all levels: local government authorities, local NGOs, international NGOs, local universities, overseas government donors and with Sri Lankans affected by the tsunami. She traveled extensively to the areas affected to ensure that she duly understood

the problem and could monitor the situation; visited Colombo to meet with organizations that were coordinating relief efforts; used email to keep in touch with the network and send information about the solution that was needed; and conducted training sessions with organizations and governments.

Some organizations had already developed and disseminated general guidelines on how to clean contaminated well water, which were being applied. However, they were incorrect when providing guidelines on the situation of saltwater flooding and hence contributed to confusion. When the scientist identified organizations proactively promoting incorrect well-cleaning guidelines, she tried to persuade them to change. As a result, the US Government took their guidelines off their website.

It was perceived that the reputation of IWMI or that of the main scientist did not affect adoption of the guidelines. However, it did help that IWMI was physically located in Sri Lanka, as it gave easier backing to the work and meant that the resources were at hand. Also, this assisted with having the longer-term assistance, which lasted approximately one and a half years.

The emergency situation brought attention to the need for clean well water procedures. If the guidelines had been developed without the emergency situation, it would have been difficult to get attention from relevant organizations to review their own processes and guidelines.

However, the emergency situation also meant that it was difficult getting attention of the organizations and the government. Everyone was rushed and there were different agendas. So, getting attention from organizations or at meetings was a challenge. It required having a message that could be explained quickly and one that seemed to be an obvious need. Part of the process was to be able to convince people of the need.

After the tsunami, several scientific reports were prepared and published<sup>3</sup>. Local students were also trained in water sampling and analysis, as well as a PhD student gaining expertise in saltwater impacts on groundwater.

### **Adoption of the guidelines by WHO**

After the tsunami, the IWMI scientist followed up the situation with WHO representatives to inquire about their intention to endorse the guidelines, which was mainly through a few emails. This did succeed in WHO officially adopting the guidelines. This would not have happened if the scientist had not followed up the situation. Also, it would have been very difficult to achieve this change had there not been a tsunami crisis in Sri Lanka and the associated connections that were made through this, especially with WHO.

### **Lessons learned**

(a) The following were necessary to enable organizations and the Government of Sri Lanka to adopt the guidelines:

- Personal networking was key to building trust and collaboration as well as for obtaining funding.
- Continuous relationship building was needed.

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<sup>3</sup> Villholth et al. 2005, 2010

- Targeting the early remediation efforts was important to make best use of the uptake efforts. However, also targeting the organizations who were the early adopters and with long-term impact was important for general uptake.
- Scientific backing for the solution along with clear, easy-to-understand presentation material was important to convince others to adopt this solution.
- Training was essential to build the understanding and capacity of others so that they could adopt the solution.
- Having an office physically located close to the areas affected enabled access to the resources needed and local knowledge.
- Communications material was important and this needed to be presented in a way that was easy to understand and include clear explanations on why the suggested solution was important.

(b) International adoption of the guidelines required the following:

- Timeliness, i.e., a natural disaster on such a large-scale brought attention to the issue.
- A proven case study (of Sri Lanka) with scientific backing of the solution.
- Personal contact within the adopting body.

### **Key factors that led to uptake**

- Personal networking helped to build trust and collaboration, and to obtain funding.
- Continuous relationship building.
- Targeting of the early remediation efforts and early adopters.
- Scientific backing of the solution along with clear, easy-to-understand presentation material.
- Training and capacity building of others to enable them to adopt the solution.
- Having an office physically located close to the areas affected.
- Communications material in an easy-to-understand form with a clear explanation of the solution.
- Timeliness of the natural disaster helped to bring attention to the issue.
- Having a proven case study with scientific backing of the solution.
- Maintaining personal contact within the adopting body.

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*Note:* This case study was based on perception surveys with key project staff. It is recognized that there was a larger group of key individuals involved in this project, whose contributions assisted towards the successful uptake of the solutions recommended.

Also based on IWMI 2010a.

The key individual interviewed and whose contributions assisted towards the successful uptake of the solutions recommended was Dr. Karen Villholth, Senior Researcher – Groundwater Management, IWMI, Pretoria, South Africa.

## Case study 5: Managing groundwater sustainably for irrigation

### The research and the adoption

There was a concern about not having sufficient water to grow enough food. Previous research indicated that canal irrigation in large parts of Asia was performing below par, and was not able to meet the demands of intensive and diversified agriculture. The growth in the use of groundwater was unprecedented in large parts of India and had become the engine of the rural economy. However, this growth was unregulated and anarchic, and required efficient governance and management at all levels. The available groundwater professionals were ill-equipped to handle this challenge. This included managing groundwater so that it could be used in a sustainable way, to incorporate this into irrigation policy and to increase water productivity.



Photo: Aditi Mukherji/IWMI

The use of groundwater grew rapidly in India

The research carried out by IWMI was based on the project, *Groundwater governance in the Indo-Gangetic and Yellow River basins in Asia*, which was primarily a capacity building project aimed at senior and mid-career water managers in Asia, specifically India, Nepal, Bangladesh, Pakistan and China. The project built capacity for analyzing physical, socioeconomic, governance and policy perspectives of groundwater to see how it could be used in a productive and sustainable way.

IWMI had been working extensively in India since the inception of the Institute, initially in a non-resident mode and then established as a resident mission in 2000. IWMI had a variety of information and advice to share, based on accumulated knowledge of its work in India over many years, as well as drawing information from studies carried out in different countries. The research brought in lessons learned from overseas, e.g., China, Mexico and Africa. This accumulated knowledge from several projects was an important base that IWMI built on over time.

Solutions were developed for better management of water in agriculture in India over the years, but also particularly through a number of projects sponsored by the CGIAR Challenge Program on Water and Food (CPWF) and the IWMI-TATA Water Policy Research Program.

This work brought the topic of groundwater use in India to the center stage of the irrigation policy debate. This helped decision makers to think seriously about sustainable management of groundwater, emulate strategies adopted by more mature groundwater economies and form some effective groundwater management policies.

Some examples of the changes made by the government in relation to this include the following:

- The 'Punjab Preservation of Sub-soil Water Act, 2009', which mandated farmers to delay paddy transplanting until after the 10<sup>th</sup> of June to avoid the extremely high evaporation in early summer. This helped achieve water savings of 7% in annual groundwater draft, as well as saving the energy used for pumping groundwater.
- In 2010, the Indian Government, based on suggestions from its own Ministry and IWMI, allocated USD 400 million to fund well recharge projects that would build structures to divert monsoonal runoff, as well as collect surplus rainwater and divert desilted water. Farmers were to receive subsidies for construction of the recharge structures. In time this will be set up in 100 districts in seven states where water stored in hard-rock aquifers has been overexploited.
- IWMI is directly contributing to government plans to overhaul irrigation schemes. The Planning Commission of India has now issued a formal invitation to IWMI scientists to write a forward-looking paper on what the future of government irrigation projects should be, as well as how to rationalize the accelerated irrigation benefits program. IWMI researchers also significantly contributed to the formulation of water sector programs and policies for the 11<sup>th</sup> and 12<sup>th</sup> Five Year Development Plans of India.

### **The uptake efforts undertaken**

There was no formally written or coordinated strategy across the different research activities of IWMI. However, there was a conscious effort, adopted by all the main senior scientists and managers involved, to meaningfully engage with the people and institutions who mattered most in decision making



(e.g., members of the Planning Commission of India; Chair, Central Ground Water Board; Indian Council of Agricultural Research (ICAR) and its institutes; Directors of State Departments of Agriculture (Punjab) and Irrigation (Andhra Pradesh); and water sector leaders at the World Bank (John Briscoe)), and with a number of NGOs (Professional Assistance for Development Action (PRADAN), People's Science Institute (PSI), Self-Reliant Initiatives through Joint Action (SRIJAN), Sir Ratan Tata Trust (SRTT)) and independent thinkers. This helped in creating good visibility and focused impact in the region.

A major effort was made to have information material available.

Both print and electronic media played a role in building greater awareness and initiating the process of change.

This included a variety of research reports, two books on groundwater governance in Asia (published by CRC Press and IWMI), a number of videos and flyers, an international course kit on groundwater governance and a dedicated website with all the material accessible through the site.

Involvement of media professionals in the program also helped in powerful packaging and describing complex phenomenon in an easy-to-understand story-telling format. Synthesizing messages and developing solutions across project results and information was important in making it easier for the users of the information.



**“ Working with professionals from five countries helped officials understand different perspectives ”**

The key stimulant for adoption mainly came about because of the capacity-building component of the project for groundwater governance. Formal training was conducted for high-level government officers and mid-career professionals. The Punjab Director for Agriculture, Director for Groundwater in Nepal and others were in attendance.

The training was made attractive by being:

- continued at regional workshops (focused on the regional issues and based in the region);
- spread over time (not conducted in one block), which is more flexible on people's time;
- included within field tours to Australia and USA;
- conducted with small groups of 'influencers'; and
- conducted with self-learning surveys and field studies, plus case studies and innovative documentation.

Development of site-specific case studies, enumeration of the constraints faced by farmers and managers, and the linkages with service providers, were all very helpful in convincing the government individuals of the solutions. Study visits to the Murray-Darling Basin in Australia, the University of Kansas and State of Kansas in the USA, and interactions with farmers, associations and water managers, helped the participants to appreciate the new paradigms in water governance, marketing and sharing mechanisms.

Working together with professionals from five different countries and interactions with a host of other

people helped the officials to understand different perspectives and capture potential opportunities. This included strong involvement with Centers of Excellence such as the Indian Institute of Technology, Indian Institute of Remote Sensing, University of Kansas (USA), University of South Australia, Murray-Darling Basin Authority (Australia) and the National Institute of Hydrology (India).

Interactions with the government as part of the research were important, periodic and regular. Workshops were conducted with government participation. Partnering with government institutions during the research assisted with acceptance of the research results as well as building contacts within the departments. Developing relationships through proactive and regular interactions, both within and outside the project work, was important in being 'listened' to.

This was also undertaken outside of the projects by senior staff at IWMI. For example, the South Asia Regional Director also contributed to building relations and promoting the solutions. Interactions, such as invitations to events, were aimed at high-level officials within the government. IWMI dealt very closely with the decision makers or highly influential people.

Developing the relationships during the research phase was important as it takes significant time to build relationships, win the confidence of policymakers and develop a good reputation. Nearly all these activities were undertaken during the research phase, either as part of the research or in support of, but outside of, the research.

IWMI's reputation as a respected scientific organization was important and central to being heard. Policymakers are willing to listen to high-profile researchers – those with high-quality publications, serving in key committees, etc. IWMI's dedicated efforts to relationship building also led to the Institute building its reputation of having a personal and collaborative style.

Within India, groundwater became recognized as a critical political issue, which brought more attention to the research results. New micro-irrigation technological innovations to improve water productivity brought more attention and interest to developing supportive policies. Also, institutional and policy reforms in the water sector, especially irrigation, gave more attention to all the issues around water management. Also growing in attention was the strong nexus between energy and groundwater use, and the need to manage groundwater use efficiently under varied aquifer/social strata conditions.

## **Lessons learned**

No formal uptake strategy was designed. However, there was a conscious effort by scientists and managers to influence and work directly with the Indian Government to adopt research recommendations and solutions. Key efforts that were perceived to have led to adoption included the following:

- Capacity building of middle- to senior-level government officials was important to ensure they clearly understood the issues and solutions. The training was able to attract the higher-level participants, especially with respected professionals from different countries involved and overseas trips. This targeting of high-level decision makers was important for future adoption of the solutions.
- Relationship building with the adopters was essential and needed to be undertaken throughout the

research phase, because of the time needed to build relationships.

- A wide range of IWMI staff were involved in building relationships, including project staff and corporate managers. This allowed for more resources to be committed to relationship building.
- Partnering during the research phase was also important to build relations, understanding and ownership of the final recommendations and solutions.
- IWMI's good reputation for undertaking high-quality science and partnering in a truly collaborative way contributed to building the relationships and the credibility of the recommendations.
- The issues being researched were already high on the political agenda, which contributed to the attention given to the research recommendations and solutions.
- Publications and material, print and electronic, contributed to building awareness.



**“ Building relationships takes time, so it was essential to engage with adopters early on ”**

### Key factors that led to uptake

- Capacity building of middle- to senior-level government officials to create an understanding of the issues and the solutions.
- Relationship building with the adopters throughout the research phase.
- A wide range of staff were involved in relationship building.
- Partnering during the research phase.
- The R4D organization having a reputation in undertaking high-quality science and collaborative partnering.
- Issues being placed high on the political agenda.
- Publications and materials contributed to building awareness.

*Note:* This case study was based on perception surveys with key project staff and further supported with published material. It is recognized that there was a larger group of key individuals involved in this project, whose contributions assisted towards the successful uptake of the solutions recommended.

Perception interviews conducted with:

Dr. Madar Samad, Emeritus Scientist, IWMI, Colombo, Sri Lanka (formerly Regional Director (South Asia))

Dr. Bharat Sharma, Principal Researcher and Coordinator – IWMI India, New Delhi

Dr. Tushaar Shah, Senior Fellow, IWMI, Anand, India

Dr. Palanisami Kuppannan, Principal Researcher, IWMI, Hyderabad, India

Also based on IWMI 2010c.

Key individuals involved in this project and whose contributions assisted towards the successful uptake of the solutions recommended are:

Dr. Bharat Sharma, Principal Researcher and Coordinator – IWMI India, New Delhi

Dr. Aditi Mukherji, formerly Senior Researcher, IWMI, New Delhi, India

Dr. Karen Villholth, Senior Researcher – Groundwater Management, IWMI, Pretoria, South Africa

Dr. Madar Samad, Emeritus Scientist, IWMI, Colombo, Sri Lanka (formerly Regional Director (South Asia))

Dr. Balwinder Singh Sidhu, Director-Agriculture, Government of Punjab, India

Dr. Jinxia Wang, Chinese Centre for Research on Agriculture Policy, Beijing, China

## Case study 6: Evaluation of the use of wetlands for poverty reduction

### The research and the adoption

In 2005, at the 9<sup>th</sup> Meeting of the Conference of the Contracting Parties to the Convention on Wetlands of the Ramsar Convention, Resolution IX.14 on Wetlands and Poverty Reduction was proposed, but not passed, as members indicated that further work was required on the Resolution. As a result, Wetlands International (WI) obtained funding from the Dutch Government to carry out research on the possibility of balancing the conservation of wetlands with their use for agriculture and other local livelihood strategies in four Demonstration Projects (Demo Projects) in Mali, Malawi, Kenya and Indonesia. Each represented different wetland types, and socioeconomic and cultural landscapes.



### Wetlands provide livelihoods for many people around the world

IWMI was brought in as one of the partners to provide additional technical inputs to, and undertake, an evaluation of the Demo Projects. The basis for IWMI's technical contributions was a review of seven other past and ongoing projects (from locations in Asia, Africa and South America), which had similar objectives to those of WI's Demo Projects; an analysis of existing literature on linking ecosystem conservation and poverty reduction; and an open e-forum on the same topic where the participants ranged from wetland specialists and development practitioners, to donors and policymakers. Evaluation of the seven case studies also involved developing a framework for analyzing and evaluating the sustainable integration of conservation and poverty reduction in wetlands, based on a review of existing frameworks. This was applied to the seven case studies to derive lessons of relevance to WI's Demo Projects. It also enabled the testing and modification of the framework prior to its application to the Demo Projects as part of their evaluation.

### **Material produced through the project is now adopted in university curricula**

The publication, *Good practices and lessons learned in integrating ecosystem conservation and poverty reduction objectives in wetlands*, is now being used by students and course developers at the Wetland Alliance for Training, Education and Research in KwaZulu-Natal, South Africa, and by the Water, Engineering and Development Centre at Loughborough University, UK, amongst others.

### **Global policies were influenced through input into Ramsar resolutions**

Since balancing ecosystem conservation with its use in poverty reduction is a central challenge addressed by the Ramsar Convention on Wetlands through its concept of Wise Use, the insights generated by IWMI's research meant that it was ideally placed to provide key inputs into the revised draft of the 2008 Resolution X.28 on Wetlands and Poverty Eradication, which was passed at the 10<sup>th</sup> Meeting of the Conference of the Contracting Parties to the Convention on Wetlands in the same year.

The value of this work was further recognized by the Ramsar Convention when the IWMI scientist who led this piece of research was invited to represent the Institute on the Convention's Scientific and Technical Review Panel (STRP) Working Group on Wetlands and Poverty Eradication, which was given the task of providing technical advice and guidance in shaping future Ramsar policy and activities on wetlands and poverty reduction. A culmination of this work as a member of the Task Group was demonstrated in July 2012 at the 11<sup>th</sup> Meeting of the Conference of the Contracting Parties to the Convention on Wetlands, with the adoption of the Draft Resolution XI.13 (an Integrated Framework for linking wetland conservation and wise use with poverty eradication). This incorporated IWMI's research findings and in its text (article 7), thanked and acknowledged the support of the Institute (in addition to other organizations) in the development of the guidance to support the implementation of this Resolution on wetlands and poverty eradication.

While IWMI is already an International Organization Partner (IOP) of the Ramsar Convention on Wetlands and attends key meetings in this capacity, this has provided an additional pathway for the Institute's research results to be more directly incorporated into global policy, with a knock-on influence on the national wetland policies of member countries.

### **The uptake efforts undertaken**

An uptake strategy was not formally developed and written up. However, the research was embedded in a development program led by WI, and activities were undertaken that contributed to the uptake.

### **Communication and discussion**

The adoption of IWMI's research began, first, with the communication to, and discussion with, members of WI's Demo Project teams of its findings from the seven case studies, literature review and e-forum dialogues. This occurred primarily through the annual project review and planning workshops, where IWMI presented its findings and their relevance to specific Demo Projects was identified and internalized in planning activities. IWMI continued to provide technical inputs during subsequent planning workshops.

### **Involving key influencers**

The recognition and acceptance of IWMI's research also flowed from involving the Ramsar Secretariat from

the outset of this work, and particularly by working closely with the Deputy Chair of Ramsar's STRP, who was also brought in by WI as an advisor to its Demo Projects. In addition to jointly participating in the project review, planning workshops and field visits, the Deputy Chair of the STRP was also one of the reviewers of IWMI's publication, *Good practices and lessons learned in integrating ecosystem conservation and poverty reduction objectives in wetlands*. This direct involvement with IWMI researchers and the process of critically reviewing their work helped build a greater acceptance of this work and a commitment to support the uptake of its results by the Ramsar Convention.



### **Scientifically backed publications**

It was important to support the findings with scientific publications that were externally reviewed to gain acceptance of the results.

*Open access publications:* IWMI's results were made available to a wider audience through the publication, *Good practices and lessons learned in integrating ecosystem conservation and poverty reduction objectives in wetlands*, an externally peer-reviewed report. WI also produced its own policy briefs and invited IWMI to contribute a chapter on lessons learned from its seven case studies and to co-author two other chapters in its final project publication, *Planting trees to eat fish*.

*Journal article:* Following the evaluation of WI's four Demo Projects at the end of their term, IWMI was able to synthesize its results from the earlier case studies with results and lessons emerging from the Demo Projects into an externally peer-reviewed journal article. This also included a further refined framework for assessing conservation-poverty reduction interventions. This publication specifically recorded the successes of some Demo Projects. For example, one project sustainably transformed a history of starvation and loss of lives to one of improved food security and nutrition. Another showed how diversifying livelihoods enabled farmers to invest in healthcare and education. Land and water management practices appropriate to each wetland's specific characteristics and position in the broader landscape underpinned these successes. However, the authors also sought lessons from the less successful results of these projects, especially in the context of longer-term sustainability.

### **Scientific credibility of IWMI**

The scientific credibility of IWMI was critical in WI selecting the Institute to build a framework and undertake this analysis. WI realized that showcasing Demo Projects in a scientifically sound manner would strengthen its statements and recommendations among scientists, practitioners and donor communities.

### **Issues were topical and already on the agenda**

The issue of using wetlands for agriculture and other livelihood activities was already a topical issue and on the agenda of the Ramsar Convention on Wetlands.

## Lessons learned

The lessons learned for ensuring IWMI's research influences policymakers and practitioners included:

- The research was integrated into a development project as well as a request for a policy.
- Working closely with key high-level influential people in, and throughout, the research process built important ambassadors.
- IWMI's scientific credibility was important for others wanting to engage the Institute as well as for the credibility of the outcomes.
- Scientific material was essential to back-up the recommendations. Journal articles were important for high-level scientific recognition, and open access publications were important to ensure the recommendations became available widely.
- The issue was already topical, which assisted in the attention it received.
- Research and uptake were intertwined and an effort made for one helped the other as well.

### Key factors that led to uptake

- The research was integrated into a development project as well as a request for policy.
- Having high-level influential people as ambassadors throughout the research process.
- Scientific credibility of the R4D organization.
- Publishing in journals and open access publications was essential to back-up the recommendations.
- The issue was already topical and helped in getting the necessary attention.
- Research and uptake were intertwined and an effort made for one helped the other.

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*Note:* This case study was based on perception surveys with key project staff and further supported with published material. It is recognized that there was a larger group of key individuals involved in this project, whose contributions assisted towards the successful uptake of the solutions recommended.

Perception interview conducted with:  
Dr. Sonali Senaratna Sellamuttu, Senior Researcher – Livelihood Systems, IWMI, Vientiane, Lao PDR

Also based on IWMI 2010e.

Key individuals involved in this project and whose contributions assisted towards the successful uptake of the solutions recommended are:  
Dr. Sonali Senaratna Sellamuttu, Senior Researcher – Livelihood Systems, IWMI, Vientiane, Lao PDR  
Sanjiv de Silva, Researcher – Institutions Analyst, IWMI, Colombo, Sri Lanka  
Sophie Nguyen Khoa Man, formerly Associate Director, CGIAR Challenge Program on Water and Food (CPWF)

## Case study 7: Improving soils and yields

### The research and the adoption

Farmland in northeast Thailand had such poor quality soils that farmers were using termite mounds to add rich clays, which helped soils retain water and nutrients. These natural termite mounds were becoming scarce and farmers did not have alternatives in place.

IWMI scientists were aware of studies carried out in Australia, which showed that the application of bentonite clay helped retain water and nutrients in the soil. Researchers at IWMI and Khon Kaen University, Thailand, conducted trials with bentonite in the northeast of the country, which resulted in average yield increases of 73% with certain applications, even with low-quality bentonite. It was also shown to reduce the risk of crop failure during a drought.



### It was hard for some farmers to grow crops in Thailand because of poor soils

Three years after the initial trials, a farmer survey was conducted. It was estimated that 200 farmers in northeast Thailand and 400 in neighboring Cambodia were found to have adopted the use of bentonite. Their average yield was 18% higher than farms not using bentonite, and many farmers had also been able to switch to higher-value crops, such as vegetables, that required more nutrient-rich soils.



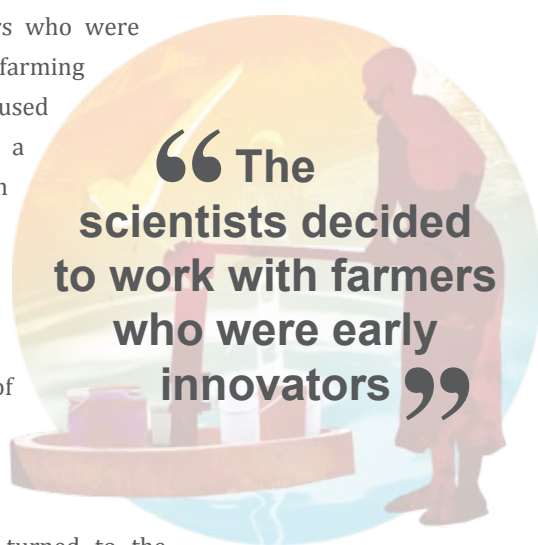
The government is now assisting farmers with access to bentonite, having developed a plant where waste bentonite from the vegetable oil industry is being converted into a soil amendment through a composting process. This is cheaper than pure clay but just as effective. The government is making this available to farmers for free, excluding transportation costs.

This initiative also stimulated the Thai Government to undertake other experiments, e.g., researching a composting system to produce a bentonite product. This research success has also influenced an initiative in South Africa, which is conducting trials to develop a bentonite-based product, as well as in Australia where bentonite trials are now being conducted on the island of Nauru.

### **The uptake efforts undertaken**

Although a scientifically proven solution and one with very high-yielding results had been found to a recognized problem, it still took years before farmers adopted this. Farmers needed to be involved and convinced of the solution.

The scientists decided to work with targeted farmers who were early innovators with an ethos of using organic farming solutions. The research and uptake efforts were focused on the 'Farmer Wisdom Network' (FWN). This was a more progressive and innovative group of farmers with a strong network around Thailand. IWMI's university partner, Khon Khaen University, Thailand, already had a strong connection and well recognized reputation in this network. The FWN was developed through the Buddhist religion. It had come about because many of the rural people who had migrated to the cities to look for work suffered financially from the Asian currency crisis in 1997, and had returned to the rural area often with significant debt. These people had turned to the Buddhist temple for assistance. An ethos of self-sufficiency became one of their pillars, which required a focus on agriculture. The FWN was initiated but it was a select group, and members had to fulfill strict criteria and undergo training.



To undertake the research needed, IWMI collaborated with colleagues who they had already developed professional and personal relationships with at Khon Kaen University. The main project partner at the university was already connected with the FWN, and was well respected and had the farmers' confidence. As Thai culture has high regard for professionals and academics, e.g., professors, this helped with IWMI scientists and the university partners gaining some respect and credibility.

Another key partner needed for this initiative to be a success was the Thai Government. IWMI was located in Bangkok and had spent significant time over many years to develop relationships with the Thai Government, which was critical for the support needed. IWMI had built this also through action – by always being available to contribute or help the government and their researchers when required.

Original farm trials were conducted on a government experiment station. This engaged the government in the experiment, and they participated in, and observed throughout, the trials.

Farmer field days were held for the FWN. There were about 200 farmers involved and the same group of farmers throughout the field days. Funding financed farmers to come to the experiment three times each year/season for two years: at the start of application of the bentonite, halfway through the growing season and at the end of the season, to assess the performance of the crop under the different imposed treatments. The responses were dramatic and farmers could quite clearly see the tangible returns associated with treatment applications.

After the government field experiments were completed, farmers were provided with bentonite to carry out their own trials. This was undertaken as a coordinated approach with an agreement to track and share the results among the entire farmer group. At the end of the growing season, farmer schools were organized to exchange experiences and knowledge.

The farmers were given the flexibility to experiment or adopt their own practices. Even when farmers were seen to be placing bentonite on the top of the soil and not mixing it in, this was not corrected. When farmers shared their experiences at the farmer schools, the effective and non-effective practices were shared and became a stronger learning experience. After the key research stage, the FWN continued to exchange knowledge, and extension officers disseminated the information further.

From the very start, IWMI engaged with a supplier of bentonite, which was looking for alternative outlets. The supplier was involved in all the field days conducted. During this phase of the project, the company was the main supplier, providing bentonite clay.

## Lessons learned

Lessons learned included the following:

- Having an excellent solution to a recognized problem is not enough to ensure adoption. The solution was considered by researchers to be an absolute winner – if you mix bentonite in light soils, you have a dramatic response in productivity. Also, the farmers were already extremely aware that they had a problem of low-quality soils and were looking for solutions. However, this in itself was still not enough to ensure adoption. Significant efforts over many years were still needed to lead to adoption.
- It was critical to have local (Thai) partners and to have them in the forefront presenting the ideas as theirs. IWMI/foreign researchers had to be in the background, and it was believed that a foreigner would never have been able to ‘break into’ the local community to engage and achieve adoption of the solutions.
- Key elements were needed for a successful partnership. There had to be a strong and trusted relationship between the local and foreign partners and each had to see themselves as being equal team members. This was only achieved due to the long relationship that had been built-up over the years. This was both a personal as well as a professional relationship – which is important in Thailand. This requires long-term foresight even before a specific need arises. It also requires commitment, time, corporate support and value placed on building relationships.
- The key was to identify and target the early innovators and to aim all efforts towards them. These

innovative farmers were targeted by working with the 'Farmer Wisdom Groups' – a network that already existed and was known to be a group of progressive, open-minded farmers.

- The target audience was selected by their psychographics. It was important to target not only innovative farmers but to also identify the target audience, which in this case were farmers with a similar ethos of using natural organic farming solutions. Targeting specific types of farmers resulted in a captivated, positive audience from the start.
- Targeting was considered more important than a broad/inclusive participatory approach. A typical broad participatory research approach was not followed. Carefully selected audiences can result in more efficient use of efforts and a greater chance of adoption. Although the process still followed many elements of a participatory approach by engaging beneficiaries within the research, it was undertaken with a selected targeted, innovative group of farmers.
- Targeting was considered as being more important than the use of extension services. It was consciously decided not to use extension services. Feeding new information and solutions through a government extension service is commonly used. The extension service was seen as a broad-brush approach using a lot of time and resources across all potential beneficiaries, as opposed to targeting early adopters, which was thought to be more effective.
- A long-term relationship of trust and confidence was critical with the targeted beneficiaries – organic farmers. IWMI had not worked directly with, or built a relationship with, the farmers and hence partnering with someone who already had this status was important. Confidence in the people and organizations presenting the solutions was important.
- A long-term relationship and trust with the Thai Government was also critical. IWMI had achieved this, but only after years of proactively developing it and having the commitment and ability to spend time on it. IWMI being located in Bangkok assisted with this, as did having built the relationship through action – by always having been available to contribute information or help the government and its researchers when required.
- The input supply chain was developed by involving the suppliers of bentonite in the research. They engaged with farmers from the beginning and throughout the trials.
- Engagement can have unpredictable spin-off benefits, e.g., leading to others developing their own initiatives and innovations. Engagement of the government, e.g., through the trials being conducted at its experiment station, allowed it to be more involved and led to spin-off benefits of the government initiating other innovations. For example, it developed a composting plant to produce a bentonite product for farmers.
- Cultural influences were important to be aware of. Thai culture has high regard for professionals and academics, e.g., professors. This assisted in IWMI scientists and the university partners gaining some respect and credibility.
- Uptake efforts were important during the 'research stage' for eventual adoption. Undertaking uptake activities during the research phase was possible, because the project leaders knew who their target audience was and they also had proof of the concept. This confidence of the scientists stemmed from previous successful Australian trials which had the same defining attributes.
- Seeing was believing and much more compelling and effective than producing brochures for the farmer target audience. Farmers, especially poorer farmers, are often more averse to risk and need extra confidence to take on alternative practices. Experimental field plots undertaken and monitored by farmers during field days were believed to be very effective.

- Farmers learning from their own and each other’s experiences was effective. The project provided the opportunities (with controlled trials undertaken by the farmers) and knowledge-sharing channels (through farmer schools) for the farmers to learn from their own and each other’s experiences.
- By working through permanently set up networks and the government, the knowledge sharing continued ‘post-project’ through the network and government extension.

### **Key factors that led to uptake**

- Having an excellent solution to a recognized problem was not sufficient - significant uptake efforts were also required.
- Allowing local (national) partners to be in the forefront presenting the ideas as theirs.
- Building strong and trusted relationships between local and foreign partners to ensure that they saw themselves as equal team members.
- Identifying and targeting the early innovators.
- Selecting the target audience by relevant psychographics.
- Having a selected target group rather than a broad/inclusive participatory approach.
- Targeted activities were considered to be more important than using general extension services.
- The R4D organization having a long-term relationship of trust and confidence with targeted beneficiaries.
- The R4D organization having a long-term relationship and trust with the government.
- Involvement of supply-chain stakeholders in the research and engaging with farmers.
- Engagement with the government allowed it to be more involved and led to spin-off benefits.
- Awareness of cultural preferences within the country.
- Uptake efforts were important during the ‘research stage’.
- Seeing was believing and more effective than producing brochures for the farmer audience.
- Providing opportunities for farmers to learn from their own and each other’s experiences.
- Working through permanently set up networks, the knowledge sharing continued ‘post-project’.

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*Note:* This case study was based on perception surveys with key project staff and further supported with published material. It is recognized that there was a larger group of key individuals involved in this project, whose contributions assisted towards the successful uptake of the solutions recommended.

Perception interviews conducted with:

Dr. Andrew Noble, Program Director – CGIAR Research Program on Water, Land and Ecosystems (WLE), IWMI, Colombo, Sri Lanka (formerly Regional Director, IWMI Southeast Asia and Central Asia)

Also based on IWMI 2010b.

Key individuals involved in this project and whose contributions assisted towards the successful uptake of the solutions recommended are:

Dr. Andrew Noble, Program Director – CGIAR Research Program on Water, Land and Ecosystems (WLE), IWMI, Colombo, Sri Lanka (formerly Regional Director, IWMI Southeast Asia and Central Asia)

Dr. Sawaeng Ruaysoongnern, Associate Professor, Faculty of Agriculture, Khon Kaen University, Khon Kaen, Thailand

## Case study 8: Technologies for better on-farm water management

### The research and the adoption

Reliable access to water is a key constraint for smallholder farmers in developing countries. It affects their survival and hinders small-scale farming, which is an engine for economic growth, poverty reduction and food security. While many studies have concluded on the need for investments in smallholder agricultural water management, what was needed was guidance on what, where and how donors, implementers and policymakers should invest in order to sustainably and cost-effectively achieve the greatest livelihood benefits (AgWater Solutions Project n.d.c).

Research was undertaken to develop a methodology to assess agricultural water management interventions with the aim of identifying promising solutions and technologies and the factors that influence their adoption and successful scaling up. In the process of developing the methodology, it was applied to five countries in Africa and two states in India to develop a science-backed portfolio of viable agricultural water management investments.

This was a three-year project which was in its final year during this study, ending in mid-September 2012. However, even within a short time period and before the project was completed, there had already been some significant outcomes. This was largely attributed to the approach taken throughout the project, which viewed uptake efforts as something to be incorporated at the beginning of the project and then integrated into the research. Examples of uptake already achieved follow.



**The project aimed to identify water management methods that would best help farmers**

*Note:* This case study is in no way intended to be a ‘review’ of the project’s uptake approach. The survey was undertaken on the overall uptake approach of the project and it is recognized that individual country analyses would also be beneficial to achieving further understanding and uptake lessons.

In Tanzania, the Parliamentary Committee on Agriculture, Livestock and Water has pledged a budget to support implementation of some of the solutions recommended by the project, to the Ministry of Agriculture for the 2012/2013 budget. Also, an Agricultural Water Management Platform has been created within the Southern Agricultural Growth Corridor of Tanzania (SAGCOT) – a private-public partnership. This has been set up to further discuss the issues related to water-use efficiency.

In Ethiopia, steps have been taken by the Ministry of Agriculture to incorporate some of the findings in the National Community-based Participatory Watershed Development Guidelines, as well as acknowledging the need to review import tax policies which was a recommendation of the project. With the backing of the Ministry of Agricultural Transformation Agency, it has been agreed to set up a long-term Agricultural Water Management Platform. Also, the Swedish International Development Cooperation Agency (Sida) has committed to projects in Tanzania and Ethiopia to further build on the research recommendations.

In Ghana, the government is considering linking the policies of agriculture, energy and transportation. This would bring agricultural development needs into the rural energy and transportation plans. As a result, the Ghana Irrigation Development Authority (GIDA) is preparing a memorandum for the cabinet on the benefits of this. GIDA has also created its own farmer information packs based on details from the project.

In Zambia, it is expected that the Ministry of Agriculture, Food and Fisheries will provide guidelines targeted to smallholder farmers and dealers, about which agricultural equipment is exempt from duty. This is being championed by the Chief Irrigation Engineer at the Ministry who is also the project National Focal Point and has agreed to follow-up with the Ministry of Finance to incorporate this in the 2013 budget preparations.

In Burkina Faso, the government has organized a field visit for farmers and donors to the project sites, and is transitioning the approach from project- to partner-facilitated outreach.

In India, at a national level, the Planning Commission has taken on some of the recommendations and has expressed interest in further analysis and application across various states. As a result of a policy dialogue initiated by the Commission with the State Government of West Bengal, the Government adopted two new policies (Government Orders) to help reduce the cost to smallholder farmers in accessing groundwater. Also, PRASARI, the research project's implementing partner in West Bengal, has been funded to pilot the construction of rainwater harvesting structures that were presented as one of the solutions in the project.

## **The uptake efforts undertaken and lessons learned**

### ***In summary***

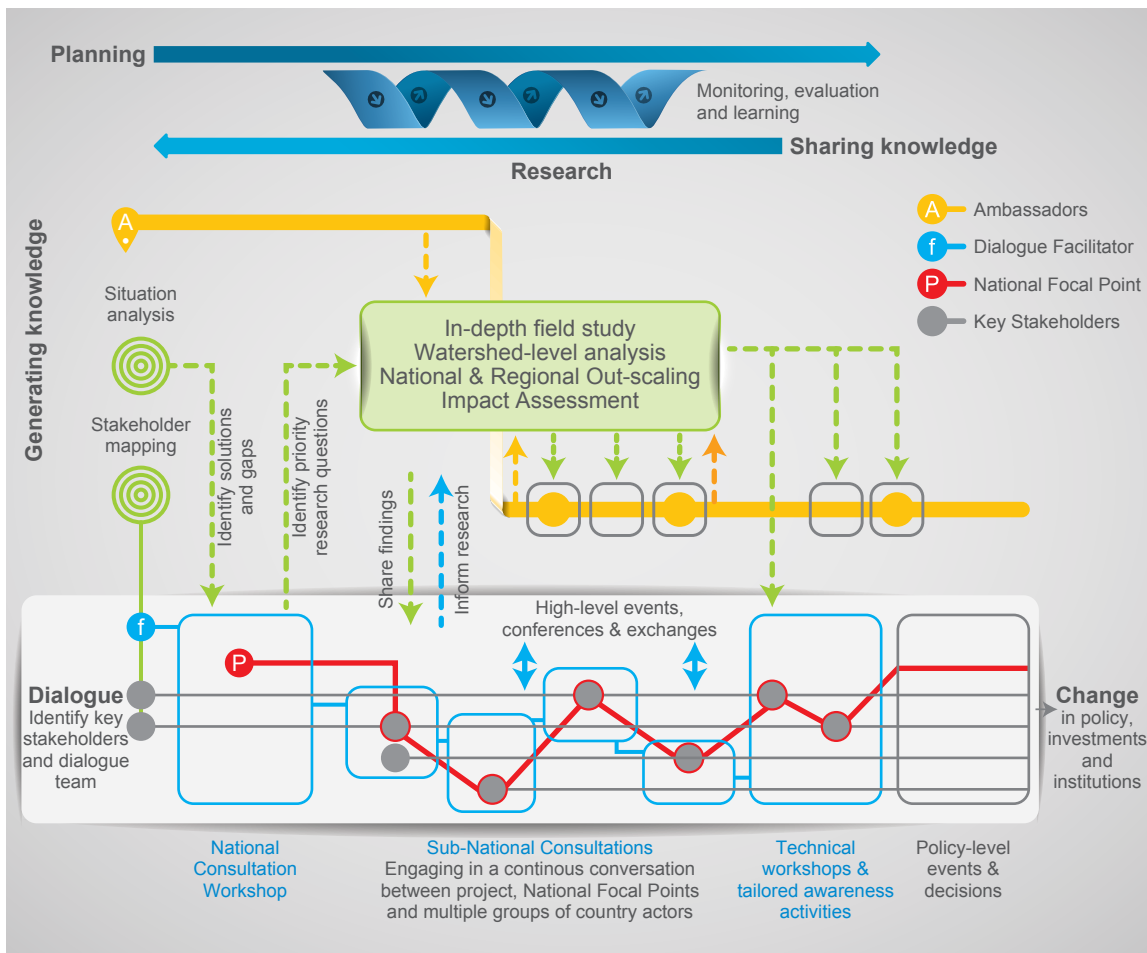
The extensive engagement of stakeholders throughout the research phase was key to the early adoption of the research recommendations. Engagement by close participation and partnering led to ownership of the recommendations and solutions. The use of the networks of the project team members, i.e., personal and professional contacts, was also important for engaging key influencers and opening doors of decision makers. This engagement was critical for developing appropriate solutions, as well as for developing ownership for better adoption of the solutions. The research and uptake efforts were not mutually exclusive.

It was important to place significant resources into uptake during and after the research phase. However, it was also important to be flexible with the use of the resources to be able to further develop and adapt the uptake efforts. Monitoring and evaluation across the uptake efforts were helpful to be able to adapt. Internal communications and coordination were necessary for all this to work as well as key science-backed information material providing credibility to the uptake efforts.

The uptake efforts undertaken are summarized in Figure 1 and are described in more detail below.

**Figure 1: Uptake efforts undertaken throughout the project**

(Source: Adapted from IWMI 2012c)



### Engagement with stakeholders

The purpose of engagement was to be able to have better solutions created that were suitable to the local environment and to also achieve adoption of these solutions. The early successes of this project are largely attributed to the engagement of stakeholders throughout the research process. However, it is not enough to just say that the ‘engagement of stakeholders is important’. Key factors were identified to understand how stakeholder engagement was made effective. These key factors identified included: who was engaged, when were they engaged, the level of engagement and how stakeholders were engaged. These factors are detailed below.

### ***Who was engaged?***

Formal 'actor surveys' were undertaken early on in the project to identify the most relevant players/stakeholders, their priorities, roles and needs. Contact lists were built from the start and were helpful. Keeping the flexibility and openness for other stakeholders to be identified and engaged was also important. Personal and organizational networks were key to reaching targeted stakeholders. Relevant personal contacts were highly effective in engaging with as there was a level of credibility, respect and commitment that was already present.

It was important to involve all key stakeholders. These included policymakers, investors and implementing agencies. There was a bias towards involving stakeholders already within the project staff networks and hence comfort zone - the private sector, in particular, being a key stakeholder group where the research team had fewer networks. It was very important to recognize this and to undertake extra effort to ensure a broader, more balanced sectorial engagement.

Engaging with high-level decision makers was recognized as being important. Within the government, this needed to be at ministry level, hence ensuring that there was support from the head of a government department was important.

### ***When were they engaged?***

Uptake was undertaken throughout all stages of the project - the research phase, the launch (being planned at the time of this study) and post-project (also being planned). The many uptake activities undertaken throughout the research phase were mainly focused on the engagement of stakeholders and targeting national/local agencies. A launch of the final recommendations was being organized through a global campaign mainly targeting international donors. Post-project uptake activities are expected through the efforts of national-level stakeholders, who have now taken ownership of the research results, through IWMI's continued corporate support (by its regional uptake initiatives, and corporate information and communications initiatives) and through possible phase two projects.

Engaging with the stakeholders from the 'start' was important to have a greater chance of them taking ownership of the final recommendations and solutions. Engagement 'during' the process was also important to ensure the research was realistic and responsive to the stakeholder requirements. The engagement (via dialogues) was originally planned to be held nearer the end of the project when the researchers had results to share. However, it was decided to elaborate the process to start incorporating the dialogues in the research cycle.

Researchers were initially hesitant to engage with stakeholders at early stages of the research phase, because of the concern to share interim/progressive research results which still might change and hence could be misleading. However, by the end of the project it was recognized that this did not cause problems and only had positive benefits, when approached appropriately and carefully.

Engagement with the stakeholders, who are the implementers and adopters of the solutions, increased as the research matured. This was to ensure that action on the results eventuated. However, it is important to note that this does not substitute early engagement but builds on it.



## **The level of engagement**

There were many levels of engagement identified when analyzing this project, which included the following:

- *Awareness*: This included building awareness of the problems and potential opportunities that the research was addressing, and building expectations for future solutions.
- *Communication*: Stakeholders were engaged with and listened to and this helped the research team to better understand the needs and environment to develop appropriate solutions and uptake strategies.
- *Input*: Stakeholders proactively provided input by vetting initial solutions, and making their own suggestions and contributions.
- *Partnership*: A working partnership was developed with some stakeholders, where they were also undertaking parts of the research and uptake efforts.
- *Leadership*: Leadership roles were created for some stakeholders as it became more obvious that the higher the level of engagement, especially of influential stakeholders, the greater the likelihood of the adoption.
- *Ownership*: Stakeholder ownership of the solutions and recommendations was achieved in many areas, which led to direct action or adoption. Many of the current successful adoptions already undertaken have been achieved via national ownership of the solutions; viewing them as homegrown.

Ownership was also important, given that these solutions were being created as part of a 'project' which has a defined life span. This allows for the momentum to continue as individuals or organizations continue to work on solutions and adoption efforts. Ownership was achieved through the engagement of stakeholders and by the project not having any requirements or restrictions on the recognition or branding of the solutions at a national/local level.

## **How stakeholders were engaged**

Stakeholder engagement needed a concerted effort, significant time and resources. Stakeholders from multiple sectors were engaged in 'unison' – a transdisciplinary approach. This approach was more challenging to manage discussions with a wider range of needs and perspectives. However, this approach was important not just for the project team but also for the stakeholders of different sectors, in order to understand each other's needs and the consequences of their own actions. The value was that holistic solutions could be developed along the entire value chain.

Cross-country and cross-continent exchange contributed towards identifying alternative solutions and led to initial steps being taken by governments to adopt these solutions. An example of this is when project partners from Tanzania and Ghana were taken on a field visit to India to see the power/energy solutions applied to groundwater extraction. The issue was already topical in both countries, but the visit seemed to have sparked further discussion and action on the issue and resulted in a chain of activities towards adoption taking place. For example, GIDA has since consulted with key stakeholders and produced a Draft Memo which both the ministries of Energy, and Food and Agriculture are reviewing and hope to send to the Cabinet shortly to promote a change in the electricity tariff structure to enhance the productive use of electricity in Ghana. It was noted that it was important to recognize that the other country studies had different environments and contexts and to openly discuss this with the stakeholders. National/local stakeholder dialogues were seen as being important for all stages of the project, involving a wide range of communications and with all the stakeholder groups.

The dialogues had various purposes ranging from discussing stakeholder needs, vetting the research findings, providing advice on how to achieve adoption of the recommendations, building awareness and relationships, and future buy in.



Photo: Barbara van Koppen

### **Cross-country dialogues can help stakeholders to identify solutions**

The dialogues in each country were a process of continual conversation and engaged a variety of activities as shown in Figure 1. This included typical project workshops being converted into engagement workshops. The dialogues commenced with national consultation workshops, followed by sub-national consultations during the main research phase involving regular conversations with a wide range of stakeholders through high-level events, conferences and personal exchanges. The national and sub-national dialogue involved a wide range of stakeholders from both public and private sectors – policymakers, implementers, investors, researchers and farmer leaders. This was followed by technical workshops and tailored awareness activities to present preliminary and final solutions. Final solutions were presented through small-sized targeted policy dialogues and meetings (AgWater Solutions Project n.d.a; IWMI 2012c).

This project was also innovative in its creation of complementary support roles to engage stakeholders. These included the following:

*National focal points:* These positions were created with high-level decision makers from relevant government ministries. This was an additional need identified during the project. The focal points were appointed to ‘create linkages to existing policy platforms and initiatives’ (IWMI 2012c). As a result, they were able to help provide input into the priorities of the research work as well as advise on the key people to engage with within the political sphere and how to work with them.

National focal points made major contributions in the uptake initiatives, being able to be more politically aware and able to engage more with governments.

It was possible to engage such high-level national focal points because FAO, a partner on the project, already worked at a national policy level and could leverage its networks and reputation.

*Project ambassadors:* The idea to have ambassadors was also developed part way through the project when it was recognized that more assistance was needed to help the research team reach the key influencers. The ambassadors ‘provided guidance on the project research activities and fostered communication channels with strategic individuals and organizations nationally, regionally and globally’ (IWMI 2012c).

The six ambassadors, representing each subregion, who contributed nationally, regionally and globally, were selected from both the public and private sectors to broaden the networks.

*Dialogue facilitators:* These positions were especially selected national experts with strong networking skills who ‘coordinated the engagement process at the country level’ (IWMI 2012c). They had to have a strong reputation in their field, with technical expertise, but still understand the political environment. Formal facilitation training was provided to assist with the facilitation of the national dialogues.

## **Linking with ongoing initiatives**

It was helpful for adoption to not only engage with individuals and organizations, but to also identify existing initiatives and link into these. One example where this approach led to adoption is the linkage with SAGCOT in Tanzania. It led to the setting up of an Agricultural Water Management Platform.

## **Management of the project**

### ***Planning***

The uptake approaches applied took more time and different skill sets to those held by the technical researchers, requiring uptake expertise being engaged and extra budget. Planning for this was important to be able to do this well.

### ***Flexibility***

However, planning for this was not enough – flexibility was also important. There needed to be a significant level of flexibility built into the time, budget and the approaches, to be able to adapt. Adaptation is not only for a changing environment but also to be able to adapt as the environment is further understood. Flexibility is also needed to be able to capitalize on opportunities that arise.

There were two key elements that made this flexibility critical. First, by taking a more participatory approach with stakeholders, many more variables and realisms were brought to the fore a lot earlier. This has the positive outcome of producing better and more implementable solutions, but the challenge of having to regularly rethink any aspect of the research or uptake processes.

Second, the overall aim of the project broadened over time from what was described as a research/learning grant to inform the project donor of their future investments to a R4D approach informing relevant

investors (from private industry to the government, NGOs, development agencies and farmers). This required significant changes to the uptake efforts. Many of the engagement processes used were originally for input purposes to ensure that the research results were applicable to the local environment. This later expanded so the engagement was also to achieve uptake objectives.

### **Country coordinators**

These were important positions to ensure the many different activities and information were being coordinated appropriately.

### **A steering committee**

A project steering committee was also set up. This created another opportunity to engage and involve high-level people in the project who could help not only with technical advice but also by providing input into the uptake and being a link to another network of contacts.

### **Internal communications**

Internal communications were believed to be very important and had an effect on the research, analysis and uptake efforts. It was difficult reaching a balance of the appropriate amount of internal communications as well as the most appropriate mechanisms. Being such a large project across many countries and with many different positions (researchers, steering committee, focal points and ambassadors), added to its complexity.

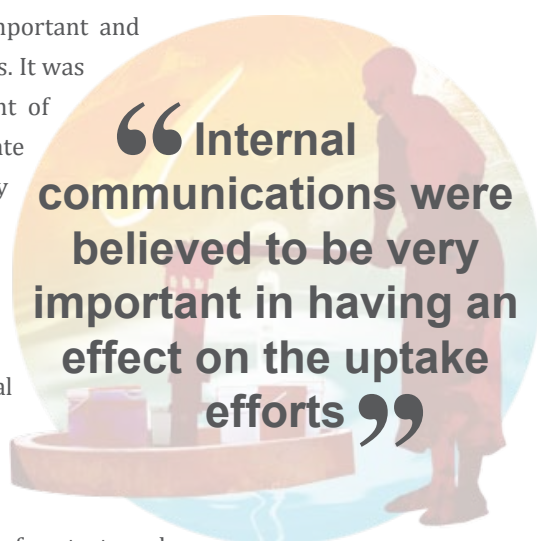
It is noted that, it is difficult to distinguish between internal and external communications given the 'engagement' of stakeholders who then become 'internal'.

It was identified by the project team that more tracking of contacts and the people engaged with, as well as more follow-up communications after any engagement, would have assisted with even higher levels of awareness and relationship building.

### **The core project team – diversity and reputation**

The diversity of the core project team also contributed to the success of the recommendations and uptake. This included IWMI and IFPRI's strength in scientific research; Stockholm Environment Institute (SEI) with watershed experience; FAO, which engaged in the political environment; and iDE, which brought knowledge and implementation experience at farm level. Technical, political and uptake skills and knowledge were all important contributions.

Perceptions of one interviewee were that the lead agency, IWMI, was viewed largely as a neutral body, which led to the research recommendations being recognized as unbiased. The reputations of individuals and organizations in the core project team were also believed to have made an important contribution to achieving uptake.



## The research providing clear recommendations and being scientifically credible

Having clear recommendations made it easier for stakeholders to act. An example is the Ethiopian Agricultural Transformation Agency, which said that it was because concrete solutions were presented to it that it would act on these and do its own research to support the solutions.

Scientifically backed solutions were an important element for the recommendations being adopted. The credible science and solutions would not have been enough on their own to reach adoption, and the uptake effort would not have been effective without the scientific backing for the recommendations.



Photo: Petterik Wiggers/IWMI

**Engaging with farmers and other stakeholders was vital for uptake**

## Media

In Tanzania, a significant effort was made to connect with the media. Strategies were developed which included having workshops with the media to provide project/research information, and encourage and support the media representatives. A positive and solutions-based approach was also undertaken with the media. This led to successful coverage and influenced policymakers.

## Information materials

Scientific and communications materials provided scientific credibility during discussions. Scientific reports, briefs, slide decks, photos, a website and social media sites were produced throughout the project life span to provide updates and early research results. It is difficult to measure the effectiveness

of these materials. However, it is believed that they did provide scientific credibility for discussions and presentations. Also, they helped keep the interest going between activities and discussions. There was a difficult balance to achieve at times to provide information material to capitalize on the dialogue process while still recognizing that the information represented preliminary results that still might change.

Targeted investment material was also produced that included suitability situational reviews, feasibility information, score cards and tools for further analysis. These are expected to help attract future investors.

## Monitoring, evaluation and learning

Monitoring and evaluation (M&E) and learning processes provided essential feedback, not only to the research but also to the uptake approach. This was in place throughout the project and resulted in adaptation accordingly during its life span.

### Key factors that led to uptake

- Extensive engagement with stakeholders throughout the research phase.
- Engagement by close participation and partnering led to ownership of the recommendations and solutions.
- Tapping into the networks of the project team members was important to be able to engage key influencers and open doors of decision makers.
- Research and uptake efforts were not mutually exclusive.
- Placing significant resources into uptake during and after the research phase.
- Having flexibility with the use of resources to be able to further develop and adapt the uptake efforts.
- Monitoring and evaluation across the uptake efforts were helpful to be able to adapt.
- Internal communications and coordination.
- Science-backed information material helped to provide credibility to the uptake efforts.

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*Note:* this case study was based on perception surveys with some key project staff and further supported with published material. It is recognized that there was a larger group of key individuals involved in this project, whose contributions assisted towards the successful uptake of the solutions recommended.

Perception interviews conducted with:  
Dr. Meredith Giordano, Principal Researcher (formerly Co-Project Manager, AgWater Solutions), IWMI, Colombo, Sri Lanka  
Alexandra Evans, formerly Strategic Science Uptake Coordinator, IWMI, Colombo, Sri Lanka  
Elizabeth Weight, Global Science Uptake Coordinator, IWMI, Colombo, Sri Lanka

Also based on AgWater Solutions Project n.d.a., n.d.b., n.d.c; and IWMI 2012c.

The success of this project can be attributed to a dedicated team of scientists and other specialists who unfortunately are too many to be able to list individually or even by organization. They are, however, listed in the project's synthesis publication (see Giordano et al. 2012).

## Case study 9: Access to shared water resources between shrimp and rice farmers

### The research and the adoption

A water system and sluice gates controlled the brackish water and freshwater delivered to shrimp and rice farmers, respectively, in the Mekong River Delta of Vietnam. This was a shared water system, and conflict arose among farmers about getting the right water at the right time. The conflict peaked when some shrimp farmers broke a dam in 2001 and the issues continued without accepted solutions.



### Rice and shrimp farmers have different needs when it comes to water

The provincial authorities asked IWMI to assist with finding a solution to this problem. In 2003, IWMI and the International Rice Research Institute (IRRI) developed a new project to look at this problem, combining the research work already being undertaken with the same farmers. The research reviewed farmer needs, water availability and the options available given the existing infrastructure. IWMI ran a model on different scenarios with different sluice gates being open at different times and was able to develop a solution to the conflict. This was a plan for the best way to operate the sluice gates to satisfy the farmers' needs.

It took about 6-12 months to come up with a solution. The farmers tested the solution before it became fully operational. The solution provided a plan for the operation of the sluice gates so as to allow the appropriate water through to satisfy farmers' needs. To support this, there were also recommendations for a revised land-use plan. A hydraulic and salinity model for the Vietnam River Systems and Plains (VRSAP) was refined and new functions were added for analysis of different options in sluice-gate operation for taking brackish water into freshwater zones.

As a result of this research, the government also reviewed and made changes to its land-use plan by agreeing to stop the expansion of rice crops into an area of acid sulphate soils, which had been part of a plan developed in the 1990s. Instead, the government let saline water flow into this area to support shrimp farming. During 2003-2006, IWMI monitored the activities as part of a formal funded project.

### **The uptake efforts undertaken**

The uptake plan was consciously thought through and designed at the beginning of the project, with the aim that it would assist with a greater chance of adoption of the recommendations. IWMI had various meetings with the different organizations involved – those which would be important to make any changes necessary for adoption of the solutions. It was important to stimulate change at the national level, as well as provincial and farmer levels. All needed to be on board to make the changes.



### **Targeting the farmers**

IWMI worked directly with the farmers in eight locations, visiting them to understand their needs and contributing to water management experiments with farmers on their property while there. IRRI worked with the Can Tho University of Vietnam and undertook experiments on farm with the farmers on the modified land-use options in the study areas.

The uptake efforts of the solution involved role-playing games with farmers. This included playing the role of a shrimp farmer and a rice farmer to understand how actions of one farmer would affect the other and how farmers deal with these effects. These role-playing sessions were conducted in three villages, at three locations, with different characteristics: dominant freshwater, buffer zone between freshwater and brackish water, and dominant brackish water. After the first round of role-playing sessions, the farmers from the three villages were brought together. These role-playing sessions were all facilitated by a Vietnamese PhD student with the assistance of other students and local authorities.

### **Targeting the government through engagement**

IWMI worked with the Southern Institute for Water Resources Planning (SIWRP) for the modeling work. Partnering with the government on analyzing and developing solutions helped with acceptance of the solution. IWMI also spent significant time talking with the government (province authority) staff who operate the sluice gates. This was important for the sluice gate operators to feel part of the project



and solution, accept change and understand the ramifications of the sluice gates. IWMI also engaged SIWRP and government extension officers.

### **Capitalizing on established international and national networks, and reputation**

In this work, IWMI collaborated with IRRI and the WorldFish Center, which are international research organizations that were already undertaking work in these areas of Vietnam, and had established local and national partnerships and gained the confidence of the Vietnam Government, in particular, the provincial authorities in the study area. IWMI collaborated with universities and students in carrying out this work, and also ran experiments on farm with the farmers.



**“Foreigners were accepted as advisors but only nationals were deemed suitable for presenting solutions”**

IWMI researchers had worked extensively in this delta and had data available, long-term experience and relationships built. The Institute also had recognition as being a specialist in conducting research in water management.

IWMI’s head scientist and project leader was Vietnamese, which was critical in the recommendations being accepted by both the farmers and the government. Although the government accepted foreigners as technical advisors, they did not believe that foreigners could understand them and develop a solution that would work for their environment. As a result, foreigners needed to carry out work together with Vietnamese individuals in order to achieve adoption of any solutions. It was important to have Vietnamese involvement at both the research level and during uptake efforts for the possibility of acceptance of any solutions.

### **Capacity building**

Capacity building was an important part of the approach that led to adoption. This involved capacity building of: government extension officers through workshops; government sluice-gate operators through workshops; farmers through the role-playing exercises; and Vietnamese students through their experience and direction given on the project.

### **Lessons learned**

The elements that contributed to this project’s success are as follows:

- It was not just a case of luck of IWMI being in the right place at the right time. The success was due to the Institute having already developed relationships, built a reputation and having a presence in the area.
- Involvement of stakeholders in developing the solution was needed from the outset and throughout the research to be able to achieve adoption. The research and uptake were intertwined.
- Achieving adoption of the solution required not just having a technical solution but dealing with the emotional side of the issue between the farmers.

- The research and uptake piggybacked on projects and partnerships already established with the targeted stakeholders.
- IWMI and the partnered international organizations already had an established reputation, network and presence in Vietnam.
- IWMI was recognized as being a specialist in conducting water management research – the core of the problem that existed – and was thus respected for any technical solution.
- Vietnam culture meant that foreigners could be technical experts, but for adoption it was essential that locals were involved in developing the solution as well as during the efforts for uptake.
- The issue was high on the political agenda, which played an important role in solutions being sought out and accepted.

### Key factors that led to uptake

- The R4D organization already having developed relationships, a reputation and a presence in the area.
- Involvement of stakeholders in developing the solution.
- The research and uptake were intertwined.
- Having a technical solution and also dealing with the emotional issues between farmers.
- The research and uptake piggybacked on projects and partnerships already established.
- The R4D organization and partners already had an established reputation, network and presence in the country.
- Recognition of the R4D organization as a specialist in the core issue.
- The involvement of locals in developing the solution as well as the uptake efforts.
- The issue being high on the political agenda.

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*Note:* This case study was based on perception surveys with key project staff. It is recognized that there was a larger group of key individuals involved in this project, whose contributions assisted towards the successful uptake of the solutions recommended.

Also based on IWMI 2013.

Perception interview conducted with:

Dr. Chu Thai Hoanh, Principal Researcher – Water Resources, IWMI, Vientiane, Lao PDR

Key individuals involved in this project and whose contributions assisted towards the successful uptake of the solutions recommended are:

Dr. Chu Thai Hoanh, Principal Researcher – Water Resources, IWMI, Vientiane, Lao PDR

Dr. To Phuc Tuong, Principal Researcher, International Rice Research Institute (IRRI), Los Baños, Philippines

Dr. Kam Suan Pheng, Senior Researcher, WorldFish Center, Penang, Malaysia

Dr. Eric Baran, Senior Researcher, WorldFish Center, Penang, Malaysia

Dr. Ngo Dang Phong, Postdoctoral Fellow, IRRI, Los Baños, Philippines (formerly at Nong Lam University, Vietnam)

Dr. Duong Van Ni, Lecturer, Can Tho University, Vietnam (formerly, Director of Hoa An Research Biodiversity and Community Development Center, Vietnam)

Dr. Le Canh Dung, Lecturer, Can Tho University, Vietnam

Mr. Nguyen Xuan Hien, Deputy Director, Southern Institute for Water Resources Planning (SIWRP), Vietnam

Mr. Diep Chan Ben, Deputy Director, Department of Agriculture and Rural Development (DARD), Bac Lieu Province, Vietnam

## Case study 10: Influencing the use of wetlands globally

### The research and the adoption through a global platform

There was a sharp separation of agriculture and the environment in research and policy worldwide. The Ramsar Convention on Wetlands and other conservation groups, for example, the United Nations Environment Programme (UNEP) and WI, have traditionally focused on the ‘conservation’ of, as opposed to the ‘sustainable use’ of, natural resources.

The Director General of IWMI, at the time, saw this separation as being unproductive. He believed that it was possible and also important to humankind, especially the impoverished, to use natural resources sustainably while still keeping a healthy ecosystem. He felt it was important to influence this agenda and approach.

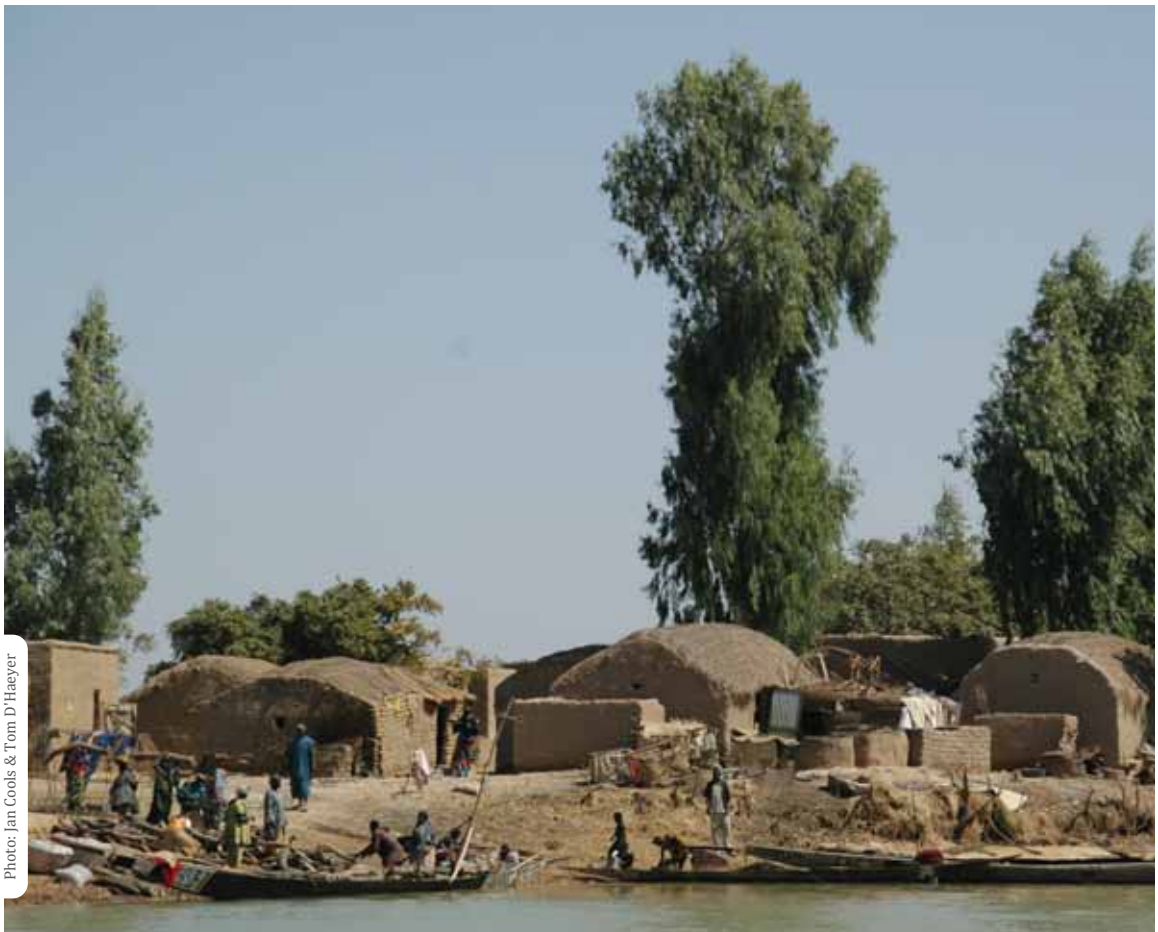


Photo: Jan Cools & Tom D'Haeyer

### Sustainable use of wetlands helps support inhabitants while keeping aquatic ecosystems healthy

The Director General wanted to change these views and set about with a strategy to influence the global agenda, and research and policy around the world. This included creating a research program at IWMI focusing on the same topic; starting the international Dialogue on Water and Food; incorporating these issues in the *Comprehensive Assessment of Water Management in Agriculture*, as well as on the agenda of

a new research program he initiated (CPWF); IWMI joining IUCN; and ultimately becoming an IOP of the Ramsar Convention on Wetlands.

The objective to become an IOP of Ramsar was particularly challenging and required a strategy on its own. The Ramsar Convention was established to conserve wetlands. In contrast to IWMI, the other IOPs were all conservation organizations that had a mandate that was not orientated to conservation but explicitly focused on livelihoods and poverty alleviation.

After a long and detailed process, IWMI was accepted as an IOP of Ramsar and has successfully shifted the discourse both within Ramsar and on the international agenda to one of sustaining ecosystem services.

By being an IOP of Ramsar, IWMI has also been able to influence and provide input into a number of Ramsar resolutions that have been passed, and have, at least in principle, been adopted in the policy of all the 158 signatory member countries.

IWMI has provided detailed information and helped create the following resolutions:

- An Integrated Framework for linking wetland conservation and wise use with poverty eradication (Resolution XI.13).
- Agriculture-wetland interactions: rice paddy and pest control (Resolution X1.15).
- Streamlining procedures for describing Ramsar Sites at the time of designation and subsequent updates (Resolution XI.8).
- Biogeographic regionalization in the application of the *Strategic Framework for the List of Wetlands of International Importance*: scientific and technical guidance (Draft Resolution X.20).
- Wetlands and “biofuels” (Draft Resolution X.25).

IWMI also submitted comments on several other resolutions:

- Ramsar Strategic Plan 2009-2014 (Draft Resolution X.1).
- Refinements to the *modus operandi* of the Scientific & Technical Review Panel (STRP) (Draft Resolution X.9).
- Wetlands and human health and well-being (Draft Resolution X.23).
- Wetlands and poverty eradication (Draft Resolution X.28).
- Enhancing biodiversity in rice paddies as wetland systems (Draft Resolution X.31).

The efforts and connections made to become an IOP of Ramsar have also led to new and long-lasting research collaborations. This is recognized through scientific publications. Last year alone, IWMI scientists published three scientific journal papers with the key scientist who had assisted the Institute collaborate with Ramsar, even though he left IWMI five years ago. These journal papers included the following:

- A study of wetland hydrology and ecosystem service provision: GaMampa wetland, South Africa. *Hydrological Sciences Journal* 56(8): 1452-1466.
- The Lukanga Swamps: Use, conflicts and management. *Journal of International Wildlife Law & Policy* 14: 293-310.
- The application of geospatial analyses to support an integrated study into the ecological character and sustainable use of Lake Chilwa. *Journal of Great Lakes Research* 37: 83-92.

Two more journal papers were being worked on as this report was put together.

There were also corporate benefits of becoming a Ramsar IOP, which included building on IWMI's reputation with a wider community and strengthening its scientific credibility.



Photo: Courtesy of WETwin

**As a Ramsar IOP, IWMI has been able to influence policy on sustainable land use in wetlands**

### **The uptake efforts undertaken**

There was a clear overall goal set for IWMI to become a member of Ramsar to influence global policy making. A clear strategy was developed to achieve this goal. This was the vision of, and driven by, the Director General of IWMI, which allowed having strong institutional support behind the efforts needed to achieve the goal.

Before being accepted as a member of Ramsar, IWMI scientists were requested to attend the Ramsar technical meetings as observers and contribute technical advice freely to Ramsar, in order to build the Institute's reputation. The flexibility of resources and time needed by staff to contribute was provided. IWMI scientists were selected to attend as observers to the international body. They were expected to put themselves in the spotlight, and speak and offer assistance on the technical analysis that was required to be undertaken. High-level staff were involved to show commitment from IWMI, as well as more junior staff to build long-term sustainability. Staff from different disciplines were selected to ensure a wider, as well as a more holistic, contribution.

Having the right contacts, reputation and understanding of the political environment were critical contributions that were all necessary. A person was headhunted and recruited as a staff member for his

contacts and knowledge of the subject matter, as well as for his understanding of the political environment of Ramsar. It took years to attract the appropriate person. This was a long-term vision which meant that the organization was prepared to wait for the right people and timing to act.

This issue of ‘conservation’ versus ‘sustainable use’ was already on the global agenda, but the Director General of IWMI elevated this issue through proactive contributions by way of public communications and use of the media. The approach was also important, which was positive and not antagonistic. Influential individuals were also targeted and communicated with directly.

When IWMI put forward its nomination to be a member of Ramsar, the loud negative opposition from the conservative conservationists actually worked in the Institute’s favor by bringing the issue of sustainable use of wetlands higher on the agenda. IWMI had a good case backed by scientific thinking and documentation. IWMI’s reputation and scientific credibility also helped. This had been proactively built with the target audience over time.

The approach undertaken to become an IOP of Ramsar included building IWMI’s reputation and contact list through volunteering and undertaking research as an observer of Ramsar. This helped to “prove IWMI’s worth”. The uptake and research were, therefore, intertwined.



**“ The issue of ‘conservation’ versus ‘sustainable use’ was already on the global agenda but the Director General elevated this issue ”**

Becoming a member of Ramsar provided a channel for IWMI’s research results to influence Ramsar Conventions and enabled quicker action to be taken on research results.

### **Lessons learned**

- There was a very deliberate strategy to influence the global agenda which was followed through carefully and led to success. Success was not based on one action or being in the right place at the right time.
- The success shows the value of being members of key selected bodies as part of an uptake strategy to assist with adoption of research recommendations. This has led to IWMI being able to have its research results used to influence policies. It has also meant a faster time period for the research results to be adopted, i.e., faster time to market, and has further enhanced IWMI’s reputation.
- Having the right contacts (and recruiting the right people, especially, to achieve this) was critical, along with building targeted relationships.
- Understanding the internal politics was important to select the appropriate course of action.
- It was better to take longer and ensure the time was right and appropriate tactics were in place.

- The uptake strategy selected incorporated a plan for sustainability of IWMI’s ability to continue to influence Ramsar. This was achieved through involving junior, as well as the senior, staff.
- Making a commitment to the strategy was important.
- Ensuring the staff had the time, resources and flexibility to react and adapt was necessary.
- Scientific information and backing was needed to support the case.
- The issue needed to be on the agenda, and proactively influencing this agenda through broad communications and the media was effective.
- Broad as well as targeted communications were used, complementing each other.
- The research and uptake were intertwined, as undertaking research contributed to building a reputation as well as building the relationships that were needed for the strategy.

### **Key factors that led to uptake**

- The existence of a deliberate strategy with actions planned to influence the global agenda.
- The value of the R4D organization being part of key selected bodies and its involvement in relevant committees/organizations.
- Having the right contacts and building targeted relationships.
- Understanding the internal politics helped to select the appropriate course of action.
- Ensuring that the appropriate people/activities were in place even if this meant taking a longer time.
- Involving junior, as well as the senior staff, helped to achieve a plan for sustainability of the R4D organization’s ability to continue to influence.
- Making a commitment to the strategy.
- Ensuring that staff had the time, resources and flexibility to react and adapt was needed.
- Scientific information and backing to support the case.
- The issue being on the political agenda, and proactively influencing this through broad communications and the media.
- The use of broad as well as targeted communications.
- The research and uptake were intertwined.

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*Note:* This case study was based on perception surveys with key project staff. It is recognized that there was a larger group of key individuals involved in this project, whose contributions assisted towards the successful uptake of the solutions recommended.

Perception interviews conducted with:

Dr. Frank Rijsberman, CEO, CGIAR Consortium (formerly Director General, IWMI)

Dr. Max Finlayson, Director, Institute for Land, Water and Society, Charles Sturt University (formerly Theme Leader – Water Management and Environment, IWMI, Colombo, Sri Lanka)

Dr. Matthew McCartney, Principal Researcher – Hydrologist and Office Head, IWMI, Vientiane, Lao PDR

Key individuals involved in this project and whose contributions assisted towards the successful uptake of the solutions recommended are:

Dr. Frank Rijsberman, CEO, CGIAR Consortium (formerly Director General, IWMI)

Dr. Max Finlayson, Director, Institute for Land, Water and Society, Charles Sturt University (formerly Theme Leader – Water Management and Environment, IWMI, Colombo, Sri Lanka)

Rebecca Tharme, Senior Aquatic Ecologist, The Nature Conservancy, Derbyshire, United Kingdom (formerly Theme Leader - Water Management and Environment, IWMI, Colombo, Sri Lanka)

“ It is important to ensure staff have the time, resources and flexibility to react and adapt when needed ”







### Developing strategies for uptake

Each case study was analyzed for how it approached its uptake efforts. This included whether the initiative made proactive efforts to achieve uptake of its outputs, whether these efforts were part of a formally developed uptake strategy, and whether there was a formal monitoring and evaluation process to feedback into the uptake strategy for further development. This information is collated in Table 2.

**Table 2: Preparation of uptake strategies by each case study**

(Note: 4a = national uptake; 4b = global uptake)

Case study	1	2	3	4a	4b	5	6	7	8	9	10
Uptake strategy formally put together and documented									●		
A monitoring and evaluation process was included to feedback into the uptake efforts									●		
Uptake efforts proactively worked on	●	●		●	●	●	●	●	●	●	●

Only one case study formally prepared and documented an uptake strategy. This was also continually monitored and revised with a formal M&E process. This was driven by the donor (the Bill & Melinda Gates Foundation) which is not a traditional R4D donor, and is highly focused on achieving adoption and impact, and having clear strategies to ensure this happens. As a result, there was budget and time allocated to this and support given throughout the project.



Photo: Sharni Jayawardena/IWMI



Photo: Jim Holmes

### Each case study was analyzed for how it approached uptake

No other case study formally documented an uptake strategy. However, all but one study had a specific adoption objective and proactively undertook uptake efforts to achieve this. The researchers saw this as being important, and dedicated time and resources accordingly.

One project did not have any form of uptake strategy or any specific R4D objectives and treated the work as a contribution to science. However, through its traditional scientific dissemination activities, the work was promoted and communicated widely and recommendations were adopted that influenced development.

Although only one project had a formal M&E process in place, most other projects were informally monitoring the environment and uptake, and adapting accordingly.

## Uptake activities

The main uptake tools, activities and approaches that were perceived to be effective were collated and are summarized in Table 3. Key findings from analyzing this table and the detailed case studies follow.

**Table 3: Uptake activities, tools and approaches that contributed to adoption**

(Note: 4a = national uptake; 4b = global uptake)

Case study	1	2	3	4a	4b	5	6	7	8	9	10
Relationships: developed for the project		●		●			●		●		●
Relationships: that were long-term	●	●	●		●	●		●	●	●	●
Relationships: from personal contacts		●	●					●	●		●
Relationships: that were corporate (IWMI)-based	●					●		●	●	●	●
Collaboration undertaken for the project	5					●	●		●	●	
Partnerships formed for the project	5				●	●	●	●	●		
IWMI's corporate reputation as being scientifically credible	●					●	●	●	●	●	●
Personal reputation of project staff being credible								●	●		●
Targeted communications	●	●	●	●	●	●	●	●	●	●	●
Mass communications			●						●		●
Communications information material				3					●		
Scientific information material		1	2				●		●		●
Scientific backing to the recommendations and solution	●	●	●	●	●	●	●	●	●	●	●
Willingness for someone else to take ownership		●							●		
Local/national person as the front person								●	●	●	
Capacity building				●		●		●	●	●	
Internal communications (with the project team)									4		

- 1 It was important that the information materials were open access.
- 2 It was important that the information materials were published in the popular scientific press.
- 3 Required for the ability to adopt, but not key to making a decision to adopt.
- 4 This project had the largest and most complex project team.
- 5 This did not assist with the initial 'trigger' to adopt solutions. However, it was believed that it assisted with the specific solutions recommended being adopted, as these had been developed together with the adopting party.

## Relationships and stakeholder engagement

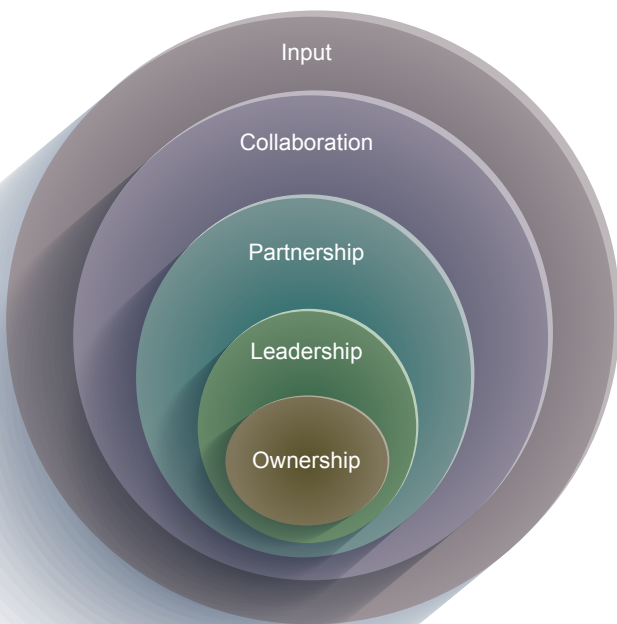
Relationships and stakeholder engagement were key elements of the uptake efforts. These were critical and led to adoption in all cases. Developing strong relationships based on trust and reputation was important and mostly required a long period of time (more than the life span of one project) to be achieved. However, existing relationships could not always substitute the need for new relationships required for different projects. New relationships were sometimes fast-tracked through the use of secondary contacts.

## Levels of engagement

Five levels of engagement were identified from the case studies and are compiled in Figure 2. The broadest level of engagement that was used was when stakeholders were asked for their ‘input’, opinions and technical advice through discussions. This was often extended to closer engagement through ‘collaboration’, where a stakeholder contributed part of the project research or uptake activities. ‘Partnership’ was just as commonly applied where stakeholders were formal project team members and they also contributed to the project management decisions. In a few projects, key stakeholders also took a ‘leadership’ role, being formal representatives of the project and recommendations. The ultimate form of engagement was when stakeholders took ‘ownership’ of the recommendations. This was sometimes planned and in one case was not. Ownership was sometimes taken by someone or an organization that had been closely engaged in the project, and sometimes by an external stakeholder who had been brought on board through relationship building or through the use of an influencer.



Figure 2: Levels of engagement applied



The engagement was undertaken for dual purposes – to gain more understanding of the environment to develop the most appropriate solution and for uptake purposes. Even the highest level of engagement, ownership, was regularly cited as being key to adoption.

### Who was engaged?

There was significant variation in the range of stakeholders engaged, as seen in Table 4. Approximately half the projects engaged a range of stakeholders from different sectors, while the other half focused on one key sector. The breadth of stakeholders involved was correlated with the breadth of the project objectives.

The direct adopters within a sector (e.g., policymakers) were usually targeted; however, key influencers were often used to reach them. Engagement with the broader stakeholder group, within a sector or across a sector, was recognized as being important for having a better solution and also for the adopter to accept the solution.

**Table 4: Breadth of key stakeholders targeted that specifically contributed towards adoption**

(Note: 4a = national uptake; 4b = global uptake)

Case study	1	2	3	4a	4b	5	6	7	8	9	10
A very wide range of stakeholders				●			●		●		
A few stakeholders								●			
Farmers and policymakers/the government										●	
Policy stakeholders (the government or international intergovernmental body)	●	●			●	●					●
R4D network			●								

The key stakeholders targeted that specifically contributed towards adoption are detailed further here:

Case 1: The government was targeted to change policy and help farmers.

Case 2: The government was targeted to make policy change.

Case 3: The researchers used their own existing R4D networks of scientists and development agencies to adopt changes.

Case 4a: All relevant stakeholders were approached, including NGOs, national government, local authorities and development agencies.

Case 4b: The researchers directly targeted WHO to influence the organization’s guidelines.

Case 5: The government was targeted to change policy.

Case 6: Individuals and organizations directly involved in changing the policy were targeted.

Case 7: Farmers and the government were targeted to change practices and provide support.

Case 8: All stakeholders (the government, farmer groups, private industry, NGOs and donors) were targeted for a wide variety of purposes.

Case 9: Farmers and the government were targeted to implement new practices and policies.

Case 10: Influencers and relevant organizations were targeted.

### Ownership

The success of two of the case studies was highly dependent on others taking ownership of the process or solutions recommended.

In case study 2, based on influencing policy change in India, direct influence was tried but failed. Eventually, the senior ministerial member could only be reached through an ‘influencer’ who was known to both parties. This person became an ambassador for the solution and was recognized as the owner of the solution, without referencing or giving recognition to the researchers or their organization for developing the solution. It was important to allow this to happen as it was key to achieving policy change.

For case study 8, a wide range of stakeholders along the value chain was targeted, and local/national organizations were partnered with in carrying out the research. This approach was believed to be critical for locals to take ownership of the solutions and increase the chances of adoption. This was very effective and the local partners are now keeping the uptake efforts going, even after completion of the project.

### **Local/national leadership**

Three case studies required a local/national person to be the front representative or perceived leader of the initiative, as opposed to a foreigner, if any success in adoption was to take place. This was essential in these cultures.

In case study 7, without this, the local stakeholders would not have given any attention to the solution. This was irrespective of the solution being considered a 'sure winner' because it was a simple, cost-effective solution that had been proved to increase farmer yields by tremendous amounts. Also, the farmers were already aware that they had a significant problem looming if they could not find a solution. In this situation, the local 'front person' was a project team member but not the person who had directly developed the solution or managed the project.

In case study 9, it was essential for a local/national to be the leader and the main person working with the stakeholders. The cultural view was that foreigners could not possibly understand the local situation, and only a local person would be able to build the required credibility that would lead to adoption.

Case study 8, as mentioned above, proactively pursued developing local engagement and leadership to build ownership and thereby positively influenced adoption of the solution.

### **How stakeholders were engaged**

The government and, specifically, policymakers were a key target audience for adoption in most of the case studies. Three main successful ways were identified to ensure these parties were engaged: direct communications and long-term relationship building with high-level influencers or adopters; collaboration and partnering on the research; and providing training for both the medium/high-level policymakers and the partner/collaborator researchers.

Broader stakeholder groups, e.g., farmers, were carefully selected and engaged with mainly throughout the research, through partnerships, collaboration, training, and general engagement and communications. Mass communications was prevalent in one case study and training in two of the case studies.

The training undertaken was very closely related to the uptake objectives. Training and capacity building fulfilled different purposes, including giving support to the adoption<sup>4</sup>, targeting key influencers, relationship building<sup>5</sup> and convincing adopters of the value of the solution<sup>6</sup>. Capacity building that involved sharing knowledge across national boundaries was recognized as contributing to influencing stakeholders of the value of solutions, in the few cases it was applied; providing technically sound and credible information was viewed as being relevant.

### **Targeted approach versus broad participatory approach**

Roger's innovation adoption curve identified adopters in different categories from innovators to early adopters, early majority, late majority and laggards. It is recognized from this model that radical new ideas

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<sup>4</sup> Case studies 4a, 7 and 9

<sup>5</sup> Case studies 5

<sup>6</sup> Case studies 7 and 9

are best at initially targeting innovators and early adopters (Value Based Management.net 2012).

In the case studies, typically, a combined targeted and participatory approach was taken and, in some cases, early innovators were identified and targeted for participation. There was some hesitation for participation mainly due to scientists being concerned about building expectations or having preliminary research results known before they were verified.

This challenges the theory of participatory research, which promotes open engagement purporting that this will lead to better adoption. However, this targeted approach combined with the participatory approach (targeted-participation) supports the participation of stakeholders in the research for the benefit of better adoption, but recommends targeting early innovators.

### Targeted versus mass communications

As defined by the BusinessDictionary.com (2012), mass communications is the “delivery of messages to the general public by utilizing mass media such as national press, radio and television.” Only three of the case studies undertook mass communications<sup>7</sup>. Out of these, mixed benefits came from using mass communications. In one case study, the mass communications were highly effective, leading directly to adoption; one case study team believed mass communications to be important to support the other uptake efforts; and the researchers of the other case study were not sure how effective mass communications would be in most of their situations.



“Capacity building fulfilled different purposes, giving support for adoption”

In case study 3, mass communications directly led to adoption of the research recommendations. The scientists targeted organizations within the R4D sector, e.g., developed country governments/donor agencies and the scientific community. The project communicated messages through traditional means such as presentations and scientific publications, especially in the popular professional press. These are channels readily accessed and followed by the targeted sector.

In case study 8, mass communications were ‘thought’ to be helpful, but the project leader was not certain as to what extent it contributed to adoption. In this situation, the project placed the majority of its efforts towards targeted communications that were perceived as the major contributor to adoption. However, in one of the countries, mass communications directly complemented the targeted uptake activities and supported adoption of the research recommendations.

In case study 10, mass communications were believed to be an important support to the other targeted uptake efforts.

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<sup>7</sup> Case studies 3, 8 and 10

In case study 1, mass media had a direct impact on the key stakeholder group – the government. Although the project team did not instigate the media coverage, it was this that became the major contributing factor for the action taken by the government. The media was highly effective in this case because of the highly political nature of the issue.

Only two case studies reported producing communications material. One case study<sup>8</sup> produced the material for a training targeted to a specific audience. This was considered as being a necessary ‘contribution’ to achieve success. The other case study<sup>9</sup> produced general communications material such as posters and flyers that were suitable to a broad range of stakeholders. However, the project leader was not convinced as to how much this contributed to adoption of the solution.

### Scientific quality, backing and credibility

Successful adoption, in all cases, required scientific backing, which is based on quality science. Two other areas that were commonly found to be important were the scientific material and the scientific reputation of the organization involved. On their own, these did not achieve adoption but they were essential for adoption.

### Triggers

From the analysis it was identified that success was often a dedicated long ‘process’ and sometimes also had a key ‘trigger’ that caused a turnaround in the situation from poor adoption levels to major success in adoption.

In every case study there were many activities and environmental situations that contributed to adoption. It was always a web of these activities and situations, and they were often interdependent in achieving success. In addition to this, there were often ‘triggers’ – something that happened either outside of the project or by the project team that caused a turnaround in the research efforts or recommendations suddenly getting the attention that was required for adoption.

Each case study was analyzed to check whether success was based on a process or whether there were also key triggers that caused the success. These are collated in Table 5. The trigger in one case study was based on the media bringing a politically sensitive issue to the attention of the general public. In the other three of the four case studies that had triggers, these were initiated by the project team. These triggers were based on contacts and relationships.



Photo: Ikuru Kawajima

<sup>8</sup> Case study 4  
<sup>9</sup> Case study 10

**Table 5: Process versus triggers**

Case study	Key elements of the process	Key triggers	Description
1		<ul style="list-style-type: none"> <li>• Media</li> <li>• High on the political agenda</li> </ul>	The media finding out about the problem and influencing public opinion caused the issue to be brought on to the political agenda. This then led the government to look for solutions.
2		<ul style="list-style-type: none"> <li>• Personal contact</li> <li>• A key influencer becoming an ambassador</li> </ul>	A personal contact was approached who had access to a key high-level policymaker. This policymaker was convinced of the solution, and became an ambassador for, and took ownership of, the solution.
3	<ul style="list-style-type: none"> <li>• Topical</li> <li>• Counterintuitive solution</li> <li>• Scientifically backed</li> <li>• Promoted through the popular scientific press</li> <li>• Personal connections</li> </ul>		A particular trigger was not identified for this case study. There were key elements involved, including that the issue was topical; the research results were counterintuitive, which gained more attention; the results were broadly promoted through the popular scientific press; and some connections the lead researchers already had.
4a	<ul style="list-style-type: none"> <li>• Networking</li> </ul>		A particular trigger was not identified, but key to the adoption was the personal networking the researcher undertook.
4b		<ul style="list-style-type: none"> <li>• Success story and scientific evidence as proof</li> <li>• Personal contact</li> </ul>	Adoption was very fast once there was a successful case study with scientific backing, and a personal contact was developed in the adopting agency.
5	<ul style="list-style-type: none"> <li>• Relationship building with targeted high-level officials</li> <li>• Capacity building with targeted high-level officials</li> </ul>		A specific trigger did not exist in this case study of influencing policy in India. There was a long process and many activities contributed to achieving this success. However, one key element was the relationship building, which targeted high-level government officials. Capacity building with these high-level officials was also unique in this situation.
6		<ul style="list-style-type: none"> <li>• A key influencer becoming an ambassador</li> </ul>	A key influencer was engaged and took on the cause, which was key to quicker adoption.
7	<ul style="list-style-type: none"> <li>• Local/national person perceived as being better to lead</li> <li>• Strong personal relationships</li> <li>• Working with early innovators</li> </ul>		There was no specific turnaround point or trigger for adoption. However, some of the key elements that were unique and critical for success were: a local person seen to be leading; strong personal and trusted relationships; and working with early innovators.
8	<ul style="list-style-type: none"> <li>• Engagement and partnership</li> <li>• Engaging influencers</li> </ul>		There was no key turnaround point or trigger. However, important to the adoption was the engagement and partnership with stakeholders; and using high-level contacts to influence the decision makers.
9	<ul style="list-style-type: none"> <li>• Previous long-term relationships</li> <li>• Participation with stakeholders</li> <li>• Capacity building</li> <li>• Led by a national/local</li> </ul>		This was a process based on: long-term relationships already built; working closely with all stakeholders throughout the research, including building capacity; and the project had to be led by a local/national.
10	<ul style="list-style-type: none"> <li>• Building a strong scientific case</li> <li>• Proactively bringing the issue higher on the global agenda</li> <li>• Building a reputation with, and helping, the deciding body</li> <li>• Engaging a key influencer</li> </ul>		There was a careful strategy with many key elements, which included: building a clear scientific case; proactively bringing the issue higher on the global agenda; and building a reputation with, and helping, the deciding body; and engaging a key influencer who had the contacts and knew the political system (particularly critical).



## Timing of the uptake

The case studies were collated in Table 6 according to when the main contributing uptake activities were undertaken. Uptake undertaken during the research phase and post-research phase dominated, and was seen as being very important, in most cases, for adoption. Uptake during the research phase was identified as being important for many reasons, especially engagement to build an understanding, knowledge and belief in the solution, create ownership, and because of the time needed to build stakeholder contacts and relationships. Uptake continued post-research because the targeted adoption had not yet been achieved. It was common for this to take years and required commitment and follow-up.

**Table 6: Timing of the uptake**

(Note: 4a = national uptake; 4b = global uptake)

Case study	1	2	3	4a	4b	5	6	7	8	9	10
Pre-research phase											1
Research phase	1					1	1	1	1	1	
A launch											
Post-research	1	1	1	1	1	1	1	1	1	1	
	1								2		3

- 1 Uptake efforts were undertaken during the research, launch and post-research phases; however, these did not have any impact until the political agenda changed. Then, the engagement with stakeholders and beneficiaries, and the long-term relationships were valuable and helped towards adoption of the solutions.
- 2 A global launch was being planned for this project. In the meantime, post-project uptake efforts were being undertaken at the national level.
- 3 The efforts made for this initiative were outside of a research project, but assisted in future projects being able to more easily achieve adoption.

Where relationships were significant for adoption, it was noted that it was important to start uptake efforts during the research phase as it takes time to build relationships. It was also recognized that it was important to engage with stakeholders during the research phase when the target market was for a specific country, region or state. An alternative to this is, for example, case study 3, which had a broader global market it was targeting and did not build relationships with most of the major adopters. Case study 4 was an emergency situation and so adoption in Sri Lanka (4a) was not based on long-term relationship building.

It was also recognized that there is a thin line between what research is and what uptake efforts are - the two were often intertwined and an effort for one helped the other too. Examples include the participatory approach, which assists towards not only better inputs for the research but also building ownership of the process and the results.

## Implementation of the uptake approach

Where relevant, the McKinsey 7-S approach was applied to each individual case study to identify which factors were believed to be the major components that contributed to effective implementation.

Only one case study<sup>10</sup> had a formal implementation of its uptake strategy. It was also the only case study with a formally written uptake strategy and the only one that brought in some uptake-related skills, which were included as part of the structure of the core project team. This was the only project to set up systems for uptake, including internal communication tools and some standardized mass communication tools; and to have a formal monitoring and evaluation process, which monitored the uptake activities and led to adjustments according to the feedback.

Nine of the ten case studies had uptake objectives that were also shared values among the project team to achieve adoption, and these were reflected in the project management style.

Only one case study<sup>11</sup> highlighted internal communications as being key to its success in adoption of the recommendations. This project proactively engaged the widest range of stakeholders and had the greatest variation in roles that were undertaken by stakeholders, ranging from research partners to ambassadors, national focal points, national dialogue facilitators, etc. The project also worked across six countries and shared technologies, practices and lessons learned across these sites. When other interviewees were prompted, they often mentioned that internal communications were important but it was this more complex project that was the only case study to emphasize its importance.

### Environmental factors influencing adoption

Environmental factors, external to the project that influenced adoption, were also identified during the interviews and are listed in Table 7. The major external factor, which was existent and influential in eight of the ten case studies, was the relevant issue/need being high on the agenda of the stakeholder. However, this did not automatically result in easy or quick adoption. Significant uptake efforts were still required and, in many cases, a number of years were needed to achieve adoption.

The other environmental factor identified was that, in two cases, an adopting stakeholder requested the research to be undertaken and solutions to be identified. In case study 3, this led to immediate adoption by the requesting stakeholder, whereas in case study 9, there were many other stakeholders involved and major uptake efforts were still required.

**Table 7: Environmental factors that influenced the adoption**

(Note: 4a = national uptake; 4b = global uptake)

Case study	1	2	3	4a	4b	5	6	7	8	9	10
Issue needed to be high on the agenda of the stakeholder											
IWMI was requested by the adopting stakeholder to assist with the specific problem											

<sup>10</sup> Case study 8

<sup>11</sup> Case study 8

**“ Monitoring and evaluation  
provides essential feedback for the  
uptake approach ”**



## Chapter 4: Conclusions and recommendations



There were many lessons learned from the findings of this study that will be useful for having greater success and impacts from R4D research. These conclusions and recommendations follow.

### Develop strategies for uptake

The literature review showed that uptake is often not recognized as a specialized skill and not incorporated as a multi-disciplinary or transdisciplinary approach with R4D. As a result, uptake strategies are not formally developed. However, there are increasing examples of R4D organizations and R4D donors to incorporate uptake and embed it in the research.

The case studies showed that the extent to which uptake activities are being undertaken in R4D initiatives can be misinterpreted, as they are often not formally collated as a strategy or even recorded. Even when not formally collated as a strategy, the uptake efforts were still usually proactively selected and designed.

It is identified that there could be an opportunity to improve on the uptake efforts by more formally strategizing and compiling uptake efforts as well as formally recording the efforts. The incorporation of a monitoring and evaluation component that feeds back into the uptake strategy for continual adaptation should also be explored further. Staff having the flexibility, time and resources to adapt accordingly are also critical for success.

### Monitor, evaluate and adapt the uptake efforts

The need for flexibility and adaptation was noted as being important in many of the case studies. This can be included as part of an M&E process. Including M&E and adapting the uptake approach accordingly supports an iterative and incremental approach to uptake strategy development.

### Give ownership of the solutions

A key uptake approach is providing ownership of the solutions by the influencers or adopters, which can increase the chances of adoption. This can be achieved by engaging in or partnering on the project. Also important can be the willingness to allow others to have ownership of the solution irrespective of whether due credit is given. In this case, building further individual or corporate brand recognition is forgone for the immediate purpose of gaining adoption.

### Adapt uptake approaches to the cultural influences

The cultural environment needs to be understood and the uptake approach adapted accordingly, especially when it is necessary to have local/national leadership to gain the respect and credibility from stakeholders and eventually achieve adoption.

### Build relationships with uptake-related stakeholders

First, there can be a distinction between research stakeholders and uptake-related stakeholders. Uptake-related stakeholders are the influencers and adopters of the research results, and not always those undertaking the scientific research, unlike the research stakeholders. However, they have been critical in influencing the research as well as the adoption.

R4D organizations should value uptake-related stakeholders and put time and effort into fostering relationships with them. This should not be project-based, but be a long-term commitment. This also means capturing new contacts developed from projects and ensuring the relationship is continued.

Some relationships can be built at a professional corporate level. However, some need to be built more on personal connection. The latter was particularly important culturally in many of the developing countries. The relationship building should be carried out at both a corporate level, as well as by individual scientists. This will also mean that the necessary time, resources and guidance are provided to scientists to nurture the stakeholder relationships.

Engagement of uptake-related stakeholders in the research itself can be critical for adoption. This has been carried out through inputs, feedback, collaboration or partnering, and should be reviewed carefully so that it is incorporated into any R4D initiatives, not only taking the research needs into account but also the uptake needs.

### **Build capacity for adoption of solutions**

Training and capacity building can be key parts of an uptake strategy. It should have a very clear purpose that contributes to adoption, which can include providing the skills necessary to be able to adopt the solution successfully as well as relationship building, influencing key people and nurturing ambassadors to convince potential adopters of the value of the solution. Cross-country/boundary capacity building through knowledge sharing has also been influential and could be explored further.

### **Identify and work with early adopters**

Identifying early innovators among different stakeholder groups is also recommended, as it was recognized that greater success was likely and quicker given the limited resources for uptake efforts. How to identify the early innovators will need further research.

### **Issues need to be a priority on the agenda**

An issue being placed high on a stakeholder's agenda was seen as being very important for gaining attention and adoption of a solution. Uptake efforts were also sometimes needed to stimulate the issue to be placed higher on the agenda. However, this did not lead to automatic acceptance of, or attention being drawn to, the solution; dedicated uptake efforts were still required.

R4D organizational strategies and priority settings should consider the issues that are already on the agendas of stakeholders. This will assist with better adoption of research recommendations. Alternatively, uptake strategies need to include a component for bringing the 'issue' onto the agenda, so that the research recommendations and solutions are more likely to be adopted.

### **R4D organizations need to proactively support uptake approaches**

It is recommended that R4D organizations adopt a more formal approach to uptake, i.e., more formally strategized, documented, monitored and adjusted over time. This could lead to more effective uptake, and can also give more recognition to uptake efforts in R4D and contribute towards the sharing of more lessons learned about uptake approaches for R4D.

R4D organizations would benefit from building in-house skills, knowledge and culture for a more 'engaged' approach to the way research is undertaken. Uptake plans should then be developed with careful strategizing on engagement – who, how and when to engage. This is also key to building ownership and needs to be developed specifically for the cultural environment, being sensitive, especially, in identifying who needs to be, and perceived to be, in the leadership position.



**“ Scientists need time, resources and guidance to nurture long-term relationships with stakeholders ”**

R4D organizations should invest in relationship building. It was identified that many successes were made possible because of the relationships that were built up over many years. These relationships were either built by individuals or by broader activities representing the organization. New relationships developed for specific projects should also be followed through, with post-project activities, to keep the newly built relationships strong. This investment will require staff and managers having the flexibility, time and resources to be able to achieve this, as well as a corporate commitment to building the relationships. Staff can also be trained and supported in stakeholder engagement.

### **Build scientific reputation**

R4D organizations should also (continue to) invest in brand building of their scientific reputation. This does not substitute the need for ensuring that the science is of a high standard, but is to ensure that it is recognized because this reputation has been an important factor in contributing to adoption.

### **Start uptake efforts from the outset and continue post-project**

Undertaking uptake efforts during the research phase and integrating it with the research has been another strongly supported approach for effective uptake. Further research is needed to detail and analyze methods to integrate uptake efforts with the research.

R4D organizations should make a long-term commitment to continue uptake efforts at the post-research stage. Success was often achieved years after the main research phase and was achieved through continued uptake efforts.

### **External communications appropriately selected and applied**

It is also recommended that a range of communications tools and activities are actively used by R4D organizations for adoption of their recommendations.

Communications materials were more effective when targeting a specific group with a very clear objective in mind. Mass communications can be an effective uptake tool for R4D organizations when the channels used are selected, because they are directly accessed by the target audience or audiences. Mass media were effective in influencing the government and policy when the issue was of a highly political nature.

## Internal communications will better support the uptake efforts

Effective internal communications with the project team should be developed to support the uptake strategy, particularly for the larger and multi-stakeholder projects.



Effective internal communications support uptake efforts

## Identify triggers

Given all the components identified as being important for a R4D uptake strategy, it is recommended that 'triggers' be continually searched for and supported, i.e., specific activities/acts that create the turning point to achieving adoption. Further research is needed on how to identify these triggers.

## Impact assessments should include contributions of uptake efforts

The case studies all showed the importance of uptake efforts in leading to their successful adoption and, where developed, scientific solutions on their own would not have achieved success. Impact assessments should include contributions of the initiative/project as well as the uptake efforts.

## In conclusion

It is hoped that this analysis can contribute to the R4D sector by providing a better understanding of how uptake strategies and efforts can contribute to greater adoption of research results and recommendations. More uptake efforts, more effective uptake efforts and recognition of this as a discipline that should be integrated with the more traditional scientific disciplines, would be a benefit to achieving the goals of R4D organizations and hence also a benefit for humanity.

**“ Fostering relationships  
should not be project-based but a  
long-term commitment ”**





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## Appendix 1. Current adoption of uptake approaches

### Development aid investments have had mixed success

OECD (2012) reported that, in 2011, USD 148.7 billion was invested in aid development. R4D is about providing the scientific input, evidence and guidance to ensure the investments in development have the greatest positive impact and minimize the negative externalities.

There are decades of examples of both successful and poorly invested development aid. In 2005, a 'Paris Declaration on Aid Effectiveness', signed by over 100 countries, was made and a monitoring mechanism put in place to help overcome the significant aid ineffectiveness (Kaufmann 2009; Bourguignon and Sundberg 2007). An analysis of development aid expenditure by the Dutch Government found that one-third of the expenditure failed, one-third could not be clarified and one-third was effective (Elzenga 2008).

Over the last decade, investors have been under increasing pressure to ensure that development aid is backed by scientific evidence (Court et al. 2005, quoted in Mendizabal et al. 2011, 1), which should place more demand on R4D.

### R4D organizations are under pressure to show outcomes

R4D organizations are those that, often among playing other roles, also undertake research for the purpose of contributing to humanitarian causes involving the economic, social or environmental advancement of developing countries.

The core business of R4D organizations is focused on undertaking the research to provide evidence-based development solutions, with an overall mission of positive and sustainable development outcomes.

These are typically not-for-profit organizations, such as NGOs, international multilaterals, foundations, funds and government agencies. The 'products' or 'outputs' produced by organizations involved in R4D may be, for example, technologies, improved practices, software models and tools, data, general information or policy recommendations.

R4D organizations work in a competitive environment looking for donors to fund individual projects or to provide unrestricted (i.e., not connected to individual projects) funding for their general operations and work. These donors are typically government aid agencies (e.g., the UK Department for International Development (DFID) and USAID), international and multinational organizations (e.g., World Bank), Foundations (e.g., Rockefeller Foundation and the Bill & Melinda Gates Foundation), other private individual philanthropists and a smaller proportion of development NGOs (e.g., Oxfam), but increasingly include private companies through their corporate social responsibility (CSR) initiatives (e.g., Nestlé). Many of these donors themselves are also R4D organizations, undertaking research to inform their development investments.

Even with a clear mission for development outcomes and a competitive funding environment, research often does not make it past the publication of articles in scientific journals. Molas-Gallart et al. (2000)

analyzed 70,000 education research projects and concluded that only 70 had significant influence in education policy and practice.

CGIAR has recognized the need to be more impact-driven and was undertaking a major reform process with one of the core aims being to produce more measurable outcomes towards development goals (CGIAR 2011).

The CGIAR strategy and results framework (CGIAR 2011, 26) noted that the main model of operations was a relatively linear approach to innovation being very top-down and supply-driven. This was successful in achieving some great impacts, but there are new challenges now that require a new approach; leading away from a linear view. Research organizations are now increasingly recognized as key actors in a new knowledge systems technology uptake process.

The role of collective action and partnerships are increasingly seen as strategic approaches to reach development goals. As a result, it is expected that, in future, R4D organizations will engage with a wider range of partners, beyond the traditional research partnerships. They will establish broader associations to participate in the design of the research through to the uptake of the research results (CGIAR 2011).

More than ever, donors are asking research institutes to demonstrate the impact their research outputs are having – where, how, who and how much. It is no longer sufficient to talk about ‘potential impact’ or to point to an isolated pilot project; donors expect action on a large scale.

During the 1990s, development aid and donor agencies started to use performance- or results-based management approaches. This has extended into the agricultural R4D organizations to undertake such approaches (CGIAR 2011, 27). Sheriff and Schuetz (2010, 1) note that, “there is an increasing demand for researchers to demonstrate the impact of the work within project time frames...”

The current financial crisis created more competition for resources early on, and thus amplified the pressure on R4D organizations to show impact from their research to prove efficiency of, and justify their, expenditures (Adolph et al. 2009).

More needs to be understood on how best to apply uptake in a R4D setting to ensure that the research is adopted and does lead to positive development impacts. Identifying successful case studies where R4D has led to positive outcomes or impacts, and analyzing how the uptake approach and activities contributed to this, has provided insights and lessons learned into effective uptake of R4D.

## **Uptake elements and approaches used in R4D**

Different models and terminologies are used for ‘uptake’ or for that undertaken for the purpose of uptake. Many of these, collated from a literature search on this subject matter, include dissemination, research communications, outreach, extension, impact pathways, outcome mapping, uptake strategies, knowledge sharing, knowledge management, learning selection model, technology transfer, theories of innovation, theories of change, research into use, complex adaptive systems, learning selection model, knowledge translation, innovation systems and others. Shaxson (2010) noted that, there is no settled language for R4D research communication and uptake.

The word 'uptake' is used here to represent any terms or methodologies that reflect efforts undertaken in an attempt to achieve the adoption of research recommendations or outputs. The term that is used for any quoted literature source is also noted by placing it within parenthesis after the term 'uptake' is used.

Some of the R4D uptake ("research communications and uptake") methods and tools identified by Shaxson (2010) are: capacity development; information and communication tools, such as publications, presentations, mass media and websites; influence; collaboration activities, such as involvement of stakeholders in research planning, the research and implementation, and the use of networks and information exchanges; and the setting up of incentives and reinforcements.

Datta and Jones (2011) conclude that, the key uptake ("uptake linkages") activities that can be used by researchers to achieve uptake of their research evidence by policymakers are: developing and sustaining good relations with legislators and/or their committees; working in coalition with policymakers on common issues; ensuring the results are communicated in methods tailored to the target audience; being proactive in disseminating information to the policymakers; and monitoring what the priority issues are to capitalize on these, where relevant.

Amoah et al. (2010) reported on successful examples of uptake ("knowledge sharing in research") undertaken after the product development-research phase. These included: world café style discussion groups with all the supply chain participants to identify the key messages from the research; multimedia training materials, e.g., radio broadcasts, videos and illustrated flip charts for target audiences, such as extension officers, to communicate with farmers; and learning activities through road shows.


Participatory research, also called action research, is another approach that has been developed and can also be considered as an uptake approach because it contributes to the adoption of the research results. Participatory research is a form of 'pull' marketing, as the approach builds stakeholders' demand for the research results through their participation in the research stage.

Participatory research became popular to overcome the elitist top-down approach of research and development with little stakeholder involvement, which often led to failure of adoption. The participatory approach integrates (end) beneficiaries and (value chain) stakeholders into the research from an early stage, and empowers and values their knowledge (IISD 2012). This can often mean everyone having the opportunity to be involved, and efforts being made to engage a variety of beneficiaries and stakeholders.

Bennett and Roberts (2004) note that a participatory approach can improve the understanding of the situation of stakeholders and assist in achieving more effective research and adoption, leading to greater positive development impact. They also note that not all research needs to be participatory and just some components of the research can be participatory. Participatory can mean a fair openness to any stakeholders to participate. However, it is recognized that participatory research requires more resources and time, and participants have different objectives and needs.

Others take participatory approaches further. Cornwall and Jewkes (2010) note that, participatory research is carried out 'with' and 'by' the stakeholders, and not 'on' them. Key is who has 'control' over the research

process. Cleaver (1999), van de Fliert (2003) and Huesca (2002) have some similar views, noting that many R4D projects use participatory approaches as a ‘means’, i.e., a pathway to achieve project objectives or involvement of stakeholders for the purpose of an externally applied program. This is described as a top-down approach even with participation; whereas a true participatory approach is one where participation is seen as a goal in itself, i.e., as the ‘end’. This focuses on empowering stakeholders to take control and provide the direction. Van de Fliert (2003, 95) recognizes that facilitation of participatory approaches is an art in itself.



**“ The regional uptake strategies are important as they help keep the momentum going after the life of a project and build linkages across projects ”**

A case study analysis by Court et al. (2005) identified key components of uptake (“influence”) that contributed to successful adoption of research leading to policy change. ‘Evidence’ was identified as being able to influence change but depended on its credibility (the analytical rigor or reputation of the researcher), relevance and applicability. ‘Communications’ of the evidence was identified as being important, including the packaging and interactive approach to the communication. ‘Links’, defined as the networks that were capitalized on for the uptake, were identified but noted that little was understood about what makes networks work. Lastly, the value of the ‘transfer of knowledge transnationally’ among researchers, policymakers and donors was identified as being increasingly important. However, it was recognized that little was understood about the formal and informal processes that were existent. The ‘political context’ was also noted as being important to capitalize on through the uptake actions of links and evidence. The political context included the level of demand for change, the competitiveness and openness to new ideas.

Jones (2011, 4-8) noted that, uptake (“influence”) efforts can result in policy adoption through three main efforts: evidence and advice, public campaigns, and advocacy and lobbying. Evidence and advice is based on providing knowledge-based inputs to lead to evidence-informed policy change. This involves tangible products or activities, e.g., briefs and events. Public campaigns and advocacy are about uptake and influencing from the outside through public messaging and building public support for the change, using public meetings, speeches and mass communications. Alternatively, the third strategy, advocacy and lobbying, is more direct and influences from the inside. This can include participation at debates, information meetings and direct communications.

In 2009, IWMI adopted a triple approach to uptake (IWMI 2009; Kane-Potaka 2011). This included uptake strategies being developed at project, regional and global levels. Project- or program-level uptake strategies are targeted strategies built into the projects from the beginning, that are focused on the project results and potential users of the results. The regional uptake strategies are particularly important as they help keep the uptake momentum going after the life of a project, as well as building linkages across



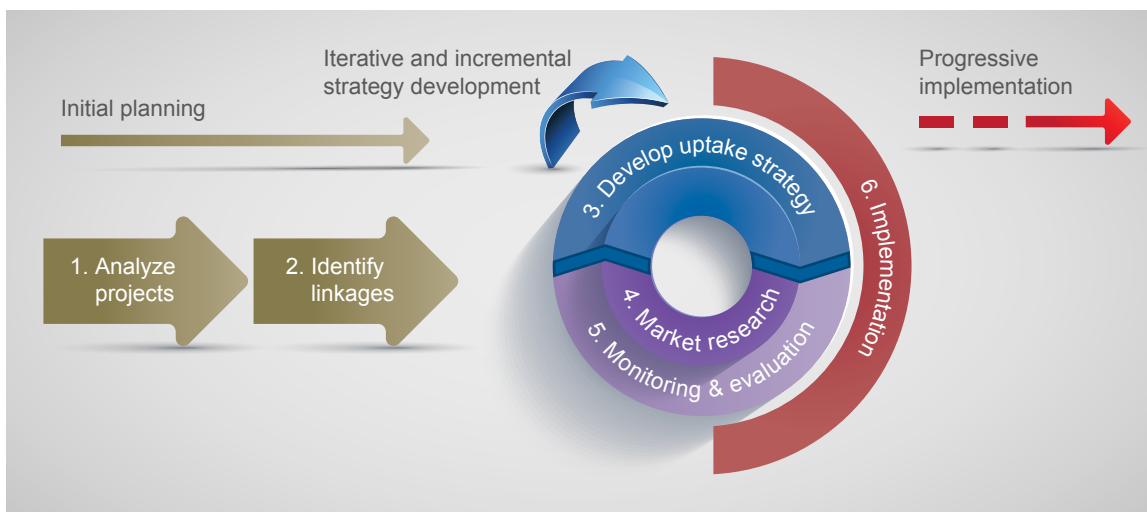
projects and synthesizing messages. The global uptake strategy is about developing strategies to influence the global agenda.

The uptake guide developed by IWMI (Kane-Potaka 2009) notes that, to maximize the effectiveness of uptake efforts, both a Broad-Macro and Targeted-Micro approach are recommended. The Broad-Macro efforts are about making the research information widely available, easily accessible and well promoted. The Targeted-Micro efforts involve a strategy focused on the specific targeted audiences. These two components are viewed as being complementary and both are essential to get the full impact from the uptake efforts.

The guidelines IWMI developed for an uptake strategy at project level (Kane-Potaka 2009) included a checklist of involvement of stakeholders – taking a participatory approach; relationship building and management; capacity building; and information and communications. There was a strong emphasis on having a strategy and not just some uptake products, activities and tools; and following a structured methodology for developing the strategy. This included not asking, “How will we disseminate information?” but “What will it take to get uptake?” Uptake was also seen as another discipline to embed in the project, requiring its own research from the start of the project, and integrating monitoring and evaluation that continually feeds back into an iterative and incremental approach to developing an uptake strategy (see Figure A1) (Kane-Potaka 2011).

**Figure A1: An iterative and incremental approach to developing uptake strategies**

(Source: Kane-Potaka 2011)



### Recognition of the need for more uptake efforts in R4D is still evolving

Meeting the increasingly demanding expectations of donors to show impact from the research, does require an additional effort by the R4D organizations. Ensuring adoption of, and eventual impact from, the research has become a growing field of expertise with new processes being developed.

Stone (2001) identified 12 key reasons why research is ignored, most of which are factors that are caused by a lack of or poor uptake or could be overcome through uptake efforts. Some of these factors include

inadequate supply and access to information, poor comprehension of policy processes by researchers, ineffective research communications, ignorance of politicians to the other sources of information, policymakers being more likely to use internal information and acceptance of the validity of the research.

As part of a background paper for the main UK and Australian R4D donors, Shaxson (2010) noted that, uptake (“research communication and uptake”) methodologies in R4D is a comparatively new field and there is no clear formula for doing this.

The Overseas Development Institute (ODI) is Britain’s leading independent think tank on international development and humanitarian issues (Court et al. 2006). ODI reported that enhanced investment in uptake (“communication”) approaches and more work on stimulating demand were needed (Jones and Young 2007). This was included in their key recommendations as part of a review and to provide input into the DFID research strategy. ODI noted that DFID is one of the few international organizations explicitly concerned with stimulating demand for research.

Shaxson (2010) also noted that, R4D uptake (“communications and uptake”) has focused largely on the supply side and there is the need to have a corresponding emphasis on the demand side, i.e., moving from push models to pull models and focusing on the need to improve demand from the end users. Shaxson et al. (2012) reported that uptake via the strengthening of the demand for science by policymakers still receives relatively little attention internationally. Adolph et al. (2009, 19) also concluded that, “there is a strong emphasis on the supply of research to potential users, rather than on strengthening demand for research”. It was noted that there is, however, growing “innovation on building up the demand side” through more engagement between the researchers and users.

Mendizabal et al. (2011) also noted that, “uptake concepts” is a discipline that has largely developed over the last decade with regards to its implementation in R4D organizations and is still not well implemented in many such organizations.

Jones and Young (2007) identified only two R4D organizations that had incorporated uptake (“research utilization and communication”) as a priority in their strategy – DFID and International Development Research Centre (IDRC), Canada. DFID was also seen as a pioneer and leader in this area (“research communication”). A study carried out by Adolph et al. (2009)<sup>12</sup> of 17 major R4D donors concluded that, only eight of these development donors explicitly included uptake (“research uptake and communication”) in their mandate and none of them had an active strategy in this area (“research communication”). However, six of the organizations had a strong interest or were working on a strategy and its implementation. The UK Government has now placed a moratorium on communications and marketing spend by Whitehall departments, which has negatively impacted funding for science uptake (“communicating”) (Shaxson et al. 2012).

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<sup>12</sup> The study carried out by Adolph et al. (2009) was undertaken by the major development donors mostly involved in research marketing; commissioned by DFID and undertaken by Triple Line Consulting. The study reviewed how research communications were used for marketing, for “enhancing research uptake and use” and reviewed the organizations’ policies, investment and practices in research communications. The leading organizations in this field were identified, along with other organizations that have the largest volume of R4D funding and others to ensure a balanced global representation. In total, 17 organizations were studied and interviewed.

## **Uptake at the product development research stage**

Carter and Paulus (2010) noted that, the traditional approach to R4D followed a linear approach of undertaking the research, writing an academic report and then undertaking some uptake (“dissemination”) efforts of the findings, and did not involve the users of the research results until the final dissemination stage. New approaches see the users of the research results not as passive recipients but as stakeholders, who are engaged and taking ownership in shaping the research and responding throughout the research cycle. Overall, this concept is accepted, but the processes used to achieve this are “still evolving” and it is a “relatively new discipline” (Carter and Paulus 2010, 11).

Adolph et al. (2009) identified some of the main uptake (“communication”) methods and tools used by many of the major R4D donor organizations. Uptake currently identified and used throughout the product development/research phase includes communication, stakeholder participation (e.g., with policymakers), multi-stakeholder platforms for demand articulation and agenda setting, and tools to engage the public, e.g., road shows and public debates.

One key part of a R4D uptake strategy is the partnership and relationship building and incorporating this at the very beginning of the project. Costello and Zumla (2000) recognized that these practices needed to be incorporated at the very start of project design for it to be most effective. This was seen as being important to positively influence uptake, due to more acceptance of information from a local source rather than a foreign source by institutions (e.g., governments), and a deeper understanding of the culture and decision-making processes that a local organization can have. Costello and Zumla (2000) criticized international R4D organizations for having a semi-colonial model, whereby they undertake research in developing countries but do not collaborate appropriately with national organizations.

Shaxson (2010) noted that, the single most important lesson from the work on R4D uptake efforts (“research use and uptake”) over the last decade are uptake efforts at the product development/research stage through the engagement of users at this stage.

## **Some barriers to uptake efforts being implemented in R4D organizations**

Uptake is often not recognized as a specialized skill and it is expected that researchers are trained in this area or that they will automatically take on the role of ensuring that the research is marketed. For example, a scoping study undertaken by ODI (Datta and Jones 2011, vi) concluded that, “researchers need to work harder to ensure evidence is accessible by legislators.” Adolph et al. (2009) noted that, DFID, Sida and IDRC do identify uptake (“research communication”) as a specialized area and thus provide specialists in this field to work with researchers, but such organizations are in the minority.

In 2009, IWMI added a new role of corporate/global uptake as well as strengthening the role of regional directors in assisting with uptake. In 2010, two new positions of African and Asian Uptake Coordinators were created. This reflected the recognition of uptake as its own discipline and the commitment to ensuring research led to impact. However, this is still in the early stages of taking on new approaches and internal understanding, and cultural changes are still required. Researchers continue to be employed from the traditional sciences and thus do not have the expertise to develop uptake strategies.

Numerous problems exist with the implementation of uptake strategies at the product development/research stage. R4D organizations do not always see efforts that lead to uptake as their role. They struggle with the dilemma of how the institute and the scientists keep, and continue to build, their core strengths in scientific research, but still ensure that their work has impact beyond the covers of peer-reviewed journals.

Uptake skills are often in a separate department, outside the science/research departments, which is consulted after the research is completed. Almost half of all 17 major R4D organizations studied by Adolph et al. (2009, 20) supported some uptake (“research communications”) efforts, but this was considered as being a separate activity and it was not integrated into the research.

Four of the organizations that were not incorporating uptake into the product development/research stage were the World Bank, Rockefeller Foundation, Hewlett Foundation and Carnegie Foundation. These organizations undertook uptake as a separate component towards the end, which is a conventional ‘transfer of technology’ approach. Adolph et al. (2009) recognized that only some development donors embed uptake (“research communication”) into the product development/research phase, in particular, the Directorate-General for International Cooperation (DGIS) of the Netherlands and IDRC.

Although most R4D donors focus on ‘repackaging’ research findings for different audiences, there is an increasing interest by some of the R4D donors to embed uptake (“research communication”) into the research and development programs. This allows for earlier engagement between researchers and users (Adolph et al. 2009).

Adolph et al. (2009) also concluded that, most R4D donors are without a strategic approach to the uptake (“research communication”) of research results. Shaxson (2010, 12) had similar conclusions, noting that, “there are few examples of clear strategies being developed” for R4D uptake (“research communications and uptake”).





International Water Management Institute (IWMI)

127 Sunil Mawatha, Pelawatte, Battaramulla, Colombo, Sri Lanka

Telephone: +94 11 268 0000 Fax: +94 11 278 6854 Email: [iwmi@cgiar.org](mailto:iwmi@cgiar.org) Website: [www.iwmi.org](http://www.iwmi.org)



International Crops Research Institute for the Semi-Arid Tropics

Patancheru 502324 Andhra Pradesh, India

Telephone: +91 40 30713071 Fax: +91 40 30713074 Email: [ICRISAT@cgiar.org](mailto:ICRISAT@cgiar.org) Website: [www.icrisat.org](http://www.icrisat.org)

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