

Business Development Plan Regional Water Hub for Irrigation Service Reform
(DRAFT)

Organisation:	International Water Management Institute, FAO Regional Office for Asia and the Pacific
Authors:	Herath Manthrilake (IWMI) Thierry Facon (FAO) Dawn Rodriguez (IWMI)
Contact Email Addresses:	d.rodriguez@cgiar.org thierry.facon@fao.org h.manthri@cgiar.org
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1. BACKGROUND / INTRODUCTION

The Asia-Pacific Water Forum (APWF), an independent, not-for-profit, non-partisan, and non-political network was launched in 2006 with the aim to improve sustainable water management in the region by capitalizing on its diversity and rich history of experience in dealing with water as a fundamental part of human existence. APWF has set out to identify and champion solutions to water issues in the region, and aims to boost investments, build capacity, and enhance cooperation in the water sector.

The lead organizations, Public Utilities Board (PUB) of Singapore and UNESCO are responsible for developing cooperation in the region for the delivery of high-quality products and services that meet the priority needs of decision-makers and practitioners. The Asian Development Bank (ADB) is the leader of APWF's Priority Theme A on "water financing and capacity development" and on increasing public outreach. PUB Singapore, ADB and UNESCO-IHE Institute for Water Education agreed in June 2007 to collaborate in establishing a network of regional water knowledge hubs under APWF to improve water knowledge management in the region, and deliver high-quality products and services in knowledge networking and capacity development.

Representatives of several candidate regional water knowledge hubs (WKH) met in Singapore on 29-31 October 2007 to discuss this new approach during a regional consultation meeting hosted by PUB Singapore under the auspices of APWF. The regional consultation meeting concluded that establishing regional water knowledge hubs that focus on key water sector topics (knowledge domains) would help the countries of the Asia-Pacific region in addressing the formidable water management challenges of the 21st century.

The participants agreed to establish the Asia Pacific Water Forum's Network of Regional Water Knowledge Hubs. The Network will allow the knowledge hubs to collaborate and support each other in their joint vision to develop, share and disseminate knowledge and capacity development services in the region. The meeting also agreed that each candidate regional water knowledge hub would develop its own development/business plan.

Accordingly, the International Water Management Institute (IWMI) and the South East Asia Regional Office of the Food and Agriculture Organization (FAO), Bangkok are leading the knowledge hub on "Irrigation Service Reforms" along with other partners and this document presents the proposed Business Plan for the said Hub.

The International Water Management Institute (IWMI) is a non-profit international research organization focusing on improving the management of water and land resources for food security, livelihoods and nature. With headquarters in Sri Lanka, IWMI also has regional offices in 12 countries across Africa and Asia. IWMI is one of 15 research centers of Consultative Group on International Agricultural Research – the "CGIAR". The CGIAR is a body of international donors and governments whose primary goal is to apply science to the challenge of feeding the world's poor and enabling them to escape poverty.

IWMI's presence in developing countries helps in the development of a strong understanding of local water issues and in the formation of productive working relationships with key stakeholders, of irrigation and water sector in the region.

IWMI also has strong linkages with National Agricultural Research Institutes (NARS) and partnerships with Advanced International Research Institutes (ARIs). This places IWMI in a strong position as a knowledge centre providing both international and regional leadership in

helping to resolve some of the key water –related issues of our generation. Since 2001 IWMI has been in the knowledge sharing business through its Knowledge Sharing Initiative which seeks to communicate research findings to a range of stakeholders and create impact through the application of this knowledge.

See more in Annexure 1 on IWMI's Knowledge Sharing Initiative.

The FAO Regional Office for South East Asia is the key partner with IWMI in the Knowledge Hub network. FAO as one of the key agencies of the United Nation, working on alleviating hunger and poverty in developing nations, worked many years with local governments in region and the world as a whole, on many aspects of land and water management, in particular improving irrigation management and modernization of irrigation systems. The Regional Office for Asia Pacific has implemented many programs with national governments on evaluation, capacity building, strategic planning, institutional reform and modernization of irrigation systems and produced an immense knowledge base on the issues in the region. FAO regularly produces various knowledge products and methodologies, updates databases and runs capacity building programs and technical assistance projects in the said areas. Hence, the knowledge base, tools and ability of FAO would be the most valuable asset for the knowledge hub on Irrigation Reform. FAO, with the World Conservation Union (IUCN) is leading Theme C, Water for Development and Environment, of APWF and has contributed, mobilizing regional partners, relevant recommendations in the APWF Policy Brief.

See more in Annexure 2 on FAO's Knowledge Sharing Initiatives.

2. FOCUS OF THE REGIONAL WATER KNOWLEDGE HUB ON IRRIGATION SERVICE REFORMS

2.1. RATIONALE

Irrigation faces unprecedented challenges, as it is the key to livelihoods for the vast majority of the population in the Asia Pacific region. This is compounded with climate change, urbanization, decentralization, environmental degradation, governance reforms, and other profound changes in society. To address these formidable challenges, countries in the region need urgently to improve their irrigation sectors through reform, if they are to meet the new challenges. This requires harnessing upon on already available, scattered knowledge, generating new knowledge, sharing and brokering it, and building capacities to deliver services and manage efficiently irrigation systems. In this context, new knowledge partnerships and networking is needed. The proposed regional water knowledge hubs are expected to serve this purpose. In this new approach, space should be created for countries with advanced expertise and existing 'centres of excellence' in the region to offer their services to clients and partners in the region.

Irrigation plays an important role in agricultural production, rural livelihoods, and rural development in Asia. Rapid population growth and intensified competition for water combined with the effects of globalization, urbanization, climate change and recent soaring food prices apply multiple pressures on irrigation systems, which should be developed to ensure poverty reduction, support food security, improve rural livelihoods, enhance water productivity, and conserve local ecosystems, while maintaining a region's cultural heritage. The current position of irrigation systems in Asian countries is characterized by incomplete infrastructure, degraded facilities, outdated institutions and management, which are unable to meet the new requirements. The only way forward is *Reforms* that address all - policy, institutional, managerial and technical issues comprehensively and systematically.

IWMI, FAO, and ADB along with many other like-minded international organizations have researched and advocated irrigation service reforms in Asia for some years. While the concepts are well accepted by governments and institutions, implementation is still weak. Large investments are still being made in classical irrigation projects with old models and limited results. Many irrigation agencies are still functioning in a supply-driven mode and need to adopt demand-driven, participatory and service-oriented strategies. At the same time, many reform programs have failed to reach their objectives. There is an urgent need to strengthen regional and national coordination and cooperation; and further advocate and disseminate workable and successful irrigation service reforms concepts, theories and approaches, and effective implementation. Irrigation service reforms must be incorporated into national strategies, policies, plans and program. Local capacity building should be strengthened to promote adoption of successful service reforms in Asian countries. This cannot be done without new knowledge. This knowledge hub will provide countries, organizations and individuals interested in the service reforms of their irrigation systems with valuable information and expertise.

This initiative builds upon the IWMI-led knowledge synthesis and global research initiatives such as the Comprehensive Assessment of Water Management in Agriculture, FAO's Regional Irrigation Modernization Program and other relevant programmes and projects, as well as the CGIAR Challenge Program on Water for Food and the groundwater governance program.

3. VISION, MISSION, GOALS AND OBJECTIVES

3.1. VISION

The knowledge available, generated through collaborative research, support to irrigation agencies and system managers and shared with a range of stakeholders at different levels will have the greatest impact on poverty in Asia, speeding up economic development and helping the achievement of the Millennium Development Goals. Therefore, *our vision is that the irrigation sector shall rise to the occasion, and meet the challenges their societies are facing in 21st century through an overall service reform process.*

3.2. MISSION

To ensure that through effective partnerships and knowledge sharing activities we link key stakeholders such as government agencies, NGOs, organizations, individual and others with first class knowledge and information. The mission of the proposed knowledge Hub on “Irrigation Service Reforms” is to serve as the *‘one stop- knowledge shop’* or *state of the art Knowledge Centre* for diverse stakeholders, who are interested and actively involved in Irrigation Service Reforms.

Comment [11]: We may have to choose one!

3.3. GOALS

The irrigation sector is increasingly coming under pressure from several sides, which call for it to adjust reform and modernize to meet current and future challenges. There will be no end to these pressures and challenges. Hence, we may have to develop some flexibility within, i.e. make it a learning, dynamic, experience-exchanging and adapting to the needs of society. So far, the irrigation sector was slow in meeting these requirements. Hence, the *long-term goal* of the Knowledge Hub would be to inject new life into the irrigation sector in the Asia Pacific region, by establishing a network of learning/ reforming IMOs, led by our KHub.

In the *medium term*, our KHub should become a “*state of the art Knowledge Centre*” for irrigation Service Reforms. In the *short-term*, the proposed knowledge hub would connect people and organizations to the irrigation knowledge domain (to other related knowledge domains, too), where the best information, analyses, people and organizations, are available. This will promote knowledge sharing and capacity development services to clients on irrigation service reforms. Essentially, to start with, this should help countries in the Asia Pacific region address the challenges of irrigation service reforms.

3.4. OBJECTIVES

Based on the above goals, there are two sets of specific objectives identified:

A) Development of the KHub

- A.1 Organize the Irrigation Service Reforms KHub
- A.2 Link people and organizations that can form the knowledge base with clients of KHub
- A.3 Promote /Activate the KHub

And,

B) Establish network of learning reforming IMOs

B.1 Initiate knowledge sharing and brokering

B.2 Initiate and encourage governments, irrigation management organizations (IMOs) to review / assess and evaluate their institutions and practices in terms of service reforms and performance

B.3 Set them on the path to Service Reform and improvement of technical, economic, social and environmental performance

This Khub shall initiate and lead, raising pertinent issues related to irrigation performance and service reforms. It shall collate available/ existing information, knowledge, experts, champions and organizations around those issues; establish and coordinate 'communities of practice'; disseminate good practices and advocate policy development, and provide capacity development programs in collaboration with partners and clients, It will also network with them for the purpose of sharing knowledge and information. In order to facilitate this knowledge exchange and synthesis, this Khub will develop and promote the adoption of common monitoring, evaluation and benchmarking tools.

4. CURRENT AND FUTURE SITUATION

4.1. LEADING PARTNERS

The International Water Management Institute (IWMI), and the Food and Agriculture Organization (FAO) are the lead agencies of this KHub. Both FAO and IWMI have a wide network of partners / clients whom they work with at international, regional and local levels for collaborative research, capacity building and knowledge sharing activities (see annexure 1 & 2). Both organizations work with a range of partners from government institutions, water sector organizations, INGOS and NGOs, river basin organizations, training institutes and universities as well as water user associations, farmer communities and more recently, private sector organizations (see annexure 3 & 4). Therefore, both FAO and IWMI have a wealth of experience in networking, partnerships and knowledge sharing.

The International Water Management Institute (IWMI) is a non –profit international research organization focusing on improving the management of water and land resources for food security, livelihoods and nature. With headquarters in Sri Lanka, IWMI also has regional offices in 12 countries across Africa and Asia. We are one of 15 research centres supported by the Consultative Group on International Agricultural Research – the “CGIAR”. This is a body of international donors and governments whose primary goal is to apply science to the challenge of feeding the world’s poor and enabling them to escape poverty. IWMI’s presence in developing countries helps in the development of a strong understanding of local water issues and in the formation of productive working relationships with key stakeholders.

Over the years, FAO has worked in partnership with numerous international and national institutions and has developed a series of technical and advocacy publications and a suite of training materials and modules. It has implemented a Regional Training Program. Established a website on Modernization of Irrigation Systems and, in partnership with UN-ESCAP, and e-network on strategic planning and management of water resources, improved and developed practical tools on Rapid Appraisal Process for Evaluating Performance of Irrigation Systems and a Mapping System and Service of Canal Operation Techniques (MASSCOTE) methodology for modernizing irrigation management. FAO has also supported the efforts of national governments and agencies in the Service Reforms of their irrigation sectors. So far, some 1,000 engineers and managers in 12 Asian countries have been trained under FAO’s capacity building program on irrigation modernization. FAO has also carried out substantial work on legal issues related to irrigation services reform and is managing a database of water and irrigation legislation.

IWMI and FAO are working together on a regional program to re-invent irrigation and agricultural water governance in the Asia Pacific region, much of the knowledge generated through this partnership will feed into the knowledge hub initiative. The IWMI /FAO partnership would support action at different levels through knowledge sharing, capacity building and project implementation with a view to speeding-up the achievement of the Millennium Development Goals (MDGs).

A service-oriented culture at IWMI and FAO has helped to build and maintain these relationships. These networks shall be extended to the Water Knowledge hubs and the set of core partners and clients that they will build relationships with.

4.2. *CLIENTS AND PARTNER RELATIONSHIPS*

As a KHub specializing in irrigation service reforms, our agenda is wide and interlinked. Hence, we see opportunities for sharing knowledge with other related hubs such as river basin management, climate change and groundwater, to name a few. We would work on opportunities for collaborative projects in partnership with other hubs and partners in the region, while building up our existing network.

Our KHub is dedicated to provide useful information, knowledge and capacity building services to its clients. In that sense, most clientele are expected to be governments and IMOs who are interested in improving their irrigation sector's performance and donors who would support such initiatives, as well as irrigation system managers, be they public, farmer organizations, or private, interested in improving their system's performance. This does not mean, the clientele are restricted to governments, IMOs and donors. There could be academics, researchers, private sector service providers, consultants and irrigation technology developers, water user communities, NGOs, etc. The KHub shall willingly serve anyone interested in knowledge and capacity building opportunities on these core areas of irrigation management on a cost recovery basis, through specifically designed KHub interventions.

Similarly, those who are willing to be knowledge contributors are welcome to become partners, too. Therefore, one can be client as well as a partner at the same time. These relationships shall be regulated through signed legal agreements between KHub and the client and/or partner.

While strengthening existing partnerships of both of our lead organizations - IWMI and FAO, we shall explore developing new partnerships with clients for example in the private sector – a new area we have to begin with. Already, there have been some requests from few organizations to tie up with IWMI on the Water Knowledge Hub Initiative.

Some of the partners could join as members and those would be contributing for their membership.

Proposed areas of networking:

- **Communities of practice** for policy makers, implementing agencies, water resources and irrigation system managers, water user and farmer organizations for the Service Reforms of irrigation system management, re-invention and improvement of irrigation at all scales
- **Knowledge synthesis** from development, practice and research on challenges and issues and effectiveness of policies, strategies, and management practices and identification of poles of excellence and knowledge gaps
- **Capacity building services** to provide updated and validated training and other support for irrigation management service reforms
- Develop new/ revision of **training curricula** in local training institutions to train the next generation of decision-makers and managers

- **Supporting action** in representative basins: support to selected IMOs to become centres of excellence and reference, and to functional centres of excellence and reference within these basins
- Development and promotion of adoption of regional guidelines for monitoring investment and results of policy reforms in the irrigation sector including a harmonized regional **irrigation benchmarking system**
- **Mobilization of the professional community in the region** for analysis, advocacy, dissemination and promotion of national initiatives through national platforms and professional networks such as national ICID committees, PIM, etc

4.3. **NETWORK DEVELOPMENT**

A network of diverse partners and institutions (see Annexure 2, 3 & 4) already work with IWMI and FAO. With our constantly expanding knowledge base, this network can easily integrate with that of the water knowledge hubs, providing access to wide range of web-based tools and platforms, databases and information.

Leading partners shall have sections on their websites for news of the Water Knowledge hubs and in particular, for the Irrigation Service Reform Khub, which will create awareness and generate interest among those in the region.

4.4. **CAPACITY IN RESEARCH, TRAINING & EDUCATION, CONSULTANCY**

Much of the leading partners' work is carried out in collaboration with local institutes and organizations. We also work with national academic, training and research organizations to build research capacity and train water professionals.

IWMI has a PhD scholarship Program and Post Doctoral Fellowship Program where student can contribute to IWMI's research while completing their PhDs or postdoctoral studies. We carry out research in partnership with a number of key universities in the North and South. Capacity building programs help us meet our goals of realizing a network-based approach to collaborative research

FAO has run many capacity-building programs in the region to upgrade professionals on irrigation reforms. FAO has already trained more than 1000 practicing engineers on irrigation modernization and other aspects of irrigation.

IWMI and FAO play a consultative role, advising governments in countries where we work on water sector development strategies and policy recommendations, through consultative meetings and high-level round table discussions.

The need for capacity development for irrigation services reform and improving irrigation performance in the region is enormous. A key issue is thus to significantly increase the number and capacity of knowledge, academic and training institutions to build capacity and disseminate relevant knowledge. Among potential knowledge centres are a number of IMOs and irrigation service providers themselves. The Khub will thus develop specific initiatives – and seek to raise resources for these initiatives- aimed at increasing the capacity of carefully selected organizations in the region to provide knowledge and capacity building services on a cost recovery basis.

4.5. **PRODUCTS AND SERVICES DEVELOPMENT**

FAO and IWMI test and develops tools and interventions to help developing countries manage their irrigation systems in a more productive and sustainable way. Our own products and services are global public goods, which would be freely available to hub partners and clients.

However, the KHub is planning to deliver a variety of services in the near future on cost recovery basis, too. For example, a) specific research and investigations; b) linking with capacity building and other service providers; c) Advice and links to knowledge sources /consultancies; d) Information on success and failure stories and lessons learned; e) Support for advocacy and communication; f) Training and guidance on benchmarking tools, etc to name a few.

IWMI with regional partners developed and implemented a pilot training program initiated by the ADB.

- **Peer review process** to benchmark the performance of River Basin Organizations (NARBO)

Through the Knowledge Hub network, this peer review process can be institutionalized among RBOs in Asia.

- **A benchmarking tools** to evaluate and improve irrigation performance and achieve targets
- **IWMI Data Storehouse Pathway (IWMI DSP)** offers access to high quality science data in standard formats for rapid assessment, monitoring and reporting on the conditions of irrigation systems, river basins, nations, regions and the world.

This is already used by scientists and practitioners in many countries and is available for the APWF Water Hubs.

IWMI DSP: <http://www.iwmidsp.org/iwmi/info/main.asp>

FAO, with regional and international partners, has developed a regional training programme on irrigation modernization and, through this programme, has developed the following products and services:

- A Rapid Appraisal Procedure for irrigation system performance evaluation and benchmarking
- A methodology on Mapping of System and Services for Canal Operation Techniques (MASSCOTE)
- A suite of training materials and modules on:
 - Improving irrigation canal operation
 - Modernization of irrigation systems and benchmarking
 - Strategic planning and management for irrigation and drainage organization
 - The MASSCOTE methodology
- A website on modernization of irrigation systems, www.watercontrol.org , through which the above products and services and relevant technical publications are available.

- A website and e-network on strategic planning of water resources in the Asia-Pacific, in partnership with UN-ESCAP, www.spmwater-asiapacific.net, which is a repository of knowledge documents, tutorials and case studies in the region to promote inter-sectoral planning in the region, and supports an e-network and exchange platform.

Further, partners can extend their own services in the following areas:

- Pathways to Service Reforms: a mix of technological and managerial upgrading practices to improve the responsiveness to the region's needs
- Best practices for more productive and sustainable irrigation.
- Performance benchmarking tools for irrigation performance management
- Recommendations for better integration of irrigation with agricultural production systems for higher value agriculture
- Recommendations on how irrigation can be integrated with livestock, fisheries and forest management.
- Development of new tools/ models for regional requirements
- Hosting of regional workshops (subject to funding)
- Regional consultations with governments, water sector professionals (subject to funding)

All these services would be extended to the hub network.

4.6. **REVIEW PROCEDURES**

Quality control

IWMI and FAO senior experts shall review the quality of knowledge products and services. Apart from this, the activities of this Khub shall be subject to existing IWMI QMS system. IWMI has in place a project management /evaluation process (e-Project) as well as a Quality Management System (QMS). Against this QMS system, all aspects of Khub work can be measured and improved. The QMS documents and effectively re-engineers all internal processes for continuous improvement by benchmarking them against best practices as required for ISO certification. At the center of the QMS system is the "Research Project Cycle", a module that clearly defines the stages a project goes through from conception to completion. Regular quality audits are held. These systems shall automatically adapt to all KHub activities.

FAO products and publications are also subject to a multi-stage quality control process involving a peer review process. FAO services provided through FAO Regular Programme activities are monitored and evaluated through a systematic monitoring, evaluation process using output and outcome indicators. FAO's performance is assessed through regular self-evaluation procedures and FAO has recently been the object of an External Evaluation that is providing guidance to FAO reform. FAO services provided through technical assistance projects are also the object of tripartite evaluation procedures that involve FAO, the donor, and the recipient government agencies.

The Khub would make use of the systems both IWMI and FAO have in place to develop a quality and impact assessment system for the hub. In addition, initial focus on the development of a system for monitoring of investments and results underpinned by benchmarking would allow the Khub to have instruments to monitor and evaluate the impact of the adoption and use of knowledge and implementation of irrigation service reform on irrigation sector performance

Impact Assessment

Assessing the impact of Khub activities and outputs ensures that the KHub programs meet the needs of stakeholders and partners, while taking into account both positive and negative impacts for future priority setting processes. Khub shall identify opportunities to strengthen in-house capabilities and forge new linkages with external organizations, to assess the impact of their operations.

KHub governance board shall regularly review the progress and guide the operations. Furthermore, reports on progress and activities shall be available on the website and reported to APWF meetings and other regional forums.

4.7. COST RECOVERY STRATEGY

For existing IWMI and FAO general products and services are global public goods, hence, those are available free of charge to anyone who is interested. However, for new collaborative research, capacity building and tailoring such for specific needs shall require, funding and those services shall be on cost recovery basis.

Though the KHub network shall operate on a non-profit basis, it has to recover operating costs through membership fees from partners and/or clients, through brokering charges, etc.

These operational costs include:

1. marketing the hub
2. network development (databases) and coordination
3. initial investment on hardware and software,
4. development and maintenance of websites
5. operational costs (including travel/ meetings etc)
6. human resource development /capacity building
7. consulting and service delivery
8. product development
9. building of client base

Potential sources of funding are:

- (a) Membership fees
- (b) Network clients (service fees)
- (c) Governments of countries
- (d) Development Banks (projects)
- (e) Targeted international donors/private sponsors (grants)
- (f) Philanthropic organizations/individuals (donations)
- (g) Development organizations (co-funding)

Types of Funding:

1. Short term grants for specific activity (ex. start-up)
2. Funding of collaborative projects over set period
3. Sponsorships for capacity building and research
4. Scholarships for study in different areas of water management
5. Medium-long term grant for initiatives aimed at boosting the region's capacity in delivering capacity building services

Care would be taken to match activities that require funding with the correct donor/sponsor as different organizations fund different activities. For the start, IWMI and FAO would make use of its existing portfolio of donors/ funding for preparatory work.

5. DEVELOPMENT PLAN AND ACTIVITIES 2008-2011

5.1. *KHUB NETWORK DEVELOPMENT AND GOVERNANCE*

In chapter 3 above, we have described the goals and objectives. Based on above goals there are two sets of specific objectives identified:

- A. development of the KHub itself and
- B. establishment of learning, reforming IMOs' network

Concerning development of the KHub, by 2011 following outputs are expected:

- A.1** Irrigation Service Reforms KHub is in operation
- A.2** Functional links between Experts and organizations are established through the KHub
- A.3** KHub is known around as a reliable knowledge centre

In order to achieve these outputs following activities were initiated:

- i) A simple governance structure for the HUB, consisting of three members established.
- ii) A small core team to run operations of the KHub established
- iii) The Secretariat is located at HQ of IWMI. The Manager and the Head of KHub Secretariat shall work closely to pool the resources, tools and capacities of both the organizations – IWMI & FAO, as needed. These two shall be responsible for managing the KHub affairs on day-to-day basis.
- iv) The Core team shall:
 - i. develop the business plan
 - ii. link with partners and clients and donors
 - iii. coordinate the website development and management
 - iv. plan and effectively implement knowledge sharing activities within the hub network (hardware, software and products)
 - v. Identify opportunities for collaboration, advocacy and capacity building
 - vi. Periodically, evaluate hub performance and report to the governance board and APWF
 - vii. With the governance advice adopt to changing regional requirements

Both IWMI and FAO are in operation in many countries and for those places, KHub will use their legal status as part of these organizations. However, where necessary, it may have to obtain accreditation; one of the organizations shall obtain it on behalf of the KHub with the help of local partners.

The KHub shall respect the copyrights, and other globally accepted legal requirements related to the knowledge pieces, it should share. In addition, it shall require its clientele and other stakeholders to maintain the same. However, most of the core/ lead partners' knowledge domains are public goods and the only requirement shall be the reference to the source.

5.2. **COMMUNICATION STRATEGY**

In order to achieve a significant and positive impact on core subject area of the KHub domain in the Asia Pacific region, IWMI & FAO shall make use of its diverse set of communication tools and approaches. IWMI & FAO shall develop a comprehensive communications strategy with a supporting plan to maximize its outreach and dissemination in the region. The Communications Strategy will take into account:

- Website and leaflets
- Internal Communications within the hub network
- External Communications to Clients and Partners
- Media Relations

5.3. **DEVELOPING THE KHUB AND IT'S ACTIVITIES**

In this start-up phase, the KHub shall aim to improve the access to, and the use of knowledge related to the irrigation Service Reforms. The KHub shall proceed in realistic steps, using available resources and achievable milestones. While some activities are dedicated to the development of the KHub's network itself, a set of activities shall develop the products and services the KHub and its network are aiming to deliver. These are initiating knowledge sharing and brokering (B.1), initiate and encouraging governments, irrigation management organizations (IMOs) and irrigation service providers to review / assess their institutions and practices in terms of service reforms and performance (B.2) and Setting them in the path for Service Reforms and improved performance (B.3).

1. Already the governance board met with the core team in August 10th, 2008 to discuss the next steps
 - Dr David Molden (DDG/IWMI) as Chair;
 - Dr. Thierry Facon (Regional Senior Water Management Officer and Technical Group Leader, Natural Resources and Environment for Asia and the Pacific/FAO) as a members of the governing board and
 1. Dr. Andrew Noble (Director, Central & South East Asia/ IWMI) as second member of the governing board
- 2 A core team consisting a Manager - Dr. H. Manthritilake (Senior Researcher, IWMI) and Head of KHub Secretariat - Ms. Dawn Rodriguez (Communications Coordinator- IWMI) shall manage the affairs of the KHub. IWMI and FAO staff shall be called in as necessary to assist the core team when and where necessary.
- 3 A special KHub web portal is launched and with IWMI's and FAO's sites and other websites. It is expected that this shall create some awareness among the potentials stakeholders.
- 4 IWMI & FAO shall inform their existing partners (Potential clients) about the launch/ establishment of this KHUB
- 5 In January 2009, IWMI with FAO is planning to organize an expert group workshop to review the "Future trends of Irrigation in Asia" in Bangkok, Thailand. The official launch of Irrigation Service Reform KHub shall be at this meeting.
- 6 KHub shall explore the possibilities of mapping on-going irrigation service reforms in the region with the aim of monitoring the developments /changes with regards to modernizing approaches and systems
- 7 Development of communities of practice of policy makers, implementing agencies, water resources and irrigation system managers, irrigation related other

- experts; on the Service Reforms of irrigation system management, re-invention of irrigation at all scales and improvement
- 8 A knowledge synthesis from development, practice and research on challenges and issues and effectiveness of policies, strategies, and management practices and identification of poles of excellence and knowledge gaps
 - 9 Development of a networked capacity to provide updated and validated capacity building services in irrigation management Service Reforms
 - 10 Promotion of the revision of training curricula in local learning institutions to train the next generation of decision-makers and managers
 - 11 Supporting action in representative irrigation dominated basins and their surface & groundwater systems management and private irrigation
 - 12 Development and promotion of a regional guidelines for monitoring investment and results of policy reforms in the irrigation sector including a harmonized regional irrigation benchmarking system
 - 13 Mobilization of the professional community in the region for analysis, advocacy, dissemination and promotion of national initiatives through national platforms and professional networks such as national ICID committees, PIM, etc

During the next three years while developing the KHub itself, we shall identify potential clients, target areas for service reform advancement, resource personal and knowledge bases and organizations useful for promotion of irrigation service reforms and successful strategies and implementation to improve service and economic, social and environmental performance. We will establish linkages with on-going reform projects and organizations collate information on success and failures and reasons behind those and synthesize the experiences. These will be packaged and tailored to meet concrete needs. The KHub will actively promote service reform process in member countries and organizations.

5.4. *RESOURCES*

The following resources are available in support of the KHub functioning:

- **Human resources:** The governance board and the core team has mixed competencies in project management, administration, communication, promotion and resource mobilization, technical specialties on the irrigation Service Reforms, and a wealth of international experiences in their domains.
- **Financial resources:** To start with, IWMI has kindly agreed to provide initial resources/ funding, secretarial services, network infrastructure such as websites or databases, and core services and activities. Similarly, FAO and IWMI have offered opportunities within their ongoing and future projects. In addition, it is proposed to raise funds through developing proposals for specific projects or programs that shall be initiated by the network and its members.
- **Contributions:** The core team with the help of governing board shall explore potential funding supports from the KHub itself, from in-kind contributions of the network members, from membership fees, and from income-generating activities and support from public contributors and private sponsors.

5.5. **PRODUCTS AND SERVICES PROPOSED /AVAILABLE**

On behalf of KHub for Irrigation Service Reforms, IWMI & FAO would be able to provide the following for the Asia Pacific region:

- Research reports, policy briefings, research papers, brochures, and newsletters.
- Access to virtual libraries web tools, and remote sensing tools
- Environmental flow related information
- A comprehensive framework for identifying and designing pro-poor interventions in irrigated agriculture such as the following :
 - Menu of pro-poor intervention options
 - Recommendations and guidelines for policymakers
 - Investment models according to poverty types

Pro-poor Interventions in Irrigated Agriculture in Asia

<http://www.iwmi.cgiar.org/propoor/index.asp>

- **The Comprehensive Assessment of Water Management in Agriculture** – This five year study led by IWMI and co-sponsored by FAO made a critical evaluation of the benefits, costs and impacts of the past 50 years of water development, the water management challenges communities face today and the solutions people have developed around the world. These findings are especially relevant to Asia Pacific countries. The CA findings received widespread international media coverage and are expected to enable better investment and management decisions in water and agriculture for the future. They are already influencing international bodies such as the World Economic Forum. One of the CA key policy recommendations is to “**adapt yesterday’s irrigation to tomorrow’s needs**”.

The Comprehensive Assessment of Water Management in Agriculture

<http://www.iwmi.cgiar.org/Assessment/>

- Regional knowledge synthesis and prospective knowledge products on:
 - The future of large rice-based irrigation systems in Southeast Asia
<http://www.fao.org/docrep/010/ai408e/ai408e00.HTM>
 - Water Resources Management and irrigation modernization in arid regions
<http://www.fao.org/docrep/010/ah995e/ah995e00.htm>
- Information on drought related management tools
Drought monitoring website:
<http://www.iwmi.cgiar.org/drw/info/default.asp?PG=HOME>
- Access to IWMI’s and FAO’s spatial products, tools and statistics
IWMI’s Global Map of Irrigated Areas of the World (GIAM)

Global Map of Irrigated Areas of the World (GMIA):

<http://www.iwmigiam.org/>

FAO's Global Map of Irrigated Areas

<http://www.fao.org/nr/water/aquastat/irrigationmap/index.stm>

FAO AQUASTAT

<http://www.fao.org/nr/water/aquastat/main/index.stm>

FAO agricultural statistics

<http://www.fao.org/corp/statistics/en/>

- Access to FAO & IWMI's virtual library web tools, and remote sensing tools
FAO Publications

FAO Water Information Resources

<http://www.fao.org/nr/water/infores.html>

FAO GEO-INFORMATION

http://www.fao.org/nr/geo/geo_en.htm

- Access to FAO's legal database and publication including laws and acts related to water resources management and irrigation
<http://faolex.fao.org/faolex/>
<http://www.fao.org/legal/prs-ol/lpo69.pdf>
- **Peer review process** to benchmark the performance of River Basin Organizations (RBOs); IWMI has already worked on this with NARBO. Through the Knowledge Hub network IWMI shall try to institutionalize this peer review process among RBOs in Asia.
- **A benchmarking tool** to evaluate and improve irrigation performance and achieve targets
- A Rapid Appraisal Procedure for irrigation system performance evaluation
- A methodology on Mapping of System and Services for Canal Operation Techniques (MASSCOTE)
- A suite of online training materials and modules and technical briefs on:
 - Improving irrigation canal operation
 - Modernization of irrigation systems and benchmarking
 - Strategic planning and management for irrigation and drainage organization
 - The MASSCOTE methodology
www.watercontrol.org
- A website and e-networked community of practice on strategic planning of water resources in the Asia-Pacific which is a repository of knowledge documents and case studies in the region to promote inter-sectoral planning in the region, and supports an e-network and exchange platform.
www.spmwater-asiapacific.net

- **Data Storehouse Pathway (IWMI DSP)** offers access to high quality science data in standard formats for rapid assessment, monitoring and reporting on the conditions of river basins, nations, regions and the world.

This is already used by scientists and practitioners in many countries and is available for the APWF Water Hubs.

IWMI DSP: <http://www.iwmidsp.org/iwmi/info/main.asp>

5.6. *COLLABORATION WITH OTHER HUBS*

We believe that the formation of partnerships with other KHubs is essential to deliver high quality outcomes for development. We also look to organizations that can complement our capabilities and sharing resources and partners through collaborative work across the water knowledge hub network as one means of achieving this. Knowledge would be shared through documented knowledge such as websites, research reports, policy briefings and other tools while tacit knowledge would be shared through face-to-face dialogues, on –the –field research and capacity building.

6. WORKPLAN FOR 2008

6.1. *SPECIFIC OBJECTIVES FOR 2009*

- To raise awareness of water issues in the region
- To strengthen the knowledge hub in the region as the source of knowledge
- Link-up with countries/organizations undergoing /implementing service reforms

6.2. *HUB ACTIVITIES IN 2009*

- Collate available products and services and service providers and clients information related to the KHub network
- Development of web portal for Knowledge Hub on Irrigation Reform with links to related websites.
- Development of concept paper on "The Future of Irrigation in Asia" as requested by the ADB (separately funded)
- Explore opportunities for collaboration (with funding).
- Mobilize the media to promote the water knowledge KHub initiative in the region

6.3. *EXPECTED RESULTS*

- Larger network of knowledge partners, clients and stakeholders
- KHubs begin to influence and shape thinking on irrigation service reform in the region
- KHubs assist in accelerating development of the service reform processes in the Asia Pacific region

6.4. *EXPECTED IMPACT*

- New knowledge generated that can help resolve some of the region's irrigation challenges
- Uptake of recommendations by policy makers and irrigation sector organizations in the region
- Greater involvement of wide group of stakeholders in irrigation reform initiatives

6.5. *BUDGET FOR 2009*

Estimated Budget for operations of KHub Activities -2009

Staff time: \$15,000.00

(for 80 days)

Operational costs: \$10,000.00

Research Collaboration/
product development \$ 15,000.00

Total Cost: ~~~~~\$ **40,000.00**

7. ANNEXES

7.1. ANNEXURE 1. LEADING PARTNERS' EXPERTISE IN KNOWLEDGE SHARING

A. INTERNATIONAL WATER MANAGEMENT INSTITUTE (IWMI)

IWMI is already in the knowledge sharing business. The Knowledge Management Initiative developed by IWMI between 2001 and 2003 built a structure helped IWMI develop knowledge sharing and knowledge management approaches. This led to the creation of IWMI's Information and Knowledge Group (IKG), followed by a cross-institute coordination effort bringing together a number of roles needed to put knowledge into action. These roles are:

- Knowledge Generation
- Knowledge Sharing
- Knowledge Brokering
- Knowledge Application

IWMI Research Themes:

IWMI's research has been instrumental in shaping the global water agenda. Our aim is to ensure that through effective partnerships, we link key stakeholders such as government agencies, NGOs, regional organizations and others with first class research and development. IWMI constantly evaluates and refines its research agenda to meet changing global and regional needs. To have the greatest impact on poverty reduction, our research agenda was recently re-organized under the following new themes:

Theme 1: Water Availability and Access

Theme 2: Productive Water Use

Theme 3: Water Quality, Health and the Environment

Theme 4: Water and Society

These themes also have a direct link with irrigation, and will therefore be reflected in the work carried out by IWMI under the Water Knowledge Hub initiative.

http://www.iwmi.cgiar.org/Research_Impacts/Research_Themes/index.aspx

With over 30 years of experience in South Asia and Southeast Asia in irrigation management and reforms. IWMI is well positioned to be a leader in the area of irrigation Service Reforms for the Asia Pacific region.

Regional Offices in Asia Region

IWMI India, Pakistan, Nepal http://www.iwmi.cgiar.org/Offices/Asia/South_Asia/

IWMI Sri Lanka - HQ: <http://www.iwmi.cgiar.org/Offices/HQ.aspx> ,

IWMI Southeast Asia: <http://sea.iwmi.org/>

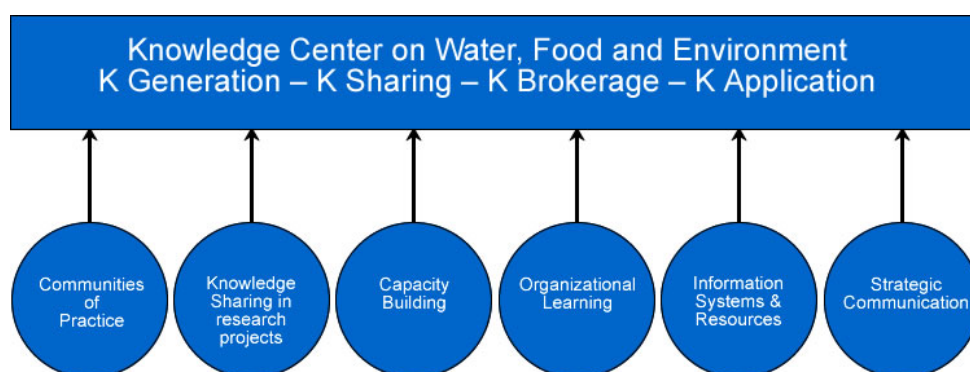
IWMI Central Asia: <http://centralasia.iwmi.org/>

IWMI Knowledge Center Initiative

It is increasingly becoming the business of researchers, particularly in research for development, to be aware of how the knowledge they generate is used, and to do what they can to increase the likelihood of their work having an impact on the communities who can benefit from it. Traditional research approaches are often isolating, allowing for little interaction between researchers, and even less between researchers and end users. Moreover, the final outputs of research usually come in the form of an academic publication, the essence of which is expected to be communicated and disseminated by extension or communication staff - or even extracted by end users themselves. When end users are included in the research process from the inception, it is more likely that the knowledge or technology generated will serve them better.

Building on the hypothesis that research, and its impact, can be improved by sharing knowledge among researchers and involving users throughout the research process, IWMI embarked on a number of initiatives to test, learn about and implement knowledge sharing both on an institutional as well as research level.

To support its knowledge sharing work, IWMI developed a change management process known as the Knowledge Center Initiative (KCI) involving six main pillars of activities:



Through these activities, IWMI works to improve knowledge sharing both within IWMI and the CGIAR as well as with IWMI's external partners and stakeholders through the research process itself. The KCI, an institute-wide initiative, was started in order to foster the sharing of information and knowledge between researchers at IWMI. A major activity to which the initiative contributed is the 'Annual Research Meeting and Knowledge Fair', a re-envisioning of the institute's annual programmatic event which now involves greater participation and opportunities to share research experiences across the institute.

Through the Knowledge Sharing in Research pillar of the KCI evolved IWMI's [Knowledge Sharing in Research Pilot Project](#) (KSRPP) The KSRPP was jointly supported by IWMI, the ICT-KM Knowledge Sharing Project and the Challenge Program on Water and Food (CPWF). KSRPP was started in 2005 and over the next two years worked with a number of IWMI and CPWF projects to test innovative approaches to improve collaboration in projects between researchers, partners and end users in an effort to promote greater uptake of research results.

The [CGIAR's ICT-KM Program](#) recently secured funding for a second phase of knowledge sharing activities under the project 'Improving CGIAR Effectiveness through Knowledge Sharing (KS): A project of the [ICT-KM Program of the CGIAR](#)'. This project has two main components. The institutional component (IKS), led by CIAT, aims to introduce KS into organizational change management projects of CGIAR Centers, Programs and System Units. The knowledge sharing in research (KSinR) component, led by IWMI, aims to enhance research processes, uptake of research results, and overall impact of agricultural research through the use of innovative KS approaches that promote better collaboration and knowledge sharing through research activities.

7.2. ANNEXURE 2. FAO INITIATIVES

Serving both developed and developing countries, FAO acts as a neutral forum where all nations meet as equals to negotiate agreements and debate policy. FAO is also a source of knowledge and information, sees itself as a knowledge organization and has significantly been improving its knowledge management system. Improving knowledge management is one of the key areas of FAO's ongoing reform process (<http://www.fao.org/iee-follow-up-committee/home-iee/en/>).

FAO's activities comprise four main areas:

Putting information within reach.

FAO serves as a knowledge network. We use the expertise of our staff - agronomists, foresters, fisheries and livestock specialists, nutritionists, social scientists, economists, statisticians and other professionals - to collect, analyse and disseminate data that aid development. A million times a month, someone visits the FAO Internet site to consult a technical document or read about our work with farmers. We also publish hundreds of newsletters, reports and books, distribute several magazines, create numerous CD-ROMS and host dozens of electronic fora.

Sharing policy expertise.

FAO lends its years of experience to member countries in devising agricultural policy, supporting planning, drafting effective legislation and creating national strategies to achieve rural development and hunger alleviation goals.

Providing a meeting place for nations.

On any given day, dozens of policy-makers and experts from around the globe convene at headquarters or in our field offices to forge agreements on major food and agriculture issues. As a neutral forum, FAO provides the setting where rich and poor nations can come together to build common understanding.

Bringing knowledge to the field.

Our breadth of knowledge is put to the test in thousands of field projects throughout the world. FAO mobilizes and manages millions of dollars provided by industrialized countries, development banks and other sources to make sure the projects achieve their goals. FAO provides the technical know-how and in a few cases is a limited source of funds. In crisis situations, we work side-by-side with the World Food Programme and other humanitarian agencies to protect rural livelihoods and help people rebuild their lives.

The **Knowledge Forum** provides a direct gateway to the Organization's vast expertise and wealth of knowledge through a series of interactive services. It is also an opportunity to learn from and give a voice to the agricultural community regarding a wide range of issues affecting Food Security and Agricultural Production today. Through the Knowledge Forum, FAO uses knowledge exchange and dialogue to help build a world without hunger.

<http://www.fao.org/corp/knowledgeforum/en/>

IPTRID

FAO hosts the International Program on Technology and Research in Irrigation and Drainage (IPTRID). IPTRID is a multi-donor trust-fund hosted by FAO as a special programme. IPTRID aims at improving the uptake of research, exchange of technology and management innovations by means of capacity development in the irrigation and drainage systems and sectors of developing countries to reduce poverty, enhance food security and improve livelihood, while conserving the environment.

<http://www.fao.org/landandwater/iptrid/index.html>

Study on Analysis of Sustainable Water Resource Use

FAO's Regional Office for Asia and the Pacific, Food and Agriculture Organization of the United Nations has just initiated a regional project funded by the government of Japan- "Study on Analysis of Sustainable Water Resource Use. The scope of the project is regional but the project will focus specifically on river basins in the four following countries: China, Vietnam, Thailand and Malaysia. The project focuses specifically on issues related to policies and practices of water allocation, particularly to agriculture. The immediate objective of the project is to promote sustainable water resource use for agriculture in the Asia Pacific region through capacity development; analyses of water allocation policies, strategies and practices in the selected river basins; and the availability of a comprehensive set of technical and policy assistance instruments.

The project seeks to produce the following outputs: i) Centres of excellence established in a number of river basins; ii) A knowledge network on water allocation; iii) case studies and supporting analysis

and dialogue in representative countries/basins; iv) a publication on review of existing status, challenges and issues; v) Synthesis of findings and recommendations.

Counterpart Agencies : Department of Water Resources, Ministry of Natural Resources and Environment, Thailand;

Agriculture Drainage and Irrigation Division, Ministry of Agriculture and Agro-based Industry, Malaysia;

Department of Irrigation and Drainage, Ministry of Water Resources, China;

Department of Water Resources, Ministry of Agriculture and Rural Development, Viet Nam

Selected on-going technical assistance projects and technical cooperation in the region in the area of irrigation services reform:

• **Thailand:**

FAO is currently providing assistance to the **Royal Irrigation Department of Thailand** on Policies and Strategic Planning for the Thailand Irrigation Sector Reform Programme. The project's goal is to assist RID in its transformation from an agency focused on design and construction of irrigation projects to an agency focused on their management and improvement. The project aims to stimulate this at two levels: a) within RID as an organization and b) at project level, including large, medium and small-scale irrigation systems.

The project has the following objectives:

- Provide necessary legal expertise to enable RID to review present legislation and formulate appropriate administrative regulations for water users organizations, irrigation service agreements and water use rights.
- Provide essential advisory and training support for organizing effective WUOs and transfer of management to them.
- Provide essential advisory and research support to enable RID and representatives of WUOs to follow up and modify appropriate cost sharing arrangements for irrigation O&M, rehabilitation and upgrading, emergency repairs and new construction.
- Follow up and provide technical support for the development of procedures and guides for service agreements, irrigation management audits and contracting for O&M services, and Performance Indicators and Service Satisfaction (PI&SS).
- Provide essential expertise to RID in methods of strategic planning, to facilitate a comprehensive strategic planning process in support of the restructuring of RID, consistent with the ISR Programme.
- Upgrade the training curricula and material and facilities at the Irrigation Development Institute to provide essential and practical training in modern water control, operation and management concepts and water measurement to present and future operation and management staff of RID as well as of WUOs and future private operators.

- Assist RID in identifying necessary capacity building and further technical assistance requirements for implementation of the Irrigation Sector Reform Programme.
 - Study and develop the functional linkages and relationship between RID and Tambon Administration Offices (TAO) in relation to irrigation management transfer.
- **China:**
 - FAO has been introducing irrigation modernization concepts and methodologies in Shanxi and Hubei Provinces through capacity building workshops. FAO has supported the efforts of the Shanxi Water Resources Department in developing its new 5-year irrigation development plan, focused on the modernization of irrigation management in the province. The Department has adopted the MASSCOTE approach for irrigation system-level improvement of performance and preparation of irrigation modernization plans supported by the provincial budget.
 - FAO has been cooperating with the Chinese National Committee on Irrigation and Drainage to develop improved versions of the Rapid Appraisal Procedure for use in the country as a policy evaluation tool by the Ministry of Water Resources. A new version is currently being developed, that will capture better multiple uses, roles and functions of the irrigation systems.

- **Cambodia:**

FAO is providing assistance to the Ministry of Water Resources and Meteorology (MOWRAM) on Strengthening the Participatory Irrigation Management and Development (PIMD) Strategy. The project aims to improve Government capacity on implementing PIMD strategy; improve national capacity on irrigation management and development; and improve productivity and sustainability of irrigated agriculture in Cambodia. The project focuses on: i) review of current PIMD experiences and identification of further needs, with a specific study on women's role in PIMD; ii) study on policy innovations for PIMD implementation which aims at establishment and operation of an Irrigation Investment Fund (IIF) for medium and large scale irrigation systems and an Irrigation Financing Fund (SIFF) for small-scale irrigation development; iii) Capacity building through a cascade of tailor-designed training courses for master trainers, trainers, FWUC leaders and farmers groups; iv) formulation of a 5-year national action plan on the implementation of PIMD strategy.

- **India:**

Since 2006, **the Karnataka Water Resources Corporation (KNNL)**, has been developing with FAO assistance a reengineering approach of irrigation management which is based on a set of applications of Masscote on 4 systems, the development of the capacity within KNNL on modern management techniques together with policy changes at state level. This approach has since been extended to all three water resources corporations of the State. In addition, FAO has provide capacity building services in the adoption of MASSCOTE to Utar Pradesh in the context of a World Bank-funded irrigation investment project.

Programmes due to be initiated in the short-term:

Multiple countries:

- **FAO will initiate early 2009 a regional Capacity Building on Irrigation Modernization in 5Asian Countries** (China, India, Malaysia, Thailand, Vietnam). The project aims at broad and accelerated dissemination, adoption and implementation of irrigation modernization concepts, theories, technologies and practical tools in Asian countries. Implementing partners include relevant government departments, national and local agencies and selected irrigation schemes in the project countries. Following outputs are expected from the project implementation: i) a network of centres of excellence and their associated open communities of practice on irrigation modernization and agriculture water management established and strengthened in each of the project countries; ii) training packages and modules on irrigation modernization and agriculture water management reviewed, updated and developed; iii) technical capacity on irrigation modernization and agriculture water management in project counties improved through training and capacity building, including the development of a corps of 25 trainers of trainers.
- **Development of generic subregional water investment frameworks in Asia**

The recent international crisis related to soaring food prices has re-focused the attention of the international community on the food security imperative. Countries in the region have indicated that they would accelerate or strengthen their irrigation rehabilitation, construction and water management programmes while major donors have emphasized the importance of public investment in irrigation infrastructure and policy reform. Investment flows into the irrigation sector are thus expected to significantly increase in the coming years. In view of the poor investment record in the irrigation sector in the region, the lack of success of institutional reform in a number of countries, and the recent imbalance of investment patterns and neglect of investments aimed at improving water productivity of rainfed agriculture and small-scale water control, that would favour the populations most affected by the soaring food prices, it is necessary to support international, regional and national efforts and ensure that they deliver the expected results. In addition, in view of the increasing water scarcity and related environmental problems in the region, future investment needs to be framed in the context of natural resources constraints, address natural resources conservation and minimize environmental impacts.

The issue is not only investments, but also governance. Both the large regional commands and the groundwater irrigated areas of the region may have reached productivity limits (it is even estimated that productivity may be declining for some major food baskets) not just because of scarce water or accumulation of salinity, but also because of institutional rigidity. These structural constraints need to be addressed for moving towards more responsible (i.e. governance focused) and responsive productivity from irrigation. If these structural constraints are not addressed, production may not respond to higher prices. A water investment framework, thus, also needs to address hard and soft institutions.

Objectives:

The project is aimed at:

- developing generic multidisciplinary and multisectoral water investment frameworks in support of meeting MDGs in the region, to increase water-based food production and productivity (crops, livestock, fisheries, forestry), income generation and livelihoods, contribute to poverty alleviation and improve the environment. The project would produce generic investment frameworks covering types of farmers, producers and natural resources users and managers, hard institutions (including information, extension, post harvesting and marketing), soft institutions (legal framework, policies, incentives and markets) and all sources of financing (national budgets, local governments, private sector, farmers etc.) for South Asia, Southeast Asia and Northeast Asia

The water investment frameworks would be used for:

- providing a framework for regional support
- supporting the development of medium-long term programmes
- support the preparation of investment and technical assistance projects
- support an interdisciplinary mapping of FAO-RAP activities in the water sector in the region

The sub-regional scale is considered to be a good compromise to develop generic but sufficiently specific investment frameworks based on pertinent typologies and common issues, in order to support the development of national/subnational water investment frameworks.

An important component of the water investment frameworks will be the design of a monitoring of investment and results system in the region, which would link the investment framework to MDG targets, national socio-economic development indicators, and sectoral targets.

Expected outputs:

- 3 generic subregional water investment frameworks covering South Asia, Southeast Asia and Northeast Asia
- Design of a monitoring of investment and results systems for water and agriculture

7.3. *ANNEXURE 3. LIST OF EXISTING IWMI PARTNERS IN ASIA*

IWMI SOUTH ASIA

International Partners

Cemagref, France	www.cemagref.fr
International Crops Research Institute for Semi-Arid Tropics (ICRISAT), India	www.icrisat.org
International Livestock Research Institute (ILRI)	www.ilri.org
International Maize and Wheat Improvement Center (CIMMYT), Mexico	www.cimmyt.org
International Rice Research Institute (IRRI), Philippines	www.irri.org
The International Sedimentation Research Institute, Pakistan	

Local Partners

Aga Khan Rural Support Program	www.akdn.org/agency/akf/html
BAIF Development and Research Foundation	www.baif.org.in
Center for Economic and Social Studies (CESS)	www.cess.ac.in
Central Soil Salinity Research (CSSR)	www.cssri.org
Gujarat Ecology Commission (GEC)	www.gec.gov.in
Indian Council for Agricultural Research (ICAR)	www.icar.org.in
Institute of Rural Management (IRMA)	www.irma.ac.in
International Development Enterprise (DE)	www.ide-india.org
Irrigation Dept NWFP Water and Power Development Authority	www.nwfp.gov.pk/
NM Sadguru Water and Development Foundation	www.nmsadguru.org
Professional Assistance for Development Action (PRADAN)	www.iwmi.cgiar.org
Self-Reliant Initiative through Joint Action (SRIJAN)	www.srijanindia.org
Seva Mandir	www.sevamandir.org

SOUTHEAST ASIA (MALAYSIA, THAILAND, CAMBODIA, LAOS, VIETNAM)

Agence Française de Développement - Agency of Phnom Penh, Cambodia (AFD)	www.afd.fr
Asian Institute of Technology, Thailand (AIT)	www.ait.ac.th
Consultative Group on International Agricultural Research Centers (CGIAR)	www.cgiar.org
FAO Regional Office for Asia and the Pacific, Thailand (FAO-RAP)	www.faoap-apcas.org

Institut De Recherche Pour Le Developpement (IRD)	www.ird.fr
Khon Kaen University, Thailand (KKU)	www.khonkaen.com
Land Development Department, Thailand (LDD)	www.ddd.go.th
Mekong Program on Water Environment and Resilience, Thailand (M-POWER)	www.sea-user.org/mweb.php?pg=172
Mekong River Commission, Lao PDR (MRC)	www.mrcmekong.org
Ministry of Water Resources and Meteorology, Cambodia (MOWRAM)	www.mowram.gov.kh
National Agriculture and Forestry Research Institute, Lao PDR (NAFRI)	www.nafri.org.la/
Network of Asian River Basin Organizations, Japan (NARBO)	www.narbo.jp
Royal Forest Department, Thailand	www.forest.go.th/default_e.asp
Soils and Fertilizers Institute, Vietnam (SFI)	
Stockholm Environment Institute – Asia, Thailand (SEI)	www.sei.se/asia
Sustainable Mekong Research Network, Thailand (Sumernet)	www.sumernet.org
The World Conservation Union - Asia Regional, Thailand (IUCN)	www.iucn.org/places/asia/thailand.htm

CENTRAL ASIA

International Partners/ Donors

Asian Development Bank (ADB)	www.adb.org
Global Water Partnership	www.gwpforum.org
PFU/ICARDA and other CG centres	
Swiss Agency for Development and Cooperation (SDC)	www.sdcindia.in

Regional Partners

Interstate Commission for Water Coordination (ICWC) in Central Asia	www.icwc-aral.uz
Scientific Information Center of ICWC (SIC-ICWC)	www.sic.icwc-aral.uz

National Partners

Ministry for Agriculture and/or Water Resources in Kyrgyzstan,
Ministry for Agriculture and/or Water Resources in Kazakhstan,

Ministry for Agriculture and/or Water Resources in Tajikistan,
Ministry for Agriculture and/or Water Resources in Turkmenistan
Ministry for Agriculture and/or Water Resources in Uzbekistan
National Agricultural Research Systems (NARES)

Universities

Water organizations

IRAN

Agricultural Engineering Research Institute (AERI) <http://aeri.areo.ir/>
Agricultural Research & Education Organization (AREO) www.areo.ir
Forest, Rangeland and Watershed Management Organization (FRWO) <http://janganal.areo.ir/> OR
<http://www.rifr-ac.ir/>
Khuzistan Water Power Authority (KWPA) www.KWPA.ir
Ministry of Energy (MoE) www.moe.org.ir

National Salinity Research Center (NSRC) <http://shoori.areo.ir/> OR
www.insrc.org
Seed and Plant Improvement Institute (SPI) <http://bazar.areo.ir/>
Soil Conservation and Watershed Management Institute (SCWMRI) www.scwmri.ac.ir
Tarbiat Modares University www.modares.ac.ir

NEPAL

Department of Irrigation (DOI), Nepal www.doi.gov.np

Institute of Water and Human Resource Development (IWHRD), Nepal No website
International Development Enterprise (IDE), Nepal No website
Peoples Science Institute, (PSI), India www.peoplescienceinstitute.com

Stockholm Environmental Institute (SEI), Nepal www.sei.se
Water and Energy Commission Secretariat (WECS), Nepal wecs@mos.com.np

PAKISTAN

Agriculture University of Peshawar (AUP) www.upesh.edu.pk

Asian Development Bank (ADB) www.adb.org

Ayub Agricultural Research Institute
www.punjab.gov.pk/agriculture/.../ayub_research_institute.htm
Centre of Excellence in Water Resources Engineering, University
of Engineering and Technology, Lahore.(CEWRE) www.uet.edu.pk

Department of Irrigation Punjab (DOI)	http://punjabgovt.nic.in/government/govt76c.htm
Institute of Public Health. (IPH)	No website
Japan Bank for International Cooperation (JBIC)	www.jbic.go.jp/english
Ministry of Food, Agriculture and Livestock (MINFAL)	www.pakistan.gov.pk/ministries/index.jsp?MinID=8&cPath=88
Mona Reclamation Experimental Project (MREP)	No website
Pakistan Agricultural Research Council (PARC)	www.parc.gov.pk/
Pakistan Council of Research in Water Resources (PCRWR)	www.pcrwr.gov.pk
Pakistan Meteorological Department (PMD)	www.pakmet.com.pk
Planning and Development Board Punjab (P&D)	http://puda.nic.in/legal1.htm
Planning and Development Division (P&D)	www.planningcommission.gov.pk/
Punjab Agriculture Department	http://punjabgovt.nic.in/GOVERNMENT/GOVT751.HTM
Punjab Irrigation and Drainage Authority (PIDA)	www.planningcommission.gov.pk/
Sindh Irrigation and Drainage Authority (SIDA)	www.sida.org.pk
Soil Salinity Research Institute (SSRI)	www.tcdc.gov.pk/ssri_hafizabad/index.html
The International Waterlogging and Salinity Research Institute (IWASRI)	www.un.org.pk/undp/sl/pak97024.htm
The Soil Survey of Pakistan (SSP)	www.pakistan.gov.pk/divisions/ContentListing.jsp?DivID=10&cPath=91_97_750
The World Bank (World Bank)	www.worldbank.org
University of Agriculture Faisalabad (UAF)	www.uaf.edu.pk
Water and Power Development Authority. (WAPDA)	www.wapda.gov.pk/
Water and Sanitation Agency (Faisalabad) (WASA)	www.lda.gop.pk/lda_wasa.html
World Wide Fund for Nature – Pakistan (WWF)	www.wwfpak.org

7.4. ANNEXURE 4 LIST OF EXISTING FAO PARTNERS IN ASIA PACIFIC REGION

To be completed

8. REFERENCES:

1. Carel Keuls, UNESCO-IHE Institute for Water Education, Guidelines for Development / Business Plans of Candidate Regional Water Knowledge Hubs Version 1.2, December 2007