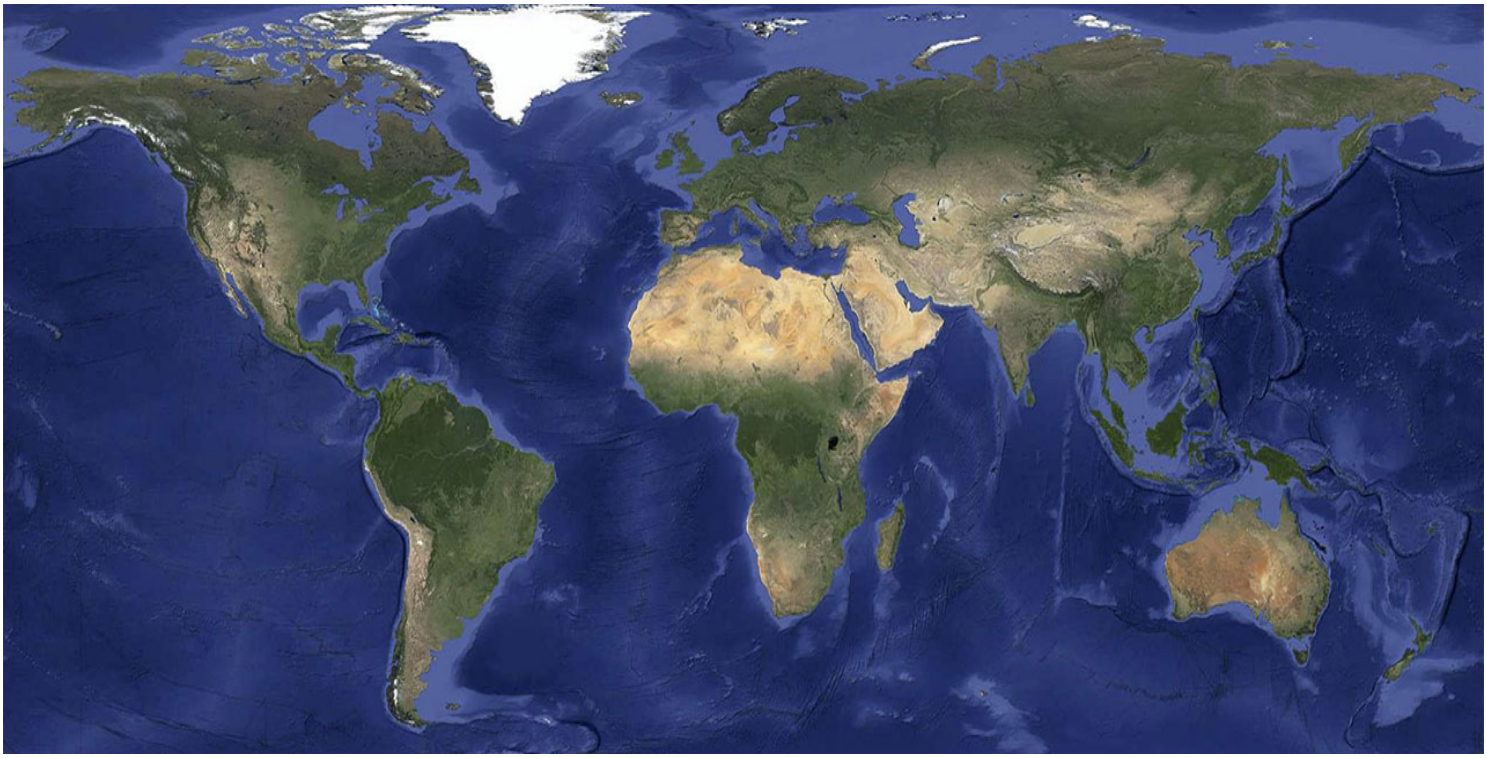
A ROAD MAP TO ICID VISION 2030

A WATER SECURE WORLD
FREE OF POVERTY AND HUNGER

ICID • CIID

INTERNATIONAL COMMISSION ON IRRIGATION AND DRAINAGE

ICID Membership Network



> The world is not ours to keep.
> We hold it in trust for future generations.
>
> — Kofi Annan, UN Secretary General

> Reflecting on the Millennium Development Goals and looking ahead to the next 15 years, there is no question that we can deliver on our shared responsibility to put an end to poverty, leave no one behind, and create a world of dignity for all.
>
> — Ban Ki Moon, UN Secretary General

> We live in a complex world. The United Nations cannot succeed alone. Partnership must continue to be at the heart of our strategy. We should have the humility to acknowledge the essential role of other actors, while maintaining full awareness of our unique convening power.
>
> — António Guterres, UN Secretary General

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> At its essence, sustainability means ensuring prosperity and environmental protection without compromising the ability of future generations to meet their needs. A sustainable world is one where people can escape poverty and enjoy decent work without harming the earth's essential ecosystems and resources; where people can stay healthy and get the food and water they need; where everyone can access clean energy that doesn't contribute to climate change; where women and girls are afforded equal rights and equal opportunities.
>
> **— Ban Ki Moon, UN Secretary General**

Foreword

Dr. Saeed Nairizi
President

The International Commission on Irrigation and Drainage (ICID), established in 1950, is perhaps the only global professional irrigation and drainage network, which strives to bring together various stakeholders of the irrigation and drainage sector to promote sustainable management of water for agriculture worldwide. ICID provides a unique platform for exchange of knowledge and information related to agriculture water management - irrigation, drainage, drought and flood management. It promotes its objectives through a network of professionals associated with National Committees (NC) in member and non-member countries, like-minded international organizations, private companies, and institutional and individual members.

The ICID network is a product of the times when sharing of experiences and transfer of technologies were largely guided through professional platforms providing opportunities for networking with peers. It has actively contributed to the success of the first Green Revolution by facilitating information and knowledge exchange, technology transfer to developing countries of Asia and Africa, and promoting research and development.

Having been in existence for more than 65 years, the mandate of ICID has evolved over the years, from a purely engineering perspective of canal irrigation to the integrated water resources management approach by embracing the technical, agronomic, socio-economic and environmental perspectives of agriculture water management. With Information Technology and World Wide Web subsuming, some of the networking functions of the professional organisations, ICID has been making incremental changes to re-orient its course of action and introducing new emerging tools for sharing knowledge from time to time. The two World Irrigation Forums organized by ICID in 2013 and 2016 have helped in experiencing closer interactions with the other stakeholders such as farmers, policy makers, professionals, researchers, academicians and private sector.

The Earth Summit 1992 provided impetus to many international and professional organizations for supporting member countries in addressing new and emerging challenges of reconciling the economic and environmental goals. RIO+20 in 2012 provided the desired push in the political process by articulating 'The Future We Want' that lead to the globally acceptable Sustainable Development Goals (SDGs) adopted by the United Nations General Assembly in September 2015. For providing support to National Committees and irrigation professionals in fulfilling these expectations, ICID started a systematic review of its objectives, goals and activities and established a Consultative Group. After detailed deliberations, ICID Vision 2030 with mission and organizational goals were adopted by International Executive Council in October 2015.

This document "A Road Map to ICID Vision 2030", developed over past two years, presents an Action Plan to move towards "A water secure World free of poverty and hunger through sustainable rural development".It outlines the strategy to convert the vision into a reality. It incorporates the Action Plan that identifies the activities to be undertaken by members of the network, i.e., the National Committees, the technical Working Groups, the Regional Working Groups, the Management and ICID Central Office. The identified activities (given in the Appendix) will be reviewed during the Congress every three years and make necessary course correction.

I wish to dedicate the Road Map to the farmers around the world and I am confident that it would help strengthen National Committees and facilitate them, together with the private sector, in supporting their national governments in achieving the targets set under a number of SDGs related to water and poverty. At the same time, I am hopeful that the Road Map will motivate and guide all the network members to contribute to the ICID Vision 2030.

The entire network has participated in shaping the ICID Vision 2030 and prepared this Road Map. I acknowledge the excellent work done by the Consultative Group, Chaired by Dr. Hüseyin GŰNDOĞDU (Turkey) with Dr. Willem F. Vlotman (Australia), Dr. Sylvain Perret (France), Mr. Ian Makin (UK), Prof. Dr. Charlotte de Fraiture (The Netherlands), and Mr. Waseem Nazir (Pakistan) as its members and Er. Avinash C. Tyagi, Secretary General, in steering the discussions leading to the development the Road Map to ICID Vision 2030.

The challenge of eradicating poverty and hunger requires greater cooperation and collaboration among actors working in different related sectors through effective partnerships. The Road Map to ICID Vision 2030 is a small contribution from ICID in this endeavour. I wish all our members and partners good luck in their effort to playing their roles in contributing to 'The Future We Want'.

September 2017

Preface

Avinash C. Tyagi
Secretary General

The formal establishment of a Consultative Group (CG) by the President Dr. Saeed Nairizi, in the beginning of his tenure in December 2014 was initiation of a process of systematic introspection and analysis of the vision, objectives and functioning of ICID as a professional network. The Group was supported by the deliberations and outcomes of a number of work bodies established during the intervening period. Two of the work bodies directly responsible were: Task Force on Revitalization of National Committees and Task Force on Financing. More than 30 NCs and 80 experts provided their inputs to CG while formulating the strategy by responding to a set of questionnaires. The Group also benefitted from the feedback received from the discussions President and Secretary General had with various NC experts and policy makers in the member countries including China, Korea, Russia, Tajikistan, Thailand and Turkey, and the discussions of President with the Ministers of Bhutan, China, Ethiopia, Indonesia, Nepal, Russia, Sudan, Tajikistan and Thailand, wherein he gauged the expectations the policy makers have from ICID as an organization.

CG also took into account various reports and documents prepared in the field of agriculture, food security, climate and water by various international organizations in the last 5 years. It kept itself abreast of the process of development of Sustainable Development Agenda and the subsequent process of articulating key performance indicators, particularly in respect of the SDG 1-Poverty, SDG 2-End Hunger, SDG 3-Healthy Lives, SDG-6 Water for all, SDG-13 Combat Climate Change, SDG-15 Protect and Restore Ecosystems and SDG-17 Partnership.

The vision, mission and the organizational goals were deliberated in the meetings of various work bodies during the 66th meeting of the International Executive Council held in Montpelier in October 2015. Recognizing that realisation of the vision of a network lies in clearly communicating the Vision among all the stakeholders, the exercise of developing the Action Plan was spread over the two years starting with 66th IEC meeting in 2015 that adopted Vision 2030. CG developed strategies and called upon the various Working Groups to identify the activities during 67th IEC meeting in 2016 and subsequently. The Road Map also reflects the views and suggestions made by various Office Bearers and experts during the 21st and 22nd Congresses of ICID, the Second World Irrigation Forum and other ICID events and the informal studies taken on strength and weaknesses of the network from time to time.

The Road Map to ICID Vision 2030 is a compilation of the outcomes of all the above deliberations. The Road Map document includes the ICID Vision 2030 adopted by 66th IEC in Montpellier with vision, mission and organizational goals. The Road Map outlines the strategies adopted to convert the goals into activities. The Action Plan includes actions that would be required for converting vision to action. It includes an

Appendix that details various activities planned for 2017-21, would be reviewed once every three years for course correction where required. Various WGs have given the Action Plan in the present shape and they would continue to keep the document under review and at the same time populate it further through their activities.

The lively discussions that took place in Montpelier with not only NCs but also a number of our partners such as FAO, IWMI, World Bank, WMO, and ICRISAT richly contributed to the discussions. On behalf of CG, I thank all the members of the network who have contributed to the process in a coherent and cooperative manner.

It is expected that the network members would be able to benefit from this collaborative effort and be able to contribute to their national as well as individual professional goals.

September 2017

EXECUTIVE SUMMARY

Water, as the main input for food production, has played the most significant role in population growth and societal evolution over much of the recorded human history. Numerous civilizations flourished and then also became extinct because of the way they managed their agricultural water. By being a direct or indirect part of 7 out of 17 Sustainable Development Goals, water assumes inclusive dimension both as a natural resource for rural development and an essential input commodity for industrial and human (life-style) consumption.

Ironically, agricultural water seems to be a victim of its own success as it supports the human life multiply, and enables better living conditions, only to be eventually challenged by increasing demand on its share of the pie, i.e., available freshwater. Due to increasing industrial prosperity over the last several decades and demographic changes taking place around the world, urban oriented socio-economic considerations have started attracting greater attention of policy makers and investors at the direct cost of rural water issues.

Resolution of development conflict is feasible through exchange of knowledge and sharing of technology through communication, cooperation and/or collaboration. For more than sixty-five years ICID network has symbolized the share and exchange of knowledge and technology for agricultural water management (AWM). Under the limiting natural resources, climate change and rising conflicts, the task of ICID network has become even more critical and daunting. The newly emerging and competing demands for water, coupled with the uncertainty of impact of climate change on food productivity, have challenged the ICID stakeholders and partners to redouble their efforts. ICID Vision 2030 for **a water secure world free of poverty and hunger through sustainable rural development** through its mission to facilitate prudent AWM by encouraging interdisciplinary approaches to irrigation and drainage management is an expression of intent of the network to help various stakeholders in moving towards a 'World we Want'.

This **'Road Map to ICID Vision 2030'** has been a collective effort of all ICID network members and partners who have deliberated various implications of emerging socio-economic scenarios and their effect on AWM issues. ICID network, which serves National Committees (NCs), irrigation and drainage professionals, farmers, policy makers, irrigation and drainage industry, researchers and the academia, and the society at large, aims to advocate an enabling integrated policy environment for facilitating multi-disciplinary innovations to increase land, water and crop productivities in a sustainable manner in a changing climate.

A symbiotic network such as ICID will remain only as strong as its members and partners. Ideally, NCs include experts from water resources, irrigation, agriculture, rural development, hydro-power, environment, and flood management sectors. In majority of countries NCs are hosted within one of the related government departments dealing with the above subjects and include representatives from research institutions, universities, private sector companies, and in some cases farmers' groups. Through ICID, NCs undoubtedly serve as an important link between nationally produced knowledge and global AWM stakeholders and communities. ICID partner organizations also play a significant role in contributing to this continuous build-up of subject-matter knowledge body.

In order to realize the vision, ICID has set clear organisational goals for the network that will enable NCs to re-confirm or re-orient their national goals or will help establish specific goals at the national level, addressing the specific national needs. ICID Vision 2030 sets out six organizational goals:

Goal A : *Enable Higher Crop Productivity with Less Water and Energy*
Goal B : *Be a Catalyst for a Change in Policies and Practices*
Goal C : *Facilitate Exchange of Information, Knowledge and Technology*
Goal D : *Enable Cross-Disciplinary and Inter-Sectoral Engagement*
Goal E : *Encourage Research and Support Development of Tools to Extend Innovation into Field Practices*
Goal F : *Facilitate Capacity Development*

With support from the experts participating in different technical Working Groups (WGs), the NCs and international partners, ICID Central Office will continue to play a pivotal role in coordination and management of the network and will facilitate the network in realisation of organizational as well as national level goals. The Road Map also includes an Action Plan for 2017-21. Various actions under the following categories would be required to be undertaken during the next five years for realising the vision:

1. Strengthening of the ICID Network and National Committees;
2. Collective Network Knowledge Management;
3. Organizational Changes in the Network; and
4. Enhanced Visibility of ICID Activities

Activities planned to be implemented during the next five years to form part of this Road Map.

This Road Map intends to further support the NCs in building blocks of the network, and enable them to play a, much needed, wider role within the development community in their respective countries and regions and a more prominent role at international level. NCs need to be strengthened to serve as the common platform for various AWM stakeholders. The new vision and action plan is expected to boost the role of NCs in implementing sustainable development agenda within their countries. Particularly with respect to meeting the goals of poverty alleviation, food security and sustainable water management and other related SDGs in the context of Climate Change. As AWM issues become more multi-sectoral and multi-disciplinary in nature, NCs need to consider active involvement of other relevant national stakeholders and mutually beneficial collaboration with the private sector.

In some respects, ICID may have limited role in national and local activities, however, it can assist NCs with technical support, capacity development and realization of greater regional cooperation through the newly established Technical Support Unit (TSU). For example, TSU, a distributed network of expert volunteers from NCs, will help NCs in general assessment of gaps in AWM capacities within the countries and suggest possible solutions; develop feasibility reports for small and medium irrigation, drainage and flood management proposals and undertaking assessment of training requirements. ICID network, through its collective knowledge, can also facilitate NC members in communicating with their policy makers, who are primarily responsible for basic citizen provisions such as water for livelihood in agriculture sector and human consumption.

AWM knowledge is the core strength of ICID network and therefore it needs to be assimilated more efficiently by the WGs, exchanged or shared more widely and made available ubiquitously using the best tools that ICTs have to offer. Based on more than six decades of experience, ICID network strives to emerge as a global knowledge hub - a one stop information service for irrigation and drainage stakeholders throughout the world.

The irrigation and drainage knowledge is the product of work done in national institutes, research centres, and field level project activities. In order to enhance research activities in science, technology, and management aspects of irrigation and drainage and to strengthen the capabilities in the member countries, International Research Program for Irrigation and Drainage (IRPID) has been established. The Program is implemented through establishment of Regional Nodes hosted by National Committee of ICID, in collaboration with NCs in the region. NCs need to come forward either to set up a regional node or join the nearest regional node. The network will be made more vibrant and expanded in areas not already covered.

Well-organized and well-attended ICID network events and their technical gatherings are also opportunities that provide live platforms for policy advocacy, inter-sectoral communication, multi-disciplinary collaboration, and enhanced geographical cooperation among the stakeholders. Active participation of young professionals in such events helps spread more awareness about AWM as a challenging but intellectually satisfying career option. Host NCs get the opportunity of expanding their global horizons with the participation of experts from all corners of the world and to showcase national achievements and experiences in the development of irrigation and drainage systems as well as local heritage, culture and hospitality.

Partnership is recognized as an essential mechanism for ensuring inter-disciplinary approaches in AWM and has been an important plank used by ICID in the past. Active development of thematic partnerships both at global and national levels need to be encouraged by ICID members and support organizations. Senior level policy makers with their reach to various national agencies also need to be involved through NCs in AWM partnership development.

ICID, as an organization of voluntary professionals, operates under significant resource constraints (both human and financial) to carry out its stated mission. For improving the profile of NCs within the countries and ensuring their long-term financial sustainability the private public partnership in the NC needs to be further explored. NCs need to consider organizing at least one annual event, undertake professional activities to raise resources, strategically partnering with other water sector professional groupings. NCs can improve their visibility at the national level by organizing important technical events, say in the form of seminars on ICID Foundation Day or during the annual general body meeting.

Most of the identified activities of the Action Plan for the next five years have definite resource implications in terms of financial costs as well as voluntary human resources contributions. Innovative ways need to be explored for broadening the revenue base for the network. The strategies and activities to achieve ICID's organizational goals have to be flexible enough and can be fine-tuned according to the new developments. Being a rolling plan, the activities under various strategies would be monitored every year at the annual meeting of IEC while the strategies themselves would be reviewed and fine-tuned every three years.

1. INTRODUCTION

Water, as the key natural resource, is fundamental to all economic, social and environmental development processes. Thus, efficient water resources management is essential for achieving poverty reduction through inclusive growth;maintaining public health and food security; providing livelihoods for a life of dignity for all; and sustaining long-lasting harmony with the Earth's essential ecosystems.

Members of ICID network have given themselves a constitution that binds them together and sets out a mandate for working towards a world free of poverty and hunger through socially responsive and environmentally sound irrigation, drainage, flood and drought management, loosely termed as Agriculture Water Management (AWM). ICID network is dedicated to enhancing food production worldwide by improving the efficiency of production factors, including land, water, labour, equipment, and agrochemicals.

Given the rapid changes taking place within the global development scenario due to demographics, climate change and degradation of natural resources, AWM also needs to change in order to ensure water security, food security and sustainable rural development. In view of this dynamic development scenario ICID as a network of AWM professionals decided to give itself a reality check and reorient its vision and strategies to achieve its stated objectives.

This document presents the Road Map to ICID Vision 2030 of **"A water secure World free of poverty and hunger through sustainable rural development,"** and agreed strategies to convert this vision into actions. It sets out a functional framework that brings together the organization's work for greater focus and provides a set of actions with various partners and stakeholders at different levels of engagement with reference to the present development scenario and the emerging challenges for humanity as a whole. It identifies changes that may emerge up to 2030 amid concerns of water and food security and impact on environment. The Road Map is aligned with the SDG targets and takes into consideration the ICID's overall mandate as well as specific goals and issues related to agriculture water. The mutually agreed strategies are intended to facilitate positive, substantive and measurable change at global, regional and national levels.

This Road Map is intended to support the National Committees (NC), the most basic building blocks of the ICID network, and enable them play a much- needed wider role within the development community in their respective countries and regions as well as a more prominent role at international level. The document summarizes what the network represents and whom it intends to serve through the sustainable development paradigm over the years up to 2030. It represents an agreement among the constituents on the future role of ICID and its members that gives forward looking direction to the activities of ICID.

The Road Map articulates various strategies for achieving its organizational goals and the necessary activities to carry out these strategies. It attempts to bring out a coherent program of practices that will address the identified needs and facilitate the implementation process. The Road Map includes an Action Plan for the period 2017-21. The Action Plan is an expression of the intent of various contributors – National Committees, Working Groups, Regional Working Groups, Management and the Central Office. It includes an Appendix that lists the activities planned during the next five years along with the necessary implementation information, e.g., the kind of outputs, who all would be responsible for different activities and the possible timeline to complete the tasks and activities.

With the professional volunteerism as its core value and the resources as constraints, the Action Plan is intended to be a living document with possibility of revisions through both internal review processes and inputs from partners. The Action Plan would be monitored annually and reviewed triennially.

SUSTAINABLE DEVELOPMENT GOALS

Goal 1. **End poverty in all its forms everywhere**

Goal 2. **End hunger, achieve food security and improved nutrition and promote sustainable agriculture**

Goal 3. **Ensure healthy lives and promote well-being for all at all ages**

Goal 4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

Goal 5. Achieve gender equality and empower all women and girls

Goal 6. **Ensure availability and sustainable management of water and sanitation for all**

Goal 7. Ensure access to affordable, reliable, sustainable and modern energy for all

Goal 8. Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

Goal 9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation

Goal 10. Reduce inequality within and among countries

Goal 11. Make cities and human settlements inclusive, safe, resilient and sustainable

Goal 12. Ensure sustainable consumption and production patterns

Goal 13. **Take urgent action to combat climate change and its impacts**

Goal 14. Conserve and sustainably use the oceans, seas and marine resources for sustainable development

Goal 15. **Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss**

Goal 16. Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels

Goal 17. **Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development**

2. AGRICULTURE WATER MANAGEMENT IN A CHANGING DEVELOPMENT ENVIRONMENT

Freshwater plays a fundamental role in support of the environment, society and the economy. Water is closely linked to a number of key global challenges. Its role in eradicating hunger, achieve food security and improve nutrition and promote sustainable agriculture is critical.

ICID is committed to enhance the world-wide supply of food and fibre which can come mainly from irrigated agriculture. It believes that food security at various levels: household, local, regional, national and global, requires assured and stable agriculture production. ICID believes that food production should be enhanced in ways that do not compromise the environment, now and for generations to come.

2.1 Sustainable Development Agenda

Member States of the United Nations launched a process to develop a set of sustainable development goals (SDGs) based on their agreed perspective on the "Future We Want"(UN, 2012). SDGs (UN, 2015b) recognize water to be at the core of sustainable development. Underlying linkages between water and sustainable development reach far beyond its social, economic and environmental dimensions. Human health, food and energy security, urbanization and industrial growth, and climate change are critical challenges where policies and actions at the core of sustainable development can be strengthened (or weakened) through water. Therefore, it is not surprising that seven out of seventeen SDGs (1, 2, 3, 6, 13, 15 and 17) are directly or indirectly influenced by Agriculture Water Management (AWM).

Post-2015 Sustainable Development Agenda stresses the importance of access by all countries to environmentally sound technologies, new knowledge, know-how and expertise, and highlights the importance of cooperative action on technology innovation, research and development. ICID provides the platform for the process of cooperative actions and technology transfer through partnership created among the AWM professionals around the world.

2.2 Water, Energy and Food Nexus

Freshwater is essential for production of food and generation of energy. It also plays vital roles in achieving progress in all aspects of development. Demands for freshwater, food and energy will continue to increase over the coming decades to meet the needs of growing populations and economies, changing lifestyles and evolving consumption behaviours. These trends will greatly amplify existing pressures on finite natural resources and on ecosystems and the life-sustaining services they provide. As countries commit themselves to reduce their carbon footprints under National Climate Change Action Plans, increasing energy demand has put further stress on agricultural production for bio-energy, and in turn on the land and water resources needed for this. ICID recognizes the close and intricate water-energy-food nexus (FAO, 2014; Vlotman et. al.; 2014) and importance of engaging the respective stakeholders and users from these sectors for better understanding of their needs while articulating a vision for AWM.

2.3 Agriculture Water Management Issues

In order to feed the 9 billion people in 2050, under current market, institutional and economic systems, the world must produce 40% more food by 2050 and 100% more in developing countries (FAO, 2012). These challenges have to be met with limited land and water resources, using less energy, fertilizer and pesticides and under climate change uncertainties while coping with rapid developments in many other related spheres. Increasing food production through sustainable use of water will, among others, require large investments in infrastructure, and research and development that are compatible with the preservation of ecosystems and resilient to climate change. Globally, the current growth rates of agricultural water withdrawals are unsustainable to begin with. Therefore, the sector must work efficiently to increase water and crop productivity. Agricultural water pollution, which can worsen with increased intensification of agriculture, will also need to be managed well.

Climate change is expected to result in increased frequency of droughts, while some will experience increasing incidences of floods and other extreme events due to increasing trends in precipitation intensity and variability (IPCC, 2012). This increasing variability of climate exacerbates risk and unpredictability for farmers, particularly those who mainly depend on the rain-fed agriculture and are the most economically vulnerable and the least capable to adapt. In order to make agriculture sector sustainable as well as profitable, it is imperative to increase the climate resilience of agriculture by expanding irrigated area, among others,without any further increase in water withdrawals. The conceptual and practical framework of climate-smart agriculture (FAO, 2013) recognizes the urgent need for adaptation and innovation in irrigated agriculture.

Irrigation, supported by proper drainage and possible reuse of drainage water, is expected to play a much bigger role in future. With the potential for further expansion of irrigated agriculture estimated to increase by only 20 Mha by 2050 (FAO, 2012) greater emphasis must be on improved performance of the existing irrigation infrastructure through its modernization and optimal utilization of every drop of water available at the farm level. Salinization of soil due to irrigation, accentuated by waterlogging caused by excess irrigation, has affected large areas reducing land productivity and is a major environmental concern, which needs to be addressed timely.

The challenges at the interface of water and sustainable development vary from one region to another. Increasing resource use efficiency, reducing waste and pollution, influencing consumption patterns and choosing appropriate technologies are the main challenges facing Europe and North America. Maintenance of old drainage systems in the reclaimed agricultural lands are also presenting new challenges in some of the countries. Although the region does not suffer from large precipitation variability, incidents of droughts are increasing. Reconciling different water uses at the basin level and improving policy coherence nationally and across the borders will be priorities for many years to come.

Sustainability of irrigation and drainage services in the Asia and the Pacific region to support high density of population is essential to meet the basic need for access to food and safe drinking water. Large parts of the region in the west and south Asia experience arid and semi-arid climate while parts of the east and south-east Asia and the Pacific islands experience tropical humid climate. The water resources of the region are largely dependent on the monsoon. The region is subjected to frequent climate extremes, droughts and flood events. In many parts of the region, seasonal water scarcity is increasing and monsoon activities show clearly changing patterns. The region has seen development of large irrigation infrastructure in the last fifty years which has helped create food security and fuelled the growth. However, the farm sizes in the region are small and the vast majority of farmers engage in subsistence farming. Water managers in the region are facing the challenge of poor irrigation services provided through aging irrigation and drainage infrastructure and rapidly depleting groundwater resources. The priorities for the region lie in improving overall water governance, including groundwater management; pollution control; rehabilitation and modernization of existing irrigation systems; improving livelihoods and attractiveness of irrigation farming; improving efficiency in water use and increasing resilience to water-related disasters.

Water scarcity is at the forefront of consideration of water-related challenges impeding sustainable development in the Arab region[1] which is characterized by unsustainable consumption and over-abstraction of surface and groundwater resources. Water salinity and soil salinization are major concerns of the region, which must be addressed through cost effective,innovative and adaptable water abstraction and use practices. Options to enhance water supplies include water harvesting, wastewater reuse and solar energy based desalination combined with micro-irrigation technologies that make efficient use of expensive water and improve financial viability of agriculture.

A major priority for the Latin America and the Caribbean region is to build the formal institutional capacity to manage water resources and enable sustainable integration of water resources management and use for socio-economic development and poverty reduction. Further priority is required to ensure the full realization of the human right to water and sanitation in the context of the post-2015 development agenda. Possible solutions lie in making agriculture systems resilient against droughts and modernising existing large irrigation systems.

In Africa, which could not reap the benefits of the first green revolution, unlike the Asian region, the aim should be to make agriculture a sustainable and vibrant driver of national economies. Currently only 5% of the Africa's potential water resources are developed and average per capita storage is 200 m^3 as compared to 6,000 m^3 in North America (UN, 2015a). Only 5% of Africa's cultivated land is irrigated with less than 10% of hydropower potential having been utilized for electricity generation. Smallholders with land holdings of less than 1 ha have no guaranteed access to water or to support services and training. In sub-Saharan Africa, the irrigation sector is largely based on informally

[1] The Arab Region is comprised of 22 countries in Northern Africa, the Levant and Arabian Peninsula stretching from Atlantic Ocean to the Indian Ocean. The countries in the Arab Region are Algeria, Bahrain, Comoros, Djibouti, Egypt, Iraq, Jordan, Kuwait, Lebanon, Libya, Mauritania, Morocco, Oman, Palestine, Qatar, Saudi Arabia, Somalia, Sudan, Syria, Tunisia, United Arab Emirates and Yemen.

developed schemes, which are scattered over vast areas of land and around urban centres. There is a need for development of both infrastructure as well as human capacity. Modernization and improved governance in existing schemes are also required in many countries. Especially, land and water institutions and access regulations need to be reviewed, revised, strengthened, and/or clarified, depending on a particular national context.

2.4 Multi-Disciplinary and Multi-Stakeholder Approaches

Irrigation water systems, at the local and national levels, are designed to fill the gap between supply and demand for water at various spatial and temporal scales making agriculture resilient to the vagaries of climate. They ensure availability of water in rural areas not only for agriculture but for other uses such as for drinking water and for small entrepreneurs as well. Assured production that results from irrigated agriculture encourages re-investment in the sector and generates surpluses to be invested in other social sectors.

Irrigation is often a multifaceted endeavour that requires interaction among various sectors, institutions and users. Sustainable use and efficient management of irrigation systems require understanding and cooperation among these multiple actors. ICID works towards creating a coherence between agriculture and water policies, improving publicly operated irrigation schemes, advocating increased public and private investments for expansion of irrigated area, and modernizing existing infrastructure. It supports knowledge sharing on all aspects of AWM, including collation of irrigation statistics; data and information exchange; sharing of successful management strategies, best practices, knowledge and know-how. It supports and encourages multiple use of water and the promotion of amenities, goods and services provided by irrigation systems.

The cooperation mechanisms used by ICID network range from simple exchange of information through its annual meetings where practitioners, researchers and planners from both developed and developing countries participate, to collating latest research and innovations through its Journal on Irrigation and Drainage, developing guidance material and their dissemination through various channels. ICID organizes triennial World Irrigation and Drainage Congresses, World Irrigation Foras, Regional Conferences, and International Drainage Workshops and Micro Irrigation Conferences to address and discuss AWM issues of global or regional importance.

3. STAKEHOLDERS AND USERS

A number of disparate stakeholders have an interest in the way agriculture water management (AWM) policies are formulated and implemented. The main stakeholders of ICID are categorised as primary or core stakeholders – the national committees, farmers and irrigation and drainage professionals; secondary stakeholders – policy makers, researchers and the industry who directly influence the activities of the agriculture sector; and the tertiary or peripheral stakeholders - the society at large.

A number of United Nations' and other international organizations are engaged in water sector as well as the agriculture sector. They support their member national governments in meeting various SDGs. In the spirit of SDG 17 to strengthen the means of implementation and revitalise the Global Partnership for Sustainable Development, ICID actively seeks partners to provide inputs and assist in the implementation of its activities.

3.1 National Committees

National Committees (ICID, 2014) representing various stakeholders engaged in different facets of AWM in their respective countries are the core stakeholders of ICID. Ideally, National Committees (NCs) include experts from water resources, irrigation, agriculture, rural development, hydro-power, environment, and flood management sectors, and also from finance and economics theme. In majority of the member countries, NCs are hosted within one of the related government departments dealing with the above subjects and include representatives from research institutions, universities, private sector companies, and in some cases farmers' groups too. NCs need to be strengthened and supported to serve as the common platform for various AWM stakeholders. The new vision and action plan is expected to boost the role of NCs in implementing sustainable development agenda within their countries. Particularly with respect to meeting the goals of poverty alleviation, food security and sustainable water management and other related SDGs in the context of Climate Change.

3.2 Farmers

Farmers are the end- and most important user of the knowledge that the network provides through its NCs, and as such they constitute the key stakeholders. The services provided by irrigation utilities should reduce the financial risks and increase profitability for farmers. Driven by practices rooted in tradition, introduction of new tools and processes are likely to find resistance, if not adequately articulated and successfully demonstrated.

Small-scale family farms are mainly driven by food security concerns. They are the main suppliers of most of the world's food markets but are the most vulnerable to the increasing risks posed by climate variability and climate change. They are highly dependent on adequate irrigation services for their survival and are also typically using water and irrigation infrastructure in multiple ways for multiple purposes.

3.3 Irrigation and Drainage Professionals

Professionals in the large public sector irrigation and drainage institutions in Asian and African countries are often equipped with outdated tools and professional skills. The sector suffers from severe lack of penetration of latest science and technology tools in the profession. Given the complexity of development process, irrigation and drainage professionals need exposure to the economic, social, environmental and other disciplines that influence AWM. As perhaps the only international network directly dealing with irrigation and drainage sectors, ICID has the responsibility to fulfil the professional and intellectual needs of its members.

At the same time, the sector is challenged by a general lack of interest from the young professionals as they find the career in the sector uninteresting with little growth potential. This lack of interest among the young generation has resulted in innumerable vacancies in irrigation utilities and the closure of irrigation and drainage departments in many academic institutions around the world. There is need to make the sector interesting and challenging for young generation.

3.4 Policy Makers

Policy makers have the responsibility to ensure provision of the basic necessities to citizens within the framework of given natural, financial, and human resources in an institutional setting (legislation, organisations, and regulations). Despite the recognition of the close linkages between different development sectors, the policy making often remains compartmentalized. In order to support policy makers in taking right and most appropriate decisions the professionals should be able to develop and present different development scenario, explaining the socio-economic impacts of various development options. The practitioners need to translate the results of such studies from the technical terminology to the language of development and human impacts which could be easily understood by the policy makers, the non-technical professionals as well as common man. ICID network, through its collective knowledge, facilitates NC members in communicating with their policy makers.

3.5 Irrigation and Drainage Industry

Irrigation industry that includes public sector agencies, private consultancy companies, individual consultants, contractors, manufacturers, and service providers, plays an important role in the transfer of technology in today's global marketplace. The industry is at the forefront of implementing new technologies and address the need for capacity development. They need to be sensitized to look beyond the short-term goals of project implementation while recommending introduction of new technologies.

3.6 Academia, Research and the Extension Workers

Multi-disciplinary research plays a critical role in understanding the complexity of issues in AWM. Readily available research results and state-of-the-art diagnostic tools, methodologies and solutions must be made known and available to practitioners and policy-makers. NC members need to play a linking role in promoting two-way communication between practitioners and farmers on one hand, and researchers on the other. ICID is committed to promote, foster and support such two-way communications. Institutions engaged in agriculture and water related research have the onus of targeting the needs of small holders and subsistence farmers.

Rural development workers, including extension or outreach workers, form an important link in the chain of delivering irrigation services. Apart from AWM issues, they have to deal with a plethora of complex rural development issues. These complexities have to be brought to the knowledge of common stakeholders in their own language. These development workers act as true interlocutors and facilitators of change at the ground level. It would be appropriate to target them for delivering the message effectively.

3.7 Society at Large

Being the ultimate consumer of agriculture produce and as a competing water consumer in various forms, society at large is impacted by the way the Network serves farmers to produce more food and fibre with limited water resources and without adversely impacting the environment. Under the growing water scarcity in many parts of the world, water saving in agriculture sector, which withdraws 70-80%of water, could go a long way in meeting the growing demands in other sectors. However, society at large needs to be made aware that wasting food is wasting imbedded water. Recognizing the growing awareness of society at large on environmental and social issues related to production worldwide, ICID commits to play its role in information sharing with the general public, whenever and wherever possible.

4. VISION, MISSION AND GOALS

The irrigation and drainage sector is an important contributor to rural development. Irrigation and drainage systems and professionals play an increasingly crucial role in eradication of rural poverty by creating sustainable livelihoods for the majority of rural population, particularly in developing countries, and by supporting healthy living environments. It is therefore appropriate for ICID to realign its vision and dedicate itself to a mission that supports sustainable rural development.

4.1 Vision

The vision of ICID for 2030 is:

"A water secure World free of poverty and hunger through sustainable rural development."

4.2 Mission

To achieve this vision, ICID network within its self-assigned sphere of activities, with support and active involvement of its partners, has a mission to:

"Facilitate prudent agriculture water management by encouraging inter-disciplinary approaches to irrigation and drainage management."

The vision of ICID will be achieved by generating new knowledge, compiling and collating information, sharing experiences and good practices, and disseminating the new knowledge to the relevant stakeholders. It will include considerations for drainage and flood management and its effect on food production. Prudent AWM is not confined to the efficient use of water in agriculture, but is also concerned with making optimal use of water diverted for agriculture for the overall benefit of the rural community and preserving the quality of return flows to receiving water bodies.

4.3 Core Values

The core values of ICID are defined by the:

- non-profit objectives of the network;
- voluntary contribution of time and monetary resources by its members and experts; and
- sharing of knowledge and experiences among the stakeholders.

These core values are underscored by the empathy of the networks members towards those suffering from hunger and rural poverty.

4.4 Organizational Goals and Strategies

In order to realize the vision, ICID has set following organisational goals for the network:

Goal A : Enable Higher Crop Productivity with Less Water and Energy
Goal B : Be a Catalyst for a Change in Policies and Practices
Goal C : Facilitate Exchange of Information, Knowledge and Technology
Goal D : Enable Cross-Disciplinary and Inter-Sectoral Engagement
Goal E : Encourage Research and Support Development of Tools to Extend Innovation into Field Practices
Goal F : Facilitate Capacity Development

These will enable NCs to re-confirm or re-orient their national goals or will help establish specific goals at the national level, addressing the specific national needs. With support from the experts participating in different technical Working Groups (WGs), the NCs and international partners, ICID Central Office will continue to play a pivotal role

in coordination and management of the network and will enable the network in realisation of organizational as well as national level goals. These collectively identified organizational goals and the strategies to achieve them are discussed in the following paragraphs:

GOAL A : Enable Higher Crop Productivity with Less Water and Energy

ICID network would advocate with the national governments and funding agencies to make strategic choices that favour higher crop production using less energy and water thereby contributing to sustainable agricultural water management and net increase in farmers' income and profits. This is proposed to be achieved by implementing following strategies:

Strategy 1.1 : Modernizing Irrigation Systems
Strategy 1.2 : Improving O&M of Irrigation Systems
Strategy 1.3 : Implementing Water Saving Techniques and Technologies
Strategy 1.4 : Promoting Institutional Reforms
Strategy 1.5 : Supporting Water Productivity Enhancement
Strategy 1.6 : Improving Performance of Irrigation Systems
Strategy 1.7 : Using Wastewater or Poor-Quality Water for Irrigation
Strategy 1.8 : Encouraging Participatory Management of Irrigation Systems

NCs will be the key players in working towards this goal through their national stakeholders. ICID technical Working Groups will provide the key inputs crystalized through shared experiences to achieve this goal.

GOAL B : Be a Catalyst for Change in Policies and Practices

Water policy is inherently difficult as it involves trade-offs between the benefits and costs of alternative uses, different sectors, equitable distribution of resources and required institutional arrangements. Governing policies need regular revision in view of changing demand patterns and technological advances, as social experience with water management arrangements progresses. Developing policies for managing water systems for human needs in such a complex environment is difficult, slow and very costly. At the same time the proper policy, institutions and market incentives are essential to increase water-use productivity in agriculture. For example, water policy instruments such as energy pricing, water entitlements and transfer provisions, and eco-conservation programs provide incentives for improved management of water supplies at the farm level.

Following strategies would be adopted to act as a catalyst for bringing change in policies and practices:

Strategy 2.1 : Supporting Development of Appropriate Policies
Strategy 2.2 : Promoting Risk Management Approaches
Strategy 2.3 : Integrated Irrigation and Drainage Management
Strategy 2.4 : Encouraging Development of Drought Management Policies
Strategy 2.5 : Encouraging Development of Integrated Flood Management Strategies
Strategy 2.6 : Helping Development of Climate Change Adaptation Strategy
Strategy 2.7 : Advocate for Maintaining Balance between Development and Environment

ICID, through its WGs will provide guidance to water policy analysts at the national level to facilitate analysis of trade-offs to maintain the economic efficiency of agricultural production and minimise the adverse environmental impacts by developing and sharing experiences, using latest tools and modelling principles for simulating development scenarios, and generating knowledge which can serve as catalyst for policy changes.

GOAL C : Facilitate Exchange of Information, Knowledge and Technology

Current irrigation systems and services are generally characterised by low water use efficiencies. Irrigated agriculture is under considerable pressure to adopt practices and methods to increase efficiency of water use. New irrigation technologies have the potential to increase productivity and in some cases may result in increased water availability for alternative uses (e.g. environmental flows to maintain ecosystem services) or both.

ICID will work towards exchange of information, knowledge, management practices and use of new technologies for sustainable AWM that will require adoption of following strategies:

Strategy 3.1 : Providing Knowledge-sharing Platform for AWM Professionals
Strategy 3.2 : Promoting and Providing Network Platform for Irrigation and Drainage Stakeholders
Strategy 3.3 : Promoting Regional Cooperation
Strategy 3.4 : Compile, Collate and Share Knowledge and Experiences
Strategy 3.5 : Dissemination of Data, Information, Tools, Knowledge and Know How

Central Office by making use of latest ICT tools and knowledge management techniques with inputs from various WGs will meet the expectations of various stakeholders.

GOAL D : Enable Cross-Disciplinary and Inter-Sectoral Engagement

ICID network would make available the required information about irrigation, drainage, drought and flood management to all the relevant stakeholders in the language suitable for their use. Where required, platform for inter-disciplinary networking would be facilitated for dialogues among various groups. Following strategies would be adopted:

Strategy 4.1 : Providing Platform for Various Stakeholders of AWM
Strategy 4.2 : Developing Technical Documents in Non-technical Language
Strategy 4.3 : Facilitate Development of Inter-sectoral Platforms Involving NCs
Strategy 4.4 : Synergetic Engagement with Regional and International Partners

NCs at the national level and the Central Office, by facilitating active participation of experts and stakeholders from the relevant sectors and *fields of expertise, will play key roles in achieving this goal.*

GOAL E : Encourage Research and Support Development of Tools to Extend Innovation into Field Practices

ICID network would provide technical support on the latest innovations available in the agriculture water domain to non-governmental entities that are engaged in providing various kinds of services in the rural areas and are increasingly occupying the vacant space to provide excellent opportunities for covering the last mile and help in the outreach into rural communities using following strategies:

Strategy 5.1: Support Improving Research Prioritization in the Countries
Strategy 5.2: Strengthening Extension and Outreach Services with AWM information
Strategy 5.3: Developing and Promoting Tools for AWM
Strategy 5.4: Research on History of Irrigation and Drainage and Lessons Learned from the past
Strategy 5.5: Compilation of Global Data Sets on Irrigation and Drainage
Strategy 5.6: Dissemination of Useful Research Outputs

With collaborative action by NCs with various research and development institutions within the countries and with support from ICID's Central Office and International Partners the goal to convert innovations into field practices would be met.

GOAL F : Facilitate Capacity Development

ICID would work towards continuous capacity development of professionals including young professionals through training programmes, promoting irrigation and drainage as relevant academic topics in education and training within the context of integrated water resources management (IWRM), and will try and foster closer connections with various stakeholders including farmers through NCs. The following strategies would be adopted to achieve this goal:

Strategy 6.1: Enhancing Institutional Capacity Development in Member Countries
Strategy 6.2: Support Capacity Development Activities of Member Countries
Strategy 6.3: Technical Training of Professionals from Member Countries
Strategy 6.4: Developing and Sharing AWM Knowledge Base
Strategy 6.5: Providing Technical Support to NCs

TARGETS

6.1 By 2030, achieve universal and equitable access to safe and affordable drinking water for all

6.2 By 2030, achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations

6.3 By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally

6.4 By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity

6.5 By 2030, implement integrated water resources management at all levels, including through transboundary cooperation as appropriate

6.6 By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes

6.A By 2030, expand international cooperation and capacity-building support to developing countries in water- and sanitation-related activities and programmes, including water harvesting, desalination, water efficiency, wastewater treatment, recycling and reuse technologies

6.B Support and strengthen the participation of local communities in improving water and sanitation management

5. ACTION PLAN : REALISING THE VISION

The ICID Vision 2030 and the strategies adopted to achieve the identified goals require strengthening of mechanisms for ICID network's knowledge generation, knowledge assimilation, knowledge representation, and knowledge sharing as well acknowledge dissemination among NCs to enable them meet their national obligations and objectives.

The actions required to be taken up by the network for fulfilling of this vision during 2017-21 are discussed under following four categories:

1. Strengthening of the ICID Network and NCs ;
2. Collective Network Knowledge Management;
3. Organizational Changes in the Network; and
4. Enhanced Visibility of ICID Activities

5.1 Strengthening of the ICID Network and National Committees

Broad-basing NCs to Convene all Stakeholders within the Country

NCs have to further review and broad-base their membership and structure to include all stakeholders related to agriculture water management (AWM) and also broaden their scope, and where feasible to enable it to play a greater role in national rural development in accordance with the ICID Vision 2030. They would benefit from linkages with the relevant government departments and ministries to serve as an interdisciplinary dialogue and exchange platform for stakeholders across various AWM disciplines, departments and institutions.

As agriculture diverts more than 70% of all water resources, it has the potential to address the water security issues within countries. ICID needs to advocate for greater investments in AWM, and irrigation and drainage infrastructure. NCs undertake advocacy on importance of AWM and make themselves visible by organizing events and meetings for members as well as support relevant government departments/agencies in achieving their national goals and targets related to AWM.

Enhancing Regional Cooperation

Regional Working Groups (RWGs) address specific issues of interest of particular regions. The three regions where NCs come together are Asia, Africa and Europe. These RWGs need to be further strengthened with all NCs of the regions participating in the activities. NCs at sub-regional levels (in the form Sub-regional groups like South African Regional Irrigation Association, SARIA) need to be promoted further where necessary. In order to enhance research in science, technology, and management aspects of irrigation and drainage and to strengthen the capabilities in the member countries, International Research Program for Irrigation and Drainage (IRPID) has been established. The Program is implemented through establishment of Regional Nodes hosted by National Committee of ICID, in collaboration with NCs in the region. NCs need to come forward either to set up a regional node or join the nearest regional node. The network will be made more vibrant and expanded in areas not already covered.

Facilitating Technical Support to NCs

It is recognized that lack of capacity at various levels is constraining the development of irrigated agriculture. A Technical Support Program has been established with the overall objective to "undertake capacity development activities in the field of AWM in support of rural development." A Technical Support Unit (TSU) will help NCs in general assessment of gaps in AWM capacities within the countries and suggest possible solutions; develop feasibility reports for small and medium irrigation, drainage and flood management proposals and undertake assessment of training requirements. TSU, a distributed network of expert volunteers from NCs, needs to be fully operationalized and made effective. Members or partner institutions would be requested to depute personnel to TSU from time-to-time, as required. In order to ensure smooth functioning of TSU, a 'Capacity Development Fund' has been established, which would require resource mobilization at various levels.

Training and Capacity Development

It is imperative to update the professional skills of AWM practitioners and young professionals in the use of latest techniques and tools to bring about the desired qualitative improvement in irrigation and drainage services with necessary orientation to contemporary problems. Working Group on Capacity Development and Training (WG-CDTE) has been established with the objective to identify the needs of NCs for: the required guidelines, manuals and position papers; making available various tools in public domain; and organizing training workshops. The target audience for these trainings are working irrigation and drainage professionals, professionals from other sectors associated with AWM related activities, intermediary or extension service providers and NGO's working at the community or farm level. As the demand for training is expected to surpass the available resources, alternative cost-effective options for capacity development such as distance learning (e.g., e-Learning modules and Webinars) will be explored and used. ICID, in association with its knowledge partners such as FAO, WMO, IWMI among others, organizes a wide range of tailor made training programs for working professionals, particularly the younger ones during the annual events and as such will continue to form the basis for future training activities.

5.2 Collective Network Knowledge Management

Serve as a Knowledge Hub in Agricultural Water Management

Managing the network knowledge processes comprising of knowledge generation, extraction, consolidation/ compilation, synthesis, packaging and dissemination is key to fulfil the mission of ICID. While the scientific knowledge generation falls in the purview of the research and development institutions in ICID member and non-member countries, it is assimilated through the various technical Working Groups and their activities that extract, compile, and synthesize the available knowledge. For dissemination of this knowledge across a wide spectrum of users, Central Office facilitates its packaging and makes optimal use of advances in the information and communication technology. These efforts are being streamlined by carving out a specialized Knowledge Management Division at the Central Office to bridge the last mile gap between lab and field and to ensure that the collected knowledge is made available ubiquitously.

Knowledge Exchange and Collation by Working Groups

Technical Working Groups of ICID, organized in four thematic areas: the Basin, the Systems and the Farm level and the fourth as the Knowledge base underpinning the other three, act as the network knowledge engines to fulfil the objectives of ICID. During the last four years (2013-16), these working groups have been reorganized as part of a continuous review process. The mandates of these groups, revisited from time to time, are indicative of the strategies that ICID has adopted. The outputs of the WGs are in the form of technical papers, reports, manuals and/ or guidelines. In addition to sharing knowledge, exchanging experiences with new technology and innovations at the annual WG meetings, the experts also share their experiences through technical deliberations at the Congresses where specific technical questions are posed and deliberated upon.

Extensive Use of Information and Communication Technology

Various platforms are used by ICID to disseminate the network knowledge to help members of the network and also other stakeholders. Greater emphasis has been placed on IT and web-based tools which include weekly e-Bulletin, monthly News Update and the quarterly ICID News. Rich and documented experiences of members are compiled in Special Publications in the form of manuals, guidelines, position papers, etc., developing a strong knowledge base which can be accessed online by the members free of cost. These platforms need to be continuously intensified and adapted to the new tools made available by the advances in technologies.

Providing Online Services

Products and Services Directory, a form of Irrigation and Drainage Yellow Pages, enlists all the services and products being provided by consultants, manufacturing companies, dealers, and other professional institutions dealing in irrigation and drainage sector to help various stakeholders in locating required services, products and business information and will be expanded with inputs from NCs. Integrated Library Management System (ILMS) will be upgraded as 'One-Stop Knowledge Catalogue' on Irrigation and Drainage by sharing available catalogues among NCs. Multilingual Technical Dictionary (MTD), available both as online and CD versions in English and French, will be expanded to other international languages. It needs to be expanded by updating the existing terms; sharing picture/ drawing to enhance the visual impact; sharing related video links; and adding other interesting relevant links.

5.3 Organizational Changes in the Network

Well-organized Annual ICID Events

With a view to provide platform for all AWM stakeholders, ICID annual events are arranged and organized in a triennial cycle: First year is dedicated to provide platform to all stakeholders in the form of World Irrigation Forum; Second year where all technical partners gather to address certain technical questions in the form of Irrigation and Drainage Congresses; and the Third year where regional issues are focussed through Regional Conferences. To provide continuity and contemporary topicality, the triennial events would continue to be guided by International Technical Advisory Committee (ITAC). International Drainage Workshops, and International Micro-irrigation Conferences are guided by the respective technical WGs.

Efficient Functioning of Working Groups

Working Groups are striving to become more efficient by making their physical meetings more meaningful and fruitful for which some of them have started using video-conferencing platform to organize virtual work body meetings. For better participation of national experts in the technical WGs, the scope and objectives of new or extended WGs are being discussed to ascertain in advance the interest of NCs through 'Scoping Document,' a practice that will be continued to be followed. The annual review of the activities of Working Groups taken by the Strategy Theme Leaders would be made more rigorous and effective to align their mandates with the goals of the new Vision, as required.

Encouraging Participation of Young Professionals in ICID Activities

Despite the challenging development scenario the sector is suffering from a general lack of interest from the young professionals. To address this issue, ICID has established ICID Young Professionals' e-Forum (IYPeF) providing an international platform to young engineers/scientists/practitioners to engage, network and share their experiences, and also learn from the experiences of senior professionals (Mentors) in the field. Young Professionals are provided various incentives such as concession in registration fee in all ICID events and conferences, free on-line subscription of the ICID Journal on Irrigation and Drainage, and scholarships to attend ICID events. These efforts will be continued on a long-term basis to consolidate the gains achieved in the past few years.

5.4 Enhanced Visibility of ICID Activities

Enhanced visibility of NCs within the Member Countries

National Committees with the participation of experts from various ministries and disciplines representing the full spectrum of institutions involved in agricultural water management from within the country form the backbone of ICID. In order for the NCs to be able to support/influence their government policies, NCs need to position themselves as the representative of irrigation and drainage sector to provide the link between the national AWM community with the wider ICID community. For improving the profile of NCs within the countries and ensuring their long-term financial sustainability private-public partnerships in the NC needs to be further explored. The ICID Action Plan 2030 has therefore aimed at strengthening its National Committees. Dual membership to NC members is expected to strengthen connect between members of the NC with the ICID to improve the profile of the Commission in the countries which at present is extremely limited.

NCs need to consider organizing at least one annual event, undertake professional activities to raise resources jointly with other water sector professional groupings; and be proactive in providing strategic advice to governments based on sharing of international experiences through ICID network. NCs can improve their visibility at the national level by organizing important technical events such as a Seminar(s) on ICID Foundation Day or during the Annual general body meeting.

Awarding Excellence

The World Irrigation and Drainage (WID) Prize established to recognises contributions made by an individual or an institution in the field of Irrigation and Drainage that have far reaching and wide impacts. WID Prize with a cash prize of US$ 10,000, awarded once in three years, raises the profile of ICID at the global level and will be maintained at the current level.

WatSave Awards, instituted in the year 1997 with the aim of increasing the beneficial and/or efficient use of water, encourage the best technological applications and management practices which have been successful in saving and/or recovering waste waters/low quality waters. During the last twenty years WatSave Awards, awarded annually, have gained popularity and enhanced the visibility of ICID at international level. These annual awards will be continued.

The ICID Register of Heritage Irrigation Structures (HIS) recognizes historical irrigation and/or drainage structures with the main objectives of tracing the history of and understanding the evolution of irrigation in the civilizations across the world and to learn the philosophy and wisdom on sustainable irrigation from these structures. The scheme has proved very popular among the local irrigation authorities/institutions and stakeholders within the countries, thereby increasing NCs and ICID's visibility. NCs would be encouraged to submit proposals from their countries to make it as a vehicle to connect with its national stakeholders.

Strengthening International Collaboration and Partnership

ICID collaborates with all the major international organizations dealing with AWM such as FAO, IWMI, IFAD, ICRISAT, WWC, ICOLD, IWRA and, WMO among others to address challenges associated with food and water security and AWM. As a partner organization of UN-Water, ICID has the opportunity to interact with various UN agencies dealing with water and thereby utilize this platform for advocacy for irrigation and drainage. However, it is unable to contribute to its activities as they require attending regular meetings and supporting technical activities such as contributing to World Water Development Reports, where they are focussed on AWM. Active collaboration with and participation in international activities require significant human and financial resources. Therefore, a balance between resources and activities that could actually be implemented needs to be maintained.

ICID is jointly working with its international partners on a number of international initiatives. World Water System Heritage (WSH) program, launched jointly by ICID and WWC, as a global initiative provides recognition to the water management systems from around the world, aims at learning lessons from these heritage systems, disseminate the age-old wisdom gathered through them, extract new ideas from the wisdom aggregated from the past, and adapt the knowledge suitably in the present day context.

ICID has joined the Global Framework for Water Scarcity (GFWS), launched by FAO for "Coping with Water Scarcity in Agriculture: A Global Framework for Action in a Changing Climate." It brings the partners and key stakeholders together to define the 'mechanics' behind the Global Framework. ICID is an important member of the steering committee of the Framework and will contribute to its objectives.

The World Water Forum (WWF) provides an excellent platform for showcasing the activities of ICID. ICID establishes a Task Force to ensure its effective contribution to WWF and participation in the event. ICID has successfully established its credentials as a major contributor in the AWM sector. However, these processes are also time-consuming. NCs who are intensively involved in the WWF process such as JNC-ICID, KCID, CNCID, AFEID, etc. need to take a leading role in such events on behalf of ICID.

Multilateral Development Banks (MDB's) such as African Development Bank (AfDB), Asian Development Bank (ADB), World Bank (WB), etc. have enhanced their support for sustainable development and management of infrastructure including in the AWM sector to achieve SDG's and also playing a catalytic role in helping countries to mobilize domestic resources including from the private sector. ICID in the past has strengthened its relationship with MDB's, leading to greater participation of these institutions in the ICID events. There is need to further develop cooperation and collaboration with these institutions for their active support and participation in ICID initiatives and programmes.

6. CHALLENGES AND CONSTRAINTS

ICID is a network of voluntary professionals engaged in agriculture water management (AWM) with a vision of a 'water secure world free of poverty and hunger through sustainable rural development'. They have self-engaged in a mission to **"facilitate prudent agriculture water management by encouraging interdisciplinary approaches to irrigation and drainage management."**

In implementing the action plan to convert vision to action, the availability of resources in terms of voluntary inputs from national experts spread across many countries and disciplines will have to be maintained. The resources of ICID network, which mainly consist of membership fee from the National Committees (NC) from the member countries and the voluntary time of the participating experts, are limited. With the slowing growth rate and increasing austerity measures being adopted in many countries, the government support to the NCs is dwindling, putting their financial sustainability in jeopardy. The fact that global food production has kept pace with the population over the decades has given rise to a new complacency and has de-prioritized the agriculture sector. Under these conditions keeping the size of the network, which is already hovering around a minimum critical mass, will remain a challenge.

Innovative means of raising resources both at NC level as well as at the global level will be a considerable challenge for the network. The private sector participation in the ICID network has remained quite limited. Greater participation of the private sector at NC level would have to be materialised.

Majority of irrigation and drainage professionals participating in ICID activities, mostly working in government institutions and saddled with additional responsibilities as the governments adopt austerity measures, are pressed for time. They are unable to devote voluntary professional time to the activities of ICID. At the same time, AWM sector is no more considered as a lucrative or challenging career option, thereby discouraging young professionals in the sector.

Given the constraints of financial and human resources, the Appendix to the Action Plan, is therefore designed to be a living and dynamic document that, while addressing long-term vision takes account of the progress and other ground situations.

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APPENDIX

Action Plan 2017-21
Activities Under Various Strategies

ACTIVITIES UNDER ICID ACTION PLAN 2017-21

GOAL A : Enable Higher Crop Productivity with Less Water and Energy

	Strategies and Activities	Outcomes/Outputs	Responsible Work body
A1	**Strategy : Modernizing irrigation systems**		
	1.1 Develop a program for introducing standards for irrigation systems	Standards for Irrigation and Drainage	WG-IDM
	1.2 Report or case studies on recent development in Irrigation Drainage Management	Case studies Presented in WG meetings	WG-IDM
	1.3 Prepare country overview papers	Papers	WG-SON-FARM
	1.4 Preparation and presentation of Case studies	Compilation of Case Studies	WG-M&R
	1.5 Prepare an overview paper on State of the Art on Modernization of Irrigation Systems	State of the Art Paper	WG-M&R
	1.6 Develop Guidelines for Modernization of Irrigation systems	Guidelines	WG-M&R
A2	**Strategy : Improving O & M of Irrigation Systems**		
	2.1 Advocacy paper to draw attention to the needs of adequate resources for O&M	Advocacy paper	WG-M&R
	2.2 Develop norms of O&M of Irrigation systems	Technical Report	WG-M&R
A3	**Strategy : Improving water saving techniques and technologies**		
	3.1 Support Watsave award winner selection	Awards	WG-WATS
	3.2 Best Practices and Successful Story on Water Saving	Documents	WG-WATS
A4	**Strategy : Promoting Institutional Reforms**		
	4.1 Introduce suitable institutional setup.	Guidelines	WG-IOA
A5	**Strategy: Supporting water productivity enhancement**		
	5.1 Prepare 'how to do' thematic documents ready	Technical Document	WG-SON-FARM
	5.2 Develop a position paper on key issues on sustainable on-farm irrigation systems	Position paper	WG-SON-FARM
	5.3 Develop guidelines on efficient use of water in crop production	Guidelines	WG-WATER & CROP
A6	**Strategy : Improving performance of irrigation systems**		
	6.1 Investigating and providing information on the positive amenities, services and goods provided by irrigation systems	Technical Report	WG-IDM
	6.2 Investigating and documenting negative environmental impacts of irrigation systems	Guidelines/Case Studies	WG-ENV
	6.3 Facilitate policy analysis for improved water governance with a focus on agricultural water management and sustainable rural development.	Technical Paper	WG-IOA
	6.4 Develop generalized legal regulations (guidelines) and implementing changes in the public and private sectors of agriculture and water economies of the countries	Guidelines	NC, WG-IOA
	6.5 Implementing changes in the public and private sectors of agriculture and water economies	Position paper	WG-IOA
	6.6 Improving communication among country members between annual ICID meetings	On-line	WG-ENV
	6.7 Identify drivers and social resistances within the systems to improving Irrigation management	Report	WG-IDM

A7	**Strategy : Using Wastewater or Poor Quality Water for Irrigation**		
	7.1 Compile best practices for sustainably manage and use non-conventional water resources.	Case studies	WG-PQW
	7.2 Contribute to the establishment of national policy for re-use of treated wastewater in irrigation	Position Paper	WG-PQW
	7.3 Participate in research on the development of sewage	Guidelines	WG-PQW
A8	**Strategy : Encouraging Participatory Management of Irrigation Systems**		**WG-IOA**

GOAL B : Be a Catalyst for Change in Policies and Practices

	Strategies and Activities	Outcomes/Outputs	Responsible Work body
B1	**Strategy : Supporting Development of Appropriate Policies**		
	1.1 Promoting Sophisticated water-saving irrigation development with Internet of Things (IoT) and water-saving irrigation model techniques exchanges	Technical report, Workshop proceeding and Water Industry Web Site	WG-SDTA
	1.2 Promoting up-to-date water-saving experiences exchange	As above	WG-SDTA
	1.3 Disseminate the water saving award technologies	Workshops proceedings	CO, WG-WATS
	1.4 Policy and legal approaches to Water Saving	Policies/ Document	WG-WATS
	1.5 Water Charging policies	Position Paper	WG-WATS
	1.6 To devote one issue of IRD to the ICID Action Plan with invited papers of high level authors	IRD Special Issue	EB-JOUR
	1.7 Review of European/NC policy documents related to water resources that impact irrigation and drainage sector	Technical Report	ERWG
	1.8 Position paper or updated technique paper on bio-energy and AWM	Position paper	WG-BIO-FUEL
	1.9 Prepare position Paper on Key Issues on Modernization of Irrigation Schemes	Position/Policy Paper of ICID	WG-M&R
	1.10 Sustainable drainage management experience exchange	Internet of Things Water industry workshop	WG-SDTA
	1.11 State of the art on water saving	Journal Paper	WG-WATS
	1.12 Review of policies and publications related to Bio-Energy	Condensed overview of national policies and relevant publications on the topic	WG-BIO-FUEL
	1.13 Technical Report on Efficient Use of Water in Crop Production	Report	WG-WATER & CROP
	1.14 Report on South-South cooperation for capacity development in the field of irrigation management	Report	WG-IDM
	1.15 Position Paper on Green Revolution in Africa	Position paper	AFRWG
B2	**Strategy : Promoting Risk Management Approaches**		**WG-CLIMATE, WG-MWSCD, WG-CAFM**
B3	**Strategy : Integrated Irrigation and Drainage Management**		
	3.1 Assess methods and develop guidelines on relevant water balance approach	Guidelines	WG-IDM
	3.2 Organize Introduction of the Cases to be Applied to Other Regions	Compilation of Cases	WG-CLIMATE
B4	**Strategy : Encouraging Development of Drought Management Policies**		
	4.1 Advocating role of agricultural drainage under drought		CO, WG-MWSCD
	4.2 Managing with limited water under drought		WG-MWSCD
	4.3 Develop guidelines on drought risk management strategies	Guidelines	WG-MWSCD

B5	**Strategy : Encouraging Development of Integrated Food Management Strategies**		
	5.1 Develop Guidelines on Flood Risk Management strategies	Guidelines	WG-CAFM
	5.2 Publication of the WG on Adaptive Flood Risk Management	Report	WG-CAFM
B6	**Strategy : Helping Development of Climate Change Adaptation Strategy**		
	6.1 Develop Guideline for Water Management Practices under Changing Climate	Guidelines	WG-CLIMATE
	6.2 Prepare Position Paper on Smart Water Management for Mitigating Climate Change	Position Paper	WG-CLIMATE
	6.3 Develop Position Paper on Adaptation to Climate Change	Position Paper	WG-CLIMATE
B7	**Strategy : Advocate for Maintaining Balance between Development and Environment**		
	7.1 Compile best practices in irrigation and drainage in the world on managing limited water under drought and role of agricultural drainage under drought,		WG-MWSCD, CO

GOAL C : Facilitate exchange of information, knowledge and technology

	Strategies and Activities	Outcomes/Outputs	Responsible Work body
C1	**Strategy : Providing Knowledge-sharing Platform for AWM Professionals**		
	1.1 Organize Workshop, Seminar and Symposium	Compilation of proceedings	WG-WATS
	1.2 International conference/ workshop/ seminar on History	Workshop Proceedings	WG-HIST
	1.3 Organize Workshop, Seminar and Symposium on Water Balance Approach		WG-IDM
	1.4 Organize workshop for IDSST	Workshops	WG-IDSST
	1.5 Organize Workshops, Seminar and Symposium on Modernization	Compilation of proceedings	WG-M&R
	1.6 Organize workshops, seminar, or symposium	Compilation of proceedings	WG-BIO-FUEL
	1.7 Organize Workshop, Seminar and Symposium	Compilation of proceedings	WG-IOA
	1.8 Broad basing of National Committees	Rejuvenated NCs	NCs
	1.9 Organizing Annual National Events by NCs		NCs
C2	**Strategy : Promoting Networking among AWM Stakeholders**		
	2.1 Develop & maintain relevant I&D sector stakeholders databank	Global Water Industry Dictionary	ICID Secretariat/ NCs
	2.2 Organize Interaction Plan for Water Industry contractors/ manufacturers/technology service provider	Water Industry Partnership/ Affiliation strengthening	ICID Secretariat/ NCs
	2.3 Allocate space for Water Industry news in ICID Bulletins to promote awareness among stakeholders	Awareness/ source of revenue generation	ICID Secretariat/ NCs
C3	**Strategy : Promoting Regional Cooperation**		
	3.1 Organise Workshop / Seminar etc.	Proceedings of workshop/ seminar	ERWG
	3.2 International workshop/ seminar on' Improving Water Use Efficiency in the frame work of Water Energy Food Nexus'	Workshop Proceedings	WG-WATER & CROP
	3.3 Organise internal / international Workshop on Flood Management	Proceedings of the workshop	WG-CAFM
	3.4 Activate or Establish Regional/sub-regional WGs	Regional WGs	NCs/RWGs
	3.5 Enhance Linkages between National Committees for International Cooperation	Technical Report	ASRWG

	3.6 Broaden relationship and mutual understanding and cooperation between NCs from developing countries and developed countries	Collaboration/ MoU	ASRWG
	3.7 International conference/ workshop/ seminar	Compilation of proceedings	ASRWG
	3.8 Organize international workshop, seminar or symposium	Compilation of proceedings	WG-SON-FARM
	3.9 International conference/ workshop/ seminar	Workshop Proceedings	WG-HIST
C4	**Strategy : Compile, Collate and Share Knowledge and Experiences**		
	4.1 To publish high quality papers in the journal Irrigation and Drainage (IRD) on new developments in irrigation, drainage and flood management	About 70 papers per year published in five issues.	EB-JOUR
	4.2 In addition to the regular issues to publish sponsored special issues on an ad hoc basis		EB-JOUR
	4.3 To maintain good working relations with a professional publisher. At present John Wiley & Sons		EB-JOUR
	4.4 Special joint Publication on Agricultural Water Management for Sustainable Rural Development	Side Event with AARDO	ASRWG, CO
	4.5 Publication on Historical Water Sustainability	Publication	WG-HIST
	4.6 Heritage Irrigation Structures (HIS)	Register of HIS	WG-HIST, CO
	4.7 World Water System Heritage (WSH) Program	Register of WSH	WG-HIST, CO, WWC
	4.8 Condensed overview of existing key books, manuals, guidelines and other relevant publications on water saving	Technical Report	WG-WATS
	4.9 Condensed overview of existing documents and practical examples on water balance approach	Technical Report	WG-IDM
	4.10 Condensed overview of existing key books, manuals, guidelines and other relevant publications on the Institutional, organizational aspects of Irrigation Management	Technical Report	WG-IOA
	4.11 Overview paper on the state of the art on the IOA of I&D in Irrigation and Drainage (IRD)	Paper	WG-IOA
	4.12 Exchange of information and sharing knowledge through case studies on institutional and organizational aspects	Case studies	WG-IOA
	4.13 Publish proceedings of Congress	Technical Report	CO
	4.14 Publish proceedings of WIF	Technical Report	CO, NCs
	4.15 Develop repository of technical documents in AWM	On-line	CO, NCs
	4.16 Maintaining an updated Multilingual Technical Dictionary	On-line	CO
	4.17 Overview paper on the Irrigation Development for publication in Irrigation and Drainage (IRD)	Technical Paper	WG-IDM
	4.18 Maintain an updated database on irrigation and drainage in the countries of transition	Database	WG-IDSST
	4.19 Updatingon of ICID NC data base, developing human resource database, knowledge sharing and information platforms	On-line	CO & NCs
	4.20 Database on sprinkler and micro irrigation in the world	Database	WG-SON-FARM
	4.21 Report on "Contribution of Agricultural Water to the Rural Development in Asia"	Technical Report	ASRWG
	4.22 Review the standards for collection and compilation of AWM related data	Technical Document	Various WGs
	4.23 Technical report on water for bio-energy	Technical report	WG-BIO-FUEL
	4.24 Case Studies on flood mitigation measures	Technical Report	WG-CAFM
	4.25 Special Issue of ICID Journal on SDTA	Special Issue of IRD	WG-SDTA

	4.26 Research article on state of the art for publication in Irrigation and Drainage Journal	Study report	WG-SON-FARM
	4.27 Design guidelines for flood based farming system	Guidelines	WG-MWSCD
C5	**Strategy: Dissemination of Data, Information, Tools, Knowledge and Know How**		
	5.1 Guide and support organization of seminar/workshops etc. by WGs and NCs	Networking and exchange of knowledge	WG-CDTE
	5.2 Report on role of ICT in capacity development	Study report	WG-CDTE
	5.3 Increase the outreach of IRD Journal		EB-JOUR
	5.4 Increase number of unique visitors to IRD's pages at Wiley	On-line	EB-JOUR
	5.5 Increase number of downloads of IRD papers		EB-JOUR
	5.6 Increase number of institutions with access to IRD via a Wiley License		EB-JOUR
	5.7 Increase number of low-cost or free access to current content to developing world institutions		EB-JOUR, CO
	5.8 Develop and maintain the ICID web site as a knowledge hub	On-line	CO, WGs, WG-SDTA
	5.9 Maintain an integrated library system	On-line	CO
	5.10 Producing documentary on "Historical Water Wisdom".	Documentary	WG-HIST
	5.11 Updating the WG-HIST website	On-line	WG-HIST
	5.12 Producing documentary on "Historical Water Wisdom".	Documentary	WG-HIST
	5.13 Continue Regular e-Bulletin and NEWS Update	On-line	CO
	5.14 Bring out ICID-NEWS	On-line	CO
	5.15 Improvement in the citation index (CI) and in the altimetric scorer (AC)		EB-JOUR
	5.16 Bring out Annual Report	Annual Report	CO

GOAL D : Enable Cross Disciplinary and Inter-Sectoral Engagement

Strategies and Activities		Outcomes/Outputs	Responsible Work body
D1	**Strategy : Providing Platform for Various Stakeholders of AWM**		
	1.1 Organize World Irrigation Forum	Forum and Reports	CO, Host NCs
	1.2 Organize Irrigation & Drainage Congress	Congress Proceedings	CO, Host NCs
	1.3 Organize Annual IEC Events	Council Meeting	CO, Host NCs
D2	**Strategy : Developing Technical Documents in Non-technical Language**		
	2.1 Integrated Assessment of Climate Change Impacts	Brief Guidelines with Compilation of Case Studies	WG-CLIMATE
	2.2 Crop – Water – Energy Nexus	Technical report	WG-WATER & CROP
	2.3 Investigating and documenting the social and economic impacts of irrigation systems	Technical report	RNs, NCs, WG-IDM
	2.4 Bringing out quarterly ICID News	Yearly 4 Issues of ICID NEWS	CO, NCs

D3	**Strategy : Facilitate Development of Inter-sectoral Platforms Involving NCs**		
	3.1 Developing inter-sectoral engagement		ASRWG
	3.2 Organizing National Irrigation Forum		NCs
	3.3 Broadbasing of NCs		IEC, NCs
	3.4 Build free or low-cost and widely accessible water/irrigation/drainage technical information platform		ZwCID
	3.5 Developing/establishing national platform on "Climate, Water, Energy and Food"		CO
D4	**Strategy : Synergetic Engagement with Regional and International Partners**		
	4.1 Work with WMO on climate information for water and agriculture.	Joint activities	CO, WG-CLIMATE
	4.2 Work with IWA on use of wastewater in agricultural activities.	Joint activities	CO, IRNCID
	4.3 Work with IWRA on Water-Food-Energy Nexus	Joint activities	CO, NCs
	4.4 Work with FAO and other partners on Global Framework on Water Scarcity (GFWS)	Joint activities	CO, NCs
	4.5 Work with WWC, FAO and IWMI on exchange of knowledge through World Water Forums (WWFs)	Participate in WWFs	CO, NCs, TF-WWF
	4.6 Work with/support regional irrigation associations such as SARIA, ARID, etc.	Expand ICID network to involve non-member countries in ICID activities	CO, RWGs

GOAL E : Encourage Research and Support Development of Tools to Extend Innovation into Field Practices

Strategies and Activities		Outcomes/Outputs	Responsible Work body
E1	**Strategy : Support Improving Research Prioritization in the Countries**		
	1.1 Facilitate research on the shortcomings of WUA governance		IRPID-Regional Nodes
	1.2 Undertake/support cutting edge research studies		IRPID-Regional Nodes
	1.3 Overseeing activities of Technical Support Unit (TSU)	Capacity development and technical support to NC	WG-CDTE
	1.4 Establish new IRPID Nodes	IRPID Nodes	NCs
E2	**Strategy : Strengthening Extension Services with AWM information**		WG-WATER & CROP, WG-SON-FARM
E3	**Strategy : Developing and Promoting Tools for AWM**		
	3.1 Support research and development of modelling tools	Development of suitable Models, Sensors, Tools for field use	WG-WATER & CROP
	3.2 The application for output of development tools from academic institutions		WG-SDTA
	3.3 Promote Value Engineering as a tool for enhancing creativity and innovation		WG-CAFM
E4	**Strategy : Research on History of Irrigation and Lessons Learned from the past**		**WG-HIST**
E5	**Strategy : Compilation of Global Data Sets on Irrigation and Drainage**		
	5.1 Datasets for irrigated area		WG-SON-FARM
	5.2 Datasets for Pressurised Irrigation Systems		WG-SON-FARM
	5.3 Datasets for Drainage Area		WG-SDRG

E6	**Strategy : Dissemination of Useful Research Outputs**		
	6.1 Prepare a paper on combination of old methods and new technologies		WG-HIST
	6.2 Investigate and report on state of research, barriers or locks and promising paths in the field of irrigation management		WG-IDM
	6.3 To publish high quality papers in the journal Irrigation and Drainage (IRD) on new developments in irrigation, drainage and flood management	Publication of IRD Journals	EB-JOUR
	6.4 Compilation of research outputs from IRPID collaborative projects		IRPID RNs
	6.5 Development of tools from research outputs		IRPID RNs

Goal F : Facilitate capacity development

	Strategies and Activities	Outcomes/Outputs	Responsible Work body
F1	**Strategy : Enhancing Institutional Capacity Development in Member Countries**		
	1.1 Provide technical support for National Committees, member and non-member of ICID		TSU
	1.2 Assisting to find capacity gaps in NC		TSU
	1.3 Twinning of some inactive NCs which are willing to join ICID activities but not available due to financial or internal constrains with developed country NCs		KCID, CNCID NCs
	1.4 Arrange reciprocal technical visits among the national committees and use them to assess requirements and accordingly organize technical trainings.		NCs, IRPID Regional Nodes, CO
	1.5 To launch from Europe an international e-Discussion on Water issues and/or Environmentally Sustainable Water Management from Europe for Young Professionals	Knowledge sharing and capacity development of YP	ERWG
	1.6 Training Workshop on Bio-Energy	Training workshop	WG-BIO-FUEL
	1.7 Contribute in the process of reorganization of NCs		TSU
	1.8 Develop a Roaster of Experienced ICID Experts		Experts/NCs
	1.9 Develop the Capacity Development Fund	Well-funded TSU	NCs
F2	**Strategy : Support Capacity Development Activities of Member Countries**		
	2.1 Facilitate donor NCs supports joint research, invitational training, YP support program, or membership subscription in certain period		TSU and CO
	2.2 Report on capacity development needs, available training courses, gaps, institutes which can provide training to fill gaps etc.	Study report	WG-CDTE
	2.3 Organize Webinar	Online meeting	WG-CDTE, CO
	2.4 Strategy for capacity building in Africa	Strategy/ Policy	AFRWG
F3	**Strategy : Technical Training of Young Professionals from Member Countries**		
	3.1 Develop on-line training and extension material to be used in support of improving irrigation practices and increasing water productivity		WG-CDTE, CO
	3.2 Implementing special invitational training program for YPs in developing countries		CO
	3.3 Establishment of a distance learning mechanism	e-learning modules	WG-CDTE
	3.4 Capacity development/ training program on request from NCs	Training of professionals	WG-CDTE
	3.5 An online directory of institutes providing formal degree in Irrigation and Drainage	Online course	WG-CDTE
	3.6 Organize Training Workshop	Training Workshop	WG-IDSST
	3.7 Short Course/ Training Workshop on Sustainable Development of Tidal Areas	Technical transfer and Internet information short course/ Training Workshop	WG-SDTA

	3.8 To launch e-Discussion on Sustainable Development	e-Discussion	WG-SDTA
	3.9 Training on Crop Water Models Aqua Crop	Conduct Training Work-shops	WG-WATER & CROP
	3.10 To launch e-Discussion on Flood Risk Management	Outcome	WG-CAFM
F4	**Strategy : Developing and Sharing AWM Knowledge Base**		
	4.1 Maintain a database of experts in AWM in different countries in the irrigation and drainage field		CO, NCs
	4.2 Build irrigation extension technical competencies		CO
	4.3 Dissemination of new technologies and efficient equipment manu-facture		CO
	4.4 Condensed overview of Key books, manuals and Guidelines	Book Overview	WG-M&R
F5	**Strategy : Providing Technical Support to NCs**		**TSU**

ABBREVIATIONS

AARDO	African-Asian Rural Development Organization
AC	Altmetric Scorer
ADB	Asian Development Bank
AfDB	African Development Bank
AFEID	Association Française pour l'Etude des Irrigations et du Drainage
ASRWG	Asian Regional Working Group
AWM	Agriculture Water Management
CG	Consultative Group
CI	Citation Index
CNCID	Chinese National Committee on Irrigation and Drainage
CO	Central Office
EB-JOUR	ICID Journal Editorial Board
ERWG	European Regional Working Group
FAO	Food and Agricultural Organization
GFWS	Global Framework for Water Scarcity
HIS	Heritage Irrigation Structures
ICID	International Commission on Irrigation and Drainage
ICOLD	International Commission on Large Dams
ICRISAT	International Crops Research Institute for the Semi-Arid Tropics
ICT	Information and Communications Technology
IEC	International Executive Council
IFAD	International Fund for Agricultural Development
ILMS	Integrated Library Management System
IPCC	Intergovernmental Panel on Climate Change
IRD	Irrigation & Drainage
IRPID	International Research Program for Irrigation & Drainage
IWMI	International Water Management Institute
IWRA	International Water Resources Association
IWRM	Integrated Water Resources Management
IYPeF	ICID Young Professional's e-Forum
JNC-ICID	Japanese National Committee, ICID
KCID	Korean National Committee on Irrigation and Drainage
MDB	Multilateral Development Banks
MTD	Multilingual Technical Dictionary
NC	National Committees/Committee
NGO	Non-Governmental Organization
O&M	Operations & Management
RIO+20	United Nations Conference on Sustainable Development
RN's	Regional Nodes
RWGs	Regional Working Groups
SARIA	Southern African Regional Irrigation Association
SDG's	Sustainable Development Goals
TF	Task Force
TF- BIO-ENERGY	Task Force on Water for Bio-Energy and Food
TSU	Technical Support Unit
UK	United Kingdom
UN	United Nations
UNW-DPC	UN-Water Decade Programme on Capacity Development
WB	World Bank
WG	Working Group
WG-CAFM	Working Group on Comprehensive Approaches to Flood Management
WG-CDTE	Working Group on Capacity Development, Training and Education
WG-CLIMATE	Working Group on Global Climate Change and Agricultural Water Management
WG-CROP	Working Group on Water and Crops
WG-ENV	Working Group on Environment
WG-HIST	Working Group on History of Irrigation, Drainage and Flood Control
WG-IDM	Working Group on Irrigation, Development and Management
WG-IDSST	Working Group on Irrigation and Drainage in the States Under Socio-Economic Transformation
WG-IOA	Working Group on Institutional Aspects of Irrigation / Drainage System
WG-M&R	Working Group on Modernization & Revitalization of Irrigation Schemes
WG-SDRG	Working Group on Sustainable Drainage Management
WG-SDTA	Working Group on Sustainable Development of Tidal Areas
WG-SON-FARM	Working Group on Sustainable On-Farm Irrigation System Development
WG-WATS	Working Group on Water Saving in Irrigated Areas
WID Prize	World Irrigation and Drainage (WID) Prize
WIF	World Irrigation Forum
WMO	World Meteorological Organization
WSH	World Water System Heritage Program
WUA	Water Users Association
WWAP	World Water Assessment Programme
WWC	World Water Council
WWDR	World Water Development Report
WWF	World Water Forum
YP	Young Professional
ZwCID	Zimbabwe National Committee, ICID

Technical Support Program

What is a Technical Support Program?

The main purpose of the Technical Support Program (TSP) is to support the member countries in general assessment of gaps in AWM capacities within the countries and suggest possible solutions; developing feasibility reports for small and medium irrigation, drainage and flood management proposal and undertaking assessment of training requirements.

A Technical Support Unit (TSU)* consist of distributed network of short-term and long term expert volunteers has been established at the ICID Central Office.

The experts selected by TSU comprise professional experts who maintain high levels of competence, have long-standing experience, and are able to provide global, consistent technical and science-based answers and approaches to AWM.

How does ICID support National Committees through TSP?

- General assessment of gaps in agriculture water management capacities within the countries and suggest possible solutions;
- Developing feasibility reports for small and medium irrigation, drainage and flood management proposal;
- Assessment of training needs; and
- Undertake capacity development programmes.

**The 66th International Executive Council Meeting held at Montpellier, France, in 2015 approved the concept of establishing a Technical Support Unit (TSU) at ICID Central Office with an overall objective to "Undertake capacity development activities in the field of AWM in support of rural development".*

ICID • CIID

International Commission on Irrigation and Drainage

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