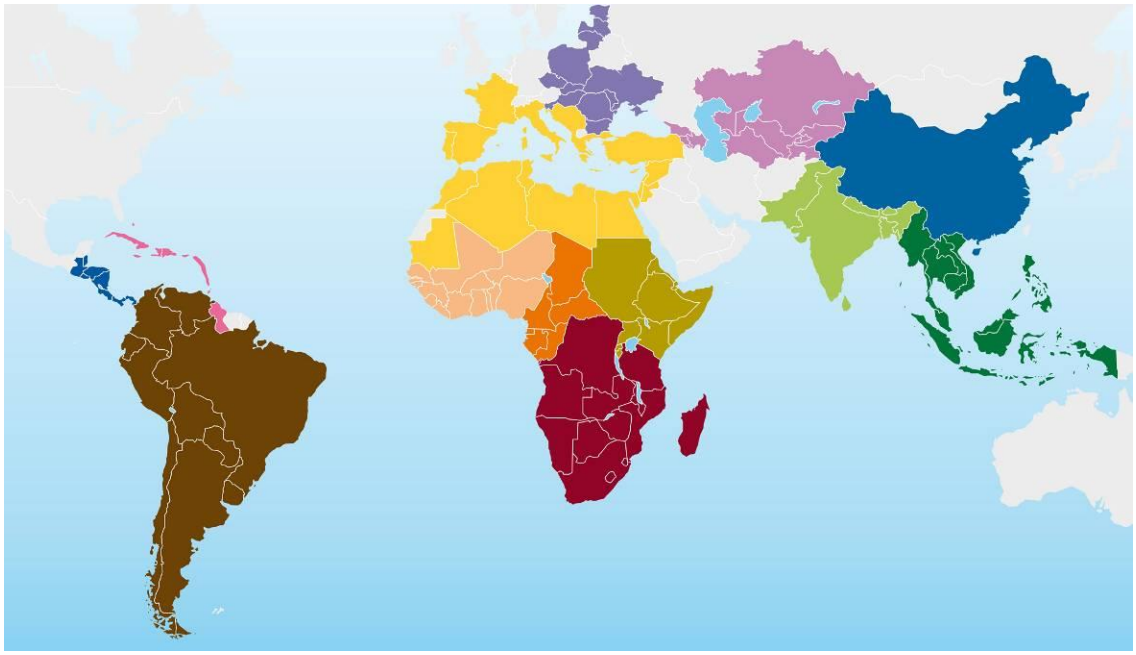
Projects - RWPs

GWP Project Document

Theme: Water & Climate

Region: CHINA

October 2013



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GWP China Agenda

Water & Climate Programmes

Programme Data Sheet

Programme Name	WACDEP China
GWPO Promoter	Jacques Rey
Duration	Initial Phase of one year followed by a Phase 2 of two years
Financing	GWP WCP
Programme preparation stage (A)	From 30/08/2013 to 01/12/13
Programme implementation stage (B)	From 01/01/2014 to 01/12/2016
Objectives	To integrate water security and climate resilience in development planning processes, build climate resilience and support provinces to adapt to a new climate region through increased investment in water security.
Partners	Provincial water resources departments, river basin organizations,

	water-related governmental agencies (National Development & Reform Committee, Ministry of Water Resource, Ministry of Health, Ministry of Agriculture and etc.), NGOs, Universities, Research Institutions, Media and etc.
Target groups	GWP China, GWP China Provincial/River Basin WPs, advisor group (experts of climate change, water resources, economy and management)
Main expected Results	Water security and climate resilience incorporated in next national and water sector development plans (2016-2020); capacity for adapting climate change improved; water security further promoted; cross-province cooperation promoted; investments on water security and climate resilience strengthened.

1. Background and introduction

1.1 Overall GWP China Water and Climate Programme

The GWP China WACDEP aims to integrate water security and climate resilience in development planning processes, build climate resilience and support provinces to adapt to a new climate regime through increased investments in water security. By building climate resilience, the initiative will contribute to national social-economic development, coordinate transboundary water cooperation of different provinces, and demonstrate pilot Programme in delta areas and support safe investments in water and economic development, and achieve the Millennium Development Goals (MDGs).

With large population, China is a country that is relatively less advanced in economic development, complex in climatic conditions and fragile in ecological environment. China is relatively weak in response to climate change in developing countries since its coal-dominated energy structure can hardly meet the demand of fast urbanization and industrialization and energy consumption of residents. In past few years, the extreme weather events have been vital threats to our natural ecosystems and economic-social development, mainly in agriculture, forestry, natural ecosystems, water resources and coastal areas as well as ecologically fragile areas. Now, water security in China is challenged by the climate change.

China's water resources are recognized mostly and directly to be affected by the climate change, the better management of water resources is now also recognized as being of critical importance in adapting to the climate change. The Chinese Government attaches great importance to the climate change adaptation and water security and takes strong measures to strictly manage water resources.

As one of regions involved in the WACDEP, GWP China initiates the programme and will be responsible for the implementation of the programme in China region. This is a three-year programme being implemented from 2014 to 2016.

Initially, WACDEP will be implemented in five Provincial/River Basin Water Partnerships: Fujian, Hebei, Shaanxi Hunan and Yellow River Basin; and Pearl-Delta.

1.2 Strategic regional context

Under the impact of global climate change, the extreme weather events, such as higher temperatures increase that is occurred by temperature and precipitation, lead to more storms, droughts, typhoons and other natural disasters. In recent years, the frequency of severe floods and droughts has been getting more that caused significant loss of life and property and also raised water-related challenges of flood control, water supply, food, ecology and energy security.

Extreme weather highlights the weaknesses of flood control. Since the 1990s, China has been suffered from the flood disasters, including Jianghuai flood in 1991; Haihe River flood in 1996; the Yangtze River, Songhua River and Minjiang River flood in 1998; the Huaihe River, Wei River and Hanjiang River flood in 2003; the Huaihe River and Hanjiang River flood in 2005; and the greatest flood of all basin-wide since 1954 took place in Huaihe River in 2007. China has basically established a relatively complete system of flood control Programmes to enhance the ability of flood control. Nevertheless, with the rapid economic and social development, many places cannot afford the damages of floods. In 2010, there was a great flood influenced Yangtze River, Songhua and Liaohe rivers and made some small rivers overflowing. Due to this disaster, 11

small reservoirs were collapsed, more than 200 cities were submerged and the death reached 3,200. This flood was more serious than the Great Flood in 1998 and led to the direct economic losses amounted to 374.5 billion Yuan. In addition, the problem of sea levels rise caused more floods in many coastal areas. Owing to the natural environmental deterioration, suffering from the increasing turmoil's impact on the extent and severity, in some areas local heavy rain caused landslides, mudslides and flash floods and other disasters. The flood control is not optimistic.

Extreme weather exacerbates the problem of safe drinking water supply. China has more than 40% of the population living in water-scarce regions, the severe water shortage areas, including Yellow River, Huai River and Hai River basins and other inland areas and the Northwest region, accounted for 35%. The nationwide water shortage in normal year is nearly 40 billion m^3. In 668 large and middle cities, over 400 cities are short of water, of which 108 are severely short of water and normal life of more than 160 million urban residents are affected. Climate change enlarges the gap between the South and the North in China, more water in the South and less in the North. The problem of sea level increase and surface runoff decrease will further affect the safety of water supply. In recent years, the Pearl River estuary has been suffered by sea water intrusion so as to pose a great threat to the water supply of Macao, Zhuhai and the Pearl River Delta region and to challenge 15 million people who have been short of drinking water. And the reason of sea water intrusion is the runoff decrease in dry season.

Extreme weather increased the risk of agricultural production. Since the 1990s, the annual average area affected by drought is 271 million hectares which would lead to the reduced grain yield of 24.5 billion kg annually, accounting for about 5% of total grain output. The direct losses caused by drought every year is about 280 billion Yuan, accounting for2% to 3% of GDP. Especially in recent years, due to more frequent severe drought events in China, the main agricultural areas in arid areas affected have increased. Such as, the drought of Sichuan Province and Chongqing City in 2006, and in Xinjiang Autonomous Region in 2008, severe drought in North China in 2009, severe drought in Southwest China in 2010 and the drought of North China in 2011. The drought particularly in 2010 affected 100 million acres of crops and drinking water of more than 2000 million people. The impact of this disaster was rare in historical record since it covered wide area, lasted long duration, and caused severe water shortage and large economic losses. In addition, climate change also led to the proliferation of pests and diseases. During the last 10 years, high incidence of rice stem borer disasters became the most serious issues in South China. And the problem of wilt plant-hopper and withdrawal of fruit trees in South China has also deteriorated.

Extreme weather events also increase the vulnerability of aquatic ecosystems. As a newcomer of industrialization, China’s the largest population, relatively scarce resource per capita and extensive development of resources has caused great waste of resources and serious environmental problems of ecological security. Extreme weather exacerbated the problem of water ecology in China. Many rivers in North China dried out; some lakes shrank and even disappeared; some impoundments had less storage; the functions of wetlands reduced and pollution of rivers intensified. Coastal areas have series of estuarine ecological problems, such as coastal erosion, saltwater intrusion, soil salinization and seawater intrusion due to sea level rise.

Extreme weather affected the hydroelectric energy. Since hydroelectric energy needs enough storing runoff, the decrease of water level will have a negative impact on power generation, resulting in power load reduction. Runoff decrease caused by climate change as well as more frequency and intensity of extreme weather events would pose negative impact on hydroelectric energy.

All these indicate that extreme weather events have led to serious impact on China 's water security. The disasters severely pose challenges to the protection of water security. In order to respond to extreme weather events, to prevent flood and drought and to protect water security, the issue of sustainable development and use of water resources is the major issue in the process of building a moderately prosperous society and accelerating the process of modernization in China.

The Chinese government attaches great importance to the response of water security under the context of adaptation to climate change. The implementation of the strictest water resources management system was stressed in the No.1 Central Government Document of 2011 and the Central Water Conference in the same year. The implementation aims at establishing flood and drought control system, reasonable water allocation and efficient use system, water conservation and river and lake health security system and institutional system conductive to water development. Therefore, there is a higher demand on the integrated management of water resources. In January 2012, China's State Council issued a document about how to implement the strictest water management system, emphasizing the need for water allocation, conservation and protection, water demand and water management, activities to improve capacity, strengthen management, control over the total amount of water to improve water use efficiency, strictly control the total amount of sewage into rivers and lakes, and promote the sustainable use of water resources and accelerate the construction of water-saving society; identifying three main objectives about the control of water resources development, water efficiency improvement and water pollutant limits in water function zones and the measures of implementing the strictest water management system.

The Chinese government issued the “China's Policies and Actions for Addressing Climate Change” in 2009. According to the document, China actively applies policies and takes actions to adapt to climate change in natural ecological systems such as agriculture, forestry and water resources, as well as ecologically fragile areas like coastal zones and regions, and has achieved positive effects.

For instance, China has worked out and enforced laws and regulations in this regard, including the Water Law, Flood Control Law, and Regulations on River Management. The program of flood control on major rivers and other water-conservancy programs have been formulated and completed an elementary law regime and a program on water conservancy commensurate with China's conditions set up, and a basic flood-control and disaster-alleviation system for major rivers and a water-resource allocation and protection system established. Meanwhile, great efforts have been made to control soil erosion. By the end of 2007, China had made efforts to bring soil and water erosion under control over an area of one million sq km, thus effectively protected the soil and water resources and improved its eco-environment.

China will accelerate the pace of formulating nationwide comprehensive plans for water resources and river basins, drawing up a water allocation plan for major rivers, speeding up the construction of the south-to-north water-diversion and other water-diversion projects, so as to optimize the water resource allocation pattern, and increase the water supply capability for drought emergencies. Efforts are being made to enhance unified water resources management and allocation, and establish national water-right distribution and transfer systems as well as a water resources conservation and protection system. The state will strengthen the construction of projects to control floods on major rivers as well as a system to control floods caused by mountain torrents, thus basically establishing a flood-control and disaster-alleviation system mainly formed by reservoirs, river channels, dykes and a mountain flood-control system. Further efforts are being made to improve the national commanding system in control and prevention of floods and droughts, establish a flood-risk management system, so as to enhance the country's capability in controlling floods and droughts. In river basins with serious ecological deterioration, China will set the cap on extraction of groundwater, strictly control excessive extraction of groundwater and adopt active measures to rehabilitate and protect water resources. Research will be strengthened into the impact of climate change over China's water resources and into the mechanisms of water conversion between atmospheric water, surface water, soil water and groundwater as well as related technologies for optimizing water-resource configuration. China is also strengthening study, development and popularization of technologies relating to reuse of wastewater and desalinization of seawater.

From the aspect of forests and other natural ecosystems, China has made great efforts to protect forests and other natural ecosystems by formulating and enforcing relevant laws and regulations, such as the Forest Law, Law on the Protection of Wildlife, Law on Water and Soil Conservation, Law on Prevention and Control of Desertification, Regulations on Conversion of Farmland to Forests, Forest Fire Prevention Regulations, and Regulations on Forest Diseases and Insect Pest Prevention and

Control. The state is now working hard to draw up laws and regulations on the protection of nature reserves, wetlands and natural forests, and pushing forward the all-round implementation of a national program of eco-environment development and protection.

Features of Climate in 2013

China is relatively weak in response to climate change in developing countries since its coal-dominated energy structure can hardly meet the demand of fast urbanization and industrialization and energy consumption of residents. In past few years, the extreme weather events have been vital threats to the natural ecosystems and economic-social development, mainly in agriculture, forestry, natural ecosystems, water resources and coastal areas as well as ecologically fragile areas. Now, water security in China is challenged by the climate change.

Since July 1 in 2013, Hunan province's average rainfall is 38.5 mm that is 78.5% less than normal the average calendar year of 179.4 mm and reaches the least rainfall year on the historical record since 1949. The average rainfall reduced more than 90% in five cities, namely, Loudi, Xiangtan, Shaoyang, Hengyang, Yiyang; and the rainfall in 35 counties (city) was only 5 mm or less.

On August 6, 2013, 18 provinces (autonomous regions and municipalities) was suffered by hot weather, including Sichuan, Chongqing, Guizhou, Hubei, Jiangsu, Anhui, Zhejiang, Shanghai, Hunan, Jiangxi, Fujian, Guangxi, Guangdong and Henan, Shandong, Shaanxi, Shanxi, Hebei and others. The temperature of 1,580,000 square kilometres which is accounting for 1/6 land area reached more than 35℃; and of which the temperature of 70,000 square kilometres was over 40℃.

Along with the drought and high temperatures weathers in South China, the three northeaster provinces (Helongjiang, Liaoning and Jilin) in China had been attacked by heavy rains and floods since August 10, 2013 that led to 197.76 million people affected and killed 11 people in Heilongjiang Province. The heavy rain and flood on August 16, 2013 caused 152 million people affected, one killed and one missing in Liaoning Province. The disaster in Jilin on August 14, 2013 led to 89 million people affected and killed 14 people.

2. Programme Result Framework

The goal of the Programme is to promote water as a key part of sustainable social and economic development of China and contribute to climate change adaptation for human sustainability and planet security.

The overall objective is to support integration of water security and climate resilience in development planning and decision making processes, through enhanced technical and institutional capacity and predictable financing and investments in water security and climate change adaptation.

The Programme will involve seven packages (Package 1, 2, 3, 5, 6, 7, and 8). For each package, it has designed activities to support the achievement of and its objective. The Programme plans, through thirty-five activities in total, to promote better implementation of water security and climate resilience in China.

2.1 Impact & Overall Outcome

The Chinese government attaches great importance to adapting global climate change; developing low-carbon economy; development and construction of hydropower, solar, wind power and other renewable energies.

However, the integration of different sections is not easy to achieve. Based upon the high reputation in governments and large network of partners in China, GWP China is able to playing the facilitator of the Chinese government to enable the integration of water security and climate resilience in China. Through the activities under the programme, GWP China manages to influence the stakeholders and decision makers to develop more policies and plans to mitigate and respond to various fields the adverse effects of climate change. And particular the programme will raise the importance of water issue to the further development of China. The national plans shall include the contents of response to extreme weather, flood and drought prevention. GWP China manages to support the governments to achieve the target from different aspects, including:

First, to further improve the integrated system of flood control.

Second, to significantly improve the level of urban and rural water supply security.

Third, to enhance the rural water infrastructure. The water saving Programmes in more than 70% large-scale and 50 % of medium-scale irrigation system will be completed. The net increase of effective irrigation area will be 2,666,700 hectares and the new efficient water-saving irrigation area is 3,333,000 hectares. New rural hydropower installed capacity will be 10 million kilowatts.

Fourth, to substantially raise water use efficiency and effectiveness.

Fifth, to significantly improve water environmental protection and ecological status of water. The water quality rate of country's major rivers, lakes and reservoirs will rise to 60%. The establishment of erosion control system will be completed. And the new comprehensive soil erosion control area will be 250,000 square kilometres. The ecological environment vulnerable areas and key river lake ecological environment will be improved, and over-exploitation of groundwater will be controlled.

TABLE A: Strategic Results Framework (1)			
Impact	**"A water-secure world"**	**Regional Programme Impact Statement:** A higher level of water security and climate resilience achieved in provinces, transboundary basins and economic regions	China will mitigate and respond to various fields the adverse effects of climate change, of which water is one of key sectors. In the plan of China's response to extreme weather, flood and drought prevention is one of the major objectives.
Outcome	**"To advance integrated water resources management for sustainable growth and prosperity at all levels"**	**Regional Programme Outcome Statement:** Sustainable development and management of water resources at all levels	**Regional Programme Overall Outcome:** The GWP China's mission is to facilitate the building of the resources-conservation and environment-friendly society, the realization of the drinking

			water security, flood control security, food security, ecological security and energy security and the harmonious development of economy and society. Water security, flood control security, food security, ecological security and energy security are all closely related to water resources and therefore can be summed up as "water security". Water security means that water with enough quantity and good quality can be always supplied for the people's life and health, the economic development and the ecological system at present and in the future. The concept of water security indicates that, on the one hand, water serves the human's living and happy life and be efficiently used for the economic development, ecology and environmental protection, and on the other hand, water security also includes the management of water disasters such as floods, hill slides, water and soil erosion, droughts and water-borne diseases. At the same time, water security is the foundation for poverty alleviation and the social harmony. 1. Improve the integrated system of flood control; 2. Enhance the level of urban and rural water supply security; 3. Improve the rural water infrastructure development; 4. Increase water use efficiency and effectiveness; 5. Improve water environmental protection and ecological status of water.

2.2 Regional Outcome Challenges & Progress Markers

Challenges and Rationale for the Choice of the Provinces

As the coastal area, Fujian Province does not have the common problem of water scarcity as those Northern provinces like Hebei and Shaanxi. However, these provinces have been threatened by the extreme climate events. As a result of the global climate change, there are more frequent extreme climatic events such as the strong typhoons, extraordinary rainfalls in urban areas and mountain torrent disasters which raise more challenges to flood control on the one hand and have impact on water ecology and water environment on the other.

The climate change adaptation can be hardly handled by a single department or sector but requires an joint contribution of different sectors and groups. For the better implementation of adaptive measures, Fujian Province will set up an new institution to get all related departments together to deal with the water resources management and extreme climatic events and the disasters caused .The institution will be improved to be part of new policies at provincial and national levels.

Fujian Province is one of the most vulnerable areas to the heavy rain. As a coastal province, Climate change has brought certain impacts on Fujian Province and its ecosystems in some extent, mainly represented by the accelerating trend of sea level rise along the Chinese coast in the past 50 years, which resulted in coastal erosion and seawater intrusion, as well as mangrove and coral reef degradation. The future climate change will have even greater impact on the sea level and coastal ecosystems.

The programme in Fujian Province aims at enhancing adaptive capacity of water resource system to reduce its vulnerability to climate change. GWP China and GWP China Fujian will be in charge of implementation of the programme in Fujian Province. We will jointly work with the Ministry of Water Resources, Fujian Provincial Water Resources Department and local research institutions to keep up with international advanced research on climate change in some fields so as to provide an effective and scientific basis and theories for the development of provincial strategy and policy on climate change, and scientific guidance for participation in international cooperation on climate change.

Measures in this regard include strengthening basic research on climate change, further developing and improving research and analytical methodology, intensifying the training and capacity building for professionals and decision-makers on climate change.

Water resources are recognized mostly and directly to be affected by the climate change, the better management of water resources is now also recognized as being of critical importance in adapting to the climate change. One of the challenges of Hebei Province is over exploration and utilization of groundwater, which has been deteriorated by the worse water shortage owing to the climate change.

According to local geological department, 14.6 million people in Hebei Province drink unqualified water due to deterioration of groundwater. Water resources experts attributed the situation to excessive use of groundwater in Haihe River valley. The Haihe River valley, with an area of 320,000 square kilometers, covers six provinces and two municipalities, including Beijing, Tianjin and part of Hebei and Shandong Provinces.

Due to fast economic growth and social development, the region faces severe water shortage. 98% of the water resources in the river valley have been exploited, far exceeding the world standard of 40%.

Things are getting worse as an enlarging funnel-shaped zone, covering over 40,000 square kilometers, has taken shape in the Haihe River valley, a result of excessive tapping of ground water. Ground linkage resulting from the funnel-shaped areas keeps happening in the region. The urban district of Dezhou has sunk by about 0.38 meters since the 1990s and it keeps sinking. Situation in Cangzhou, a city in Hebei Province, is more worrisome. Ground linkage led to cracks in pipelines and buildings, and erosion of seawater in coastal areas.

The programme in Hebei Province would be conducted to prevent the situation from turning worse; localities in the area have taken a series of measures to save water resources. Currently, 54.7 percent of arable land of Hebei Province, totaling more than 2.4 million hectares, is irrigated with water-saving methods, saving 2.5 billion cubic meters of water annually. By implementing the programme, we expect that the damages to environment can be avoided while achieving economic development and social progress.

The Central Government and Shaanxi Provincial government have attached great importance to the water issues and ecological protection and restoration since this province belongs to the geographically fragile areas that are short of water and easily suffered from the impact of climate change. And much ground water have been developed and utilized. Aiming at changing these situations, better management of water resources, raising water use efficiency and ecosystem protection and restoration are among the top priories of Shaanxi Province.

The programme in Shaanxi Province targets at better management of water resources with groundwater in particular and development of a green region. According to the plan, the GWP China Shaanxi will play as a functional role of implementing the programme in local to promote water and climate resilience into the policies. This program includes the organization of on-site surveys and case studies on water resources management and impact of climate change to water resources, consultations between experts and water manager and governmental officials, promoting the establishment of a special provincial organization for IWRM and further exchanging and sharing information and experiences.

Rationale for the choice of demonstration Programmes:

1. The Pearl River Delta is the key to carry out transboundary cooperation, inter-provincial/sector/businesses cooperation and delta protection since it is the most vulnerable to the climate change; the top economic development area; over 70% urbanization with high population; cooperation with Macao; ecological regulation by green solution
Targeted population: 64.81 million citizens in the Pearl River Delta and 586,300 citizens in Macao.

2. The experience of the Pearl River Delta Programme will be shared with the other two deltas for promoting transboundary cooperation in the Yangtze Delta which directly influences the water supply of Shanghai citizens and in the Yellow River Delta which locates in Shandong Province, covering 10 million populations.
Targeted population: 23.8 million citizens in Shanghai and 10 million people in Shandong Province.

2.2.1 Strategic goal 1

"Catalyse Change in policy and practice". *This goal focuses on improving water resources management putting IWRM into practice to help countries towards growth and water security emphasizing an integrated approach, good governance, appropriate infrastructure and sustainable financing***.**

TABLE B: Strategic Results Framework (2)			
OC	**Outcome Challenges**	**Boundary partners**	**Progress markers**
1.1	The target of optimal water allocation plan is hardly achieved in the Yellow River since the issues of this River are complicated that must raise water use efficiency, protect ecological environment, treat water wastes and bridge the gap between urban and rural areas to serve the interests of farmers. The water use and demand contradiction is obvious along with the economic growth in the Yellow River Basin. The main challenge is to achieve the rational water allocation among related provinces for the sustainable economic development.	Governments of 9 provinces	• The Yellow River Conservancy Commission will consult and reach agreement on water resources management and water allocation with nine provinces in the Yellow River Basin, including Qinghai, Gansu, Sichuan, Shaanxi, Ningxia, Inner Mongolia, Shanxi, Henan and Shandong. • The programme will enable the stakeholders to include the IWRM into their integrated plan to promote the sustainable development of the Yellow River Basin. • It plans to solve the water use and demand contradiction among related provinces through setting up platform for consultation.
1.2	The next Five-Year Plan (2016-2020) of National Economic Development is the key national economic and social development blueprint that guides the Government to fulfill economic regulation, market supervision, social management and public service functions. As water and climate are closely related to the economic and social development in China, in the five-year plan, the water security and climate resilience has to be included for a	Chinese Government	• Through the programme, the decision makers are influenced to attach the importance to the aspects of integrating water security and climate resilience into the National Economic Development Plan. • It will promote the integration of the water security and climate resilience into policies, including one national development plan, one sector plan at national level, four provincial economic development plans and four

	better development of all relevant industries. The challenge is how to convince the governments to incorporate the integrated water security and climate resilience into the National Economic Development Plan.		provincial water sector plans.
1.3	The next Five-Year Plan (2016-2020) of National Economic Development Plan at provincial level must be adaptive to the local demand of each province. The more efforts must be made to include the water security and climate resilience into the provincial Five-Year Plan and also implemented in local areas. The main challenge is how to make the provincial governments to agree water and climate aspects when they formulate their plans.	Governments of 4 provinces	• The Provincial Water Partnerships, through their designed activities under the WACDEP, will be able to influence and support the Provincial Governments in Hebei, Shaanxi, Hunan and Fujian Province. • It will promote integration of water security and climate resilience to be adapted into policies, including one national economic development plan, one water sector plan at national level, four provincial economic development plans and four provincial water sector plans. The four provinces are Hebei, Shaanxi, Hunan and Fujian.
1.4	The Chinese Government invests the infrastructure in water sector according to the Policy Document on Reform and Development in Water Sector by the Central Government in January 2011. Yet, along with the implementation of the investment plan, the problem of heavy loans, fund shortage and better allocation of funds is the challenge to the further development in water sector.	Chinese Governments	• The activities will be conducted through collecting investment outcomes, analysing the outcomes in different uses, evaluating the analysis outcomes and submitting the improvement proposals. • The related governments are influenced through the related activities and reports.
1.5	The provinces in the Pearl River Delta Basin share the responsibility of the integrated management of the Delta. The challenge to the Pearl River Delta is water allocation management, pollution control and protection of ecological	Governments of the provinces	• The activities of the demonstration Programme will integrate the water security and climate resilience into the "Water Allocation Plan of the Pearl River Delta" drafted by the Ministry of

	environment. The sustainable development of the Pearl River Delta is threatened by these problems.		Water Resources, promote the legislation process of the "Water Allocation Regulation of the Pearl River Delta" and support the feasibility study of Datengxia Hydro Complex in the Pearl River Delta. • The management capacity and skills, through the demonstration Programme, will be advanced and optimized to solve the problems in the Pearl River Delta.

2.2.2 Strategic goal 2

"Generate and Share Knowledge". *This goal focuses on developing the capacity to share knowledge and to promote a dynamic communications culture, so as to support better water management.*

TABLE B: Strategic Results Framework (2)			
OC	**Outcome Challenges**	**Boundary partners**	**Progress markers**
2.1	The GWP China does not particular case studies in the ToolBox related to the issues of water security and climate resilience.	Partners, particular universities, research institutes, NGOs	All related to IWRM practices and theories will be shared among the partners
2.2	The lack of mechanism of communication and information sharing between organizations is the result of poor mutual understanding and trust among the related stakeholders.	Institutions and stake-holders	The programme will help Institutions and stake-holders to develop better mutual trust to develop better communication, information sharing and other interactions.

2.2.3 Strategic goal 3

"Strengthen Partnerships". *This goal focuses on enhancing the network's resilience and effectiveness through stronger partnerships, good governance, measuring performance to help learning and financial sustainability.*

TABLE B: Strategic Results Framework (2)

OC	Outcome Challenges	Boundary Actors	Progress markers
3.1	The capacity building system for existing and new provincial and river basin partnerships is short of an integrated plan and set of activities to support.	All organizations at provincial and river basin levels.	• The capacity of provincial and river basin partnerships will be improved. • It also be helpful for developing new partnerships.

3. Programme Implementation Map

The Chinese government makes a great effort to adapting climate change; developing low-carbon economy; conducting hydropower Programmes and utilization of solar, wind power and other low-carbon and renewable energies.

In practice, China is also trying to mitigate and respond to various fields the adverse effects of climate change, of which water sector is one of the key sectors. According to the No. 1 Political Document "Accelerating the Reform and Development of Water Sector", it states that with the industrialization and urbanization in-depth development, China's water sector situation is facing more severe problems under the impact of global climate change. Therefore, it is urgent to enhance disaster prevention and mitigation capacity; strengthen the protection of water resources and to change the situation of agricultural development from only relying on weather. These tasks raise the position of water development to the level of national security and make the water infrastructure construction to be a national priority area. The plan in the next years is to promote flood control and drought relief, water allocation and efficient use for water ecology and environmental protection system, strong ability to support water resource base, and active adaptation to climate change.

Target 1:
To further improve the integrated system of flood control. Rivers flood control system was basically completed; basically completed an important focus of small river management, and basic elimination of existing reservoirs and medium-sized dangerous sluice risks, the basic set flash flood control district monitoring and early warning systems and monitoring and prevention system . Nationwide floods accounted for the same period the average annual direct economic loss of GDP down to 0.7% or less.

Target 2:
Significantly improve the level of urban and rural water supply security. The initial formation of the rational allocation of water resources in river basins and regional pattern , the basic set with industrialization, urbanization , agricultural modernization to adapt to urban and rural water supply system, a comprehensive solution to the problem of rural drinking water safety . National new water supply capacity of 400 billion cubic meters, the national average annual direct economic losses of drought share of GDP over the same period decreased to 1.1 % or less.

Target 3:

The significant improvement will be reached in the conditions of rural water infrastructure. More than 70% large-scale and 50 % of medium-scale irrigation system will be completed. The net increase of effective irrigation area will be 2,666,700 hectares and the new efficient water-saving irrigation area is 3,333,000 hectares. New rural hydropower installed capacity will be 10 million kilowatts.

Target 4:
A substantial increase in water use efficiency and effectiveness. Water-saving society has made significant progress , the efficient use of water resources and the effective protection of basic system . The national water consumption of each 10000 RMB (2000 USD) GDP is reduced to 140 m^3; and the water consumption of the industrial added value of each 10000 RMB (2000 USD) will go down to 80 m^3 or less. The effective utilization coefficient of irrigation water will increase to 0.53.

Target 5:
The methods of water environmental protection and ecological status of water will be improved. The water quality compliance rate of country's major rivers and lakes will rise to 60%. The establishment of erosion control system will be completed. And the new comprehensive soil erosion control area will be 250,000 km^2. The ecological environment vulnerable areas and key river lake ecological environment will be improved, and over-exploitation of groundwater will be controlled.

3.1 Implementation Path for Goal 1

Under the Strategic goal 1, the activities are designed to contribute to climate change, urbanisation, food, energy, ecosystems, transboundary water management and other challenges as they emerge.

According to the requirements of the goal 1, the activities will relate to the work packages listed below:

- •Work Package 1: Regional and Transboundary cooperation
- •Work Package 2: National and Sector development Plans
- •Work Package 3: Investments
- •Work Package 4: Programme Preparation and Financing
- •Work Package 5: Demonstration Programmes

High level Output: Facilitation packages for provinces implemented

		TABLE C: Implementation Map	
OC	**NB**	**HIGH LEVEL ACTIVITIES (CONTENT OF WORK PACKAGES)**	**MAIN MPLEMENTATION MECHANISMS**
1.1	**WP1.1**	Develop cooperation between 9 provinces in the YR Basin, by GWP China YR	Implemented in collaboration with YRCC through WACDEP
1.2	**WP2.1**	Support the introduction of climate resilience into national and water development plan (2016-2020) by GWP China	Implemented with support by Ministry of Water Resources through WACDEP

1.2	**WP2.2**	Support the introduction climate resilience into the national economic development plan at the central government level, by GWP China (2016-2020)	Implemented with support by Ministry of Water Resources through WACDEP
1.3	**WP2.3**	Support the introduction climate resilience into Hebei provincial economic development plan (2016-2020) by GWP China Hebei	Implemented through WACDEP with support by provincial government in cooperation with provincial water resources department
1.3	**WP2.4**	Support the introduction climate resilience into Hebei provincial social and economic development plan (2016-2020) by GWP China Hebei	Implemented through WACDEP with support by provincial government in cooperation with provincial water resources department
1.3	**WP2.5**	Support the introduction climate resilience into Shaanxi provincial social and economic development plan (2016-2020) by GWP China Shaanxi	Implemented through WACDEP with support by provincial government in cooperation with provincial water resources department
1.3	**WP2.6**	Support the introduction climate resilience into Shaanxi provincial development plan (2016-2020) by GWP China Shaanxi	Implemented through WACDEP with support by provincial government in cooperation with provincial water resources department
1.3	**WP2.7**	Support the introduction climate resilience into Hunan provincial social and economic development plan (2016-2020) by GWP China Hunan	Implemented through WACDEP with support by provincial government in cooperation with provincial water resources department
1.3	**WP2.8**	Support the introduction climate resilience into Hunan provincial development plan (2016-2020) by GWP China Hunan	Implemented through WACDEP with support by provincial government in cooperation with provincial water resources department
1.3	**WP2.9**	Support the introduction climate resilience into Fujian provincial social and economic development plan (2016-2020) by GWP China Fujian	Implemented through WACDEP with support by provincial government in cooperation with provincial water resources department
1.3	**WP2.10**	Support the introduction climate resilience into Fujian provinical development plan (2016-2020) by GWP China Fujian	Implemented through WACDEP with support by provincial government in cooperation with provincial water resources department
1.4	**WP 3.1**	Support the Chinese Government in implementing the investment on the infrastructure in water sector according to the Policy Document on Development in	Implemented with support by Ministry of Water Resources through WACDEP

		Water Sector issue by the State Council in January 2011 by GWP China	

High level Output: Innovative, sustainable IWRM solutions demonstrated

		TABLE C: Implementation Map	
OC	**NB**	**HIGH LEVEL ACTIVITIES (CONTENT OF WORK PACKAGES)**	**MAIN IMPLEMENTATION MECHANISMS**
1.5	**WP 5.1**	Introduce innovative water governance arrangements in Yangtze River Delta	Implemented through WACDEP in cooperation with Yangtze River Conservancy Commission
1.6	**WP 5.2**	Introduce innovative water governance arrangements in the Pearl River Delta	Implemented through WACDEP in cooperation with Pearl River Conservancy Commission
1.7	**WP 5.3**	Introduce innovative water governance arrangements in the YR Delta	Implemented through WACDEP in cooperation with Yellow River Conservancy Commission

3.2 Implementation Path for Goal 2

Under the Strategic goal 2, the activities are designed to contribute to develop the capacity to share knowledge and to promote a dynamic communications culture, so as to support better water management.

According to the requirements of the goal 2, the activities will relate to the work packages listed below:

- •Work Package 6: Capacity Development
- •Work Package 7: Knowledge and awareness

High level Output: Knowledge and capacity developed, disseminated and used

		TABLE C: Implementation Map	
OC	**NB**	**HIGH LEVEL ACTIVITIES (CONTENT OF WORK PACKAGES)**	**MAIN IMPLEMENTATION MECHANISMS**
2.1	**WP 6.1**	Establish consulting advisors group of water security and climate resilience;	Implemented through WACDEP with support by Ministry of Water Resources, and in cooperation with research institutions and universities
	WP 6.2	Organize capacity building and training of capacities of	Implemented through WACDEP in

		partners, institutions and stake-holders enhanced to integrate water security and climate resilience;	cooperation with research institutions and Hohai University, Qinghua University
	WP 6.3	Organize technical training and establish knowledge and technical consulting group for drought and flood management;	Implemented through WACDEP in cooperation with research institutions and provincial flood control and drought relief offices
2.2	**WP 7.1**	Develop case studies in pilot Programmes;	Implemented through WACDEP in cooperation with provincial water resources departments
	WP 7.2	Set up a toolbox case study to share knowledge on drought and flood management	Implemented through WACDEP in cooperation with provincial flood control and drought relief offices

3.3 Implementation Path for Goal 3

Under the Strategic goal 3, the activities are designed to enhance the network's resilience and effectiveness through stronger partnerships, good governance, measuring performance to help learning and financial sustainability.

According to the requirements of the goal 3, the activities the activities will relate to the work packages listed below:

- •Work Package 8: Governance and Fundraising

High level Output: An effective Global Action Network of partners sustained

		TABLE C: Implementation Map	
OC	**NB**	**HIGH LEVEL ACTIVITIES (CONTENT OF WORK PACKAGES)**	**MAIN IMPLEMENTATION MECHANISMS**
3.1	**WP 8.1**	Governance and management of GWP China	Implemented through WACDEP with support by Ministry of Water Resources
	WP 8.2	Participate in global, regional and national meetings to review and guide programme implementation	Implemented through WACDEP with support by Ministry of Water Resources and in collaboration with partners

4. Programme detailed Workplan

4.1 Goal 1 / Facilitation packages:

4.1.1 Work Package 1: Regional and Transboundary cooperation

Detailed description

The Yellow River runs through nine provinces in China: Qinghai, Gansu, Sichuan, Shaanxi, Ningxia, Inner Mongolia, Shanxi, Henan and Shandong. The provinces have a common problem of water shortage that leads to water use conflicts. For better cooperation between the provinces, the Yellow River Conservancy Commission (YRCC) makes the annual water allocation plans, water scheduling scheme and a combination of real-time scheduling instruction scheduling.

The GWP China supports the YRCC and related governmental agencies to coordinate transboundary cooperation. From 2014 to 2016, through the activities of understanding problems, identifying issues, developing solutions and monitoring and moving forward cooperation mechanism, the programme supports the annual water allocation plans to be implemented in a scientific and rational manner.

WP Outputs:

- The agreement between the YRCC and nine provinces in the Yellow River Basin on annual water allocation are completed.
- The water use contradiction among nine provinces, including Qinghai, Gansu, Sichuan, Shaanxi, Ningxia, Inner Mongolia, Shanxi, Henan and Shandong, can be strategically solved.

Table: Overview of proposed activities under Work Package 1

HIGH LEVEL ACTIVITIES	Detailed Activities	Deliverables	Proposed Method for delivery
WP 1.1	Conduct 1-2 on-site Investigation on the ongoing and completed works in the Yellow River Basin and organize workshops every year to disseminate the research results	• One investigation report per year; • One workshop every year and meeting report; • Two and more on-site dialogues.	Implemented through consultants group and in collaboration with YRCC **(2014 GWPO financed)**
WP 1.2	Identify focal problems of the river basin institutions as a whole	New approach/mechanism to involve all related organizations who are in charge of formulating national and local water development plans	Implemented with support by Ministry of Water Resources **(2014 GWPO financed)**
WP 1.3	Convene experts/professionals to work out proposals regarding the problems and design activities to improve	• IWRM implementation instruments can be better advocated and utilized. • The new experiences of practicing IWRM are developed.	Implemented through consultants group and with support by Ministry of Water Resources **(2014 GWPO financed)**
WP 1.4	Evaluate the activities and monitor the implementation of each activity	The fresh report of evaluating the status of the implementation of water laws and regulations	Implemented through consultants group and with support by Ministry of Water Resources **(2014 GWPO financed)**
WP 1.5	Investigate the on-going and completed works in each province in the Yellow River Basin	The cooperative mechanisms that play the role in institutional arrangement across sectors, regions	Implemented in cooperation with Yellow River Conservancy Commission, and

HIGH LEVEL ACTIVITIES	Detailed Activities	Deliverables	Proposed Method for delivery
		and agencies	with support by provincial government as well as provincial water resources departments **(2014 GWPO financed)**
WP 1.6	Identify focal problems of the river basin institutions of each province	The new urban integrated water management principles and experiences to address water supply and sanitation issues	Implemented with support by provincial government in cooperation with provincial water resources department **(2014 GWPO financed)**
WP 1.7	Convene experts/professional at the provincial level to work out tailor-made proposals regarding the problems of each province and design corresponding activities to improve	The proposals regarding the water and the ecosystem development in provinces	Implemented with support by provincial government in cooperation with provincial water resources department **(2014 GWPO financed)**
WP 1.8	Evaluate the activities and monitor the implementation of each activity at the provincial level	Evaluation reports and monitoring records of activities	Implemented with support by provincial government in cooperation with provincial water resources department **(2014 GWPO financed)**

4.1.2 Work Package 2: National and sector development plans

Detailed description:

The "National Economic Development Plan" refers to the state of the national economic development of the various elements of the specific arrangements that is divided into long-term plan (usually ten years), medium-term plan (generally five years) and short-term plans (also known as the annual plan), including economic development plans, scientific and technological and social development plans, the direction of the provisions of national economic development, size, speed, and efficiency proportional relationship is a programmatic document guiding the development of the national economy.

The "National Economic Development Plan" is developed based upon the plan of each sector and the Ministry of Water Resources drafts the National Water Sector Development Plan. The programme will enable the integrated water security and climate resilience principles to be covered into the sector development plan. Accordingly, the sector development plan will be one of elements of the national development plan.

The 13th Five-Year (2016-2020) Plan will be drafted from 2014. In the drafting process, the concept of the integrated water security and climate resilience is included into the development plan.

The GWP China, Hebei, Shaanxi, Hunan and Fujian, work with the Provincial Governments to adapt the content of integrated water security and climate resilience into the provincial development plan and sector plan of each province.

WP Outputs:

- Support the Central Government to include the contents of water security and climate resilience into the next National Economic Development Plan (2016-2020) and National Water Development Plan at the central government level, by GWP China;
- Facilitate the provincial governments in Hebei, Shaanxi, Hunan and Fujian to include water security and climate resilience in the Provincial Economic Development Plan (2016-2020) and Provincial Water development Plan, by GWP China Provincial Water Partnerships of Hebei, Shaanxi, Hunan and Fujian.

Table: Overview of proposed activities under Work Package 2

HIGH LEVEL ACTIVITIES	Detailed Activities	Deliverables	Proposed Method for delivery
WP 2.1	- Recruit consultants to work out the tools guide of adopting water security and climate resilience into the national development plan; - Organise regional workshops to convene the policy makers to adopt mainstreaming guide of integrating water security and climate resilience; - Disseminate the relevant publications for integrating water security and climate resilience principles.	The National Economic Development Plan of China integrated with the water security and climate resilience principles	Implemented with support by Ministry of Water Resources, and in cooperation with research institutions and universities
WP 2.2	- Identify national experts to draft reports; - Review and validate reports with the Regional Technical Committee of GWP China; - Submit the reports to the relevant department; - Organize workshop to disseminate the improvement of integrating water security and climate resilience.	Annual plan of the water sector that is integrated with the contents of water security and climate resilience	Implemented with support by Ministry of Water Resources
WP 2.3	- Organise regional workshops to convene the provincial policy makers to adopt mainstreaming guide of integrating water security and climate resilience; - Disseminate the relevant publications for integrating water security and climate resilience principles at the provincial level.	The Provincial Economic Development Plan of Fujian Province integrated with the water security and climate resilience principles	Implemented with support by provincial government in cooperation with provincial water resources department
WP 2.4	- Identify provincial experts to draft reports on how to improve the annual sector plan by integrating water security and climate resilience; - Submit the reports to the relevant provincial departments; - Organize workshop to exchange ideas on the improvement of integrating water security and climate resilience within the province.	Annual plan of the water sector of Fujian Province that is integrated with the contents of water security and climate resilience	Implemented with support by provincial government in cooperation with provincial water resources department
WP 2.5	- Organise provincial workshops to convene the provincial policy makers to adopt mainstreaming guide of integrating water security and climate resilience; - Disseminate the relevant publications for integrating water security and climate resilience principles at the provincial level.	The Provincial Economic Development Plan of Hebei Province integrated with the water security and climate resilience principles	Implemented with support by provincial government in cooperation with provincial water resources department
WP 2.6	- Organise provincial workshops to convene the provincial policy makers to adopt mainstreaming guide of integrating water security and climate resilience;	Annual plan of the water sector of Hebei Province that is integrated with the contents of water security and climate resilience	Implemented with support by provincial government in cooperation with provincial water resources department

HIGH LEVEL ACTIVITIES	Detailed Activities	Deliverables	Proposed Method for delivery
	- Disseminate the relevant publications for integrating water security and climate resilience principles at the provincial level.		
WP 2.7	- Organise regional workshops to convene the provincial policy makers to adopt mainstreaming guide of integrating water security and climate resilience; - Disseminate the relevant publications for integrating water security and climate resilience principles at the provincial level.	The Provincial Economic Development Plan of Shaanxi Province integrated with the water security and climate resilience principles	Implemented with support by provincial government in cooperation with provincial water resources department
WP 2.8	- Organise provincial workshops to convene the provincial policy makers to adopt mainstreaming guide of integrating water security and climate resilience; - Disseminate the relevant publications for integrating water security and climate resilience principles at the provincial level.	Annual plan of the water sector of Shaanxi Province that is integrated with the contents of water security and climate resilience	Implemented with support by provincial government in cooperation with provincial water resources department
WP 2.9	- Organise regional workshops to convene the provincial policy makers to adopt mainstreaming guide of integrating water security and climate resilience; - Disseminate the relevant publications for integrating water security and climate resilience principles at the provincial level.	The Provincial Economic Development Plan of Hunan Province integrated with the water security and climate resilience principles	Implemented with support by provincial government in cooperation with provincial water resources department
WP 2.10	- Organise provincial workshops to convene the provincial policy makers to adopt mainstreaming guide of integrating water security and climate resilience; - Disseminate the relevant publications for integrating water security and climate resilience principles at the provincial level.	Annual plan of the water sector of Hunan Province that is integrated with the contents of water security and climate resilience	Implemented with support by provincial government in cooperation with provincial water resources department

4.1.3 Work Package 3: No/low regret investments in regional and national development

Detailed description:

The investment in water facilities is a fundamental public welfare. The Chinese Government will improve the fund raising channels for the national and local water social and Programmes construction; implement the water development policies on the benefits accrued from the land 10% of farmland; strengthen financial support for water infrastructure construction and attract a wide range of social water investment funds. In 2011 and 2012, the water sector investment in China reached UISD 54.9 billion and USD 64.5 billion, and the total investment in water in the next 10 years (2011-2020) will be more than 636 billion U.S. dollars.

For better knowledge of using the investment, GWP China will jointly work with the Provincial/River Basin Water Partnerships, the Department of Finance and the Department of Water Resources of the Ministry of Water Resources, the Ministry of Finance and related governmental agencies; and invite economic experts and water professionals of Beijing Renmin University, Hohai University and Tsinghua University to conduct investigation and draft research reports. The package will be completed through collecting investment

outcomes; analyzing the outcomes in different uses, evaluating the analysis outcomes and delivering the improvement proposal to influence the relevant authorizes for the improvement of investment plan in water sector.

WP Outputs:

- Investigation reports;
- Analysis reports;
- Improvement proposals.

Table: Overview of proposed activities under Work Package 3

HIGH LEVEL ACTIVITIES	Detailed Activities	Deliverables	Proposed Method for delivery
WP3.1	Recruit experts to carry out an economic analysis of investment options in China	Investigation reports	Implemented by the Consultants Group, and with support by Ministry of Water Resources **(2014 GWPO financed)**
WP3.2	Prepare a summary national adaptation options in different uses.	Analysis report on the outcomes in different uses	Implemented by the Consultants Group, and with support by Ministry of Water Resources **(2014 GWPO financed)**
WP3.3	Analyse the outcomes of the investments and identify the weaknesses	Evaluation system for the analysis outcomes	Implemented by the Consultants Group, and with support by Ministry of Water Resources **(2014 GWPO financed)**
WP3.4	Draft the proposal of improvement; Organize workshops on financing for water security and climate resilience	Improvement proposals	Implemented by the Consultants Group, and with support by Ministry of Water Resources **(2014 GWPO financed)**

4.1.4 Work Package 4: Programme Preparation and Financing

N/A

Table: Overview of proposed activities under Work Package 4

High level Activities	Detailed Activities	Deliverables	Proposed Method for delivery

4.1 Goal 1 / Demonstration Programmes:

4.1.5 Work Package 5: Demonstration Programmes

Detailed description:

The Pearl River Delta includes Hong Kong, Macau and part of Guangdong province (including the nine municipalities of Dongguan, Foshan, Guangzhou, Huizhou, Jiangmen, Shenzhen, Zhaoqing, Zhongshan and Zhuhai), and is a region which was opened up to commerce and foreign investment in 1978 by the central government of the People's Republic of China.

The Pearl River Delta economic area is the main exporter and importer of all the great regions of China , and can even be regarded as an economic power. In 2002, exports from the Delta to regions other than Hong Kong , Macau and continental China reached USD 160 billion.

The Pearl River Delta, despite accounting for just 0.5 percent of the total Chinese territory and having just 5 percent of its population, generates 20 percent of the country's GDP.

The population of the Pearl River Delta, now estimated at 50 million people, is expected to grow to 75 million within a decade.

Apart from investment from Macau and Hong Kong companies, in the rest of the Delta, the Province of Guangdong has, for the last 20 years, been the focus of direct foreign investment, much of which from North American companies looking to make use of the same competitive edge enjoyed by Macau and Hong Kong.

The demonstration Programme in the Pearl River Delta will practise the approach of: cross-sectors cooperation (Department of Finance, Transportation, Water Resources, Environmental Protection and etc.); transbountry cooperation (Hong Kong, Macau and Guangdong Province); and management of urbanization with the urbanization rate of over 70% and development of ecological regulation by green solution

WP Outputs:

- Integrate the water security and climate resilience into the "Water Allocation Plan of the Pearl River Delta" drafted by the Ministry of Water Resources;
- Promote the legislation process of the "Water Allocation Regulation of the Pearl River Delta";
- Support the feasibility study of Datengxia Water Complex in the Pearl River Delta

Table: Overview of proposed activities under Work Package 5

HIGH LEVEL ACTIVITIES	Detailed Activities	Deliverables	Proposed Method for delivery
WP 5.1	Facilitate the transboundary cooperation, inter-provincial/sector/businesses cooperation and delta protection to be implemented in the Pearl River Delta	Methods/tools involved in the management of transboundary cooperation, inter-provincial/sector/businesses cooperation and delta protection	-Identify the problems of the demonstration Programme regarding water and climate change; - Develop countermeasures, strategies and solution tools **(2014 GWPO financed)**
WP 5.2	Support the implementation of the Pearl River Delta Demonstration Programme	Progress report	Use the WACDEP regional manager to work with the delta related organizations **(2014 GWPO financed)**
WP 5.3	Promote the ecological regulation of the Pearl River Delta by adopting green solutions	Green solutions	Develop solution tools **(2014 GWPO financed)**

HIGH LEVEL ACTIVITIES	Detailed Activities	Deliverables	Proposed Method for delivery
WP 5.4	Facilitate to solve drinking water and water supply problems due to urbanization of the Pearl River Delta	Investigation report	- Investigate urbanization situations; - Identify problems and work out proposal of linking with the new strategy of GWP 2014-2016 **(2014 GWPO financed)**
WP 5.5	Summarize the documentation of lessons from the Demonstration Programme	Lessons learnt from the Programmes implementation developed and documented	- Invite consultants in collaboration with the Programme team; - Organise workshops to summarize lessons learnt in the implementation of the Programmes to highlight policy implications to be considered for water and climate resilience

4.2 Goal 2:

4.2.1 Work Package 6: Capacity Development

Detailed description:

As the foundation, this package provides capacity for delivering all the other work packages. By increasing the awareness and understanding of tools, it will support the implementation of the Capacity Building Programme on water security and climate resilience financed by the Capacity Development and Knowledge Network. The capacity development services to safeguard no/low regret investments and integrate these into national development planning processes.

The work package of capacity development works towards the collaboration with the capacity building network for IWRM and the development of capacity building network for China Region.

The primary activities will be establishing consulting advisors group of water and climate security and organizing capacity building and training for partnerships, institutions and stake-holders.

WP Outputs:

- Set up training modules and tools for implementing the capacity building plan;
- Cooperate with Disaster Control Associations and other institutions to develop capacity;
- Establish knowledge and technical consulting group for drought and flood management;
- Organize the tailored training courses to provide on-going support, including on-the-job support to relevant planners.

Table: Overview of proposed activities under Work Package 6

HIGH LEVEL ACTIVITIES	Detailed Activities	Deliverables	Proposed Method for delivery
WP 6.1	Establish consultancy team on water and climate security	- Capacity Development plan; - Training materials	- Consultancy team and regional teams work together to identify needs

HIGH LEVEL ACTIVITIES	Detailed Activities	Deliverables	Proposed Method for delivery
			- Consultants work with CapNet (and other relevant service providers with relevant specialised skills) with input from the regions develop training materials **(2014 GWPO financed)**
WP 6.2	Organize capacity building and training of Capacities of partnerships, institutions and stake-holders to enhance the methods of integrating water security and climate resilience	- Reports on outcome of the capacity building activities with clear indicators for the capacity that was built - Report on local institutions and regional climate change centres which show the enhanced capacity through clear indicators	- Edit training materials - organize training among the regional teams and train them to cascade training into provinces - local experts continue to provide on the job support to practitioners identifying and prioritising no/low regrets investments for WCP **(2014 GWPO financed)**
WP 6.3	Cooperate with Disaster Control Associations and other institutions to develop capacity	Training materials	- identify needs - organize training workshops **(2014 GWPO financed)**
WP 6.4	Set up a knowledge and technical consulting group for drought and flood management	- Capacity Development plan; - Training materials	organize training workshops **(2014 GWPO financed)**

4.2.2 Work Package 7: Knowledge and awareness

Detailed description:

For the purpose of promoting the application of IWRM for water security and climate resilience, the work package of knowledge and awareness enables GWP China and GWP to be providers of cutting-edge knowledge; upgrade knowledge within the diverse network and to ensure that the network continues to support countries and deliver the implementation of WACDEP.

WP Outputs:

- Develop case studies in pilot Programmes;
- Set up a toolbox to share knowledge for drought and flood management;

Table: Overview of proposed activities under Work Package 7

HIGH LEVEL ACTIVITIES	Detailed Activities	Deliverables	Proposed Method for delivery
WP 7.1	Develop case studies in pilot Programmes	Information available collected from the experiences of pilot Programmes	Invite Regional TEC members, knowledge management experts as well as key strategic

HIGH LEVEL ACTIVITIES	Detailed Activities	Deliverables	Proposed Method for delivery
		Tools developed to support the implementation of WCP	allies at national and local levels, consultants, WCP Reference Group support in the development of knowledge products for sharing **(2014 GWPO financed)**
WP 7.2	Set up a toolbox to share knowledge of adopting the integrated water security and climate resilience into drought and flood management	Toolbox Knowledge available to share	- Carry out communication and knowledge management activities - Engage with stakeholders' networks - Provide knowledge management training workshops - Install website to exchange toolbox knowledge online **(2014 GWPO financed)**

4.3 Goal 3:

4.3.1 Work Package 8: Governance and Fundraising

Detailed description:

It is planned to strengthen the capacity of the GWP China network to facilitate the WACDEP program, especially with respect to elaborating the Programme documents, carrying out annual audits of the program and preparing program technical and financial progress reports. With the strong basis of governance and funds, the WACDEP will be more effectively implemented. The better management skills, including monitoring, evaluation and reflection can draw lessons, improve implementation and enhance fundraising for programmes promoting water security and climate resilience

WP Outputs:

- Organization of Regional Council and Partners' meetings;
- WACDEP management team and advisors group;
- Annual audit of the WACDEP;
- More participation in global, regional and national meetings to review and guide programme implementation.

Table: Overview of proposed activities under Work Package 8

HIGH LEVEL ACTIVITIES	Detailed Activities	Deliverables	Proposed Method for delivery
WP 8.1	Joint research Programmes; workshops; training courses; exchange experiences	More linkages with other IWRM actors	-Organize workshops; -Set up and advance websites and toolbox **(2014 GWPO financed)**

HIGH LEVEL ACTIVITIES	Detailed Activities	Deliverables	Proposed Method for delivery
WP 8.1.1	International events, e.g. CP meetings, WWW, WWF; joint researches; use TB	More international activities with other GWP RWPs	-Participate in International events; -Conduct research Programmes; -Draft reports to GWPO and develop more communication with the management team of GWPO. **(2014 GWPO financed)**
WP 8.1.2	Sign MOUs; exchange plans of activities; participate in activities	Cooperation plans between GWP China and other stakeholders	-Organize more workshops; -Make more exchanges.
WP 8.2	Follow up activities; draft evaluation standards; review cooperation outcomes.	Evaluation system of cooperation outcomes between GWP China and other organizations at all levels	-Establish an Evaluation system; -Set up esteeming teams. **(2014 GWPO financed)**

5. Programme Management Arrangements

GWP China works with the Provincial/River Basin Water Partnerships, the Ministry of Water Resources, partners and relevant agencies to set up a work network within the region. Under the framework of the WACDEP, GWP China will support the related departments to improve the policies and practices that are aimed at improving climate resilience and water security. The CWPs (i.e. Provincial/River Basin WPs) and their partners are also important in conducting this Programme at the provincial/river basin levels.

GWP China convenes together state actors and experts to develop strategies of influencing the policies and implementation of the regulation to adapt the principles of improving climate resilience and water security in China. The Programme involves one river basin and three river deltas as well as more than 10 provinces/areas. At the provincial level, the advisor group of each CWP will be established to drive the managing of shared watercourses and to facilitate the IWRM planning processes at the local level.

The Programme implementation will be facilitated by GWP China who plans to work with a number of stakeholders in the region. Based upon the mandated institutions, GWP China will ensure the roles and responsibilities of various players in the implementation of the programme.

In order to ensure the achievement of Programme objectives, the programme has its management measures as follows:

1. Responsibility system of Programme leader that includes the responsibility rules of the Programme leader and that of implementation organization;

2. Programme contract system is the way of identifying the roles and responsibilities of GWP China and other organizations that participate in the Programme implementation;

3. Expert consultation system is to be set up based on an expert advisory panel to help and evaluate research Programmes and technology framework as well as offer technical advice to the study;

4. Monitoring and evaluation system is formed to monitor and evaluate the annual and interim progress of the implementation. From the aspect of overall management and supervision of the programme, it can improve communication system, set up special contacts and assist the Programme leader for the technical issues;

5. Performance evaluation and incentive system refers to a results-oriented management system to ensure the achievement of the assessment indicators.

The organization of WCP China has a Programme team leader (RWP Coordinator), Programme manager, technical director (RWP TEC Chair), an expert advisory panel and an implementation team. At provincial/river basin level, each area has a Programme manager who reports to the PM at national level and an implementation team.

Responsibilities

1. Programme leadership team and Programme team leader--the team leader is responsible for leading the team to ensure the successful implementation of the programme at national level. The main responsibilities include:

- Development of operational management and operational rules;
- Overall implementation of the audit plan approved Programmes ;
- Implementation of Programmes ;
- Formation of the Programme implementation team;
- Working relationship with GWPO team and cooperation partners/organizations.

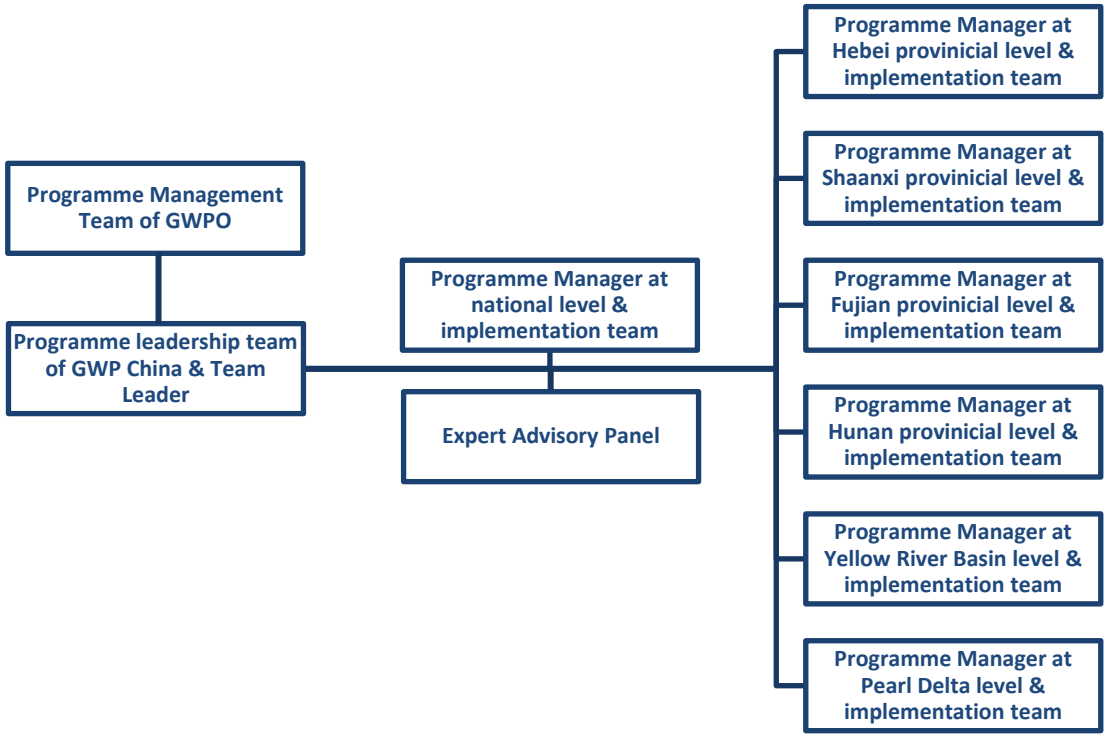
2. Programme Manager—at both national and provincial levels, the Programme managers are the key role for the operation of the programme. The responsibilities are as follows:

- Implementation of the Programme to develop a detailed Programme specification and implementation of the program plan;
- Co-ordinating arrangements and organization of the Programme, including the review of the Programme progress, control of the quality of the progress, achieving changes and dealing with emergency situations, control of risks and adjustment according to the actual situation;
- Programme supervision and case reports;
- Report to the Programme team leader.

3. Technical director is responsible for controlling all the software resources of the Programme as well as coordinating with the Programme managers to liver technical supports related to all activities of the programme.

4. Expert Advisory Panel works for resolving the key, difficult and hot issues in the process of implementing the programme. They will help to evaluate research Programmes and technology framework as well as provide technical advice during the study. The panel members are the experts from the Ministry of Water Resources, Water Research Institutes, River Basin Committees, the provinces (autonomous regions) experts, and etc.

5. Implementation team is in charge of executing the programme at provincial and delta levels. The team is under management of programme managers, the team members will be responsible for coordinating the working of the Programme, participating in the demands analysis, Programme quality supervision and on-site investigation. Likewise, the members also keep daily communication with the Programme manager to exchange the information on the progress.



6. Main Programme Assumptions, Risks And Mitigation Measures

As a special RWP, GWP China has its strength in implementing the Programme with fewer risks of coordinating its stakeholders in China comparing with other regions. However, for better development of the WACDEP in a long term, the measures are proposed to mitigate the possible assumptions and risks:

1 Engagement of the stakeholders into the Programme: the players at provincial/river basin and local levels have weak relationship and network that will lead to poor engagement at all levels.

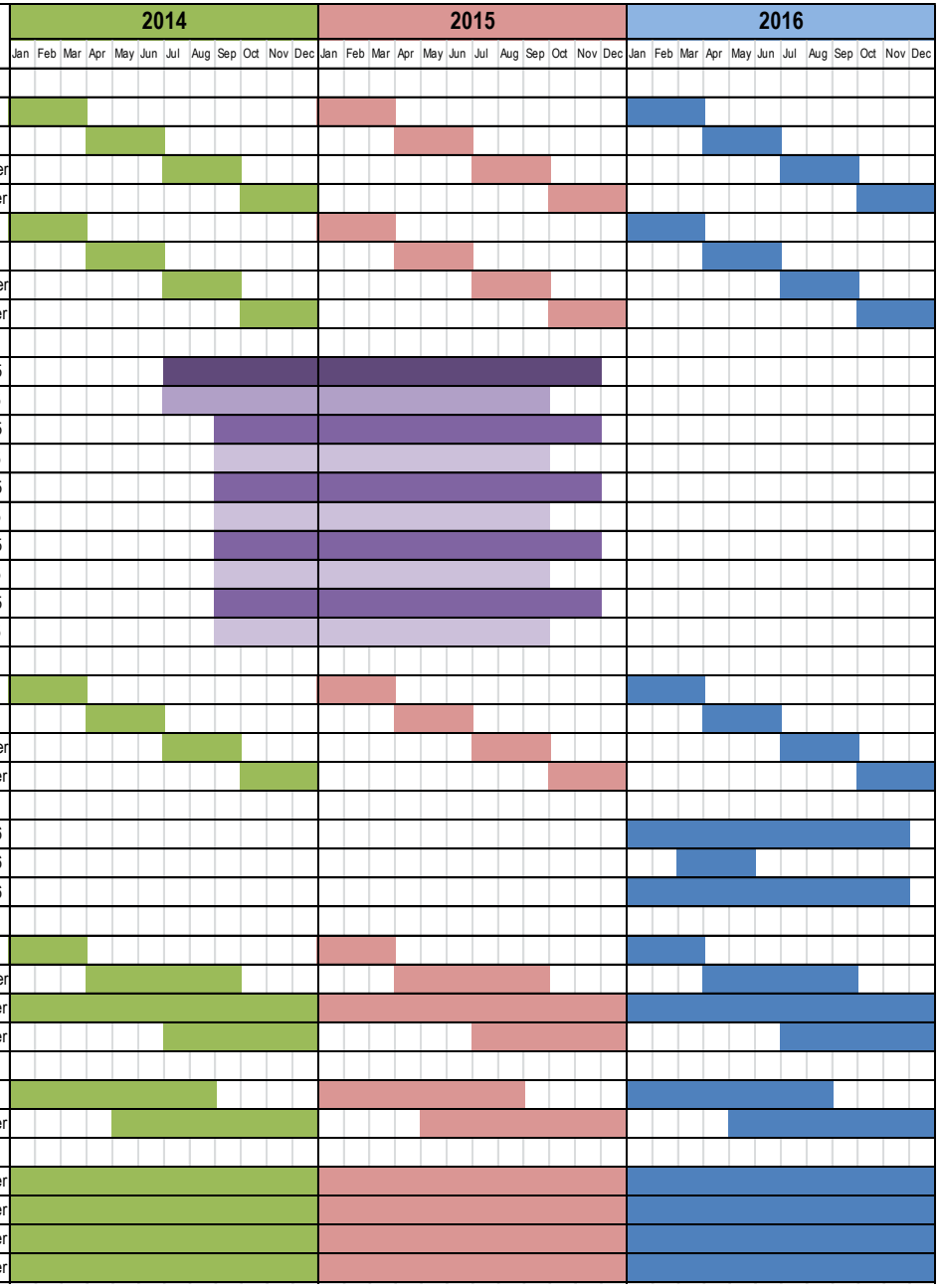
Proposed measures: GWP China and its Provincial/River Basin Water Partnerships play a critical role in driving stakeholder engagement processes in order to ensure contextualization. This approach of using regional and provincial networks will also help in ensuring these processes. Likewise, the communication with the Ministry of Water Resources and the YRCC as well as the relevant authorities will also help in managing the risks. The Programme Manager exchanges the information with the stakeholders frequently to be fully aware of the progress of the Programme in each involved department or place, and he will use the tools of consistent reporting and feedback to ensure the engagements smoothly.

2. Monitoring and evaluation of the Programme outcomes to avoid the scenario that the outcomes fail or hardly achieve the anticipated target as well as planned. .
Proposed measures: In the preparation of the Programme, it must build up an overall monitoring and evaluation system of the Programme that is conducted by the management team. Under the framework of the Programme, each activity is also designed with its independent evaluation and monitoring system to navigate the progress of the activity towards the anticipated target. Furthermore, the Programme manager has the evaluation system and review schedule to monitor the progress of the Programme and each activity respectively.

7. ANNEXE:

7.1 Gantt Chart

No.	Activity	Start	End
1	Work Package 1		
1.1	Understand current and general conditions of the Yellow River(YR)	January	March
1.2	Identify issues of the YR	April	June
1.3	Development solutions	July	September
1.4	Monitor and move forward	October	December
1.5	Understand current conditions of river basin provinces (9 provinces)	January	March
1.6	Identify issues of river basin provinces (9 provinces)	April	June
1.7	Development solutions for river basin provinces (9 provinces)	July	September
1.8	8 Monitor and move forward the project in river basin provinces (9 provinces)	October	December
2	Work Package 2		
2.1	Improve the National Economic and Social Development Plan of China	1-Jul-14	1-Dec-15
2.2	Promote the integrated water security and climate resilience management to the annual plan of the water sector	1-Jul-14	1-Oct-15
2.3	Improve the Provincial Economic and Social Development Plan of Fujian	1-Sep-14	1-Dec-15
2.4	Promote the integrated water security and climate resilience management to the annual plan of the water sector of Fujian Prov	1-Sep-14	1-Oct-15
2.5	Improve the Provincial Economic and Social Development Plan of Hebei	1-Sep-14	1-Dec-15
2.6	Promote the integrated water security and climate resilience management to the annual plan of the water sector of Hebei Prov	1-Sep-14	1-Oct-15
2.7	Improve the Provincial Economic and Social Development Plan of Shaanxi	1-Sep-14	1-Dec-15
2.8	Promote the integrated water security and climate resilience management to the annual plan of the water sector of Shaanxi Pr	1-Sep-14	1-Oct-15
2.9	Improve the Provincial Economic and Social Development Plan of Hunan	1-Sep-14	1-Dec-15
2.10	Promote the integrated water security and climate resilience management to the annual plan of the water sector of Hunan Prov	1-Sep-14	1-Oct-15
3	Work Package 3		
3.1	Collect investment outcomes	January	March
3.2	Analyze the outcomes in different uses	April	June
3.3	Evaluate the analysis outcomes	July	September
3.4	Deliver the improvement proposal	October	December
5	Work Package 5		
5.1	Activity 1 Project the Yangtze River Delta	1-Jan-16	1-Dec-16
5.2	Activity 2 Project the Pearl River Delta	1-Mar-14	1-Jun-16
5.3	Activity 3 Project the YR Delta	1-Jan-16	1-Dec-16
6	Work Package 6		
6.1	Establish consulting advisors group of water and climate security	January	March
6.2	Organize training and capacities of partnerships, institutions and stake-holders about integrate water security and climate resili	April	September
6.3	Cooperate with Disaster Control Associations and other institutions to develop capacity	January	December
6.4	Establish knowledge and technical consulting group of drought and flood management	July	December
7	Work Package 7		
7.1	Activity 1 Develop case studies in pilot projects	January	August
7.2	Activity 2 Set up a toolbox to share knowledge of drought and flood management	May	December
8	Work Package 8		
8.1	Activity 1 Broaden and strengthen linkages with other IWRM actors	January	December
8.2	Activity 2 Develop international activities with other GWP RWPs	January	December
8.3	Activity 3 Develop cooperation plans between GWP China and other stakeholders	January	December
8.4	Activity 4 Evaluate cooperation outcomes between GWP China and other organizations	January	December



7.2 Budget

(See separate Excel template)

7.3 Logframe

(See separate Excel template)