Global Water Partnership South Asia

Water and Climate Resilience Programme (WACREP)

(Year End Report 2017)

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ACRONYMS AND ABBREVIATIONS

ADB	Asian Development Bank
APAN	Asia Pacific Climatic Change Adaptation Network
AWP	Area Water Partnership
BhWP	Bhutan Water Partnership
BWP	Bangladesh Water Partnership
BAWUN	Bangladesh Water Utility Network
BWWN	Bangladesh Women and Water Network
CEDS	Center for Environmental and Geographic Environmental Services
GWP	Global Water Partnership
GWP SAS	Global Water Partnership South Asia
IMD	Irrigation Management Division
IWP	Indian Water Partnership
IWRM	Integrated Water Resources Management
IWM	Institute of Water Modelling
IWMI	International Water Management Institute
LGED	Local Government Engineering Department
NARBO	Network of Asian River Basin Organizations
NWSDB	National Water Supply and Drainage Board
PMC	Project Management Committee
PRI	Panchayat Raj Institutions
RRDI	Rice Research and Development Institute
SACEP	South Asia Co-operative Environmental Programme
SAARC	South Asian Association for Regional Cooperation
SAWAF	South Asia Water Forum
SDGs	Sustainable Development Goals
SLWP	Sri Lanka Water Partnership

USAID	United States Agency for International Development
WAPCOS	Water and Power Consultancy Services (India) Limited
NetWATER	Network of Women Water Professionals

EXECUTIVE SUMMARY

South Asia region is home to an astounding variety of geographical features, such as glaciers, rainforests, valleys, deserts, and coastal areas that are typical of much larger continents. The variety is influenced by not only the altitude, but also by the factors such as proximity to the coast and the seasonal impact of the monsoons. The climate of the region varies considerably from area to area i.e. from tropical monsoon in the south to temperate in the north.

The region is one of the most disaster-prone regions of the world while nearly 91 percent of these disasters are related to hydro-meteorological origin. Annually, about 140 million people are affected and close to 10,000 die from water-related disasters worldwide (UNESCO, 2018). Average global economic loss from floods and droughts is over USD 40 billion per year. Although no region of the world is completely spared by natural disaster, the poorest countries in South Asia are hit the most, due to poor coping capacity. The vagaries of nature leave behind death and destruction with huge impact on the developing economy. The region is generally made to acknowledge as the most vulnerable countries to climate change and climate variability. The region is host to one of the most threatened eco-systems from the effects of the climate change.

The greatest increases in exposure to pollutants are expected to occur in low- and lower-middle income countries, primarily because of higher population and economic growth in these countries and the lack of wastewater management systems. This has resulted in unprecedented stress on natural resources and ecosystems, causing sustained degradation of forest, soils, wetlands, rivers and aquifers in South Asia. With a three-fold increase in human population since 1950, South Asia's per capita water availability is down to one fifth of what it was 60 years ago.

In 2010, 3.6 billion people living in water-scarce areas out of which nearly 73 percent live in Asia. In 2050 (factoring in adaptive capacity) 3.6–4.6 billion will be under water stress with 91–96% living in Asia, mainly Southern and Eastern. In 2010, the global groundwater usage, mainly for agriculture, amounts to 800 km^3 per year, with India, the United States of America, China, Iran and Pakistan (in descending order) accounting for 67 percent of total abstractions (UNESCO, 2018).

Given the transboundary nature of most river basins, regional cooperation will be critical to addressing projected water quality challenges. There are large number of boundary partners active in this region, namely, South Asia Co-operative Environment Programme (SACEP), South Asian Association for Regional Cooperation (SAARC), Asia Pacific Adaptation Network (APAN),

Network of Asian Rever Basin Organizations (NARBO), United Nations Development Programme (UNDP), United Nations Chirldrens Fund (UNICEF), Food and Agriculture Organisation (FAO), International Water Management Institute (IWMI), United Nations Economic and Social Commission for Asia and the Pacific UNESCAP, Asia Foundation, United States Agency for International Development (USAID), Australia's Aid Programme (AusAID), Delta Alliance, World Bank, Asian Development Bank (ADB), International Union for Conservation of Nature (IUCN), World Wildlife Fund (WWF) and International Centre for Integrated Mountain Development (ICIMOD) are some of them.

Global Water Partnership South Asia (GWP SAS) started a flagship initiative Water and Climate Resilience Programme (WACREP), launched on 2013. This programme is another regional water and climate initiative under the global programme –Water and Climate Development Programme (WACDEP). WACREP was formulated to improve the climate resilience of South Asian countries to withstand the impact of climate change. Under this programme, Country Water Partnerships (CWPs) work with the respective government agencies and their partners and play a catalytic/facilitative role in implementing climate related activities.

WACREP collaborate with partners to implement the activities to achieve its objective to support countries to;

- develop and integrate "no regret'" water security and climate resilience investments in to their development plans, budget and programmes,
- identify solutions addressing critical water security challenges to enhance the climate resilience of countries and communities,
- built knowledge and capacity to enhance water security and climate resilience,
- operationalise the GWP network with strategic allies and stakeholders to integrate water security and climate resilience in development process.

WACREP is implemented under the theme of 'Climate Resilience and Water Security'. The activities also contribute to other themes such as, food, energy, ecosystems, urbanisation and Water Security and contributes to the GWP Vison: "A Water Secure World".

WACREP IMPLEMENTATION IN 2017

In 2017, Global Water partnership South Asia focused on sixteen Country Water Partnership (CWP) based activities and interventions. Overall, WACREP in South Asia is targeted towards developing resilience among communities to withstand the hazards that can be generated due to the effects of climate change in South Asia. The projects will engage stakeholders for providing knowledge and developing skills on climate change mitigation and adaptation.

Limited grant allocations in 2017 have lowered the number of activities conducted by each CWP while the Regional Office as well as the CWPs mainly targeted the efforts towards resource mobilisation. The activities conducted by the region were designated in order to achieve GWP's three Strategic Goals; catalyse change in policy and practice, generate and communicate knowledge and strengthen partnerships.

Sustainable access to water is vital for human existence. People require water and sanitation to maintain good health and to continue with their livelihoods. Besides, water beyond the household provides input into the production systems that maintains livelihoods. This year, Bangladesh Water Partnership (BWP) conducted a study to explore the challenges of sustainable access to water in coastal zone of Bangladesh with particular focus on women and youth in reference to the current context of climate change.

Although, overall water quality of rivers in Bhutan is in good condition, the water pollution problems exist especially along the banks of streams and rivers in both urban and rural areas depicting the problems that can expect in the near future. Bhutan Water Partnership (BhWP) in 2017 conducted two surveys to explore the level of pollution, pollutants and possible interventions to mitigate the pollution and on proper management of waste.

Effects of Climate Change (CC) and adaptation practices are novel concepts for some of the societies and the government officials who are even working for water and agricultural sectors. Therefore, Sri Lanka Water Partnership (SLWP) imparted trainings on Climate Change Adaptation (CCA) for stakeholders as well as the farmers. They continued in producing Capacity Building Modules and translating them to local languages in view of reaching a wider audience. BWP also conducted consultations to raise awareness and increase engagement of low-income communities on CCA in 2017.

India Water Partnership (IWP) with the collaboration of its partners kick-started a development of Integrated Water Resources Management (IWRM) programme in 2015 and compiled a Detailed Investment Plan (DIP). Aligned with the plan, IWP interacted through meetings and presentations for networking and mobilise resources from corporate sector.

Documentation of good practices and knowledge sharing is important in sustainable development especially in the developing world. GWP Nepal initiated few projects to measure the effects of devastating earthquake and document the good practices undertaken by the stakeholders of the water sector in regaining the life standard of the people and agriculture.

Strengthening partnerships and developing multi-stakeholder platforms are the most sustainable and workable approaches to achieve Sustainable Development Goal 6, Ensure availability and sustainable management of Water and sanitation for all. Pakistan Water Partnership (PWP) initiated collaborations and awareness raising programmes with various

stakeholders including Area Water Partnership (AWPs), universities and cooperate sector in 2017. IWP's activity "Climate resilience development: Participatory river basin management in semi-arid areas of Rajasthan - search for new governance system" is another good example for the multi-stakeholder approach and the expected River Basin Parliament is to be launch in 2018.

At present, access to safe water in South Asia has become a mirage as the water sources either have been polluted or dried off. The ground water table in Bangladesh, India and Pakistan is been highly contaminated with Arsenic and/or other contaminants by aggravating the situation. Rain Water Harvesting (RWH) is one of the significant remedies to achieve water security and PWP is provide technical support and knowledge to promote climate resiliency in water and agriculture sartorial Programmes.

CHAPTER 1 -BANGLADESH WATER PARTNERSHIP

BWP was established on 30 September 1998 to foster integrated water resource management (IWRM) by maximising economic and social benefits without compromising the sustainability of vital ecosystems through an experts group meeting under the initiative of Late Mr Quamrul Islam Siddique, Former Chief Engineer, and Local Government Engineering Department (LGED). Since its establishment, LGED has been supporting BWP as the host institution and Mr Shahidul Hassan, President, BWP is the Head of the Executive Committee of the BWP and Dr K. Azharul Haq, Vice President is leading activities in BWP.

BWP plays an important role on issues related to flood management, Climate Change and Adaptation (CCA) and transboundary water co-operation in the country and the region. Its initiative and leadership in developing preparedness plans and frameworks for action have influenced policies and promoted best practices, advocacy and knowledge sharing. Promoting IWRM related dialogues at all levels through provision of platforms within the country and using existing regional and global forums has made it an acknowledged and visible water sector proponent by the government, and donors.

BWP was the first to host the SAS Regional Secretariat and to organise the South Asia Water Forum (SAWAF) in 2004. It has participated actively in World Water Forums since 2002 and is responsible for texts on South Asia in the Asia-Pacific Regional Document at WWF5 in Istanbul in 2009. At the 6th World Water Forum held in Marseille, France, BWP participated in the Women Leadership Preparatory Conference to debate Women's Leadership in Water and to forge concrete solutions. A key contribution to the region was development of a framework to manage flood disasters in the Ganges and Brahmaputra rivers, examining institutional requirements for basin wide flood management by Bangladesh, India and Nepal. It created youth forums in three river basins and has undertaken capacity building and awareness creation on IWRM for water professionals, youth and women.

It facilitated the establishment of the Bangladesh Water Utility Network (BAWUN) and the Bangladesh Water Integrity Network (BAWIN) working on water integrity and the Bangladesh Women and Water Network (BWWN).

Under WACREP Phase II (2017), BWP undertook two activities -

1. Activity 6A: Ensuring sustainable access to water supply for the communities living in coastal areas, especially women and youth to bring a qualitative change in their livelihood with special reference to climate change adaptation.

2. Activity 6B: Consultation with the grassroots level community on their understanding on adaptation of climate change and their approach

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Activity 6A: Ensuring sustainable access to water supply for the communities living in coastal areas, especially women and youth to bring a qualitative change in their livelihood with special reference to climate change adaptation

Output/Outcome

BWP implemented this activity in collaboration with the Center for Environmental and Geographic Information Services (CEGIS). Six sites were covered in this activity. Three dissemination workshops in the districts of Bagherhat, Borguna and Noakhali were held in August 2017 to discuss the survey findings from the field. The final report was prepared based on the comments, suggestions and feedback received from workshops held on 2 August 2017 at Patharghata, Barguna, 03 August 2017 at Morrelganj, Bagerhat, and on 12 September 2017 at Shuborno Char, Noakhali .

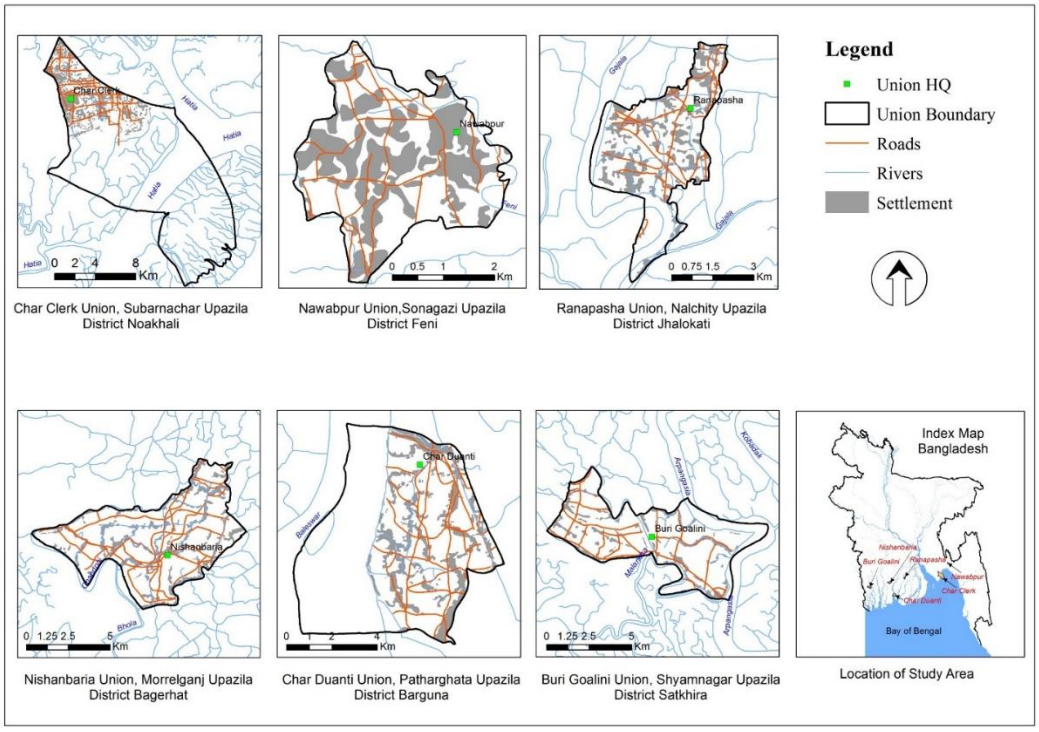
What GWP strategic goal(s) does this result relate to?

Goal 2 – Generate and communicate knowledge

Contributing Factors, Actors and Background

BWP in collaboration with Center for Environmental and Geographic Information System (CEGIS) conducted the activity from 10 May 2017 to 30 September 2017.The study consisted of a seven-day field visit in the six selected coastal districts of Feni, Noakhali, Bagerhat, Shatkhira, Jhalokathi and Barguna and three-stakeholder workshops in Noakhali, Barguna and Bagerhat.

Out of the 19 coastal districts of Bangladesh, six districts were selected for the study through cluster sampling. The selection criteria included vulnerability to water related problems and location (sea facing and non-sea facing). Three sea facing and three non-sea facing districts were selected. From these six districts, six *upazilas* (formerly called *thana*, is a geographical region in Bangladesh used for administrative or other purpose) were selected and further from six *upazilas*, six unions were selected. Using this methodology, six total study sites were selected. One field team for each union was mobilised to collect data. Data collection was based on a semi-structured questionnaire.



Study Sites

Massive and prolonged monsoonal floods delayed the implementation, and the activity was shifted to Q3 instead of Q2. The third and the last dissemination workshop was held on 12 September 2017. Nearly 120 people attended the workshop with representation of 40 and 10 percent of women and youth respectively.

Lessons Learned

The findings of the study included,

- The study found that availability of safe water is rapidly reducing in coastal areas due to salinity intrusion in both ground and surface water.
- Inundation of tube-wells and ponds due to flood and tidal water intrusion have become a regular challenge.
- Further, the coastal area is becoming more vulnerable to climatic variability, which jeopardizes access to water.
- Water scarcity affects women and girls more as they are responsible for fetching water for drinking and domestic purposes.
- The study also reflected that there is potential for augmenting water resource development with social engagement and infrastructural development.
- Ensuring sustainable access to water supply in coasts of Bangladesh requires collaboration of four major fronts:
- Water resource augmentation

- Infrastructural support
- Social empowerment
- Policy and regulatory reforms

Other Information

https://www.gwp.org/globalassets/global/gwp-sas_files/wacrep/2017/final-report-under-wacrep_cegis_2017.pdf

Disseminations workshops

Activity 6B: Consultation with the grassroots level community on their understanding on adaptation of climate change and their approach

Output/Outcomes

The consultation was conducted with the participation of Initiative for Right View (IRV)/Bhairab River Area Water Partnership (AWP). Six Community Consultations, three one-day training

sessions and an inter-community dialogue were held in the months of August, September and October 2017 respectively.

What GWP strategic goal(s) does this result relate to?
Goal 2 – Generate and communicate knowledge

Background of the Study
Approximately one-fourth of the population of Bangladesh lives in the coastal region of which three-fourths are classified as 'poor livelihood groups'. In this region, water plays a vital role in the economic and social development. However, people of this region are vulnerable to water related natural hazards as well as climate change impacts. As per the Daily Star in 2009, sea level rise, increasing salinity and waterlogging are growing threats to the coastal region including Khulna, which is one of the 15 most vulnerable cities of the world.

Khulna is the third largest metropolitan city of Bangladesh located on the banks of the river *Rupsha* and *Bhairab* with a population of 1.4 million (2017). The city suffers from acute drinking water scarcity and prolonged waterlogging due to unplanned urbanization and high rate of population growth. Increased salinity, fall of groundwater table during summer and heavy rainfall adversely affects the water availability, causes water logging and drainage congestion. Therefore, communities are becoming increasingly vulnerable to uncertainty in water supply, diminishing access, growing water conflicts and erosion of social capital.

Significant portions of the city dwellers are poor and live in slum areas that are especially vulnerable to climate change impacts. In addition to combating increasing salinity, scarcity of drinking water and waterlogging the population also suffers from lack of awareness and consciousness, which further aggravates the problem. An integrated initiative is necessary to solve the above problems. Awareness building through consultation and active participation of community, civil society mobilization and lobbying with concerned authorities can help ease the situation.

Contributing factors, actors and background
The objectives of the consultations were to raise awareness and increase engagement of low-income communities on climate change adaptation and to sensitize concerned authorities for implementing pro-people water and wastewater management practices. Approximately 200 slum dwellers participated. The community consultations and training sessions were held in the months of August and September 2017 and the inter community dialogue was conducted on the 28 October 2017. Final report of the study was shared in November 2017.

The community consultations, trainings and dialogue dates and venues were as follows:

S. No	Activities	Date	Venue
1	Consultation-1	27.08.18	Mia para Pipe More Slum, Khulna
2	Consultation-2	27.08.18	Natun Bazar Char, Christian Colony, Khulna
3	Consultation-3	28.08.18	Greenland Slum, Khulna
4	Consultation-4	29.08.18	Bastohara slum, Muzgunni, Khulna
5	Consultation-5	30.08.18	Fulbari gate slum, Khulna
6	Consultation-6	31.08.18	Banorgati rishi para, Khulna
7	Training-1	17.09.18	Baptist Church, Fulbari gate, Khulna
8	Training-2	19.09.18	Joragate, Khulna
9	Training-3	24.09.18	Senpara, Daulatpur, Khulna
10	Inter-community Dialogue	28.10.18	Hotel Royal International, Khulna

Lessons Learned

- Water supply and sanitation facilities in slum areas of Khulna city was found to be very poor and worsening due to climate change impacts.
- Predicted sea level rise (estimated to be 80 cm) is expected to increase depth and duration of water logging. In such a scenario, water supply system (WSS) facilities will flood and become non-functional resulting in the significant spread of water-borne diseases posing a formidable health risk, especially to slum dwellers.
- It was observed that the communities lack adequate knowledge on climate change, its impacts and coping mechanisms to improve water management strategies under climate change scenarios. The community needs to develop knowledge and capability to face these emerging challenges in order to facilitate improved and effective future water resources management plans and conserve the environment. It is therefore, imperative that the communities need to be well organised in collective form to adapt to climate change impacts on WSS.
- It was also observed that policy makers and service providers are not very sensitive to the needs of the slum communities. An integrated approach, including policy makers, service providers, NGOs and communities, has to be developed for sustainable delivery of WSS in the urban slums.


Training on


Bhairab AWP
Consultation with grassroots level community on their understanding on
adaptation of climate change and their approach to meeting the challenge
Training on
Adaptation of climate change and their approach
Date: 24 September 2017
Venue: Senpura, Daulatpur, Khulna.

CHAPTER 2 - BHUTAN WATER PARTNERSHIP

The Royal Society for Protection of Nature (RSPN) was founded as a citizen based non-profit, non-governmental environment organization in 1987 to support environment conservation in Bhutan. The Society was registered under the Companies Act of Bhutan until last quarter of 2009, without proper authority, which regulated the non-profit organization, with a special clause on non-profit entity. With the establishment of Civil Society Organization Authority (CSOA) of Bhutan, the Society is now registered under Civil Society Organization Authority as one of the Public Benefit Organisations (PBO).

RSPN works on environmental education and advocacy, conservation and sustainable livelihoods, research and emerging issues like climate change, solid waste and water. RSPN programmes are based on its five-year strategic plan and include species, ecosystem, and community based conservation programmes outside the protected areas system. All RSPN programmes continue to involve students/ individuals in schools, institutions, and communities throughout the country for various project activities RSPN currently enjoys the Royal Patronage of Her Majesty the Gyaltsuen, Jetsun Pema Wangchuck since 2012.

RSPN is governed by a seven-member Board of Directors, comprising representatives from varied sectors according to the requirement of Civil Society Act of Bhutan. An Executive Director manages the day-to-day affairs of the organization and reports to the Board of the Directors. Dr Lam Dorji serves as an Executive Director/Member Secretary to the Board of RSPN.

Bhutan Water Partnership (BhWP) is a consortium of water professionals and concerned individuals from various sections of society working towards achieving the goals of Integrated Water Resource Management (IWRM). It is a non-profit entity affiliated to GWP. BhWP office is currently hosted by RSPN. In 2001, the Honorable Minister of Agriculture launched the BhWP initiated by PPD of Ministry of Agriculture (MoA). Mr. Dasho Sonam Tshering, then Director of Department of Power, and Lyonpo (Dr) Pema Gyamtsho, then Deputy Secretary, PPD, MoA were appointed as Chairman and Co-Chairman of BhWP respectively. Mr. Kezang Jamtsho, PPD, MoA was nominated as the Secretary. In 2002, the National Environment Commission (NEC) was appointed by the CCM as the apex body on water resources. With this appointment, the coordination and regulatory functions of the BhWP was theoretically taken over by the commission. In a meeting between BhWP and NEC, it was agreed that BhWP would function as technical body to support the NEC and the water sub sectors. BhWP Secretariat

relocated to RSPN in February 2007 for two years. The NEC once again directed RSPN to host BhWP Programme from September 2011.

In 2017 under WACREP Phase II (2017), BhWP undertook two activities,

1. Activity 6D (BhWP 2017-19): Assessment of effluent discharge management system in three major Cities (with focus on Automobile workshops) and development of tools for the assessment.
2. Activity 6E (BhWP 2017): Assessment of impact of increasing waste due to increase trekker on high altitude lake, which is major source of water for downstream Paro and Thimphu

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Activity 6D (BhWP 2017-19): Assessment of effluent discharge management system in three major Cities (with focus on Automobile workshops) and development of tools for the assessment

Output/Outcomes

The broad objective of this assessment was to, investigate and describe the effluent discharge and management systems of the automobile workshops and draw a comparison of the water quality between upstream and downstream of the automobile workshops.

Summary of the findings are,

- The effluent discharge from these automobile workshops is low. This could be attributed to only seven such workshops established along the PaaChu River.
- Nearly 50 percent of the workshops are with well-maintained facility.
- Due to economic value of waste engine oil, it is collected and being sold.
- Although the wastewater from vehicle servicing directed to the water bodies, the quality of water is in good condition with slight higher incidence of pollution down-stream of the automobile workshops.

The report generated from the study will assist the Municipal Office, Paro to plan and intervene if necessary in order to improve the management system of the automobile workshop to prevent pollution from the effluent discharge.

What GWP strategic goal(s) does this result relate to?

Goal 2 – Generate and communicate knowledge

Contributing factors, actors, and background

Automobile workshop primarily deals with petroleum products that contains heavy metals. This waste generates from engine lubricating oils, paints, fossil fuels, detergents, metal cleaners, gear oil, brake fluids and contaminated wastewater from car wash. These wastes are harmful and can be toxic to human as well as the environment. Thus, it is important that these automobile wastes are properly handled at source and appropriately disposed.

With the give background, Bhutan Water Partnership selected Paro to conduct the assessment since there is no such assessments were carried out while the number of vehicles and automobile workshops were in rise.

Although the overall water quality of rivers in Bhutan is in good condition, at the local level the water pollution problems do exist especially along the banks of streams and rivers in both urban and rural areas. The problem has exacerbated at urban level due to surface drainage, oil and grease spills from automobile workshops, grey water discharge from domestic households and uncontrolled waste disposal.

Lessons learned

However, due to limited budget, the assessment is only a preliminary study on the status of automobile workshops in the municipal area in Paro and its implication of the environment.

Other Information

https://www.gwp.org/globalassets/global/gwp-sas_files/reports/effluent-discharge-assessment-report-2017.pdf

Activity 6E (BhWP 2017): Assessment of impact of increasing waste due to increase trekker on high altitude lake, which is major source of water for downstream Paro and Thimphu

Output/Outcomes

This rapid waste assessment and water resources quality and quantity assessment was initiated to take stock of the scenario (water and waste) and some feedback in form of recommendation.

What GWP strategic goal(s) does this result relate to?

Goal 2 – Generate and communicate knowledge

Contributing factors, actors, and background

Rapid population growth, fast paced economic development, high rate of consumption and urbanization has been a major factor to increased waste generation, specifically solid waste. Therefore, the government agencies, civil society organizations, local communities and international non-governmental organizations have initiated awareness raising and advocacy campaigns on waste management in Bhutan. However, these initiatives have not been able to bring any behavioral change among the Bhutanese societies as expected. Hence, solid waste management (and littering) is still poses as an acute challenge for Bhutan.
Tourism industry in Bhutan contributes more than 9 percent to GDP, which is major earner of hard currency and employment opportunities. The selected Druk path is one of the most popular trekking route in Bhutan for both international and local tourist. The trek is easy takes the tourists through beautiful natural landscapes and pristine lakes - most tourist opt for this package.

Description of change

The waste at the campsites and the route seem to have been generated mostly by the tourists. However, still no water body or wetland seem to be impacted with waste. Some of the key recommendations made were,

- Control waste collection in the trekking path by controlling the things taken in and brought out to and from the path.
- Create awareness on waste management, by hoisting signboards with instructions and rules and regulations on both the ends of the trek.

Lessons learned

- With the given resources, the team was unable to conduct an in-depth analysis and it only provides a snapshot of waste and water quality situation in Druk Path.

Other Information

https://www.gwp.org/globalassets/global/gwp-sas_files/reports/report-on-water-and-waste-assessment-and-its-potential-impact-on-the-high-altitude-wetland-along-druk-path.pdf

Testing the water quality

The assessment team

CHAPTER 3 - INDIA WATER PARTNERSHIP

India Water Partnership (IWP) is a non-profit organisation with a goal of promoting IWRM in India. IWP is hosted by WAPCOS, a public sector undertaking under the Ministry of Water Resources, River Development and Ganga Rejuvenation.

Core areas of IWP

IWP works towards water security in India by utilising the concept of IWRM. IWP carries out dispassionate analysis of various water related issues and steers the policy discourse on social, economic, ecological and scientific basis. IWP serves as an independent voice on water management issues, outside the government, forecasting and identifying potential challenges. IWP works towards these goals through research, advocacy and implementation on the ground with the help of its 120 network partners in India.

IWP also addresses integrated domestic water management, promoting Area Water Partnerships (AWPs) for river basin management, conflict resolution on water sharing, inter-state transboundary water sharing issues, gender mainstreaming, and involving youth in sustainable water management.

Under WACREP Phase II (2017), IWP undertook two activities, namely:

1. Activity 2D (IWP 2017-19): Climate resilience development: Participatory river basin management in semi-arid areas of Rajasthan - search for new governance system. (A case study of Mashi Sub Basin in Rajasthan) – Activity Period: May to December 2017
2. Activity 5C: Implementing Solid Waste Management based on the recommendations of the DPR prepared under - Waste Management in Village Garhi Harsaru, Gurgaon (Haryana) under IWRM Approach

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Activity 2D (IWP 2017-19): Climate resilience development: Participatory river basin management in semi-arid areas of Rajasthan - search for new governance system. (A case study of Mashi Sub Basin in Rajasthan) – Activity Period: May to December 2017

Output/Outcome

IWP collaborated with one of its network partners - Centre for Environment and Development Studies (CEDS), Jaipur in 2016 to conduct stakeholder consultations for the establishment of a River Basin Council for Mashi Basin in the State of Rajasthan. Further CEDS, Jaipur supported by IWP considered the importance of undertaking Water Evaluation and Planning (WEAP) for the Mashi river basin based on the model developed by Stockholm Environment Institute (SEI, USA).

To continue with the work from 2016, IWP partner's CESDJ developed a participatory river basin model for water resource development and management in Mashi sub-basin.

Stakeholders residing in the Mashi River Basin were beneficiaries of the project and gained knowledge from the capacity building activities at Gram Panchayat, watershed and Basin level. The concept of community management of water resources in a basin was explained at different forums by organising focus group discussions, trainings, larger meetings with different stakeholders in groups and all of them together.

Contributing Factors, Actors and Background

The new State Water Policy 2010 of Rajasthan focuses on implementation of Integrated Water Resources Management (IWRM) principals in the State. However, there is little understanding of IWRM among the stakeholders in the State. The policy does not clearly define the role of NGOs and Panchayati Raj Institutions (PRI) members and how it will be implemented at the ground level. There is lack of clarity at all levels about planning and management of water resources within the State, which raises several questions for meeting the ultimate objectives of IWRM.

The questions include the nature of the inter-relationship between PRIs, Water User Associations (WUAs) and public agencies and how communication will be conducted; the way emerging conflicts can be resolved and how regulatory instruments will be used. The answers to these aforementioned questions are essential for successful implementation of IWRM in the State.

Given the background, IWP partner organisation CEDSJ conducted a study to help State Line Departments, NGOs and people to understand basin level planning using an IWRM approach. It also aimed to help in building climate change perspective in water resource management of

stakeholders in the State. The activity is in line with the Rajasthan River Basin and Water Resources Planning Act, 2015[1].

The basic objectives of the study were:

1. To facilitate people and State line departments to better plan water resources in the Mashi Sub Basin and develop resilience to climate change.
2. To evolve a participatory river basin model for water resource development and management.

Activities Undertaken

The working group conducted a study to assist line departments, NGOs and people to understand basin level planning and IWRM approach.

Progress of activities kick started in April are,

- Selection of six NGOs from six different watersheds to mobilise people and conduct trainings. The study conducted in 2015 also targeted the same villages.
- The first orientation meeting of NGOs identified in six watersheds, (one in each watershed of Mashi River) was held on 17 April 2017 in CEDSJ office. Selected NGOs worked vigorously to promote IWRM in their respective watersheds. At the meeting, it was decided to organise a one-day training of NGO workers who can be involved in community mobilisation and to popularise the river basin concept among stakeholders. Out of six NGOs, five agreed to arrange the orientation meetings in May.
- The selected NGOs tentatively decided their respective panchayats for work. At the meeting, it was expressed that all technical support will be provided by CEDSJ and partner NGOs would facilitate the river parliament movement.
- On 23 May, a one-day training was held for NGO workers to promote IWRM concepts on at CEDSJ office, Jaipur**.** Topics covered at the training were:
  - Concept of River Basin Management
  - Salient Features of Mashi River Basin
  - Issues and Challenges in River Basin Management and Allocation of work

[1]An Act passed for establishment of State Level Water Resources Advisory Council and Rajasthan River Basin Council and Water Resources Planning Authority to adopt an IWRM approach for management and development of river basins and sub-basins on sustainable basis by planning of all watersheds, irrigation and drinking water projects covering basins, sub-basins, aquifers and watersheds to develop State Water Resources Plans to insure optimal and efficient utilization of ground and surface water including inter-basin water transfer, interlinking of rivers from surplus to deficit basins, sub-basins.

Prof M. S. Rathore, Project Director of the Study, CEDSJ, imparted the training. Five NGO representatives namely Gramodaya Samajik Sansthan, Prayas Kendra, Vikas Sansthan, Nav Nirman Evam Paryavaran and Gramin Vikas Navayuak Mandal attended the training.

- CEDSJ provided financial and technical support for planned small meetings in different watersheds during which training material prepared by CEDSJ was shared.
- Further, the selected NGOs developed a strategy for their interventions. First, to identify a small cluster of around five gram panchayats from each watershed based on their location on a river stream. Then, to organise small meetings to discuss the river basin concept and get their consent to work together and move from micro to macro concept. Thirdly, a comparatively larger meeting was planned to be organised (one for each cluster) to which neighbouring villages along with line department representatives would be invited to present an overall idea about the Mashi River Basin. Future meetings will be informed by the first meeting.
- With the conclusion of the training, a two-day field visit was conducted on 21 and 22 June 2017 in the villages identified by the NGOs to identify location specific problems.

Orientation Meeting with Selected NGOs

- Training and capacity building: A Training of Trainers (ToT) to Community Based Organizations (CBOs) involved in the programme was carried out to build their capacity on 'Community Management of Water Resources using River Basin' concept on 22 June 2017 at Khejravas panchayat with the participation of five villages (Ganeshpura, Gokulpura, Kuchyavas, Joshivas and Khejravas). Representatives from Sarpanch, Wardpanch, Anganwari workers, farmers and people attended the meeting and had lengthy discussions on the relation between river and community.
- The second meeting was organised on 30 June 2017 on River Basin Management. An introductory meeting was organised on the same day with industrialists at SEZ Mahindra

City to discuss the concept of River Basin Management and their role as one of the stakeholders of the activity. Industrialists are a key stakeholder in this activity as there are five major industrial sites in the basin, SEZ being one of them.

- Awareness and capacity building campaign for stakeholders: To attain the objective of community management of the river basin in the six watersheds of Mashi Basin, it was considered essential to build the capacity and knowledge of CBOs working in the watersheds. The first larger gathering of stakeholders was organised on 30 June for Watershed I and II near the Kalakh Dam in Bobas village school premises. Around 300 men, women and children attended the meeting**.** Members of Panchayati Raj Institution (PRI), representatives of Cooperative Bank, MandiSamiti, ICICI Bank, NGOs, and officials of Government Departments, media, teachers, students and farmers attended the meeting. The following activities were conducted to educate the stakeholders on community management of the river basin:
  - Puppet show for schoolchildren on the theme of water resource management in rural areas
  - Field visits to surrounding villages were conducted by CEDSJ staff to motivate villages to participate in village level gatherings.
- In July, organise several meetings to enhance capacities of the stakeholders on climate change issues in watershed 3, 4, 5 and 6.A partner NGO – Gramodya Samajik Sansthan in Chaksu was responsible for awareness raising activities in 4, 5 and 6 Watersheds. Two meetings were organised in the Gram Panchyat Manpura and Phywari villages on 18 and 21 July respectively and were attended by 100 villagers. Sarpanch, Wardpanch, Aganwari workers, Asha Shayogni also participated the meetings.
  The concept of River Basin Parliament was explained and their role and responsibility was described at the meetings. Participants were optimistic about the concept and willing to take part in the activity. The villages located at the downstream are interested in participating since they will get maximum benefit if the river is rejuvenated. The issue of encroachment of water bodies and riverbed was also discussed at the meeting.
- NGO workers visited village Sisola, Gram panchayat Nathadi on 21 July and organised a small group meeting with leaders of the village. People were informed about the formation of Mashi River Basin parliament and they showed interest in rejuvenation of river and assured their support. There were several meetings organised in different villages, which discussed the decreasing groundwater level in the area, increasing salinity and sand mining in Masi and Banas River etc.
- Jan VikasSanthan, Tilonia organized meetings in watershed 3 and 4. More than 400 villagers including students attended the meetings. Information, Education and Communication (IEC) materials prepared by CEDSJ were used in these workshops.

- Compilation of watershed-wise information for NGOs to build their capacity for conducting community mobilization meetings in a more effective manner -
  During the watershed wise stakeholders meetings held in July 2017 people wanted to know basic statistics related to their watersheds such as population, area, total water availability, average rainfall, number of water bodies, etc. Therefore, it was decided to prepare watershed wise handbook of pertinent information. Relevant information was collected and compiled in the handbook prepared for NGOs.
- Preparation of IEC material for stakeholder capacity building in different watersheds held in June were very useful in building consensus on the need for a River Basin Parliament. For stakeholders to play an active role in extending/sharing their thoughts with other people in village, a small document about IWP's intervention was planned to be shared. Therefore, it was decided to produce a small two-page brochure for distribution in future meetings.
- Awareness and capacity building campaign of stakeholders – IWP with the CEDSJ team undertook a follow-up visit to villages where earlier meetings were conducted and to villages where future meeting were to be organised. The purpose was to obtain feedback about meetings and to gather names of persons interested in joining the movement for the formation of River Basin Parliament. On 5 August, the villages of Shyosinghpura, Bobas, Khejarawas, and Pachewer were visited and meetings with key persons were held. It was decided that on 10 August a meeting would be held in Pachewer Government School and will be attended by five panchayat people and children above class 9th.
- In Watershed No. 4, an NGO namely GraminVikasSodhAvamThaniki Kendra, Pachewer acts as a partner of CEDSJ and is responsible for mobilizing stakeholders. On 10 August, a stakeholder meeting was organised at village Pachewar, Tehsil Malpura, District Tonk in the school premises. More than 400 students and other villagers attended the meeting. Three Sarpanchs (of Gram Panchayat Naggar, Pachewar, Malikpur), school principals and teachers, villagers from five Panchayats and four NGO representatives participated the meeting. Mr. Ram Lal Chaudhari, President, Jan Chetna Vikas Manch, who is working in 20 villages in the Basin also participated in the meeting and expressed his views. Mr. Laxman Singh of GVNML (NGO) working in 80 villages on water issues since 1991 expressed his full support to the concept of River Basin Parliament. Awareness building material prepared by CEDSJ was displayed and explained to students and people. The concept of River Basin Parliament was also explained and their role and responsibility was described. Water related issues in the upstream and downstream portion of Mashi River near Pachewar were discussed. People were apprised of the community management of water resources and related activities. Issues that came up during the meetings were as follows:

- Encroachment of Mashi river bed passing nearby Pachewar
- Rampant mining of sand from the river bed
- Upkeep of existing water bodies
- How school youths can contribute in rejuvenation of the river

कार्यालय मंत्री, ग्रामीण विकास एवं पंचायतीराज, संसदीय मामलात एवं निर्वाचन विभाग

निर्देशानुसार निवेदन है, कि दिनांक 18.09.2017 दोपहर 3 बजे इंदिरा गांधी पंचायती राज संस्थान में माननीय मंत्री महोदय एवं सम्बन्धित अधिकारियों के समक्ष श्री एम.एस. राठौड़ निदेशक पर्यावरण एवं विकास अध्ययन केन्द्र जयपुर Community Management of Water Resources विषय पर अपना Presentation प्रस्तुत करेंगे।

आपकी उपस्थिति सादर प्रार्थनीय है।

1. अतिरिक्त मुख्य सचिव, ग्रामीण विकास एवं पंचायतीराज विभाग, शासन सचिवालय, जयपुर।
2. शासन सचिव एवं आयुक्त, पंचायतीराज विभाग, शासन सचिवालय, जयपुर।
3. शासन सचिव, ग्रामीण विकास विभाग, शासन सचिवालय, जयपुर।
4. आयुक्त, भू–जल संरक्षण विभाग, कृषिपंत भवन जयपुर।
5. निदेशक, स्वच्छता मिशन ग्रामीण, जयपुर।

आज्ञा से,

(विशिष्ट सहायक)
मंत्री

अ.शा.टीप क्रमांक वि.स./मं/ग्राविप/स.मा./निर्वा/2017/
जयपुर, दिनांक

Stakeholder meeting in August at village Pachewar, Tehsil Malpura,

- According to the State Water Policy and the Water Regulatory Act 2015, the Department of Rural Development and Panchayati Raj is responsible to build the capacity of public representatives for better management of water resources in the State. Therefore, the CEDSJ team met the Rural Development and Panchayati Raj Minister, presented the concept of Community Management of Water Resources in the State on 18 September to seek his support for the work. The Minister expressed his keenness on the subject.

- Awareness and capacity building campaign of stakeholders:
  Two awareness-raising meetings were conducted in September at village Harsoli (Tehsil Dudu, District Jaipur) and village Parli (Tehsil Malpura, District Tonk). The first meeting was organised in Harsoli Higher Secondary School Campus. Government officials, principal and teachers, *anganwadi* workers, villagers from 5 Panchayats and 4 NGO representatives and 600 students participated in the meeting. Materials prepared by CEDSJ were displayed and explained by Dr M. S. Rathore, Director, CEDSJ to the participants. The concept of River Basin Parliament was explained and their role and responsibility was described. People also endorsed the idea of river parliament but public representatives wanted more awareness about it and wanted to discuss at different platform before finally accepting it. The MLA and Panchayati Raj representatives assured fullest cooperation for the initiative.
- In October, team held stakeholders meetings in six watersheds of Mashi River Basin to disseminate the idea of community management of river basins. According to the suggestions from these meetings, knowledge products were developed in Hindi to facilitate reaching out to the public. The community as well as the members of the line departments appreciated the new booklet in Hindi.
- The, organised two awareness-raising meetings for building capacities of stakeholders and to prepare a list of volunteers for each watershed. The River Parliament Members will be selected from the list of volunteers.
- Awareness raising in Jhag village, Watershed No. 2, Tehsil- Dudu, district Jaipur in October: more than 30 people attended the meeting. Majority of the population in Mashi Basin are aware of the River Parliament concept. More than 10 people volunteered to join the River Parliament.
- More than 25 public attended the Nimera village meeting held in Watershed No. 4, Nimera village, Tehsil Fagi, Jaipur District. The concept of community management of River basin was appreciated and communities agreed to participate in all its deliberations.
- A JalYatra (campaign) was organised in November by the GVNML, a partner of CEDSJ collaborating for Mashi River basin project with the theme of Mashi River Rejuvenation. Nearly 250 people from 24 villages of districts Dudu, Phagi and Malpura of Jaipur and

Tonk districts participated the Yatra, worshiped water bodies in villages, and took an oath to plant trees, clean, protect water bodies and to conduct environment conservation practices. A leaflet on the concept of River Basin Parliament prepared by CEDSJ was distributed at the gathering.

- Three capacity-building workshops were conducted in Naggar Village, Dabich, Watershed V and Jharla, Watershed V respectively. Rajasthan Government Minister, Local Government Officials, CBOs, Media with more than 500 villages attended these workshops. Issues discussed during the workshop were:
  - Function of awards were decided and tasks were allocated to individuals, NGOs and other institutions working in the field of water, environment conservation and protection.
  - The concept of Mashi-Band River Basin Parliament, other affiliated government initiatives in the Basin and issues of land encroachment.
  - Awareness raising on river issues and river basin parliament.
- Awareness and capacity building campaign of stakeholders - Nearly ten meetings were conducted in different villages in Tonk and Jaipur districts with the participation of nearly 200 stakeholders altogether. The issues discussed at the meeting include:
  - organising the planned River Basin Parliament meeting to be held on 30 December at Kalakh Dam site
  - Reviewing the Integrated Water Resources Management (IWRM) plans of unauthorised water harvesting structures constructed in the riverbed and catchment areas of other water bodies by different government programmes and by individuals.
  - Improving the drainage system of the village, ways to monitor riverbed sand mining and what is the role of Panchayati Raj Institutions (PRIs) members for addressing these two issues?
  - Sand mining and increasing encroachment of river by locals and outsiders
- A special meeting was conducted with Phagi Bar Association consisting of 30 Advocates was held on 22 December to discuss the constitution of Mashi River Parliament. While appreciating the efforts they have agreed to cooperate in all its deliberations, provide legal support to PRIs and NGOs to save the river and deal with the issue of encroachments.
- Mashi-Bandi River Basin Parliament was held on 30 December at Kalakh Dam attended by 450 members representing all the six watersheds of the Basin. The meeting was addressed by Shri. Rajendra Singh, Waterman of India, Tarun Bharat Sangh, former Member of Legislative Assembly (MLA) and several Village Heads, former Village Heads, Sarpanchs, former Sarpanchs, Up-Sarpanchs, NGOs, Wardpanchs, Government Department representatives from Public Health Engineering Department (PHED),

Central Public Works Department (PWD), Departments of Forest, Watershed and irrigation and farmers and IWP. In the meeting, it was unanimously resolved that people need a River Parliament that serves to save the river.

- IWP paid a visit to the Kalakh dam that receives water from BandiRiver, which was found completely dry without any drop of water. According to the community living around the Kalakh dam, receiving less rainfall is one reason as well as the encroachment of builders and industrialists have doubled the problem. Therefore, a River Parliament is a promising factor to overcome these problems.

Lessons Learned

During meetings, it was observed that stakeholders were prepared to organise and manage land and water resources.

- The objectives of the meetings were to create awareness on emerging water crisis in the region, and to discuss the status of scientific studies on water undertaken by CEDSJ with collaboration of IWP and the Government to mobilise people on River Basin Management. Participants suggested the importance of establishing a River Basin Parliament**.**

As per the model, suggestions for water management in Mashi Basin are as follows:

- The results of WEAP modelling should be shared and used to catalyse informed multi-stakeholder dialogue for water resource management in Mashi basin.
- Foundations should be laid and concerted efforts should be made for the improvement of value-chain work for mustard and other field crops (vegetables).
- Given the uncertainty of climate change projections, a Steering Committee for Mashi Basin should be setup that guides and monitors the overall implementation of the action plan and how climate change unfolds/manifests.
- The assumptions in WEAP need to be reviewed on a periodic basis (at least once in two years) to decide on allocations and use-efficiency across sectors.

Kalakh dam meeting

The output of the workshops are as follows:

- Mashi River Basin Parliament concept was shared among a large set of people and decision makers in the government.
- People are optimistic and gave their consent to join the movement and take up related activities in their respective villages. Many volunteered and registered to join the movement.
- People asked for a new set of laws in order to ensure the sustainability of water resources.

Other information:

https://www.gwp.org/globalassets/global/gwp-sas_files/wacrep/2018/cedsj-report-final---july_2018.pdf

Participation of multi-stake holders in Mashi river basin

Activity 5C: Implementing Solid Waste Management based on the recommendations of the DPR prepared under - Waste Management in Village Garhi Harsaru, Gurgaon (Haryana) under IWRM Approach

Output/Outcome

IWP in collaboration with one of its network partner - TARU Leading Edge carried out IWRM plan since 2015 under WACREP Phase-II in Garhi Harsaru village, Gurgaon (Haryana) which is a part of Delhi NCR region. The Sehgal Foundation, which is also a network partner of IWP, played a supportive role to TARU Leading Edge.

In order to develop an Integrated Water Resources Management (IWRM) programme, a Detailed Investment Plan (DIP) was developed in 2015 after need assessment. To kick-off the plan, TARU Leading Edge in consortium with its co-partners will develop Solid Waste Management system in the village as it is in high demand from the people. The DIP will also trigger general environmental sanitation as the visible surroundings to become cleaner. Implementation of the Solid Liquid Waste Management Plan developed in 2016 and started in 2017.

Since it is a huge investment, corporate institutions are being roped in for funding under CSR. For this purpose, various meetings were held with different corporate institutions in 2017. Although IWP submitted proposals, made presentations and met potential corporate donors for obtaining CSR funds based on the Detailed Investment Plan prepared under this activity, funding has not been realised until the end 2017. Gateway Rail showed their interest to provide financial support under their CSR funding and awaiting results.

WP will continue the discussions for 2018.

Contributing Factors, Actors and Background

In 2015, a base-line survey of the Garhi Harsaru village was undertaken on water and sanitation status and a number of awareness generation programs were conducted for the village community and schoolchildren. In 2016, an attempt was made by IWP and TARU Leading Edge to find out solutions to the issues identified during the base-line survey in 2015. Based on the findings of base-line survey, objective of the activity in 2016 was to develop an innovative IWRM plan, supported by advocacy strategy for policy and funding support.

The awareness raising programmes and regular meetings with village heads, office bearers, local community and school staff were carried out in 2016 while preparing three Detailed Project Reports (DPRs) on,

- Solid Liquid Waste Management (SLWM)
- Integrated Water Resources Management (IWRM)
- DIP by IWP and TARU Leading Edge

The collaboration continued in 2017 and implementation of the activities/sub-activities suggested in the DPRs began. Further developments include granting permission from Deputy Commissioner, Gurgaon for construction of Rooftop Rainwater Harvesting structure in a Senior Secondary School in Village Garhi Harsaru. The special Gram Sabha (village level meeting) was

called for discussion and endorsement for construction of a Rain Water Harvesting structure at Government school of the village and to discuss planning of SWLM with active participation of village communities.

- In March a presentation for potential investors based on the DIP was developed.
- Awareness raising activities were held in Senior Secondary Government School and Middle Girls School of village Garshi Harsuru on 30 May with a focus on water and sanitation in schools and village surroundings. A quiz was held covering the following topics:
    - Water availability on earth
    - Sources of fresh water and safe water
    - Water cycle and rainwater harvesting
    - Water purification techniques
    - Sanitation and water borne diseases
    - Transmission of diseases
    - Importance of ODF
    - Proper handwashing behaviour and steps
- In June, the team started discussions with several corporate sector organisations. The Motivators in the field closely interacted with the community and panchayat members to formalise different institutions at community level.

	Meeting with	Result	Additional Info
March 2017	Panchayat at Zila Parishad Office, Gurugram	the Sarpanch confirmed organising meetings with two corporates namely Karbonn Mobile and JDL Logistics for possible funding	Discussions started with Karbonn Mobile on resource mobilization in September 2017.
	Initiated discussions on fundraising with corporate sector including Honda Motorcycles and Spirotech.	Met with Sanjeev Tomar from Spirotech Heat Exchangers Limited in their Corporate Office in GK2 on 14 September 2017.	
12 May 2017	The study team comprising of Ms	The Sarpanch agreed to provide space and other	A second meeting was held with the Principal,

	Kirtika Arora from TARU Leading Edge and Mr Shourjomay Chattopadhyay from IWP met Mr Ravi Sharma, Sarpanch (Head of Village) and Mr Dayaram, Motivator of village Garhi Harsuru	resources at the Panchayat for setting up an office for programme implementation. He also agreed to organise awareness raising activities in the village and arrange nearly 60 students for a mass awareness generation – campaigning.	teachers and students of Senior Secondary Government School and Middle Girls School of village Garshi Harsuru on the same day. The school authorities of both schools agreed to provide their support for smooth implementation of the programme.
June 2017	The DIP was discussed with companies such as Accenture India Ltd., Nasscom Foundation, Hero Honda, Coca Cola Foundation and Maruti Suzuki	Three organizations (Accenture India Limited, Nasscom foundation and Cairn India Limited) showed their interest in collaborating in the initial phase	Met with Santosh Abraham, Vice President of the Nasscom Foundation on 21 September 2017. He acted as a CSR advisor for member companies.
July 2017	DIP was presented to Rajguru Behgal, Assistant Vice President of Gateway Rail. Sriram and Kritika from Taru and, Dr Khanduri from IWP were present at the meeting.	Following the meeting held in July 2017, a second meeting was held in August 2017 with Gateway Rail. A detailed discussion regarding to project will be held on 5, 13 and 22 September 2017 to finalize the components and quantum of funding. Gateway Rail has already given Rs. 15 lakhs to the Panchayat and the activities were not completed. Mr Rajguru Bahgal wanted a separate proposal with specific activities and a	In October, Gateway Rail agreed to provide financial support of nearly Euro 13,000 under their CSR funding – awaiting results.

		letter signed by the panchayat accepting to finish activities on time.	
24 July 2017	A meeting was held with Ashish Srivastava, CSR Lead, Magneti Marelli India	The concept of the project was explained to the CSR Lead and the discussion was forwarded to the Managing Director in August.	As a follow-up to the meeting held on 24 July 2017, a second meeting was held in August 2017- the tentative outcome of August meeting is that budget will be allocated in the month of November 2017.
July 2017	An initial meeting was held with Mr Kailash Kanth and Mr Sanjay Kumar Srivastava from Indian Oil Corporation.	Though the concept has been presented, the conditions need to be discussed further with the consortium. A follow-up meeting will be held in August.	
	Expecting a meeting with Mr Amit Shah, Head and Head of CSR, Yes Foundation.	Not materialized	
September	Hero Motocorp: An initial presentation to Mr Abhishek Chawla – Vice-President, HR and CSR of Hero Motocorp	No follow up	
	Proposal to be submitted to Honda motorcycles	No follow up	
	Planning for a meeting with North Zone CSR officer of Hindustan Petroleum	No follow up	

	Corporation Limited (HPCL)		
	Rajendra Tripathi, CSR Manager, Oracle INDIA, Gurugram	A presentation was made to the Gurugram field team on 24 and 26 September 2017.	No any substantial results
	Anil Rajput, Vice president, ITC LIMITED, Thapar house	Presented the entire proposal for Garhi Harsaru project. A proposal with specific budget was forwarded to Mr Biswajeet handling CSR for Delhi NCR region.	No any substantial results
	Meeting at Garhi Harsaru Formation of core fund raising team 14th September 4th October and 5th October	A team with Sarpanch of Garhi Harsaru and Wazirpur with the purpose of linking with corporates for funding has been formed. Three review meetings were conducted in September 2017. The team has promised to fix a meeting with Mr. Pradeep Jain of Karbonn mobiles on 7 October at Okhla	No any substantial results

Lessons Learned:

- Corporates have their own policies and mandates, alignment of which with the panchayat functioning needs to be matched. Once their programmes are fixed that may not fulfil the demands of the village. Other than the competition between organizations for funding there are competing demands in villages, that again hinders the availability of funding.
- When lot of stakeholders are involved, fund mobilization takes time.

Other Information

https://www.gwp.org/globalassets/global/gwp-sas_files/wacrep/2018/report-on-solid-liquid-waste-management-in-peri-urban-setting-of-village-garhi-harsau_-gurgaon_-haryana.pdf


Awareness activities in School at Garhi HARSARU

CHAPTER 4 - GWP NEPAL

Jalsrot Vikas Sanstha (JVS), Nepal, is a non-profit, non-government, non-political and professional organisation established in 1999 and is incorporated under Association Registration Act 2034 B.S.

Global Water Partnership Nepal (GWP Nepal)

Global Water Partnership Nepal (GWP Nepal) was established in July 1999, as a partner of Stockholm based Global Water Partnership (GWP) and initiated to promote networking in water resources and promote IWRM. Members of GWP Nepal have consensually decided to designate JVS as the host institution for GWP Nepal. This decision was guided by concerns of sustainability and the significant networking characteristic of the Country Water Partnership.

The Executive Committee of GWP Nepal/JVS represents a multi-disciplinary team with backgrounds in planning, engineering, environmental science, resource economics, law, political science, sociology, psychology, public administration and management. Dr Vijaya Shrestha is the President of GWP Nepal/JVS. GWP Nepal has more than 88 individual institutional memberships, including government water agencies, non-governmental organisations, international organisations, universities/colleges/educational institutions and private organisations.

In 2017, under WACREP, GWP Nepal undertook three activities:

1. Activity 2B: Stakeholder Consultation on “An In-depth Study of Rosi Khola in Relation to its Multiple Uses and Management at the Community Level” (Continue from 2015)
2. Activity 2B: Documentation of climate change adaptation practices from 2-3 LAPA project areas/sites in order to promote and support activities to meet climate adaptation challenges/realities at community/household level
3. Activity 6C (GWP Nepal) (2017-19): Conduct dissemination workshop on WACREP/Core projects
4. Activity 7B: Study of earthquake impact on the water resources status in selected earthquake hit area

Contact: GWP Nepal/Jalsrot Vikas Sanstha (JVS)
Baluwatar, Ullas Marg, House No. 102, Ward No. 4, General Post Box No. 20694, Kathmandu, Nepal.
Phone: 977-1-4434424, Fax: 977-1-4434431
E-mail: mail@jvs.org.np , Website: http://jvs-nwp.org.np

Activity 2B: Stakeholder Consultation on "An In-depth Study of Rosi Khola in Relation to its Multiple Uses and Management at the Community Level"

Output/Outcomes

JVS/GWP Nepal conducted an "In-depth Study of Rosi Khola in Relation to its Multiple Uses and Management at the Community Level" to assess the sectoral approach of water allocation, the associated conflicts and the possible adaptable management practices.

What GWP strategic goal(s) does this result relate to?

Goal 2: Generate and Communicate Knowledge

Background of the Study

Roshi Khola - a tributary of Kosi River in Nepal presents a typical example of sectoral allocation of water and associated conflicts among users. The study further identifies policy gaps and recommends possible ways to address such conflicts.

Contributing Factors, Actors and Background

The objectives of the study are to assess the sectoral water allocation and associated conflicts, to analyses the impact of non-climatic and climatic drivers of change on water allocation and water security in the watershed and to document adaptation practices adopted by multiple users (farmers, hydropower companies, water mill owners and drinking water suppliers) to cope with increasing water demand.

Stakeholder consultation on an in-depth analysis of Rosi Khola in relation to its multiple uses and management at community level was conducted on 19 December 2017 at Dhulikhel Resort, Kavre. The government officials, NGOs and Community Based Organisation of Kavre actively participated the programme and provided their valuable inputs to improve the study report.

Lessons Learned

- It was observed that the water of Rosi Khola is being used for different purposes ranging from domestic to irrigation. The non-consumptive use of water such as hydropower generation and agro-processing through water mills (Ghatta) are common. In addition, the Government intends to extract more water for other purposes, which might jeopardize existing uses of hydropower and irrigation.

Other Information

The study report can be accessed via https://jvs-nwp.org.np/wp-content/uploads/2018/07/Roshi-Khola-final-Report.pdf

Activity 2B: Documentation of climate change adaptation practices from 2-3 LAPA project areas/sites in order to promote and support activities to meet climate adaptation challenges/realities at community/household level

Output/Outcomes

JVS/GWP-Nepal planned to document the adaptation actions under implementation in 2-3 LAPA project areas of mid- and far west Nepal to understand the effectiveness of such options, and identify priority adaptation actions to address climate change impact on use based water. A consultant was hired for the research and delivered the first draft report in October, which was finalised in December 2017.

What GWP strategic goal(s) does this result relate to?

Goal 1 – Catalyse change in policy and practice

Contributing factors, actors, and background

Nepal implemented Local Adaptation Plans for Action (LAPA) to build the adaptive capacity of climate vulnerable communities and to integrate climate change adaptation into local to national development planning processes. The Government of Nepal initiated Climate Change Adaptation (CCA) planning and implementation with the preparation of National Adaptation Programme of Action (NAPA) in 2010. The LAPA Framework was designed to support and identify the most climate vulnerable people and areas, prioritize adaptation options, prepare and integrate local adaptation plans. These identified CCA practices enhance the climate resiliency of the communities and facilitate income generation among the local people. Water is central in climate change and water focused CCA practices are vital for uplifting the lives of local people to overcome the adverse impacts of climate change.

JVS/GWP prepared a water-focused LAPA for the Lamatar VDC in 2014 and planned to implement LAPA prioritized adaptation actions in the VDC in consultation with the local people. However, the devastating Gorkha earthquake in 2015 overshadowed climate change-induced water issues posing as a restraint in implementing identified activities. Since, climate change has been seen as major problem for water resources, it has the potential to impact water availability and increase water stress.

To revamp the activities, JVS/GWP Nepal conducted a study to identify the current adaptation practices in 2 to 3 LAPA project areas of Kailali district (Far-west Nepal). Two administrative units, Pawera VDC and Tikapur Municipality were studied. The consultant visited the site from 11-15 July 2018 and captured photographs depicting building toilets and houses at higher levels to escape from floods in Kailali and using different farming practices**.**

Lessons Learned

1. CCA practices enhance climate resiliency among local people.
2. Water focused adaptation practices are vital for uplifting the life of local people and supporting vulnerable groups from the adverse impacts of climate change.
3. LAPAs are important to uplift the status of local populations especially the poor and marginalised population of the area.
4. Newly introduced irrigation techniques, i.e. solar irrigation pumps are effective in the areas and reduce the level of investment of farmers on irrigation.
5. Although Kailali is flooded annually during rainy season, suggested LAPA activities i.e. elevated hand pumps, toilets and buildings were able to lessen the damage to properties.

Other Information

The study report can be accessed via https://jvs-nwp.org.np/wp-content/uploads/2018/07/Final-Report_kailali.pdf

Some adaptation practices observed

Activity 6C (GWP Nepal) (2017-19): Conduct dissemination workshop on WACREP/Core projects

Output/Outcomes

An information-sharing meeting on activities conducted by GWP Nepal/JVS under WACREP and Core projects was conducted on 15 December 2017 at Annapurna Hotel, Kathmandu. Altogether 35 participants representing youth from 13 colleges and universities and university lecturers with backgrounds in water resource management, environmental science and climate change attended the meeting.

What GWP strategic goal(s) does this result relate to?

Goal 2 – Generate and communicate knowledge

Contributing factors, actors, and background

Mr Madhab Belbase, Joint-Secretary, Water and Energy Commission Secretariat (WECS), Nepal delivered a guest speech on "Formulation of Water related Policy/Act/Regulation of Nepal". The meeting informed participants about activities conducted by GWP Nepal/JVS in 2017. The participants were informed about the formulation of water related legislation while giving an overall idea about the legislation formulation process. Discussions with young water professionals provided a platform for policy makers to understand the needs of youth that should be fulfilled out of the intended legislation.

The workshop contributed in bridging the gap between the decision makers and youth and presumably, the concern raised at the meeting would be reflected at the intended legislation. Organisation of such a workshop was appreciated both by young professionals and the policy makers and especially youth expressed their gratitude for GWP Nepal for providing an opportunity for them to associate with policy makers.

Lessons learned

1. It is necessary to represent the youth and their voices in the policy making process and it is equally important to disseminate information to them to inform them about the policy formulation process.
2. It is fundamental to bridge the gap between policy makers and aspiring young water professionals to make policy instrument/s implementable, representative, more realistic and effective.

3. Such interactive platforms are highly appreciated by young professionals as they help to enrich their knowledge.

Other Information

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Activity 7B: Study of earthquake impact on the water resources status in selected earthquake hit area

Output/Outcomes

JVS/GWP Nepal conducted this study to identify the impacts of Gorkha earthquake that hit on 25 April 2015 on the water resources of Nepal. The study was conducted using Focus Group Discussions (FGDs), Key Informants Interviews (KII), visual observations, published and unpublished report and articles. Further, the study aimed to identify the adaptation planning and practices adopted by locals at community level, governmental organizations and non-governmental organizations in Kavrepalanchowk district.

The consultant delivered the first draft of the research report in October, which was finalised in December 2017.

What GWP strategic goal(s) does this result relate to?

Goal 2 – Generate and communicate knowledge

Contributing Factors, Actors and Background

The study focuses on identifying planning and practices adopted by locals to overcome the impact of earthquake on water resources in Kavrepalanchowk district. A field visit and a Focus

Group Discussion (FGD) were conducted on 2 June in Dapcha-Kashikhanda Municipality with the participation of local stakeholders from Drinking Water Supply and Sanitation Committee, youth clubs and representatives from municipality and women associations.

The study revealed that most of the ponds, stone spout and springs in the target areas were affected – in addition to other factors; the earthquake was responsible for drying up of water resources in the areas. The quantity and quality of water were mainly affected by the earthquake while the flow of water was found to have been increased, decreased and sometimes static in the target areas. Pseudo-changes in the quantity of water in all the study sites and turbidity in water resources was high just after the earthquake.

Locals had to face adverse impacts due to the scarcity of water such as loss of agricultural production, problems in animal husbandry, hurdles in daily activities, perturbation of social harmony and impacts on aquatic ecosystems. Unfortunately, locals were not practicing any protective measures to enhance water security except in Dapcha-Kashikhanda Municipality and Bagmati River Basin (BRB). The efforts of locals in conservation of Daraune-Pokhari Pond (Dapcha-Kashikhanda Municipality) as recharge pond is praiseworthy. Likewise, BRB in Kathmandu Valley is being managed by High Powered Committee for the Integrated Development of the Bagmati Civilization (HPCIDBC) to ensure water security in Kathmandu.

Lessons Learned

- The study recommends that the water security in the area can be augmented through rainwater harvesting, restoration of traditional spouts and by identifying and conserving recharge ponds. Furthermore, identification of water stress and water availability shall solve the water scarcity to a certain extent. Improvement of water supply services are important to meet the water demands while public awareness is equally important to secure existing resources.
- Kavrepalanchowk is one of the district hit by Gorkha earthquake with severe impacts on water resources. A previous study by JVS/GWP Nepal in 2016 found significant impact on quality and quantity of water sources in Namobuddha Municipality (previous Dapcha-Kashikhanda Municipality) of the district. The study confirmed that the locals have been affected by the water scarcity in the areas. In this regard, it is quite imperative to analyse the adaptation planning and practices and identify the coping strategies with climate change and other disasters.
- The practices adopted by locals in Namobuddha municipality are inadequate to cope with potential impacts of climate change. Although the municipality of Namobuddha has formulated plans to cope with water scarcity in the area, they are also inadequate to

meet the water requirements of the citizens. A collaborative approach by including community and the government should be adopted to solve the problem of water shortage. It is recommended to prioritise the conservation and recharging of ponds and dug wells by the municipality.

Other Information

The study report can be accessed via https://jvs-nwp.org.np/wp-content/uploads/2018/07/Impact-of-earthquake-on-water-resources2.pdf

CHAPTER 5 - PAKISTAN WATER PARTNERSHIP

The Pakistan Water Partnership (PWP) was established in February 1999 as a country partner of GWP. PWP is a Public Limited Company registered under the Pakistan Companies Act 1984, with a large number of key stakeholders from government organisations, public and private sector, NGOs, women and youth groups, and civil society having an impact on or impacted by water and its uses in the country.

PWP is mandated to provide a neutral platform to all water stakeholder institutions, organisations, departments and individuals for discussing national, sub-national and local water issues to build consensus at different levels. It has to promote the concepts and principles of IWRM in the country in order to meet the growing scarcity of water resources, increasing deterioration in water quality and the looming threat to environmental sustainability. In order to carry out its mandate, PWP maintains a close relationship with official agencies like the Planning Commission, Pakistan Water and Power Development Authority (WAPDA), Ministries of Water and Power; Environment, Agriculture. The Provincial Agriculture and Irrigation Departments, Provincial Irrigation and Drainage Authorities (PIDAs), United Nations agencies and NGOs in the water sector are also collaborating with PWP for sensitising on judicious use of water resources to gain maximum benefit through the IWRM.

Board of Directors headed by a Chairman governs PWP. Mr Ragib Abbas Shah is the current Chairman of PWP and PWP Secretariat is based in Islamabad. Mr Sardar Muhammad Tariq, Executive Director/CEO of PWP is the head of the Secretariat.

Two activities carried out under WACREP in 2017, mentioned below:

1. Activity 1.2.1: Provide technical support and knowledge products to promote climate resiliency in existing water and agriculture sartorial Programmes
2. Activity 3.6.1: Strengthening Partnership/Provincial Level Assistance.

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PM 8.1: Strengthening linkages with drought management programme and undertake activities to bring people together in drought effected areas (Gawader, Tharparkar and Cholistan)

Rainwater harvesting through construction of ponds by PWP team in different villages of Tharparkar

PWP initiated the concept of rainwater harvesting among local community by excavating ponds on already depressed land and on way of run-off to collect rainwater for drinking, livestock and for agriculture purpose. Eleven ponds have been excavated in eleven locations in Tehsil Chachro, District Tharparkar.

Output/Outcomes

- Construction of 18 ponds in Tharparkar out of which 11 were constructed in Rohenaro Bhagtani, Haji Muhammad Arbab Samejo, Royedaro Dhuninant, Jhambrisar, Manbaijotar, Tarsameja, Manbaijatar Bheel, Nooro-Ji- Dhoni, Dharindhro, Sharindhro Sameja Paro and Dhorkioon
- Local Community easily get water for drinking, livestock and agriculture purpose.

Lessons Learned

1. Low cost ponds structures are efficient technology to save rainwater.
2. Success is dependent on engagement of community.
3. Regular cleaning is required for maintenance of the ponds.
4. Lining with clay can reduced seepage.


PM 5.1: As a follow up to the Paris Agreement guidelines, PWP will undertake focused discussion on water specific adaptation particularly in dryland ecologies

A workshop on 'Emerging Challenges of Water Resources and Creating Opportunities within China Pakistan Economic Corridor (CPEC)'

The PWP team organised a workshop on 'Emerging Challenges of Water Resources and Creating Opportunities within CPEC' (Sost- Hunza) under the supervision of Dr. Pervaiz Amir, RC Member PWP who visited Hunza on 17 September 2017 with the aim of identifying major water challenges and opportunities. The China Pakistan Economic Corridor (CPEC) provides a gateway to this mega project, which is considered to be a game changer for Pakistan. On the following day, Dr. Pervaiz Amir delivered a presentation on 'Emerging Challenges of Water Resources and Creating Opportunities within CPEC', in which more than 30 participants were present. Females have actively participated in the discussion and asked various questions.

Output/Outcomes

- More than 30 participants were trained.
- Awareness created among the participants.

Lesson learned:

- Development in highlands required effective partners that are ground placed.
- Linkages with ongoing projects can speed up development.
- Internships through partner NGOs at the local level can help implementation more efficiently.

PM 5.1: Provide assistance in water related impacts on climate change on agriculture, environment and drinking water in-line with current SDGs

PWP organised a one-day workshop on 'Rethinking Challenges of Water Resources within Climate Change Perspective and Sustainable Development'. More than 100 youth from various districts of Gilgit Baltistan participated. Mr Sardar Muhammad Tariq, CEO PWP and Dr. Pervaiz Amir, RC Member PWP presented a brief presentation followed by a question-answer round.

Output/Outcomes

- More than 100 youth from various districts of Gilgit Baltistan participated.
- An exposed population that is able to undertake basic intervention in SDGs.

Lesson Learned

1. Exposed to SDGs framing should be promoted at all levels.
2. Project financing is required to undertake pilot activities in which youth can be engaged especially during summer vacations.

PWP Meeting with Environment Protection Agency Gilgit (EPA), 19 September 2017

Mr. Sardar Muhammed Tariq, CEO PWP had a meeting with the high officials of EPA Gilgit Baltistan in which environmental issues were discussed briefly. Mr. Shahzad Shigri; Director, EPA shared his views on ongoing interventions on water.

Output/Outcomes

- Awareness created regarding to environmental and water issues.

Lesson Learned

1. Recent rapid raise in tourism required science based programs and logistical facilitation.
2. There may be equipment in labs that are seldom used or properly maintained.

PWP organised a Focus Group Discussion (FGD) on 'Youth Engagement on Achieving Water SDGs -Goal 6' (Karakorum University Sub Campus Skardu), 21 September 2017

PWP organized a focus group discussion on **'Youth Engagement on Achieving Water SDGs - Goal 6'** at Karakorum University, Sub Campus Skardu. Students exchanged their ideas and raised questions about SDGs and the role of youth in its effective implementation. In the end of the workshop, the PWP team visited the Integrated Mountain Areas Research Centre in Karakorum International University.

Output/Outcomes

- Students participated.
- An exposed population that is able to undertake basic intervention in SDGs.

Lesson Learned

- Exposure to SDGs at School, College and University level can help the supplements formal course work with real life experiences.
- Students were exposed the 17 goals provided CEPEC on their respective area problems that can programme into development activities.

Sustainable Development Goals workshop in two villages on 27 November 2017

PWP introduced SDGs specifically Goal 6 about Water, Hygiene and Sanitation in Tehsil Chachro and Village Barach Mithi, and is hopeful that within a short period of time, PWP with the collaboration of existing stakeholders of District Tharparkar will be able to mobilize the community to adopt and follow the techniques to meet the SDG goals. PWP planned to enlarge the circle of community mobilization each year.

Output/Outcomes

Created awareness among the community regarding to Water, Hygiene and Sanitation (WASH).

Lesson Learned

- The SDGs framework should be coupled with ongoing CSR activities of poll plants, infrastructure development and initiatives or RO plants.
- Far-flung areas should be brought into fold up development.

Workshop on 'Incorporating Water Related Sustainable Development Goals (SDGs)' in District Level Planning with Youth Participation in District Sanghar, 18 November 2017.

PWP organised a one-day workshop on 'Incorporating Water Related Sustainable Development Goals (SDGs)'. More than 150 participants attended the workshop from various districts of Sindh. Dr. Pervaiz Amir RC Member PWP, and Ms Hamida Masood Shah, President, Women Welfare Association presented a brief presentation on SDGs to raise the awareness among the community.

Output/Outcomes

1. More than 150 participants attended the workshop.
2. Raised awareness among the local community regarding to SDGs.

Lessons learned

- Student's engagements from multi-disciplinary department should be encouraged.
- Faculty need to be provided more informed on SDGs that is relevant to Pakistan.

CHAPTER 6 - SRI LANKA WATER PARTNERSHIP

Sri Lanka Water Partnership (Lanka Jalani) is an independent non-profit association of institutions with the goal of promoting IWRM. SLWP took the initiative in developing Water Vision 2025 for Sri Lanka in the year 2000 and a Programme for Action (PFA) to translate the vision to action. It sets up Area Water Partnerships (AWPs), youth and gender networks and other basin level institutions to support River Basin Management (RBM) and IWRM in Sri Lanka. AWPs provide the local institutional base for representation and action at local level while the Country Water Partnership (CWP) and associated CEO panel provides the forum for policy level dialogue of these issues for consideration at national level. Both levels encourage close interaction among groups of stakeholders for purposes of harmonising approaches and integrating issues.

Ms Badra Kamaladasa, former Director General, Department of Irrigation was the Chair of SLWP during 2016 and eminent researchers, academics and water resources specialists serve on its Steering and Programme Committees. Mr Jayatissa Bandaragoda currently chairs SLWP since the starting of 2017.

Three activities were carried out under WACREP in 2016, mentioned below:

1) Activity 2A: Climate Change Adaptation (CCA) programme for Agency Staff/FO Leaders/Farmers in irrigated and non-irrigated agriculture - Programme for Farmer Leaders and Agency Staff of Major/Medium Schemes on Improved Institutional and Programme Management to Cope with Climate Change
2) Activity 5A (SLWP 2017-19): Technology Options for CCA including conservation activities
3) Activity 7A: Media Activity - Reprinting, Posters and Talk shows

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Activity 2A: Climate Change Adaptation (CCA) programme for Agency Staff/FO Leaders/Farmers in irrigated and non-irrigated agriculture - Programme for Farmer Leaders and Agency Staff of Major/Medium Schemes on Improved Institutional and Programme Management to Cope with Climate Change

Output/Outcome

- Achieved common understanding of impacts of Climate Change by farmers and agency staff on irrigated agriculture. They will follow new CCA approaches and technical options in future.
- SLWP outreached to a broader audience through the technical and CCA publications in national languages (Sinhala and Tamil). Such documents (in national languages) are currently available only in irrigated agriculture.
- The sessions served as demonstration of practical options for CCA - as specialist resource persons were hired.

The activity continues for 2018.

What GWP strategic goal(s) does this result relate to?

Goal 1 – Catalyze change in policy and practice

Contributing factors, actors and background

While the Rice Research Institute and Field Crop Research Institute of the Department of Agriculture backstop the research/demonstration and technology option components for the irrigation programmes, the Coconut Research Institute, Central Export Crop Research Centre and Natural Resources Management Centre provided support for the non- irrigation programmes.

The training programmes held for different stakeholders across Sri Lanka, were as follows:

Irrigation Sector

CCA Programme for Farmer Organisation Leaders and Line Agency Staff of New Deduru Oya Reservoir

- Date and Venue: 30 March 2017 at Wariyapola Irrigation Engineers Office
- Collaborators: Climate Resilience Improvement Project (CRIP) of Irrigation Department and CapNet Lanka
- Attendance: 62 participants including 14 women, 14 staff of local level line agencies such as ID and DA

Resource persons from Field Crop Research and Development Institute (FCRDI), Mahaillupallama; Provincial Agriculture Department (DA), North Western Province and Director, Irrigation Department (ID), Kurunegala attended the programme. Dr S. Pathmarajah from University of Peradeniya, who is the CapNet Coordinator for Sri Lanka also participated the workshop.

CCA Programme for Farmer Organization (FO) leaders in Ampara District

- Date and Venue: 18 September 2017 at the District Secretariat, Ampara.
- Collaborators: Irrigation Department (ID) and Irrigation Management Division (IMD) of the Ministry of Irrigation and Water Resources Management (MWRM) with support of CapNet Lanka. This was the 2nd Programme in Sri Lanka supported by CapNet in 2017.
- Attendance: More than 70 Farmer Leaders representing 40 Farmer Organisations in Gal Oya Left Bank and River Division participated the programme. In addition, 14 field staff of Irrigation Department/Irrigation Management Division (IMD) working with FOs attended the sessions.

Resource Persons included Engineer Nihal Siriwardene, Director (Irrigation), Ampara; Mr Ananda Jayasinghe, Consultant (Irrigation Agronomist) and Former Director IMD; Mr A. N. Sirisena, Consultant, FAO and former Director, Ministry of Agriculture and Senior Researcher at Rice Research and Development Institute (RRDI), Batahalagoda.

CCA Programme for officers of Irrigation, Agrarian Development and Agriculture Departments in Ampara District

- Date and Venue: 19 September at the District Secretariat, Ampara
- Collaborators: Irrigation Department, Sri Lanka
- Attendance: 54 Technical Staff/Field Officers of the Irrigation Department, Irrigation Management Division of The Ministry of Irrigation, Divisional officers of Department of Agrarian Development and Agriculture Extension Officers of the Department of Agriculture serving in Ampara. The Assistant Commissioner, Agrarian Development, Ampara and Deputy Director of Agriculture, Ampara attended the programme. Same resource persons as FO leaders programme were used for this programme. In addition, a guest presentation by Engineer Janaki Meegastenne, Director of Irrigation was done by Engineer, Ms Shiromi Weeraratne, CRIP Office, ID in Ms Meegastenne's absence.


Plantation Sector

CCA Programme for Irrigation Department Officials in Central Province

- Date and Venue: 6 June 2017 at the Education Training Centre, Gurudeniya in Kandy
- Attendance: Nearly 50 officials from Irrigation Department

Engineers, technical officers and development officers serving in Kandy, Matale and Nuwara Eliya districts participated the training. Director, Training and Research, Meteorology Department and Director, Natural Resources Management Centre, Department of Agriculture attended as the resource persons while two key presenters - Assistant Director Agriculture Extension, Peradeniya and Director Irrigation and Deputy Project Director CRIP presented on 'New Technology Options' and 'Impacts of Climate Change on Irrigation' respectively.

CCA Programme on 'CCA and Technology options to cope with CC' for staff in non- irrigated sector

- Date and Venue: 15 June 2017 at the Audio Visual Centre of Department of Agriculture, Gannoruwa
- Attendance: Nearly 50 Regional Managers of Coconut Development Board and senior staff from Northern and Eastern province attended the programme. This is the second such programme held for staff in plantation sector (non- irrigated agriculture).

New findings on how to cope with CC were discussed by the Additional Director, Research, Coconut Research Institute, Lunuwila. The Director, Natural Resources Management Centre (NRMC), Department of Agriculture made a presentation on technology/land use options to cope with CC. Director, Department of Meteorology opined on the 'Climate Change Issues Effects on Agriculture and Livelihoods' while the

Assistant General Manager (training) of the Coconut Cultivation discussed 'Coping With Climate Change and Institutional and Technical Improvements'.

CCA Programme for staff of Department of Export Agriculture (DEA)

- Date and Venue: 14 December 2017 in the Seetha Banquet hall in Pilimatalawe
- Attendance: Nearly 60 participants from DEA staff in Kandy and Ella participated the programme.

Due to the successful CCA training programmes conducted by SLWP for agricultural extension and research officers, SLWP was requested by DEA to conduct another CCA programme to build the capacity of spice growers in the Central Province.
Representatives from Yatinuwara Divisional Secretariat, Department of Export Agriculture, Department of Meteorology, Lions Club Pilimatalawe and SLWP participated the training as resource persons, collaborators and trainees.
The main objective of the training was to disseminate knowledge on CCA and encourage female farmers at Denuwara who are planning to restart spice cultivation both at commercial and home garden level and produce value added products.

Lessons Learned

- Field level staff, farmer organization leaders and farmers have not been adequately exposed to CC impacts and CCA in irrigated agriculture. To date little understanding of impacts on water sector due to CC exists as other than SLWP and few activities under CRIP there is little information flow to field/ground level
- Training of Trainers (ToT) on CCA for officials has to be followed up which has not been continued after 2013. This has become an important but neglected aspect with high level of staff transfers and reassignments.
- Concomitant programmes for health/sanitation (drinking water sector) are essential for an integrated approach, but are currently neglected due to lack of funds.
- Knowledge products in national languages in adequate scope/spread are essential. Posters, bulletins, technical booklets and videos are needed but not available/inadequate due to lack of funding.
- Critical mass of activities and coverage are essential for adequate impact.


Activity 5A (SLWP 2017-19): Technology Options for CCA including conservation activities

Output/Outcomes

A workshop on 'Impact of Climate Change on Cultivation and Production of Export Agricultural Crops' was held at Mount Haven Hotel in Ella on 15 September 2017. The workshop gathered 120 participants.

Objectives of the workshop were:

- To raise awareness on climate change
- To explain the effects of climate change on export agriculture and possible adaptation methods
- To raise awareness on different water management practices and soil moisture conservation techniques to adapt and to mitigate the consequences of climate change

What GWP strategic goal(s) does this result relate to?

Goal 1 – Catalyze change in policy and practice

Contributing factors, actors, and background

The workshop was coordinated by Dr H. M. P. A. Subasinghe, Agro-meteorologist /Deputy Director (Research)/ Head of the Agronomy Division, Central Research Station, Department of Export Agriculture (DEA), Matale in collaboration with Ms Kusum Athukorala, Senior Advisor, SLWP; Mr J. Lindara, Director Development, DEA; Mrs Y. M. K. Kulasekara, Assistant Director Development, Badulla District, DEA and the District Office, DEA, Badulla.

Lessons Learned

- Mid-level staff have little access to both CCA and latest technical and research information. These programmes in national languages are important and should be also conducted for growers and planters.

Activity 7A: Media Activity - Reprinting, Posters and Talk shows

Output/Outcome

- In January 2018, SLWP published a booklet on “Rain Water Harvesting for Agriculture” which was developed in collaboration with the Field Crop Research and Development Institute in Angunakolapelessa.
- Printing two booklets on Climate Change Adaptation (CCA) practices for Paddy cultivation and Other Field Crop (OFC) Cultivation
- Printing a publication on CCA in Tamil in February
- Preparation for the next booklet on Home Garden Cultivation and cope with CCA is ongoing.

What GWP strategic goal(s) does this result relate to?

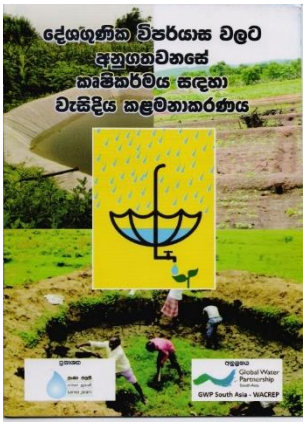
Goal 2 – Generate and communicate knowledge

Background of the Study

In February 2017, SLWP entered a collaboration with CapNet to undertake an institutional strengthening programme in medium irrigation schemes linked to CCA.

Contributing factors, actors, and background

Effectiveness of SLWP approaches (cost sharing) including ability to mobilize suitable resource persons has encouraged CapNet Lanka to collaborate with SLWP for mutual benefit. CapNet contributed nearly US$1,000 to the programme.



Lessons Learned

National language knowledge products essential for CCA extension and promotions work. Translation from English to other languages (Sinhala/Tamil) has not been a problem but translation of Sinhala documents to Tamil have been difficult due to lack of suitable translators with required experience in the sector and discipline

Global Water Partnership South Asia

This report contains WACREP activities conducted by the GWP SAS Network in 2017, which comprises of the GWP SAS Regional Office and the Country Water Partnerships of Bangladesh, Bhutan, India, Nepal, Pakistan and Sri Lanka.