India Water Partnership (GWP-INDIA)

Monthly Report

August-2014

PART-I: CORE ACTIVITY REPORT

1.1. Study for Reviewing and Examining the State Level Regulatory and Institutional Framework of State Water Policy of Maharashtra, Meghalaya and Karnataka to Operationalize the National Water Policy- 2012

India Water Partnership with the support of Indian Environment Law Offices (IELO) is reviewing and examining the state level regulatory and institutional framework of state water policy of **Maharashtra, Meghalaya** and **Karnataka** to operationalize the National Water Policy- 2012 (NWP-2012). In the previous months the review of State Water Policy of Maharashtra and Meghalaya was completed. **W.e.f. August, 2014 the third State, Karnataka was taken-up for the study**. Following are the salient findings of the study.

(i) The state has a water policy of 2002 vintage. The state is endowed with limited surface and ground water resources which makes it all the more important to systematically develop and properly utilize limited available water resources by adopting new approaches for the overall development of the State.

(ii) Till date this policy has not been updated in line with NWP-2012.

(iii) **Objectives of the State Water Policy are** :

3.1 Provide drinking water at the rate of 55 litres per person per day in the rural areas, 70 litres per person per day in towns and 100 litres per person per day in the city municipal council areas and 135 litres per person per day in city corporation areas.

3.2 Create an ultimate irrigation potential of 45 lakh hectares under major, medium and minor irrigation projects. Facilitate creation of an additional irrigation potential of 16 lakh hectares by individual farmers using ground water.

3.3 Improve performance of all water resources projects.

3.4 Improve productivity of irrigated agriculture by involving users in irrigation management.

3.5 Harness the hydropower potential of the State.

3.6 Provide a legislative, administrative and infrastructural environment, which will ensure fair, just and equitable distribution and utilization of the water resources of the State to benefit all the people of the State.

(iv) The policy states that the efficiency of utilization of water will be improved and awareness about water as a scarce resource fostered. Rainwater harvesting and water conservation will be encouraged. Conservation consciousness will be promoted through education, regulation incentives and disincentives.

(v) There are several schemes and programs run by the state which promote and encourage water conservation and water use efficiency. Karnataka State Council for Science and Technology (KSCST) is the first state council in the country to be established to address science and technology issues of the state. There is a Rainwater Harvesting Cell at KSCST for technical advice, planning and project implementation, the same can be approached by an individual or an institution. There was an amendment brought in 2009 in The Bangalore Water Supply and Sewerage Act to make rain water harvesting mandatory in the city.

(vi) There is no law specifically guaranteeing right to access to minimum quantity of potable water for health and hygiene.

(vii) The State Water Policy envisages several changes in the institutional framework for water governance in the state.

(viii) In particular, the State does not provide the rights or powers to the Panchayat Raj Institutions, or citizens to independently initiate actions for protection and conservation of water sources in their immediate vicinity. However, there is a movement in the state about transferring drinking water schemes in the rural areas to the PRIs so that the community participation in the management of water meant for their drinking purposes is in the hands of the people themselves. The Karnataka Panchayat Raj Bill, 1993 enumerate functions related to social and farm forestry, minor forest produce, fuel and fodder etc. which should be delegated to panchayats.

(ix) The policy does not define to undertake a scientific study to determine the ecological requirement of water for a river.

(x) The State has an action plan on climate change.

(xi) Karnataka State Pollution Control Board (KSPCB) is in the process of making mandatory for all industries and business establishments to reuse the water after recycling it. Karnataka would be the first state to do so. At present, there are more than 40,000 industries and business establishments in the state.

(xii) There is a groundwater authority in the state. It has mandate to take necessary steps for rainwater harvesting and identify rainwater recharge worthy areas in the state, irrespective of an area being notified or not. The Authority is also mandated to take steps for promotion of Mass Awareness and Training Programmes on Rain Water Harvesting and Artificial Recharge to Ground Water through Government Agencies/Non-

Government Organizations (NGOs) Voluntary Organizations (VOs) / Educational Institutions/Industries/ Individuals.

(xiii) Future vision for water sector development as articulated in the state water policy mentions thatwater resources planning, development and management will be carried out by adopting an integrated approach for a hydrological unit such as River basin as a whole or for a sub basin, multi-sectorally, conjunctively for surface and ground water incorporating quantity, quality and environmental considerations. Development projects and investment proposals will be formulated and considered within the framework of river or sub-basin plan so that the best possible combination of options can be obtained for poverty alleviation, increasing incomes and productivity, equity, reduced vulnerability to natural and economic risks and costs.

(xiv) The State policy mentions the priority of order in which water is to be utilised. It states that in planning and operation of water resources projects, water allocation priorities shall be broadly as follows: (a) Drinking water; (b) Irrigation; (c) Hydropower; (d) Aquaculture; (e) Agro industries; (f) Non-Agricultural Industries; and (g) Navigation and other uses.

However, the procedure for allocation is not touched upon in the policy.

1.2 Reviewing the State Water Polices of Bihar and Gujarat in line with National Water Policy -2012 in the context of climate change

India Water Partnership with the support of Institute for Resource Management and Economic Development (IRMED) is reviewing the **State Water Polices** of **Bihar** and **Gujarat** in line with the National Water Policy, 2012 with regard to climate change. In the previous months the IRMED study team had carried out detailed discussions with officials of Bihar State Water Resources Department pertaining to the draft State Water Policy of Bihar.

Recap: With the efforts of India Water Partnership by having regular interactions with senior officials of State Water Resources Department, Bihar and organizing a workshop on "**Approach to Bihar State Water Policy with Special Reference to Climate Change"** in June, 2014, the Draft State Water Policy included adequately the aspects related to the climate change apart from the other suggestions and the policy was uploaded on Government of Bihar website for wider dissemination and further suggestions. Based on the suggestions received, the final draft of the State Water Policy would be placed for approval by the State Cabinet.

In August, 2014, the India Water Partnership with the support of IRMED started reviewing the State Water Policy of Gujarat and the study team made a visit to the State Water Resources Department, Government of Gujarat w.e.f. 6th August, 2014. Outcome of the visit is given below:

In consultation with the Water Resources Department of the Gujarat State Government, Professor Kamta Prasad, India Water Partnership Project Director for this study, held an interactive session with senior officers of the Water Resources Department of Gujarat at Gandhi Nagar on 6th August, 2014.

The Project Director at the outset gave a brief introduction about Global Water Partnership and India Water Partnership including Zonal Water Partnerships and Area Water Partnerships and the activities undertaken by IWP. Thereafter, he mentioned about objectives of the study to review Gujarat state water policy in line with the National Water Policy 2012. After making a brief reference to the National Water Policy-2012 and several state water policies, he referred to the work done earlier under the India Water Partnership project in Bihar and sought the cooperation of senior officers in formulating Gujarat State Water Policy in the context of climate change.

Mr. M.P.Rawal, Chief Engineer, Gujarat State Water Resources Department made a presentation on water resource scenario in Gujarat showing the need for inter-basin transfer of water to take care of highly uneven regional distribution. During the discussion, several implications for water policy were indicated by the Project Director. Thereafter Mr. R.G.Bhatt, Chief Engineer explained the salient features of the draft of Gujarat State Water Policy prepared in 2011. Considerable discussion took place on this draft; Professor Kamta Prasad made several suggestions for improvement which were accepted by the participating officers. It was agreed that there will be a separate section on climate change as per the National Water Policy-2012. The officials present in the meeting gave suggestions on water policy from their perspective and offered cooperation in formulating Gujarat State Water Policy. They emphasized on the need for review of the norms for water requirement for cattle, analysis of local experiments on water augmentation, different impact of climate change in different regions, use of solar energy to deal with impact of climate change etc.

It was agreed that the Water Resources Department will prepare a fresh draft of Gujarat State Water Policy in the light of points made during the above interactive sessions and that the time line would be decided by the Secretary of the Department who could not be present in the discussions due to his other engagements. More than 20 senior officials of Govt. of Gujarat attended the meeting. The representative of the Department of Climate Change, who could not come to the meeting, met the Project Director later on and gave his views.

Thereafter, the Project Director had a post-lunch meeting with the Secretary of the Water Resources Department along with the Coordinator and Chief Engineer Mr.R.G.Bhatt. In the meeting the Project Director indicated the need for setting-up a deadline and for forming a Committee to formulate the State Water Policy. After discussing the matter with his colleague, the Secretary decided to form a Committee and set a deadline of 31st August, 2014 for finalizing a draft of the State Water Policy by the Water Resources Department. Thereafter, the Project Director had a meeting with the Hon'ble State Governor whom he apprised of his mission and the interactions with the state level officers. Thereafter, the Project Director had a long meeting with Mr.B.N.Navalawala, Adviser to the Chief Minister on water resources, water supply, climate change and other related departments. Mr.Navalawala is a former Secretary of the Ministry of Water Resources, Government of India. He assured all help in the matter specially in getting cooperation of other related departments. The next engagement was a meeting of the Project Director with the Hon'ble Chief Minister of Gujarat. The Secretary of the Water Resources Department, who had already briefed the Chief Minister about India Water Partnership mission and the outcome of the deliberation, was also present in the meeting along with the Chief Principal Secretary to the Chief Minister. The Hon'ble Chief Minister gave a patient hearing to the summary of the deliberation as narrated by the Project Director who urged the Chief Minister to ensure that the Gujarat State Water Policy was announced as early as possible.

The Project Director also had a brief discussion on the subject with Mr. BabubhaiBokhiria, Minister for Water Resources, Water Supply, Agriculture, Cooperation, Animal Husbandry, Fisheries and Cow Breeding and Dr.Rajiv Gupta, IAS, Principal Secretary, Water Supply & Climate Change Department of the State Government. Thereafter, the Project Director interacted with Senior Coordinator, Water and Natural Resource Management Campaign of Self Employed Women's Association, which is a NGO and life member of India Water Partnership. There wasalso an interaction with two senior faculty members of the Indian Institute of Management, Ahmedabad namely Prof.M.R.Dixit and Prof.VasantP.Gandhi. They gave some suggestions and promised help and cooperation to the study team.

The next two days were spent in the Kutch district to get a feel of the problems at the grass root level in the most drought prone area of the state. The field visitwas organized by the state government. It started with a largely attended meeting of district level officers of all the departments concerned with state water policy. It was observed that officers from other departments were not even aware of the National Water Policy 2012. Interactions were also held with village and Taluka level Panchayat representatives of Nakhatrana Tehsil who suggested the need to shift towards horticulture in order to deal with climate change. Finally interactions were held with elected members of Village Water and Sanitation Committee of Bharasar village in BhujTaluka of the district.

The considerable information collected from the state and district levels are being analyzed. Meanwhile, a query made to the concerned Chief Engineer on 19th August, 2014 indicated that, as decided, a Committee had been constituted and it was engaged in the process of formulating the State Water Policy. A further query made on 28 August, 2014 indicated that the State Policy has already been drafted by the Water Resources Department and circulated to related departments for comments.

Name of senior officials of Government of Gujarat with whom the Project Director had interaction during the meeting is given below:

1. Mr.O.P.Kohli, the Hon'ble Governor, Gujarat State
2. Mrs.Anandi Ben Patel, Hon'ble Chief Minister, Government of Gujarat (GOG)
3. Mr.BabubhaiBokhiria, Hon'ble Minister, Water Resources, Government of Gujarat
4. Mr.B.N.Navalawala, Adviser to Chief Minister, Government of Gujarat
5. Mr.K.Kailashnathan, Chief Principal Secretary to Chief Minister, Government of Gujarat
6. MrS.J.Desai, Secretary, Water Resources, (WR), Government of Gujarat (GoG)
7. Dr.Rajiv Gupta, IAS, Principal Secretary, Water Supply & Climate Change, GoG
8. Mr.U.K.Sarvaiya, Chief Engineer & Addl. Secretary, WR, GoG
9. Mr.R.G.Bhatt (IC), Chief Engineer & Addl. Secretary, WR, GoG
10. Mr.C.V.Nadpara, Chief Engineer & Addl. Secretary, WR, GoG
11. Mr.M.P.Raval (IC), Chief Engineer & Addl. Secretary, WR, GoG
12. Mr.M.G.Golvala, Superintending Engineer, State Water Data Centre, GoG
13. Mr.M.K.Dixit, Superintending Engineer, Water & Land Management Institute, GoG
14. Mr.M.J.Patel, Superintending Engineer, Central Design Organization (Hydrology), GoG
15. Dr.M.B.Joshi, General Manager (Tech. & Coordination), SardarSarovar, Narmada Nigam Ltd.,GoG
16. Mr.S.G.Ramchandran, Superintending Engineer, Gujarat Water Supply Board, GoG
17. Mr.AnandZinzala, Dy. Secretary, Climate Change Dept., GoG

18. Mr.DhavalkumarK.Patel, Superintending Engineer, KuchchhaIrrigation Circle, GoG, Bhuj-Kachchh along with 34 other district level officers from different related departments located in Bhuj
19. Smt.BhartiBhavsar, Senior Coordinator, Water and National Resource Management, SEWA, Ahmedabad
20. Professor M.R.Dixit, Indian Institute of Management, Ahmedabad
21. Professor VasantP.Gandhi, Indian Institute of Management, Ahmedabad

Activity proposed for September, 2014

It is planned to send a three member study team consisting of Mr.D.Routray, Mr. Pramod Kumar and Mr.Virendra Kumar toSurendranagar district of Gujarat for a field survey from 12 to 22nd September, 2014.

1.3 Development of participatory decision support tool for water resources assessment in 15 quality affected villages of Warangal District, Telangana

India Water Partnership with the support of Safe Water Network India (SWNI) is undertaking the above activity in 15 water quality affected villages of Warangal District of Telangana State (newly carved out from Andhra Pradesh)**.** This activity has two broad objectives (i) Map the water resources through application of GIS by adopting micro-watershed approach and estimating water balance in the 15 selected project villages of Warangal District,Telangana State ; (ii) Develop simplified IEC (Information Education & Communication) tools for raising awareness among users on water scarcity.

The SWNI with the support of India Water Partnership carried out the following activities in August, 2014:

- Data analysis and sharing information with National Remote Sensing Centre, Hyderabad for technical inputs on remote sensing application in water balance.
- Conducting participatory exercise with community at village Jookal to estimate water balance in the village.
- Collection/verification of data based on the gaps identified during the analysis.
- Collection of IEC material available on Systems of Rice Intensification for compilation to make use of in the project villages.

National Remote Sensing Centre (NRSC), Hyderabad is the sole body dealing with satellite imageries, conducting analysis and interpretation of data and disseminating results which are applicable for the different sector which ultimately benefits the society. Based on this strength, the SWNI associated with the NRSC to take advantage of information available with them and sought their support in data analysis and use of remote sensing for study of selected villages based on micro-watershed concept. To facilitate this joint exercise Safe Water Network India provided primary data related to water level monitoring from observation wells and village information with longitude and latitude. During the reporting month, the study team

alsohad a meeting with officials of NRSC to understand the process of data analysis. The NRSC has carried out following work under the project:

- Demarcated watershed boundary – except Rajavaram and Wadlakonda(all the villages are part of Godawari basin).
- Demarcation of sub-watershed – based on SWNI inputs a sub-watershed has been demarcated, this covers eleven villages (Excluding Pochampally and Kothapally). These eleven villages are part of Chalivagu) a tributary of Godawari basin.
- Soil classification map.
- Rainfall-runoff analysis (NRSC calculated volume of rainfall and runoff by using data of 2013). The NRSC was suggested to present in millimetre and if possible take two to three additional years data.
- Area under Kharif, Rabi and Double crop (SWNI will correlate with ground level information for different crops).
- Hydrogeological – contours for pre-monsoon, post-monsoon and ground water draft information (this map yet to be prepared).
- Estimation of area of Water Storage Structures in the watershed.

In this meeting with NRSC, it was decided that SWNI will provide ground water prospecting maps to NRSC and also data related to population, cattle population and crop information. These will help to work out total water requirement in the area.

Participatory Exercise for Water Balance Study at Village Jookal, District Warangal

To carry forward the work initiated during the month of July 2014, the water balance estimation technique has been tested in village Jookal, District Warangal, Telangana. For this purpose a participatory exercise was conducted along with Gram PanchayatSarpanchMr K Kumarswami village Jookalalong with 12 – 15 villagers. During this discussion the tools developed for estimation of water balance was applied to collect information and calculate the resource availability and utilization pattern. During the discussion attempt was made to demystify information and communicate by adopting visual methods which make easy to understand by community. However, scientific approach was adopted to maintain the importance of exercise. The water balance in simple words, is measuring the amount of water coming in and going out to assess availability in a given specific area. At the end of this exercise the village Sarpanch (Village Head) was quite appreciative of this exercise and suggested to adopt following in his village:

- Display this outcome in the village for sensitizing the farmers on crop-water relationship.
- Develop a documentary on water budgeting exercise which can be used as mass communication media.
- A banner can be developed and displayed at common places (iJal Station and Gram Panchayat office).

Estimation of Water Balance at Jookal (Participatory Exercise held at Jookal)

1	**Village area in hectare (Crop area reported by farmers + 10% for other purpose)**	**1400**
2	Total volume received Mm³/year	12.5
3	Ground water recharge assumed 15% Mm³/year	1.9
4	Surface flow Mm³/year (20%)	2.5
5	Absorbed by soil - available for plants & ET+PET (65%)	8.1
A	**WATER STORAGE in Tanks/Ponds**	
1	Total Volume stored in Mm³/year	0.86
2	Surface flow - Storage =	1.64
3	Total Water Available for ground water productivity (20%)	0.33
4	Total Water Available = ground water + storage	2.2
B	**WATER REQUIREMENT FOR VILLAGE**	
1	Population	0.07
2	Cattle population	0.01
3	Crops	11.22
4	Annual Water Utilization Mm³/year	11.29
C	WATER BALANCE (Mm³/year) (-deficit)	-9.1

Information Education and Communication

It has been observed that the participatory exercise of conducting water balance study in the village by involving community itself becomes a good tool to sensitize them on trend of water table depletion, problem related to water scarcity and future challenges. This can be a good approach for educating community so that the people can adopt appropriate options for managing the available water resources. Therefore options related to crop water relationship need to be discussed and methods for improving water use efficiency are to be disseminated. The paddy and cotton crops are predominant in the area. These crops requires maximum water from the available sources in the area, hence it is planned to focus on IEC activity on these two crops only.

It is also planned to use available IEC material in public domain to develop a reference guide in local language which can help field executives to share the information on crop-water relationship and options available for improving water use efficiency. In this context WWF, Hyderabad has been contacted for reference material on better cotton initiatives. They are executing a project along with MARI, a local NGO in Warangal District. Similarly WASSAN will be contacted for information on Systems of Rice Intensifications.They have developed IEC material for dissemination to people in local language.

1.4. Awareness generation and water quality testing by rural women for using safe drinking water in Kommaragiri Village, Kakinada District, Andhra Pradesh

India Water Partnership with the support of All India Women's Conference (AIWC) is undertaking awareness generation activities and water quality testing by rural women of Kommaragiri village of Kakinada District, Andhra Pradesh. In the month of August, 2014 the AIWC team undertook the following activities:

Talk on Conserving Water on 16th August, 2014

A talk on conserving water was given by Dr.I.ShantiPrabha, Head of the Department of Computer Sciences and Director Women's Empowerment Cell, JNTU, Kakinada. The talk was organized at AIWC sub office in Komaragiri on 16th August, 2014. As many as 60 people listened this talk.

Dr. Prabha narrated how water will be a rare commodity in future if enough measures are not taken for frugal usage by one and all. India is blessed with many natural resources, however, with the global warming; the Himalayan Glaciers which are the major source of ground water will melt at faster rate and the water through rivers will go into the sea. She said that wherever possible, check dams should be constructed and rain harvesting must be made compulsory to conserve water for future use. With the exploding population, the Municipal/Panchayat authorities are unable to supply sufficient water to the public. The water table is depleting very fast. She advised the gathering, specially, the women to practice optimum utilization and recycle the kitchen waste water to the plants. She also said that there is tendency of housewives to leave the tap open and do other chores in the house. She stressed that this should be avoidedso the water does not go waste.

Water Quality Testing on 23rd August, 2014

AIWC invited PanchayatSarpanchto take samples of the tap water and test the quality of water. The water testing kit was provided to him by AIWC. He collected the sample on 23rd August 2014 and tested. It was observed that the water has presence of impurities with high percentage of Chlorine. The result of the water quality testing was shared with the villagers by the PanchayatSarpanch.

The Head Master of the ZillaParishad School also gave a demonstration on the water quality testing to the students of higher classes.

1.5 Participation of Dr. VeenaKhanduri, Executive Secretary, IWP in 3rd Meeting of Central Advisory Board of WaterEx-2015

WaterEx-2015,an International Conference and Exhibition is going to be organized at Mumbai from 29th to 30th January, 2015. Theme of this event is "**Water for Ever, Water for All"**. India Water Partnership will support this event as "Non-Financial Supporter" and act as knowledge partner. CHEMTECH Foundation, India is the main organizer of WaterEx-2015.

As a member of Central Advisory Board (CAB), Dr. VeenaKhanduri, Executive Secretary, India Water Partnership attended the 3rd meeting of CAB which was organized at Central Water Commission on

19th August, 2014 under the Chairmanship of Mr. A B Pandya, Chairman, Central Water Commission, Government of India. The meeting of attended by 17 CAB members.

In the meeting, Mr. HemantShetty, CEO, CHEMTECH Foundation said that Ms. Uma Bharti, Hon'ble Minister of Water Resources, Government of India has confirmed to be the Chief Guest and she will inaugurate the event. Mr. Shetty also said that the Hob'ble Minister has also agreed to write to Ministries of Overseas countries to send their representatives/delegates during the WaterEx-2015 for water technology exchange.

Mr. Shetty added that the Hon'ble Minister has particularly emphasized upon the need to rejuvenate the river Ganga and try to synergize the technology of Germany and other countries with that of the Indian for cleaning the holy river.

Dr.VeenaKhanduri mentioned that we should be in touch with the Municipalities in Indore&, Khandwa(Madhya Pradesh) and Kalyani(West Bengal) who have done excellent service in Municipal sectors.

Mr.A B Pandya mentioned that we should also invite renowned agencies in the sphere of simulation and modelling for cleaning service of rivers. Mr.Pandya further said that to start an innovative concept we should have a skeleton projectand disseminate to an Agency who may try to improve upon the pilot project.

Ms. Maya Acharya, Sr. Policy Advisor, Netherlands pointed out that we try to develop concepts in the Technical Conferences, but then we fail to translate the project into implementation. Therefore, she added that technology once invented should be propagated and improved upon. Dr.VeenaKhanduri agreed to this and mentioned that we should identify the problem in anytechnology area and then address it. Ms.Anamika from Galgotia University was of the opinionthat we should develop means to integrate the Foreign Technology with that of Indiancondition so that it would help us to modify the problem from Indian perception.

Other CAB members present in the meeting also gave their valuable suggestions.

---------- XXXXX -----

PART- II: WACREP REPORT

2.1. Augmenting Water security and food security of small farmers in the Gundar Basin by rehabilitating or constructing water harvesting tanks

In the month of August, 2014, no much progress was achieved under this activity except for:

(a) Completion of appraisal of two tanks in Virdhunagar and Sivgangai districts for Tamil Nadu and receipt of technical estimates for reconstruction of sluice and deepening of tank bed; and,

(b) Field assessment for filling of farm ponds during South West Monsoon in Kolar and Chittoor district was done. During the assessment, it was observed that due to delay in monsoon, the completed farm ponds received little water.

Activities proposed during September, 2014:

- Field appraisal of 2 more irrigation tanks in Gundar Basin.
- Sanctioning atleast 7 farm ponds for construction.
- Monthly Progress review meeting at Madurai.

2.2 Climate Adaptive Planning, Capacity building and training programs in Bundelkhand Region of Madhya Pradesh

In the month of August, 2014, India Water Partnership with the support of Development Alternatives undertook the following activities:

Development of Climate Adaptive Plans with Community Participation: Meetings at Kamher and Nauner villages were conducted for sectoral mapping and finalization of village climate adaptive plans. Sectors such as agriculture, water, forests, livelihoods, livestock etc. were analyzed with participation of community to develop plans from a climate change lens. Plans have now been documented, collated and finalized. Development Alternatives will share the Climate adaptive plans of Kamher and Nauner village to India Water Partnership by 15th September.

Knowledge Products : The Development Alternatives team with the support of India Water Partnership has drafted and finalised the knowledge products for the project. These include vulnerability and adaptation assessment report, adaptation guide and training modules.

Validation of Climate Adaptive Plans at District Level: Meetings were conducted with C.E.O of Datiadistrict and technical staff of line departments, who have validated the climate adaptive plans prepared at village level.

Draft Manual for Farmers on Sustainable Agriculture Practices: Draft manual for farmers on sustainable agriculture practices has been prepared. The Draft Manual would be shared by Development Alternatives to India Water Partnership by 15th September, 2014.

Farmers' Training on Sustainable Agriculture Practices and Water Management

India Water Partnership with the support of Development Alternatives organized a Farmers' Training Program on **"Sustainable Agriculture Practices and Water Management**" at Development Alternatives Field Headquarter; Datia District, Madhya Pradesh. Seventy Five (75) farmers from the project villages participated in the program. The main objectives of the training program were:

- To make the participants aware about soil and water effective production and its linkages with climate change.
- To motivate the participants to resort to soil and water effective production in their personal capabilities.
- To teach them several ways of soil and effective production.
- To make participants aware about Integrated and Sustainable farming.

The report of the training program is attached as ***Annex-I***.

Activities Planned for September, 2014

- A State level workshop on "Climate Adaptive Planning in Madhya Pradesh".
- Exposure visit of farmers to demonstration centres for climate resilient agriculture.

2.3. Assessment of vulnerability to climate change on water resources, commons, agriculture system and animal husbandry in Sinhar watershed in Bhinder Block in Udaipur district of Rajasthan

In continuation to the activities undertaken in July, 2014, India Water Partnership with the support of Action for Food Production (AFPRO)took-up the following activities in August, 2014:

Village Level Meetings

Five village level meetings were organised on different dates at Dhawadiya, KhedaFala, Rayla, Veripura and Fusriya villages with core group members including cluster core group members and village elders. These meetings were facilitated by selected field associates working under WACREP. The following issues were discussed:

- Germination of the Hamta, Dhaman and Karad grass on physical intervenes i.e. CCT, Gradonis etc. The grass seems good growth on CCT and Gradonis.
- How to improve understanding about climatic variance and their impact on agriculture, livestock, fodder and water.
- Review the progress of physical works like;Gradonis, Thawala, pastureland protection through stone fencing and CPT etc.

- Growth of Demonstration plot on mix cropping of Urad, Soyabean and Maize.
- Existing coping mechanism for water, crop and livestock due to climate variability like high temperature, unpredictable and late on-set of rain during the current year.
- To conduct baseline socio economic survey as sample basis in all 10 project villages targeting 25% of total households in the project area.

Meeting for Cluster level Committee members

A cluster level meeting with the 20 participants from all respective project villages was organized at Bhavyadhara Training centre, Rayla on 23th August 2014. The purpose of this meeting was to develop the strategy against delay of the monsoon. Due to delay in the monsoon, it was decided to promote cropping the combination of Maize + Ragi, Maize + Urd and Maize + Soyabeen on a demonstration plot to see the results. It was also discussed that if there is normal rainfall then Maize will be good to produce and if the rainfall is below the normal,Urd crop will be good to produce. In case of rainfall above the normal and in the event of waterlogging, the Ragi crop will sustain.

Pastureland Protection

The Cattle protection Trench (CPT) work has been completed in the pastureland of village Raila. The cross section of the trench was kept (1 meter width x 1 meter depth). Total length of 995 meter CPT was renovated at the pastureland and gap filling was done through Thor and Jetropa stems. 375 meter length stone fencing was also done in Chunakawela and Kamliya villages.

Construction of Gradonis

Under this activity, total 180 cum earthwork and 90 cum stone work was completed on the pastureland of Kamliya and Chunakawela villages. Grasses like Hamta&Karad were sown on these structures. Good growth of thegrasses has been observed.

Construction of Continuous Contour Trench (CCT)

1120 meter length CCT has been constructed in Kamliya and Chunakawela villages. During the month Hamta and karad grasses were sown on bunds of the CCT and it has been well germinated.

Construction of Thawala on existing small plants

A total number of 1013 Thawalas have been constructed in the Chunakawela and Kamliya villages. The Thawala helps in soil moisture conservation.

Activities under Farmers Field School (FFS)

During the reporting period, FFS was approached for Package of Practices with proper inter culture operations and fertilizer applications. 480 kg of urea was distributed to 24 farmers for use in the demonstration plots.

Activities planned for September, 2014

- Continues monitoring of on-going physical work at private as well as community pastureland at Dhawdiya, Kherafala and Rayla villages.
- Village level and cluster level meetings on Farmers Field School for adaptation with 3 groups on agriculture, water and livestock (Goats).
- Initiate climatic vulnerability assessment as per PRA and preparation of assessment report .
- Five Village level meetings with core group members for review the project activities.
- Conduct Household survey for 400 families.
- Data Compilation of survey formats of water resources, status and climate change vulnerability.
- Analysis of climate change impact on water resource, agriculture system, animal husbandry and commons.
- Continuation of preparation of Vulnerability Assessment Report and Adaptation Framework.
- Planning for Exposure visit for core group members.

2.4. Study on coping mechanisms adopted by rural communities on their traditional wisdom and their relevance for adaptation to climate change, examining how science can add value to traditional/indigenous wisdom and vice versa in Meghalaya and Mizoram States

Through on-going literature review and preliminary visit in June 2014 in Meghalaya, the India Water Partnership with the support of Institute for Development Initiatives, New Delhi has identified a number of local knowledge systems that are relevant for climate change adaptation. These include; sustainable fish harvesting as well as rearing practices of War Khasi Tribe, indigenous potato storage systems, traditional herbal medicine system, split bamboo drip irrigation and drinking water supply systems, live bridge systems using trees on the banks of rivers and streams, nature conservation through sacred groves etc. The background and scope of the study is given in ***Annex-II***.

The resource Institutions whose expert knowledge would be tapped includes; Martin Luther King Institute of Social work, North Eastern Hill University, Meghalaya Mission for indigenous knowledge, Integrated Basin Development Programme etc.

Though field work was planned after August 15 2014, this could not be taken up due to continuation of very heavy rains in the selected locations. Weather continues to be highly rainy and is expected to stabilize soon. Intense field work will be taken up from 15 September, 2014.

----- XXXXX------