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ITC-IWMI

KNOWLEDGE PARTNERSHIP

Project brief and workshop policy Recommendation

Drought proofing in Agri-catchments and Water Security

Assessment in the Factory Catchments of the ITC

ITC’s ‘Mission Sunehra Kal’ aims to strengthen rural livelihoods through a slew of initiatives including

e-Chaupal, soil and moisture conservation, livestock development, social forestry and social infrastructure. Two of the key long-term outcomes envisaged from this are ‘drought-proofing of ITC’s agri-catchments’ and ‘water security for all stakeholders in ITC’s factory catchments’. Towards achieving these twin objectives, ITC and partners have been engaged in implementing measures for water supply augmentation and improved water demand management in several locations across the country. To strengthen the impacts of field interventions and contribute to building the resilience of local communities, in 2018-19, ITC invited IWMI to join them as part of a strategic knowledge partnership. As part of this partnership, IWMI was asked to develop a conceptual and analytical framework for ‘drought-proofing of ITC’s agri-catchments’ and for delivering ‘water security for all’ in ITC’s factory catchments.

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| **Drought Proofing Agri- catchments** |

To assist in the planning and identification of water management interventions, project developed a conceptual drought proofing framework (Figure A). Drought proofing framework divides agri-catchments into four distinct quadrants based on different scenarios for water availability and water use efficiency/productivity. Each of the four quadrants in the drought proofing framework represents catchments that require different type and intensity of water management interventions. The top right quadrant is the desired quadrant where both water availability (i.e., for meeting crop water needs) and WUE (i.e., water is used productively) are high.

Timeline

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*Figure A: Conceptual drought proofing framework*

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| **Drought proofing tool** |

To operationalize the conceptual drought-proofing framework, a simple Microsoft Excel spreadsheet based user-friendly tool is also developed (Figure B). Tool employs a monthly water balance approach to assess water supply and demand dynamics at the catchment level. The tool can be used with minimum input data to facilitate identification, prioritization, planning and development of suitable intervention strategies for drought proofing in ITC’s agri-catchments. The drought proofing framework and tool was was applied in four ITC agri-catchments: Prakasam (Andhra Pradesh), Mysore (Karnataka), Jhalawar (Rajasthan) and Sehore (Madhya Pradesh).

Graphical user interface, website

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*Figure B: Interface of drought proofing tool*

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| **Water Security for All in ITC**'**s Factory Catchments** |

Water security is the availability of acceptable quantity and quality of water with acceptable water-related risks for all communities and dependents (domestic, livestock, agriculture, industry). With the aim to deliver ‘water security for all’ for communities and all co-dependents living in close proximity to factory locations, project developed a conceptual risk-based framework to water security assessment. The framework uses a combination of scarcity and risk, both measured on a scale of 0 to 1, to assess water insecurity (Figure C).

Chart

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*Figure C: Risk based water security framework*

The developed water security framework captures the dynamic nature of water security with measurable indicators at the shortest time scale for which data is available. The indicators used to assess water security include:

1. Water supply from rainfall, surface water, groundwater and treated wastewater

2. Water depletion by different sectors (domestic, irrigation, industry and environment)

3. Water-related risks due to increasing demand, lack of storage and weather variability

Considering the multi-scalar realties of water, framework recommends a multi scalar water security assessment going from spatial scale of factory premises to Factory Water Influence Zone. Latter is defined as a larger zone of influence that cuts across administrative boundaries and is located entirely in the larger river basin. Operationalizing this framework involves delineation of the factory

catchment boundary; identification of co-dependents; assessment of environmental needs (e-flows), utilization of water supply, and storage capacity in the catchment; assessment of current and future water footprint; scarcity and risks. Project developed detailed guidelines for assessing each of the above. The Water Security framework was applied to ITC’s factory locations at Mureru, Ghod basin, Bengaluru/ Malur and Upper Bhavani sub-basin.

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| **Project workshop** |

To disseminate the project learnings and seek suggestions and recommendations, a virtual workshop on *“Drought Proofing Agriculture and Water Security in Catchments”* was organized on 8 October 2021. The Workshop was attended by ~150 participants/experts. Participants included senior officials/experts from Central Water Commission, Central Groundwater Board, National Rainfed Authority of India and Indian Council of Agricultural Research, NITI Aayog, NGOs, donors, private sector, research institutes. The outcome of the workshop was very positive, and all the participants showed keen interest on the frameworks and tool and was looking forward for more such collaborative workshops. Below points give some key policy recommendations generated from the workshop:

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| **Key policy recommendations** |

* IWMI – ITC’s active partnership to work on drought and water security is very welcoming, important and should be upscaled given the challenges to the current agriculture scenario.
* Overall water management requires collaborative efforts and inputs from all stakeholders to overcome the fragmented approach and upscale the learnings to see the desired outcomes.
* Water security framework should address the issue of non-availability of requisite water at the micro level. This is as the Water security issues are more acute at micro level and not at the macro level as India receives 1200 mm rainfall on average which is sufficient to meet the demands. This way multi-scalar water security framework developed is unique and should be upscaled.
* Drought must be seen from more multi hazard perspective, because in the past 15 years, many of the flood prone areas have become drought prone areas and many of the drought prone areas have also become multi hazard prone area. Thus, from disaster management perspective, emphasis should be given to interaction between various components from risk and vulnerability side.
* Project should emphasise that drought proofing can’t be done alone during the drought year alone, as drought proofing is a continuous process that spans across lean as well as normal rainfall years. Although nature of drought proofing works and activities during the lean and normal rainfall years might be different. Additionally, economic values of drought proofing interventions need to be demonstrated to the framers so that adaptation is taken up on larger scale.
* Emphasis should be given on building social capital and governance capacities of the communities which is critical for proper watershed management to achieve drought proofing and water security.
* For upscaling drought and water security framework, work should be integrated with work being done under different projects and schemes by government ministries and department (e.g., Atal Bhujal Yojana). This will lead to effective convergence and co-fertilisation of ideas and learnings.
* The work is very relevant and already in sync with mandates and activities with various government agencies. Project team is already with Karnataka watershed development programme for planning drought proofing interventions in 100 watersheds across state.
* Some key opportunities highlighted by stakeholders are:
  + Project should do knowledge exchange with “*Jalyukt – Shivar”* project in Maharashtra, where drought proofing is done for 20,000 villages.
  + Project should collaborate with National Water Mission (NWM) that is also helping the states in preparing the water security plans.
  + Drought tool developed by IWMI – ITC was suggested to be used by National rainfed area authority (NRAA) for planning process in pilot Programmes in selected districts and villages.
  + Central Research Institute for Dryland Agriculture (CRIDA) is working on drought proofing in 24 districts especially in Rajasthan and Karnataka. IWMI – ITC’s work on drought proofing presents a great collaborative opportunity and drought tool together with the information from pilot sites can be used to upscale the work on drought proofing.
* Developed drought tool and framework can act as a common language, that can be used across stakeholders, and a language that can be spoken by all stakeholder in unison. Emphasis should be given to leverage lot of information and data from various government departments for the further development of work.
* The overarching message is that IWMI – ITC’s work on drought proofing and water security is in sync with mandates and activities with various government initiative. There is a very strong support for the developed frameworks and tool and stakeholders including government has shown keen interest in collaborating and adopting the developed frameworks and tool.