ICAT-A Stakeholder Mapping Report

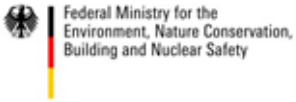
INDIA PHASE II

Developed by:
The Energy and Resources Institute (TERI)

DISCLAIMER

PREPARED UNDER

Initiative for Climate Action Transparency (ICAT) project supported by the German Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety, the Children´s Investment Fund Foundation (CIFF), the Italian Ministry of Ecological Transition (IMET) and ClimateWorks.



The ICAT project is managed by the United Nations Office for Project Services (UNOPS).

Introduction

The changing climate and the risks associated with it make adaptation imperative for all countries. India, being a large country in the tropics with diverse agro-climatic regions and a long coast line, is extremely vulnerable to the consequences of a changing climate. Extensive resources are being targeted at not only designing activities and projects specifically addressing adaptation but also at ensuring that adaptation is integrated into the development planning to help reduce risks associated with climate change.

The Government of India in 2015 established the National Adaptation Fund on Climate Change (NAFCC) through which targeted projects on adaptation are being sanctioned to States and Union Territories (UTs). The objective of establishing the NAFCC is to support the costs for adaptation in States/ UTs that are vulnerable to the adverse effects of climate change. A budgetary provision has been made to support activities in States under the SAPCCs and the NAPCC. An existing institutional entity engaged in supporting development projects has been identified as the implementing entity for adaptation projects and is the National Implementing Entity for projects supported under the Adaptation Fund and the NAFCC.

While these projects have been established, monitoring and evaluation frameworks that indicate the progress in work related to these projects are needed. The ICAT-A project seeks to identify some of these projects that are being implemented in the country to monitor, evaluate and learn from the processes of implementation that are underway.

In its first phase of ICAT- A Project, case studies were chosen from the state of Telangana in India which sought to cover interventions related to:

i) Existing programs and schemes targeted towards development with adaptation co-benefits
ii) Initiatives exclusively designed to support adaptation activities in the state.

In the second phase of ICAT-A, new case studies have been chosen along the same objectives in the two priority sectors of agriculture and water in the Union Territory of Puducherry and State of Odisha and Bihar.

In the U.T. of Puducherry TERI has identified the project on integrated surface water management for climate change adaptation. The case study has been identified in consultation with experts in the U.T. of Puducherry and has been discussed in the sections below.

ICAT-A Approach for Stakeholder Engagement

- **Scales of Engagement**

Since Adaptation is locally oriented and has to be context specific, there is a need to engage stakeholders' at all possible levels of the implementation process. An

effective implementation of any climate change adaptation intervention requires engagement at various scales starting from individuals to institutions, both horizontally and vertically oriented. The various scales as indicated below apply based on the kind of Adaptation intervention being planned/ implemented;

- *National:* Central Government, Other relevant entities in the implementation of these projects, Private Sector, Research Institutions, Academia and NGOs, Financial Institutions etc.
- *Subnational:* State relevant departments, State research institutions, Private Sector, Academia and NGOs, Financial Institutions etc.
- *Local:* CBOs, Gram panchayats, Village level committees
- *Beneficiaries:* Can be divided based on the social strata - type, class, caste
    - Types: Households/ Individuals Groups (Farmers, Fisher-folk, Forest dependent communities, Coastal communities (any other if applicable))
    - Class: High, Mid, Low Income Groups
    - Caste: General categories, SC/ STs

The objective of interactions being to understand, co-produce information that then assists in the learning process of how the implementation is being carried out.

- **Mode of Engagement**

The mode of engagement would primarily vary according to the type of stakeholder being taken into consideration and the type of information that needs to extracted. For instance, key person interviews and one-to-one interactions is normally done for interactions with various institutions to garner information on the nature of the intervention, roles and responsibilities in implementation and understanding the barriers and bridges for implementation. Community interactions are also conducted to understand their perspectives on the nature of impact and the interventions being carried out or proposed. Group discussions, FGDs, Surveys are common modes of engagement and collation of information from the beneficiaries.

Stakeholder Identification and Mapping for the U.T. of Puducherry in India

CASE: Integrated Surface Water Management for Climate Change Adaptation in U.T. of Puducherry

Rationale for selection of case study

The *Integrated Surface Water Management for Climate Change Adaptation* initiative is a National Adaptation Fund for Climate Change (NAFCC) funded project. While the funding is routed through a central agency, but the interventions, implemented by the state are specific to the needs and the requirements of the state. The initiative

promotes traditional system of water conservation, as stated in India's National Water Mission.

Description of the Case

Puducherry Union Territory (UT) is a part of the Eastern coast of India, with an average elevation of about 15 metres above sea level. The UT comprises of four regions namely, Puducherry, Karaikal, Yanam and Mahe. All the regions, while parts of different states are coastal. Puducherry, Karaikal and Yanam lie in the Eastern coast while Mahe lies in the Western coast of the India.

The Eastern coast of India is different from the Western coast in many ways. While the Western coast (Mahe) receives a good amount of rainfall annually, the rainfall in the Eastern coast is highly variable and is contingent largely on the depressions of the Bay of Bengal. Over the years, it has witnessed the lack of a particular pattern and an erratic nature of rainfall (Gopalakrishnan, 2016). This formed the rationale behind the construction of tanks in the region for water conservation and storage purposes. The UT has about 84 tanks and almost 600 ponds for water conservation and rain water harvesting.

The dependence in the UT for water is however very strongly skewed towards the use of groundwater for all purposes such as irrigation, industrial and domestic since in the middle of 1980's. And, this has led to a fall in the groundwater levels of the Puducherry region. The rise in population, coupled with intensified agricultural practises and increased industrial activities have been the reason behind the depleting groundwater levels, and deterioration of water quality due to upward movement of chemical constituents present in deep seated aquifer. Government records also note that there has been significant intrusion of salt water into groundwater acquifers to a distance of upto 4kms in some places.

A change from community based approaches such as traditional tank system of irrigation to borewells have not just meant a dis-use and lack of maintenance of rainwater water harvesting structures which suffer from sedimentation, but have inevitably further exacerbated the depletion and salination of groundwater resources, along with the vulnerability of the dependent communities.

The National Adaptation Fund for Climate Change (NAFCC) funded project, aimed to be undertaken in a phased manner, envisages increasing the recharge capacities of tanks and ponds in the villages. The project, focussing on the Puducherry and Karaikal regions of the UT, will lead to the renovation of 186 village ponds and 39 irrigation tanks, and will also build the capacities of tank water users association in the North-Western parts of Puducherry. The rationale behind the project is to encourage a shift towards *conjunctive use* of water. A harmonious and coordinated use of surface water and ground water resources through the use of tanks and village ponds that get filled up during monsoon period, will augment groundwater recharge and hence ensuring enhanced water storage of the aquifers of this region. This will reduce saline water intrusion and also ensure better availability of water during dry periods.

Governance Structure:

The project is governed by a range of entities at the National, State and local level. The table below details the multi-tier structure indicating the agencies and their nature of involvement.

	Governance Structure	Entities
1	Funding Agency	Ministry of Environment, Forests and Climate Change (MOEF&CC), *GoI*, under the National Adaptation Fund for Climate Change (NAFCC)
2	National Executing entity	National Bank for Agriculture and Rural Development (NABARD)
3	State Level Steering Committee (SLSC)	**Chair:** Chief Secretary-Government of Puducherry **Members**: 1. Secretary to Government (Animal Husbandry) 2. Secretary to Government (Agriculture) 3. Secretary to Government (Power) 4. Secretary to Government (Fisheries) 5. Secretary to Government (Forest and Wildlife) 6. Secretary to Government (Health) 7. Secretary to Government (Local Administration) 8. Secretary to Government (Planning and Research) 9. Secretary to Government (Public Works) 10. Secretary to Government (Revenue and Disaster Management) 11. Secretary to Government (School Education) 12. Special Secretary to Government (Industries and Commerce) 13. Special Secretary to Government (Transport) 14. Special Secretary to Government (Science, Technology and Environment) 15. Chief General Manager, NABARD, Chennai **Convener** 16. Director, Department of Science, Technology and Environment

4	Project Executing Entities	1. Department of Science, Technology and Environment (DST&E), Government of Puducherry. 2. Public Works Department, Government of Puducherry 3. Department of Local Administration, Government of Puducherry, through the local bodies (Commune Panchayats) of Puducherry and Karaikal region
5	Nodal Agency	Department of Science and Technology (DST&E), Government of Puducherry
6	Beneficiaries	General Public, Farming Community, Industries

Table1: Governance Structure [**Source:** Department of Science, Technology and Environment (DST&E), Revised Detailed Project Report (2020) and in-person consultations with DST&E]

Output-based Activities:

The project has five major components involving rejuvenation of irrigation tanks in Puducherry, rejuvenation of village ponds in Puducherry, formation of a mini lake in Karaikal, rejuvenation of ponds in Karaikal, and capacity building of Tank User Associations (TUAs). The expected outputs and outcomes for each of the components are described in the table below.

S No.	Project/Programme Components	Expected Concrete Outputs	Expected Outcomes	Amount (in crores)
1	**Rejuvenation of 39 irrigation tanks in Puducherry**	1. Replenishment of ground water level 2. Increase in storage capacity of tank 3. Creation of livelihood and assets	1. Maintenance of ecological balance 2. Prevention of salinity ingress 3. Increase in water availability 4. Higher crop yields and farmer's income	9.26
2	**Rejuvenation of 39 village ponds in Puducherry**	1. Replenishment of ground water level 2. Increase in storage capacity of tank	1. Maintenance of ecological balance 2. Prevention of salinity ingress 3. Increase in water availability	1.77

		3. Creation of livelihood and assets	4. Higher crop yields and farmer's income	
3	**Formation of Mini Lake Padutharkollai village in Karaikal**	1. Replenishment of ground water level 2. Increase in storage capacity of tank 3. Creation of livelihood and assets	1. Maintenance of ecological balance 2. Prevention of salinity ingress 3. Increase in water availability 4. Higher crop yields and farmer's income	1.68
4	**Rejuvenation of 147 ponds in Karaikal**	1. Replenishment of ground water level 2. Increase in storage capacity of tank 3. Creation of livelihood and assets	1. Maintenance of ecological balance 2. Prevention of salinity ingress 3. Increase in water availability 4. Higher crop yields and farmer's income	2.59
5	**Capacity Building of Tank User Associations**	1. Participatory Micro-vulnerability Assessment 2. Participatory Micro-planning	1. Equitable benefit sharing 2. Community involvement and ownership 3. Local institutions development	0.50

Table 2: Activity-output-outcome-Impact [**Source:** Department of Science, Technology and Environment (DST&E), Revised Detailed Project Report (2020)]

Expected Beneficiaries

An estimated number of 8.5 lakh residents of the north-western part of the UT, are expected to benefit from the project.

Quantitative and qualitative estimate of the expected impact of the adaptation intervention

The primary objective of the project activities is to replenish the groundwater aquifers in the region which will augment water resources and cater to the agriculture and allied sectors and lead to enhanced lives and livelihoods. The following table elucidates quantitative and the qualitative impacts of the project.

Quantitative Impact	Q**ualitative** Impact
Rejuvenation of 39 irrigation tanks in Puducherry region	• Recharge of groundwater aquifers • Livelihood generation • Capacity development and knowledge generation • Improved ecological balance in the project area • Improved groundwater quality (reduced salinity) • Improved farmer yield and therefore better farmer income • Promotion of community ownership of common pool resources • Strengthening of local institutions (like Panchayats)
Rejuvenation of 186 village ponds; 39 in Puducherry and 147 in Karaikal	
Formation of Mini Lake at Padutharkollai village in Karaikal	
Capacity Building of Tank User Associations	

Table 3: Quantitative and Qualitative Impact of the project [**Source:** Department of Science, Technology and Environment (DST&E), Revised Detailed Project Report (2020)]

Stakeholder Identification and Analysis

The key stakeholders in the project are listed in Table 4. The TERI team carried out in-person consultations with officials and representatives from various departments in the U.T. of Puducherry namely Department of Science, Technology and Environment (DST&E), the Public Works Department (PWD), the Irrigation Department associated with PWD, Local Administration Department (LAD) and representatives from the Commune Panchayats. The tank, lake and pond sites under the project in Puducherry and Karaikal were visited by the team and consultations were also held with farmers who are the direct beneficiaries of the project.

The Nodal implementing Agency of the Project is the DST&E, under which the Puducherry Climate Change Cell (PCCC) executes the role of the “Project Management Unit” entrusted with developing the project proposal, providing technical inputs, coordinating with executing agencies, managing the funds, documenting and disseminating information, and reporting the progress. DST&E also assists the regional officer of the National Bank for Agriculture and Rural Development (NABARD) in carrying out routine inspections of the project sites and recording the output based physical and financial progress of the project. A quarterly progress report and fund release request is presented by DST&E to NABARD. NABARD has a strong district/local level presence which greatly contributes to its ability to verify progress on ground aiding in its objective to monitor, recommend and report progress that is routed through the regional to the head office which in turn reports to the MoEFCC on a bi-annual basis.

The major project executing entities are the Public Works Department (PWD) and the Local Administration Department (LAD) which further coordinates and supports the Commune Panchayats in the designated project regions for implementation work. The PWD engineers oversee the desiltation of irrigation tanks and the mini lake, construction of sluice gates and construction of bunds around the tanks. The PWD engineers are also responsible for measuring and reporting ground water levels. Further, PWD is also responsible for

undertaking capacity building of Tank User Associations. The LAD and the commune panchayats are predominantly responsible for the rejuvenation and desiltation of village ponds. The LAD also takes complementary efforts in line with the objectives of this project to strengthen infrastructure, increase awareness to promote water conservation by aligning with various other relevant government schemes and policies.

The following table elucidates and maps the roles, influence and impact of the key stakeholders.

Stakeholder	Role of Stakeholder ***(Implementation, Financing, Beneficiary etc.)***	Stakeholder Influence ***(Low, Medium, High) Explain How?***	Stakeholder Impact on Intervention ***(Low, Medium, High) Explain How?***	Method of Engagement ***(Consultation, One-to-one interviews, cognitive mapping etc.)***
MoEFCC	Funding Agency	Low (Central agency that sanctions funds)	High (Disbursement of funds for project implementation)	One-to-one interview/consultation
NABARD	National Implementing Agency	Low (Objective of the entity is to increase channelization of NAFCC funds towards adaptation oriented projects; Acts as a monitoring and recommendatory authority)	High (Regulates fund disbursement for project implementation; monitoring physical and financial progress of the project)	One-to-one interview/consultation
Department of Science, Technology and Environment (DST&E), Government of Puducherry (Through Puducherry	Nodal Implementing Agency Facilitating implementation of the project Knowledge management through documentation	Low (Planning and implementation through assisting NABARD with routine inspections, reporting progress)	High (Oversee both fund management and technical execution under the project in consultation with other stakeholders)	One-to-one interview/consultation

Stakeholder	Role of Stakeholder ***(Implementation, Financing, Beneficiary etc.)***	Stakeholder Influence ***(Low, Medium, High) Explain How?***	Stakeholder Impact on Intervention ***(Low, Medium, High) Explain How?***	Method of Engagement ***(Consultation, One-to-one interviews, cognitive mapping etc.)***
Climate Change Cell)	of best practices and dissemination of information Management Information System (MIS) for progress reporting			
Public Works Department (PWD), Government of Puducherry	Project Executing Entity Rejuvenation of 39 Irrigation Tanks in Puducherry Formation of Mini Lake at Padutharkollai Village in Karaikal Capacity Building of Tank Users Association	High (Tanks and mini lake under the authority of the PWD)	High (Project implementation-irrigation tanks in Puducherry, Mini Lake in Karaikal, Capacity building of tank users association)	One-to-one interview/consultation
Local Administration Department (LAD) and Commune Panchayats under LAD	Project Executing Entity Rejuvenation of 39 village ponds in Puducherry Rejuvenation of 147 Ponds in Karaikal	High (Village ponds under the authority of LAD and Commune Panchayats)	High (Project implementation-village ponds in Puducherry and Karaikal; supporting Commune Panchayats)	One-to-one interview/consultation
Tank Users Association	Beneficiaries	Medium	Medium (Expected)	Group Discussion

Stakeholder	Role of Stakeholder ***(Implementation, Financing, Beneficiary etc.)***	Stakeholder Influence ***(Low, Medium, High) Explain How?***	Stakeholder Impact on Intervention ***(Low, Medium, High) Explain How?***	Method of Engagement ***(Consultation, One-to-one interviews, cognitive mapping etc.)***
(TUA)	Ensuring the uptake and sustainability of the rejuvenated tanks	(Receive benefits of enhanced storage)	(The uptake and sustainability of the project depends on the effective involvement of the TUA)	
Farmers and society at large	Beneficiaries	High (Receive benefits of enhanced storage of surface and ground water and enhanced climate resilience)	High (Through conjunctive use of surface water and ground water for irrigation and reducing the dependency on the latter for irrigation)	Group Discussion

Table 4: Stakeholder Analysis

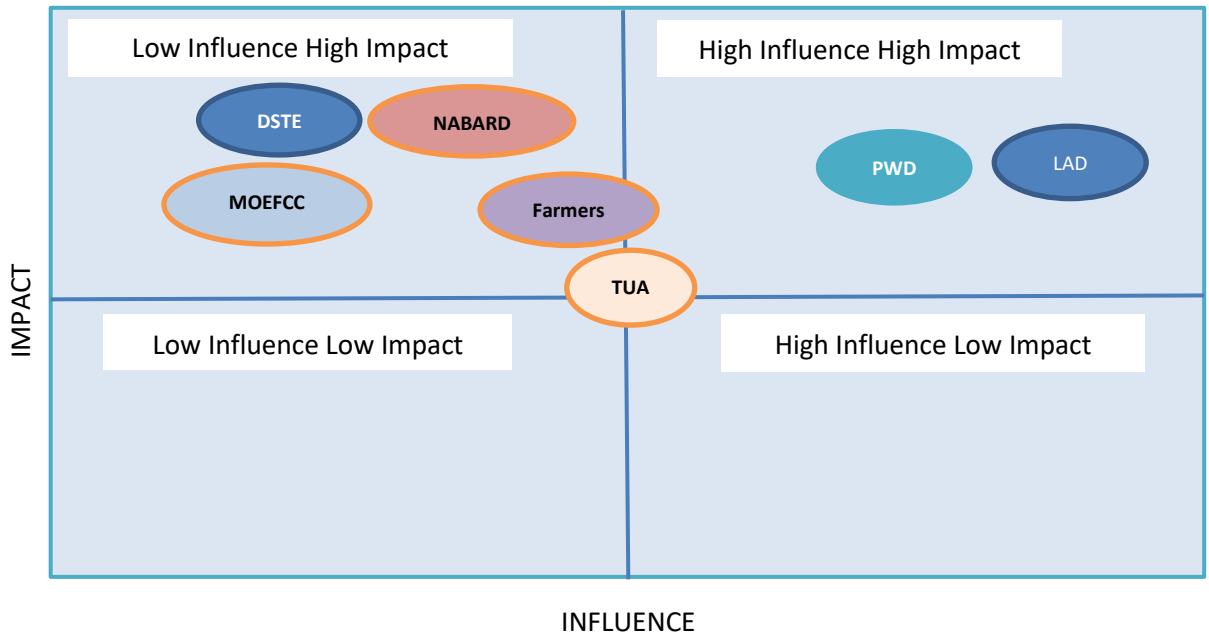


Figure 1: Stakeholder Influence and Impact Matrix

Other crucial stakeholders identified in this project are the Tank Users Associations which are expected to ensure the sustainability of the project at the local level. However these associations have largely become defunct over time and the efforts are being made towards reviving them. The DST&E have enlisted the help of development organizations like DHAN Foundation to carry out capacity building of the TUAs.

The primary beneficiaries of this project are the farmers. Irrigation tanks have substantially enhanced ground water recharge and storage and as a result the practice of digging deeper bore wells has significantly reduced. Further, there is an expressed interest among farmers to increase the depth of the irrigation tanks and ponds so that greater quantum of water is harvested for availability in the non-monsoon months.

Heavy dependence on ground water continues to be a major feature in the region. Factors such as intensive farming patterns and provision of free electricity that enable unregulated operation of motor pumps for extraction of water from the ground ensure the continued prevalence of ground water dependence. This issue becomes even more problematic with increasing salinity ingression and groundwater contamination which in the light of a changing climate will only exaggerate the vulnerabilities in the region. The Integrated surface water management project, therefore, has tremendous potential towards addressing the issues specific to the region.

Way Forward

Continuous stakeholder engagement for developing an effective MEL framework and conducting capacity building and training programmes for key stakeholders.

Stakeholder engagement will be continued as part of the ICAT process for knowledge sharing and documentation and for receiving feedback for developing the MEL framework.

TERI will be conducting capacity building and training programmes for the key stakeholders in the Government of Puducherry as per the capacity needs assessment.

References

Gopalakrishnan, S. (2016). Saved by Tanks: The story of Puducherry's Bahour commune. India Water Portal

Department of Science, Technology and Environment. (2020). Revised Detailed Project Report: Integrated Surface Water Management through Rejuvenation of 20 tanks and 32 Village Ponds for Climate Change Adaptation in Puducherry. Government of Puducherry

Annexure

No Objection Certificate from the Government of Puducherry

Smt. SMITHA. R, IAS
DIRECTOR
Department of Science, Technology & Environment
Government of Puducherry

3rd Floor, PHB Building,
Anna Nagar,
Puducherry – 5
Phone: 0413 – 2201256
e mail: dste.pon@nic.in

No. 7529/DSTE/TERI – ICAT / EE/ 2021

Madam,

Sub: Acceptance on the collaboration with the ICAT initiative headed by TERI for the NAFCC Project "Integrated Surface Water Management for Climate Change Adaptation in U.T. of Puducherry" executed by DSTE, Puducherry.

Ref: Email received from TERI dated 07.10.2021.

The Department of Science, Technology and Environment (DSTE), Government of Puducherry appreciates the initiative taken by TERI towards the development of Monitoring and Evaluation Framework to assist the State Governments. This department has been making dedicated efforts on Climate Adaptation in the U.T. of Puducherry and the "Integrated Surface Water Management for Climate Change Adaptation in U.T. of Puducherry" under the National Adaptation Fund for Climate Change (NAFCC) since 2016 is one such initiative to replenish surface water and the ground water of Puducherry and conserve the Tanks and Ponds in the U.T. of Puducherry for the future.

In this regard, DSTE, Puducherry is pleased to make a collaboration with TERI on developing monitoring and evaluation framework for the NAFCC project which will give a new dimension to the works already being carried out under the project, in taking it forward as a research-oriented activity on climate adaptation. I hope that such a collaboration will assist DSTE in framing adaptation policies and actions and in developing ideas and tools for monitoring, reporting and evaluating the implementation of the said project with technical inputs from national and regional level experts associated with ICAT. Looking forward for a valuable collaboration with TERI and ICAT for the wellness of the Union Territory of Puducherry.

Yours sincerely,

Smitha. R, I.A.S.
Director - DSTE

To,
Ms. Suruchi Bhadwal
Senior Fellow and Director,
Earth Science and Climate Change Division,
The Energy and Resources Institute (TERI),
Lodhi Road.
New Delhi -110003.