NPS Workshop Proceedings | 21 August 2024 | Jaipur, Rajasthan, India

# State-level Multi-stakeholder Consultation Workshop on Policy Coherence in the Food, Land, and Water Systems: Case Study of Rajasthan, India

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## Background

The CGIAR Initiative on National Policies and Strategies (NPS) has been co-created with national and international partners with the main objectives of building policy coherence and integrating policy tools at national and subnational levels in six countries in Africa, Asia, and Latin America. Under this initiative, the Council on Energy, Environment and Water (CEEW) has been engaged as a partner by the International Water Management Institute (IWMI) to collaboratively research the policy landscape at the National level in India in the food, land, and water (FLW) space. The national-level consultation drew on state-level examples concerning specific policies. Rajasthan emerged as an interesting case for further exploring the policy coherence in the food, land, and water sectors through a deep dive. Therefore, in continuation of our efforts at the national level, we are deep diving into the case of the Indian state of Rajasthan in this phase to derive context-specific recommendations for policy coherence at a state level. The consultation was organised in this context.

## Objectives

The state-level consultation was organized to meet the following objectives:

1. To share the key findings from the case of Rajasthan to seek feedback from the stakeholders on finding solutions to the complex challenges of the food, land, and water systems.

2. To facilitate deliberations and knowledge exchange on policy coherence in the following nine important policies governing Rajasthan's food, land and water systems.

- Pradhan Mantri Matsya Sampada Yojana (PMMSY), 2020
- Water Development Component – Pradhan Mantri Krishi Sinchayee Yojana 2.0 (WDC-PMKSY 2.0), 2015
- Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS), 2005
- National Food Security Mission (NFSM), 2007
- Mission for Integrated Development of Horticulture (MIDH), 2014
- Rashtriya Krishi Vikas Yojana – Per Drop More Crop (RKVY-PDMC), 2015
- Atal Bhujal Yojana (ABY), 2019
- Indira Gandhi Nahar Project (IGNP), 1958
- Rajeev Gandhi Jal Sanchaya Yojana (RGJSY)/Mukhyamantri Jal Swavlambhan Abhiyan (MJSA), 2016
- Rajasthan Water Sector Livelihood Improvement Project (RWSLIP), 2017

3. To bring together the policymakers, implementing agencies, academics, and civil society organisations to reflect jointly on context-specific challenges and opportunities in enhancing policy coherence.

## Welcome Remarks

**Alok Sikka, Country Representative, IWMI**

Alok Sikka, Country Representative, IWMI, elaborated that India has a vast array of policies across multiple sectors and departments, and while these policies are developed through structured processes, significant incoherence often exists at the implementation level. The CGIAR Initiative on National Policies and Strategies led by IWMI, working in partnership with CEEW aims to address these gaps by conducting in-depth analyses of state-level and sub-national policies. Rajasthan was selected as one of the states for this study, as it offers a valuable opportunity to examine and improve policy coherence. The study prioritizes policies at both the central and state levels, ensuring they align effectively to support broader

goals. This effort is being carried out collaboratively, involving multiple stakeholders. A warm welcome to everyone, and we look forward to meaningful contributions and discussions as we collectively advance this initiative.

**Nitin Bassi, Senior Programme lead, CEEW**

Nitin Bassi, Senior Programme lead, CEEW mentioned their collaboration with officials from various departments in Rajasthan. One of the major challenges identified was the fragmented coverage of policies. During the initial consultations, we analyzed policies related to food, water, and land sectors, for instance, we looked at the policy for solar irrigation pumps, which, while beneficial raises concerns about water usage and larger policy coherence. To address such issues, we decided to analyze policy coherence in national level schemes/policies such as WaterShed Development Component - Pradhan Mantri Krishi Sinchayee Yojana (WDC- PMKSY), Mahatma Gandhi National Rural Employment guarantee Act (MGNREGA), National Horticulture Mission (NHM), Atal Bhujal Yojana (ABY)and Namami Gange. At state level, we conducted deeper analysis in Odisha and Rajasthan. Rajasthan was selected after extensive discussions with stakeholders, given its distinct agroecological zones and challenges like small landholdings. We prioritized policies such as Indira Nahar Project, Food Security Mission etc. for this analysis. He thanked Mr. Vaibhav Galriya (affilitation? Principal Secretary, Department of Agriculture, Government of Rajasthan) for supporting the process of selecting and prioritizing these policies.

**Shri Vaibhav Galriya, Principal Secretary, Department of Agriculture, Government of Rajasthan**

Shri Vaibhav Galriya, Principal Secretary, Department of Agriculture, Government of Rajasthan emphasized the critical role of the Government of Rajasthan in this policy coherence study, as it offered an opportunity to learn from various departments, helping to refine and align policies for greater effectiveness. He highlighted that food, land, and water were interdepartmental resources that required efficient utilization. Water, in particular, had diverse uses, ranging from agriculture to industry and drinking water. The Department of Agriculture was a key stakeholder in this process as it was the largest consumer of both water and land. In Rajasthan, 90% of the state's water was used for agriculture, and a significant portion of the land was dedicated to agricultural activities. The Department of Agriculture not only relied heavily on these resources but also played a central role in food production, making it a major beneficiary of the workshop's findings.

He also mentioned that Rajasthan, being the largest state, accounted for 10% of the country's landmass but only 1% of its water resources, making it a water-scarce region. To address this, the state implemented initiatives to improve water-use efficiency, both at the government level and within communities. Farmers increasingly adopted measures like farm ponds and micro-irrigation systems to enhance agricultural productivity. Over the past few years, 85,000 farm ponds were constructed, collectively storing 85 billion liters of water and helping preserve groundwater. The state also popularized schemes like the IGP and the Diggi scheme, which enabled farmers to store water and irrigate their fields using drip or sprinkler systems. Efforts were made to replace traditional kutcha water channels with pipelines, with over 2 crore meters of pipeline laid. Out of Rajasthan's 8.5 million hectares of irrigated land, 20 lakh hectares were brought under drip or sprinkler irrigation, and the aim was to extend this by an additional 2.5 lakh hectares. These efforts were supported by subsidies and assistance from the Government of India.

The state also promoted water-efficient crop varieties and placed greater emphasis on horticulture, which was both water-efficient and high-yielding. Collaborations with agencies like Japan International Cooperation Agency (JICA) were explored to secure funding for horticulture initiatives. As noted in NITI

Aayog's report, these measures enhanced the quality of agricultural produce while optimizing water usage. Other departments also contributed significantly. Under the Atal Bhujal Yojana (ABY), water management projects were implemented across 36 blocks, while the Urban Water Department and MGNREGA worked to create small water storage ponds. The Mukhyamantri Jal Swavlamban Abhiyaan (MJSA 2.0 initiative) integrated resources from various departments, driving innovation and attracting support from donors. He stated that the findings from this workshop would be studied and applied by all departments, ensuring that the insights gained translated into meaningful action across the state. He thanked everyone for their participation and contribution to the study.

## Presentation on Policy Coherence in the Food, Land, and Water Systems: Case Study of Rajasthan

Mr Archisman Mitra (Water Resources Researcher, IWMI) and Dr Suparana Katyaini (Programme Lead, Sustainable Water, CEEW) delivered the presentation on the project in Rajasthan. Mr Mitra initiated the presentation by explaining the context of the study including food, land and water interlinkages and methodology for in-depth analysis of the policy coherence in Rajasthan. Dr Katyaini outlined the key objectives of nine policies, their intended impacts, and their geographic coverage. She highlighted the key analysis emerging from the study and further presented the key findings and proposed recommendations based on the analysis. The emphasis was on important examples of convergence efforts, and lessons learnt in terms of policy coherence, and the opportunities identified for further improvements drawing on these lessons.

Key analytical findings on policy coherence which were gathered through consultations with stakeholders were presented. Some of the proposed recommendations presented were. At the regional, state, and district levels, dedicated inter-departmental task forces should be established to address challenges such as waterlogging and soil salinity, particularly in policies like IGNP. Local governance and community engagement should be central to policies such as RWSLIP, integrating gender mainstreaming and rural livelihood development. Cross-departmental learning should be promoted through regular capacity-building initiatives and knowledge-sharing platforms. Impact evaluation should be prioritized to assess cross-sectoral outcomes, particularly focusing on water management and agricultural productivity. Policies should align with climate-resilient practices, such as drought-resistant crops and water-efficient irrigation, while promoting external consistencies across policies to further sustainable development. The formation of Farmer Producer Organizations (FPOs) could strengthen collective action, integrating various national and state policies for agricultural growth.

For greater policy convergence, efforts should focus on value chains and market access, especially for agriculture allied sectors, and promote integrated land and water management, as seen with initiatives like ABY and PM-KUSUM. A comprehensive rural development strategy should be developed at the district level, aligning watershed management schemes with MGNREGS to create unified action plans. To enhance flexibility, periodic policy revisions should be carried out, and adaptive information management systems should be established for optimized water distribution and climate resilience. Capacity-building through workshops and training should be expanded, and flexible fund allocation mechanisms should be implemented to support innovative projects. Policies should also promote social inclusion by developing strategies for vulnerable groups, ensuring their participation in decision-making, and prioritizing sustainable livelihoods for rural youth. Gender equality and social inclusion should be systematically integrated, particularly in policies like RWSLIP and WDC-PMKSY 2.0.

## Insights from Key Stakeholders

**Shri Dharmesh Sodani, Joint Director Fisheries, Fisheries Department, Government of Rajasthan**

He stated that the use of land and premium water bodies for cage culture and seed production is supported by schemes with funding of 60% to 40%. Large-scale fish production is primarily carried out in irrigation department tanks, which are allocated on revenue-sharing basis categorized as A, B, C and D. Category A- Tanks generating revenue of Rs 5 lakh or more, Category B- Tanks generating revenue between ~ 600 USD (INR-Rs 50,000) and ~6000 USD (INR Rs 500000). Categories C & D – Tanks generating less than Rs 10,000, typically allocated at the Gram Panchayat level through tenders. These contracts are awarded for duration of five years. At the national level, about 12% of seed stock is utilized. Fish production primarily relies on large water bodies (talabs), which play a crucial role in livelihood generation and employment opportunities.

*Dr. Sikka replied by stating that schemes should consider the water in ponds, whether they retain water throughout the year or only seasonally. For ponds with seasonal water availability (3-4 months), schemes can focus on fish seed production, and stunted growth fish can be utilized effectively.*

**Mr. Prince Purohit, Senior Program Manager, Arpan Sewa Sansthan** highlighted the RWSLIP scheme, emphasizing on the crucial role of Gram Panchayats in participatory irrigation through Water User Associations. He underlined the importance of gender mainstreaming under the PIM Act, which enables women to become active members. He also mentioned the Bhim Sagar Project and the Gender Mainstreaming Project as significant programs in this context. He discussed the impact analysis of (Pradhan Mantri Kisan Urja Suraksha Evam Utthan Mahaabhiyaan) PM-KUSUM (Component C) and the Atal Bhujal Yojana, focusing on how these schemes affect water resources. He stressed that policy planning, whether at the state level or within GPDP frameworks, should incorporate water as a critical lens to address irrigation-related water losses effectively. Regarding the Rajasthan Competitiveness Project and RWSLIP, he noted that when communities begin to understand and take ownership of a project, it often coincides with the project's conclusion. He emphasized that civil society organizations should be involved early in the planning stages rather than later to ensure more sustainable and community-driven outcomes.

*Dr. Sikka emphasized the importance of a withdrawal strategy and outlined the need for guidelines to actively involve civil society and local communities. He noted that these provisions are already part of the guidelines and must be followed to ensure the long-term sustainability of the program. For Rajasthan, being a dryland area, he pointed out that if resources like water and energy are adequately provided, more land could be brought under cultivation. He also addressed the importance of measuring outcomes such as soil health to ensure policy coherence, particularly as many policies target soil health improvement. He stressed on the significance of convergence at the planning stage, particularly at the Panchayati Raj level. He suggested developing a matrix that identifies the schemes under which specific interventions, such as check dams, can be implemented. At the village level, he recommended linking the annual MGNREGA plans to such a matrix during the planning stage, enabling better coordination and integration of efforts for holistic development.*

*Mr. Nitin Bassi replied by discussing about PM-KUSUM Component C, highlighting the government's initiative of solarizing feeders under the Atal Bhujal Yojana (ABY), particularly in areas where groundwater is overexploited. He emphasized the feasibility of shifting energy use from nighttime to daytime through solarization, including the possibility of solarizing the feeders themselves. However, he*

*pointed out land availability as a significant challenge. He also stressed the need to assess the impact of solarization on water resources, whether implemented under ABY or in non-ABY areas.*

**Dr Manju Singh, Professor, Department of Humanities & Social Sciences, Malaviya National Institute of Technology, Jaipur** highlighted that terms like "participatory" and "stakeholder" are often used without a clear understanding by many. She emphasized that communities must be involved throughout the process, from inception to completion, and that there needs to be a clear methodology for fostering community ownership and engagement at every stage. She also raised questions about policy coherence, urging the report to focus on providing actionable recommendations. She suggested identifying the challenges that prevent departments from working collaboratively and addressing these barriers in the findings.

*Mr. Archisman Mitra replied that one of the recommendation study mention is focusing on outcome-based coherence rather than merely concentrating on outputs.*

**Shri Shantanu Sinha Roy, State Head-Rajasthan, Foundation for Ecological Security** pointed out that the operationalization of policy is not adequately addressed. He highlighted that policies like MJSA, Watershed, and Fisheries overlook the distinction between two types of land—agricultural land and commons. He noted that the current policies do not incorporate commons, nor do they extend agriculture beyond farmlands. There is also a lack of attention to geo-hydrological boundaries in the policies. He stressed that common lands should be included in policy coherence, a crucial aspect that is currently missing from the study's narrative. He emphasized that the operationalization of policy must be a key component of policy coherence. Additionally, he mentioned that out of 325 blocks, 322 are considered "dark" and are not covered by any existing policy. He suggested that the scope of MGNREGA should be expanded to address these gaps.

*Dr. Sikka replied and stated that it is important to understand the interlinkage between private property rights (PPR) and common property rights (CPR). He noted that the interdependence of these aspects should be considered in planning. Although common property resources may not always be explicitly included, their inclusion should be assessed based on the involvement of SC and ST communities. He further pointed out that addressing water supply and demand should focus on the demand side rather than relying solely on supply-side augmentation, as the latter will not be effective on its own.*

**Shri. Kumar Ranjan, General Manager, Centre for Microfinance** discussed how water security planning is carried out through various schemes. He suggested that a planning process, viewed through the lens of food and water security, could help map out different schemes, potentially leading to the creation of a template for better coordination. He highlighted the issue with demand-side planning, particularly for tribal areas, where small and marginal farmers often lack the flexibility to access resources. He raised the question of how to develop a financing model that supports these farmers, especially when they don't meet the standard criteria for assistance. Additionally, he proposed incentivizing the shift to less-water-consuming crops to promote more sustainable agricultural practices.

## Presentation on Transformative impact story on Climate Change Adaptation through the Polycentric Governance Framework

**Dr. Amarnath Giriraj, Principal Researcher, IWMI** made a presentation on "Transformative impact story on Climate Change Adaptation through the Polycentric Governance Framework". He gave Morocco example, where a similar mapping exercise was conducted as part of a climate-resilient initiative. Despite significant investment from various donors, the project has yet to achieve transformative adaptation. He

pointed out that Morocco's economy is driven by the export of high-value crops such as olives and sugarcane, not only from the public sector perspective but also at the entrepreneurial level. He emphasized the challenges of implementing plans that resonate with local communities and stressed the need for policies to address these issues more thoroughly. Dr. Giriraj concluded that a clear action plan must be developed, and he will be presenting some of these recommendations.

**Shri Ramchandra Jitarwal, Assistant Director, Horticulture Department** shared a success story from the Horticulture Department under the NHM (National Horticulture Mission) scheme, highlighting the use of polyhouses and rainwater harvesting. By using drip irrigation, he manages to grow crops on a 1-acre polyhouse and harvests 12 lakh litres of water through a farm pond. This allows him to grow two crops per year. He emphasized that policies should support and promote such innovative strategies.

**Shri Khemraj Sharma, Joint Director Ag(WUC), Agriculture Department** discussed the National Food Security Mission (NFSM) and its focus on water harvesting through farm ponds ( diggi), as well as the agricultural components of the Atal Bhujal Yojana (ABY) and RWSLIP. He emphasized the importance of promoting pulses in policy, especially in terms of expanding cultivation areas. While the government is focusing on Lentils such as (Black gram ( Urad)), there is a lack of variety in Urad production within the state. He noted that Pigeon Pea(Arhar), a long-duration crop, requires significant water, and does not have a minimum support price (MSP). Pulses, however, are beneficial for soil fertility and land improvement. Rajasthan's pulse production has increased from 15 lakh to 35 lakh metric tonnes, with the state making use of all relevant components of government policies. The Government of India is focusing on millets, and in Rajasthan, 57% of the production is dedicated to Bajra, accounting for 42% of the total millet output. There is a need to incentivize millet production and work towards increasing its cultivation. A new policy is being developed to address marketing and processing aspects. Additionally, the use of farm ponds (diggi is being promoted under the Atal Bhujal Yojana (ABY), and micro irrigation systems will be utilized to support these efforts.

**Shri CK Sharma, Deputy Director Agriculture, Water Resources Department** mentioned that gender mainstreaming in agriculture, livelihood improvement, and crop diversification are key focus areas aimed at increasing farmers' income. While the Department of Agriculture and the Department of Horticulture are implementing these initiatives individually, efforts are being made to consolidate these benefits for the collective advantage of farmers. The goal is to ensure that farmers can access the full range of available schemes. Funding for these initiatives will be sourced from JICA, with the horticulture department facilitating benefits to groups of farmers through these schemes.

*Dr. Sikka suggested implementing an integrated farming system. Nitin emphasized that the coherence study should focus on an outcome-based strategy rather than just outputs. He also highlighted the role of the State Water Informatics Centre, suggesting that data from all departments should be integrated and used for planning and outcome-based evaluation. If there has been any progress on this front, we would be keen to hear more about it.*

**Shri Rajender Singh, Joint Director Horticulture**, noted that the policies are closely related to water management, with a strong focus on inter-departmental and inter-technological convergence. He mentioned that 5-7 departments are already collaborating on various initiatives. The NHM mandates the integration of micro-irrigation systems with plantation and farm ponds. Given that over 85% of water usage in the agriculture sector is reliant on water, with 70% sourced from groundwater, Rajasthan faces significant water scarcity challenges. He stressed the need for water efficiency targets, aiming to increase the current rate from 40% to 60% or even 75%. He emphasized that the agricultural sector is a major consumer of water and that there should be more awareness about the water requirements of different

crops. This awareness should be incorporated into the policy, alongside clear targets for improving water efficiency. He also pointed out the critical issue of over-exploited or "dark"1 groundwater zones and suggested that groundwater metering should be made mandatory, with penalties for exceeding limits. While these topics are under discussion, they have yet to be fully integrated into the policy. He advocated for increased awareness around groundwater usage and for metering to be implemented as part of monitoring efforts. Dr. Singh concluded that these suggestions should be included in the final report.

**Shri Surinder Singh Shekhawat, Chief Operation Officer, Rajasthan Olive Cultivation Ltd.** In his discussion on organic farming (modern agriculture), he emphasized three key areas: land, water, and food, with a particular focus on water, which is a critical issue for Rajasthan. He pointed out that much of the groundwater in the state is saline and brackish, making it unsuitable for agricultural use. Currently, 90% of the groundwater in Rajasthan is in dark zones[1]. The Aravalli range, which runs diagonally from Gurgaon to Mount Abu, contains large aquifers, but extreme climatic conditions in Rajasthan have led to visible impacts, including shifts in cropping patterns. Unfortunately, the groundwater aquifers are not being adequately recharged. Rajasthan has ten agro-climatic regions, each requiring tailored recommendations for farmers. Dr. Shekhawat stressed the importance of policy coherence, highlighting that policies need to be designed with farmers in mind and must work together to address their needs. He advocated for customized, tailored recommendations for farmers to effectively address the challenges they face. He also recalled the traditional silvipastoral system, which included different breeds of cows, and emphasized the need to strengthen animal husbandry, which was once a cornerstone of Rajasthan's agriculture. Furthermore, he recommended linking MGNREGA to agriculture, as the demand for labor in the sector is increasing, yet there is a shortage. In terms of improving agricultural productivity, he proposed the concept of "more crops per drop" to increase income per crop. He also emphasized the importance of shifting focus from physical water productivity to economic water productivity, particularly in canal command areas like Ahmednagar, where changes in cropping patterns have contributed to more efficient use of water.

**Shri H S Meena Additional Director Ag (Research), Agriculture Department** emphasized the necessity of community involvement at the operational stage of policy implementation, stressing that community ownership is essential for the success of these initiatives.

## Vote of Thanks

Mr. Chandan Jha, CEEW closed the session by giving a vote of thanks to all present.

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Garima Taneja is affiliated with International Water Management Institute (IWMI), and Tejaswi Joshi, Gursimer Gulati, Suparana Katyaini, Kangkanika Neog, Don Mani Paul and Nitin Bassi are with the Council on Energy, Environment, and Water (CEEW).

[1] A 'dark' zone area means any district, town, village or tehsil where the groundwater is lower than the average level and has been declared as the dark zone area by the state government concerned or the Central government, as the case may be.

## ACKNOWLEDGMENTS

This work was carried out under the CGIAR Initiative on National Policies and Strategies (NPS), which is grateful for the support of CGIAR Trust Fund contributors (www.cgiar.org/funders).

## SUGGESTED CITATION

Taneja, G.; Joshi, T.; Gulati, G.; Katyaini, S.; Neog, K.; Paul, D. M.; Bassi, N. 2024. *State-level multi-stakeholder consultation workshop on policy coherence in the food, land, and water systems: case study of Rajasthan, India*. Proceedings of the State-level Multi-stakeholder Consultation Workshop on Policy Coherence in the Food, Land, and Water Systems: Case Study of Rajasthan, India, Rajasthan, India, 21 August 2024. Colombo, Sri Lanka: International Water Management Institute (IWMI). CGIAR Initiative on National Policies and Strategies. 10p.

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