ISSN–2277- 8721

EIIRJ Electronic International Interdisciplinary Research Journal

Volume–XIV, Special Issues – II March – April 2025

OPEN ACCESS Original Research Article

INTEGRATED AND INCLUSIVE WATER RESOURCE PLANNING: REVISITING DR. AMBEDKAR'S LEGACY IN THE ERA OF CLIMATE CHANGE

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Abstract:

Dr. B. R. Ambedkar is often celebrated as the principal architect of the Indian Constitution and a champion of social justice. However, his profound contributions to the domain of water resource management remain underexplored. This paper revisits Dr. Ambedkar's vision of integrated and inclusive water resource planning and contextualizes his approach in light of contemporary climate change challenges. With a focus on equity, sustainability, and scientific planning, Ambedkar's legacy offers valuable insights into reshaping water governance in modern India.

Keywords: *Dr. B. R. Ambedkar, water resource management, climate change, social justice, sustainable development, inclusive planning.*

Introduction:

Water is not merely a vital natural resource essential for sustaining life—it also holds profound socio-political and economic significance. In a diverse and populous country like India, where disparities in access to resources are stark and climatic patterns increasingly erratic, the management of water has consistently posed a complex and pressing challenge. The critical importance of equitable and efficient water governance becomes even more apparent against the backdrop of droughts, floods, and the growing demand from agriculture, industry, and urban populations.

Amid these enduring challenges, Dr. B. R. Ambedkar's lesser-known but substantial contributions to water resource planning stand as a testament to his visionary leadership. While celebrated primarily for his groundbreaking work in social justice and constitutional law, Ambedkar also played a pivotal role in laying the foundations for modern water management in India. As the country's first Law Minister and Chairman of the Drafting Committee of the Constitution, he emphasized the central role of water in ensuring social equity, economic development, and national integration.

His involvement in initiatives like the Central Water Commission and his advocacy for projects such as the Damodar Valley and Hirakud Dam reflect a deep understanding of the technical, social, and economic dimensions of water infrastructure. Ambedkar's approach underscored the need for scientific planning, interstate cooperation, and equitable distribution—principles that remain highly relevant in the current era of climate change and environmental stress.

1. **Integrated Use of River Resources:**

   Dr. B.R. Ambedkar was a staunch advocate of

ISSN–2277- 8721

EIIRJ Electronic International Interdisciplinary Research Journal

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multipurpose river valley development, emphasizing the integrated use of river resources for the holistic advancement of India's economy and society. His ideas went beyond mere flood control or irrigation and focused on the simultaneous, planned, and equitable utilization of river waters for multiple needs such as hydroelectric power, drinking water, navigation, soil conservation and employment generation. *"If water is used properly and purposefully, it can become the greatest instrument of national integration and economic reconstruction."*[1] He modeled this approach after the Tennessee Valley Authority (TVA) in the USA, where multiple dams, reservoirs, and power stations were constructed with a regional development focus.[2]

Dr. Ambedkar viewed rivers as economic backbones capable of transforming underdeveloped regions. He emphasized:

1. Hydropower to electrify rural India and support nascent industries.
2. Irrigation to make agriculture reliable and resistant to drought.
3. Waterways to aid transportation in landlocked and tribal areas.

In the First Five-Year Plan, which followed his groundwork, the Planning Commission acknowledged the integrated use model he had championed earlier.[3]

2. Scientific Management and Central Planning:

Dr. Ambedkar believed that development projects—especially in sectors like irrigation, power, and flood control—should be based on scientific surveys, engineering designs, and long-term feasibility studies, rather than on political or populist considerations. In his role as Member-in-Charge of Irrigation and Power (1942–46), he stressed:

1. Detailed hydrological and geological surveys of river basins
2. Topographical mapping and flood forecasting models
3. Data collection on river flow, rainfall, catchment areas, etc.
4. The use of modern engineering practices in dam and canal construction

"No scheme involving the use of water resources should be implemented without scientific evaluation of its technical, social and economic viability."[4] To bring about centralized, expert-led management of water and power resources, Ambedkar played a key role in establishing the Central Water and Power Commission (CWPC) in 1945. CWPC was envisioned to:

1. Act as a technical advisory body to the Government of India.
2. Formulate national water policy.
3. Design and coordinate interstate river valley projects.
4. Prevent duplication of efforts by individual states.[5]

This institution became the backbone of India's water management policy in post-independence years and influenced later institutions like the Central Water Commission (CWC) and the National Water Development Agency

[1] Ambedkar B.R. (Dr.), *Memorandum on the Damodar Valley Scheme*, Government of India Archives, 1945, p. 6–7.

[2] Rodrigues, Valerian. *The Essential Writings of B.R. Ambedkar*, Oxford University Press, 2002, p. 435–437.

[3] Government of India, *First Five-Year Plan (1951–56)*, Planning Commission Report, Chapter 6: Major River Valley Projects, p. 118–125.

[4] Dr. B.R. Ambedkar, *Memorandum on Water Policy*, Government of India Archives, 1945, p. 13.

[5] Rodrigues, Valerian, *The Essential Writings of B.R. Ambedkar*, Oxford University Press, 2002, p. 437.

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(NWDA). Dr. Ambedkar was deeply concerned about water disputes between provinces (later states), especially involving major rivers like the Krishna, Godavari, and Mahanadi. He believed these could not be managed effectively through provincial autonomy alone, and that the central government must play a supervisory role. In the Constitution, he incorporated:

- Entry 56 of the Union List, empowering the Parliament to regulate interstate rivers and river valleys
- Article 262, allowing Parliament to adjudicate disputes over river waters. [6]

This framework formed the basis for central intervention in water-sharing conflicts (e.g., Krishna, Cauvery, Ravi-Beas). For Dr. Ambedkar, scientific central planning was also a means to promote social justice and regional equity. It ensured that backward and drought-prone regions (like parts of Odisha, Maharashtra, Andhra) received attention. Large projects could be planned to provide employment to marginalized groups and irrigation to small farmers.[7] National planning helped weaken regional imbalances and made development more inclusive. *"Without planning, economic democracy remains an illusion."*[8]

3. Damodar Valley Project (DVP): A Visionary Multipurpose River Scheme

The Damodar Valley Project (DVP) was India's first multipurpose river valley project, launched during the colonial period but deeply shaped by the vision of Dr. B.R. Ambedkar. The project was conceived not merely as a flood control mechanism, but as a holistic, scientifically managed development program involving irrigation, power generation, soil conservation, and regional upliftment.

The Damodar River, flowing through the mineral-rich areas of Jharkhand and West Bengal, had a long history of catastrophic floods. Between the 18th and 20th centuries, over 30 major floods devastated crops, homes, and livelihoods.[9] Dr. B.R. Ambedkar played a foundational role in shaping the Damodar Valley Project into a modern, scientific, and multipurpose scheme. Drawing inspiration from the Tennessee Valley Authority (TVA) in the United States, he proposed a similar development model for India that combined flood control, power generation, irrigation, and regional development. *"The Damodar scheme is not just about flood control. It is about building the foundations of a modern economy."*[10] Dr. Ambedkar set up the Damodar Valley Enquiry Committee in 1943. He proposed the creation of a statutory body like the TVA. And recommended interdisciplinary collaboration between engineers, hydrologists, and economists. The DVP was India's first project to integrate multiple objectives under a single river development scheme. The objectives of the DVP were:

- Mitigating annual floods via dam and reservoir construction
- Water distribution to over 5 lakh hectares of farmland
- Generation of electricity to power rural and industrial regions

[6] *The Constitution of India*, Ministry of Law and Justice, Government of India, Article 262 and Union List Entry 56, Revised Edition 2021, pp. 308–310.

[7] Jadhav, Narendra, *Ambedkar: Awakening India's Social Conscience*, Konark Publishers, 2013, p. 203.

[8] *Selected Speeches and Statements of Dr. B.R. Ambedkar*, Publications Division, Government of India, 1991, p. 22.

[9] Jadhav, Narendra. *Ambedkar: Awakening India's Social Conscience*. Konark Publishers, 2013, p. 201.

[10] Dr. B.R. Ambedkar. *Memorandum on the Damodar Valley Scheme*, Government of India Archives, 1945, p. 13.

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- Enhancing inland water transport.
- Soil conservation and environmental sustainability
- Providing power to coal mines and steel plants in eastern India

  Dr. Ambedkar envisioned that *"such a project should not only manage water but manage lives."*[11]

  After years of groundwork laid by Dr. Ambedkar, the Damodar Valley Corporation (DVC) was established in July 1948 under an act of Parliament. It was a joint venture between the Central Government and the governments of West Bengal and Bihar. The DVC was given powers to:
- Construct dams and barrages
- Operate hydroelectric and thermal power plants
- Implement flood forecasting and soil conservation programs

  "The DVC is the living embodiment of Ambedkar's institutional foresight."[12]

4. Planning for the Hirakud Dam: A Visionary National Endeavour

The Hirakud Dam, constructed across the Mahanadi River in Odisha, stands as a monumental example of early independent India's efforts at water resource planning and flood control. It was envisioned as a multipurpose development scheme—to manage floods, irrigate farmland, generate power, and support industrial growth. The Mahanadi River basin was prone to severe flooding, with major floods recorded in 1834, 1866, 1926, and 1937—the latter affecting over 1.3 million people in Odisha and Chhattisgarh. *"The floods of 1937 were a catastrophe that demonstrated the urgency of a river control system."*[13] The need for a permanent flood control mechanism and irrigation support for drought-prone areas led to proposals for a large dam upstream of the deltaic region.

As Member-in-Charge of Irrigation and Power (1942–46), Dr. B.R. Ambedkar played a foundational role in initiating the planning of the Hirakud Dam. He provided key administrative and financial approvals during the preliminary investigation and design phase. He supported the Hirakud Scheme Report submitted by the Central Water, Irrigation and Navigation Commission in 1945. Dr. Ambedkar insisted the dam be planned not only for flood control but also for irrigation, power generation, navigation, and regional development. *"A river must be made to serve the needs of the people—through planning that is national in scope and scientific in execution."*[14] His leadership helped the project secure early recognition as a national priority, and laid the groundwork for the post-Independence implementation.

The proposed Hirakud Project was envisioned as a comprehensive multipurpose river valley development scheme, designed to address the pressing needs of flood control, irrigation, and energy production in eastern India. At the heart of the plan was the construction of a large reservoir capable of absorbing peak monsoon discharges from the Mahanadi River, thereby protecting the downstream deltaic regions from recurring floods. A vast network of canals was proposed to provide irrigation to approximately 1.5 million acres of farmland across Odisha and parts of Chhattisgarh,

[11] Rodrigues, Valerian (Ed.). *The Essential Writings of B.R. Ambedkar*. Oxford University Press, 2002, p. 437

[12] *Selected Speeches and Statements of Dr. B.R. Ambedkar*. Publications Division, Government of India, 1991, p. 72

[13] Jadhav, Narendra. *Ambedkar: Awakening India's Social Conscience*. Konark Publishers, 2013, p. 204.

[14] Dr. B.R. Ambedkar, *Policy Note on the Hirakud Scheme*, Government of India Archives, 1945, p. 8.

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enhancing agricultural productivity and ensuring food security in drought-prone areas. Equally important was the generation of hydroelectric power, which was aimed at electrifying rural settlements and fueling industrial growth in the region. The project also included provisions for river navigation, with an eye toward improving inland transport infrastructure. By integrating these diverse goals, the Hirakud Dam was conceptualized as a holistic solution to the economic and environmental challenges of the region, embodying the principles of scientific planning and equitable development advocated by Dr. B.R. Ambedkar.

Though conceptualized earlier, construction began in 1948, under Prime Minister Nehru's administration. It was one of the first Five-Year Plan flagship projects, backed by central funding and interstate collaboration. *"The foundation laid by Dr. Ambedkar made it easier to push forward the project after independence."*[15] The dam was completed in 1957, and to this day, it remains:

- The longest earthen dam in the world (25.8 km)
- A lifeline for agriculture and power in eastern India

5. Early Insights of Dr. B.R. Ambedkar into Climate and Ecological Concerns:

Long before climate change became a global concern, Dr. B.R. Ambedkar demonstrated a profound ecological awareness in his approach to water resource management and national planning. While serving as Member-in-Charge of Irrigation and Power (1942–46), Ambedkar emphasized the importance of long-term environmental sustainability, advocating for afforestation, catchment area conservation, and soil protection as integral parts of water development. He recognized that unregulated river systems not only caused annual floods and droughts but also led to deforestation, soil erosion, and ecosystem degradation. In his 1946 speech on river basin development, Ambedkar observed that *"no water policy can succeed unless it is grounded in the preservation of forests, the stabilization of catchments, and the maintenance of natural drainage patterns"*[16]. He pushed for scientific studies of rainfall and runoff, emphasizing the need for meteorological data collection and hydrological modeling—principles now central to climate-resilient infrastructure planning. Dr. Ambedkar was also an early advocate of renewable energy, supporting the development of hydropower as an alternative to coal, recognizing its potential to reduce dependence on fossil fuels.[17] His vision included not just technical engineering but also ecological balance, promoting multipurpose dams that could both mitigate floods and recharge groundwater. As Narendra Jadhav notes, *"Ambedkar's policies reflected a systems approach where human development and environmental sustainability were interlinked goals"*[18]. He proposed national-level coordination of river basins to ensure uniformity in water use and conservation, which laid the foundation for India's modern watershed management and environmental planning. Ambedkar's early insights remain strikingly relevant in an era of

[15] Government of India. *First Five-Year Plan (1951–56)*, Planning Commission Report, Chapter 6: Major Projects, p. 128.

[16] Dr. B.R. Ambedkar, *Speech on River Policy and Environmental Planning*, Ministry of Irrigation and Power, 1946, p. 19.

[17] Government of India Archives, *Ambedkar's Note on Hydropower as Renewable Energy Source*, 1945, p. 6.

[18] Jadhav, Narendra. *Ambedkar: Awakening India's Social Conscience*. Konark Publishers, 2013, p. 209.

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EIIRJ Electronic International Interdisciplinary Research Journal

Volume–XIV, Special Issues – II March – April 2025

OPEN ACCESS Original Research Article

climate uncertainty, offering a blueprint for resilient, equitable, and ecologically sound development.

Conclusion:

Dr. B. R. Ambedkar's contributions to water resource management reflect a visionary blend of engineering, equity, and ethics. His legacy, often overshadowed by his political and legal work, is highly relevant in addressing current water and climate challenges. By revisiting and adapting his inclusive and integrated water planning principles, India can move towards a more just, sustainable, and climate-resilient water future. His vision bridges the gap between social justice and environmental stewardship, making it uniquely suitable for the complex challenges of the Anthropocene.

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5. *The Constitution of India, Ministry of Law and Justice, Government of India, Article 262 and Union List Entry 56, Revised Edition 2021.*
6. *Jadhav, Narendra, Ambedkar: Awakening India's Social Conscience, Konark Publishers, 2013.*
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Cite This Article:

Ms. Hire P. (2025) *Integrated and Inclusive Water Resource Planning: Revisiting Dr. Ambedkar's Legacy in the Era of Climate Change.* **In Electronic International Interdisciplinary Research Journal: Vol. XIV** (Number II, pp. 39–44). ***Doi-*** ***https://doi.org/10.5281/zenodo.15780377***