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LIFELINE, LIVELIHOOD AND LITIGATION: RETHINKING THE MAHANADI WATER CONFLICT

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Abstract: Water as a vital natural resource is intrinsically linked to life, livelihoods, human well-being, and ecological sustainability. Over time, popular struggles and rights-based movements have contributed significantly to recognizing water as essential to the rights to life, health, and livelihood. Water sustains human existence through domestic consumption, agriculture, industry, and ecosystem services. However, the unequal distribution and utilization of water resources, particularly between agriculture and industry or between upstream and downstream riparian states often generate interstate tensions and conflicts. The Mahanadi water conflict represents one such significant interstate conflict in contemporary India. The water dispute primarily emerged due to the construction of barrages and water-diversion projects by the upstream (Chhattisgarh) in the upper catchment area of the river, which raised concerns in the downstream by Odisha over declining water flow, ecological imbalance, and threats to agriculture and livelihoods. Consequently, the issue evolved beyond a resource-sharing disagreement into a politically sensitive interstate dispute involving competing developmental priorities, regional interests, and questions of water justice. The riparian states assert their respective water rights from the perspectives of basic human needs, ecological sustainability, livelihood protection, and socio-cultural dependence on the river. In this context, the conflict reflects broader debates surrounding the concepts of "right," "need," and "want" in relation to natural resource governance and water allocation. These concepts are central to understanding the socio-economic and political implications of water distribution and the competing claims over river resources. This paper examines the complex nature of the ongoing Mahanadi water conflict through the lens of political ecology and water rights discourse. It analyses the theoretical foundations of the conflict and explores how developmental aspirations, ecological concerns, and interstate politics shape the discourse on water governance. The study also highlights the significant roles of Civil Society Organizations (CSOs), environmental groups, and local communities in advocating for equitable water rights and sustainable river management. Furthermore, the paper identifies the major challenges in resolving the conflict and proposes measures to promote cooperative federalism, sustainable water governance, and equitable sharing of river resources.

Index Terms- Mahanadi River, Water Rights, Lifeline, Livelihood, Litigation, Environmental Governance, Political Ecology.

I. INTRODUCTION:-

In the contemporary world, water is regarded as one of the most precious natural resources essential for the survival of all living organisms. Human life, as well as the existence of plants and animals, is fundamentally dependent on water. Indeed, life without water is unimaginable, as it sustains both life and livelihoods across societies. From meeting basic human needs to supporting agriculture, industry, and ecosystems, water plays a vital role in maintaining ecological balance and socio-economic development. For plants, water is indispensable for photosynthesis and other metabolic processes, while animals and humans rely on it for survival and daily activities. Beyond its material utility, water also carries profound cultural, spiritual, and universal significance in human civilization. It is not merely a resource for consumption but a shared natural heritage that nurtures and sustains life on Earth. Despite its indispensability and widespread presence, water is increasingly scarce and contested in many parts of the world. Rapid industrialization, population growth, environmental degradation, climate change, and unequal distribution have intensified concerns over water availability and access. As noted by Martinez-Cruz et al. (2024), although water surrounds human existence, it is often subject to scarcity and crisis, revealing the contradictions in contemporary patterns of water use and governance. Consequently, the growing global water crisis has brought renewed attention to the need for sustainable, equitable, and efficient management of water resources.

Moreover, water is indispensable for human survival and plays a central role in almost every aspect of daily life. It fulfills a wide range of social, cultural, economic, and developmental functions within human society. Water is essential not only for drinking and sanitation but also for household activities, agriculture, industrial production, and energy generation. In this sense, the continuity of human life and civilization is fundamentally dependent upon the availability of adequate and clean water resources. Beyond its biological necessity, water also possesses significant social and cultural value. In many societies, water is closely associated with traditions, rituals, community practices, and collective well-being. Access to safe and clean water contributes substantially to improving public health, enhancing productivity, reducing poverty, and promoting sustainable community development. The availability and equitable distribution of water resources therefore remain critical for ensuring social welfare and economic progress. Water also serves broader societal needs through its role in supporting public services, community welfare, and local development. As observed by Grigg (1986:3), water use extends beyond individual consumption to fulfill collective and beneficiary needs at the community level. Consequently, effective and equitable water management has become essential not only for economic growth but also for social justice, human development, and environmental sustainability.

Water holds immense cultural significance in human society, particularly in relation to religious practices, rituals, and traditional customs. Across civilizations, rivers, lakes, and other water bodies have been regarded as sacred entities and integral components of cultural identity and spiritual life. In this way, water not only fulfills material needs but also strengthens the relationship between human beings and their natural environment. Its cultural and symbolic importance reflects the deep interconnection between nature, society, and human civilization. In addition to its cultural relevance, water plays a crucial role in economic development and the functioning of modern economies. Water resources are indispensable for key sectors such as agriculture, industry, energy production, and hydropower generation, all of which contribute significantly to economic growth and societal progress. Agricultural productivity, industrial expansion, and energy security largely depend upon the availability and efficient utilization of water resources. Consequently, water has acquired substantial economic value, with various stakeholders directly involved in its allocation, management, and commercial utilization for economic benefits (Farolfi, 2011). The diverse uses of water across social, cultural, and economic spheres make it fundamental to sustaining human life and livelihoods. As a result, access to water is increasingly viewed not merely as a matter of resource availability but as a basic entitlement linked to human dignity and survival. Contemporary human societies therefore increasingly recognize water as a birthright, a fundamental right, and an essential human right necessary for ensuring equitable and sustainable development.

However, increasing and competing demands for water have resulted in its excessive exploitation, overuse, and mismanagement, leading to growing concerns over water scarcity across many regions of the world. Such scarcity adversely affects human health, environmental sustainability, and the lives and livelihoods of communities dependent upon water resources. In a country like India, river waters are extensively utilized by states for the development of water infrastructure projects aimed at managing water supply, storage, and distribution. These infrastructures, including dams, barrages, canals, and irrigation systems, play a crucial role in supporting agriculture, industrial activities, energy production, and other socio-economic functions. Nevertheless, conflicts over water resources often emerge when water management systems fail to ensure equitable and sustainable distribution among stakeholders. In such situations, riparian states increasingly compete to secure greater access to river waters in order to sustain their developmental needs and protect the interests of populations dependent upon these resources. Consequently, interstate disputes arise over the assertion of water rights, particularly between upstream and downstream states. In this context, "water rights" refer to the legal and institutional entitlements governing the use, allocation, and management of river water for specific purposes. These rights determine who can access water, in what quantity, and for which activities, while also seeking to ensure rational and equitable distribution of water resources. The competing claims of various stakeholders, including governments, industries, farmers, and local communities, often intensify tensions over water sharing and resource control. As a result, water conflicts can place the lives and livelihoods of riparian populations in vulnerable situations, leading to economic insecurity, ecological stress, and water crises. One such prominent example is the Mahanadi water conflict between Odisha and Chhattisgarh. The dispute poses serious challenges to the livelihood security, ecological sustainability, and water rights of communities residing in the riparian regions of both states. Understanding the causes and implications of these challenges therefore requires a critical examination of the origins of the dispute and the diverse perspectives surrounding water rights and river governance in the Mahanadi River basin.

II. THE MAHANADI WATER CRISIS: CAUSES AND CONTESTATIONS:-

For more than seven decades, and particularly during the last two decades, a significant interstate conflict has persisted between Odisha and Chhattisgarh over the sharing and utilization of the Mahanadi water in eastern part of Central India. The conflict has emerged as a major interstate and federal issue involving competing claims over river water resources between the two riparian states. The dispute is deeply rooted in the growing and competing demands for water, particularly for agricultural expansion, industrial development, irrigation, and energy production. The origins of the dispute can be traced back to the period between 1953 and 1957, when disagreements arose between Odisha and the then undivided state of Madhya Pradesh as regards the construction of the Hirakud Dam at Burla in Sambalpur district of Odisha. Subsequently, another phase of disagreement emerged in 1983 concerning an agreement related to the development of joint interstate irrigation and power projects between Odisha and Madhya Pradesh. These earlier tensions laid the foundation for later disputes over the utilization and management of the river waters. The contemporary phase of the conflict intensified in July 2016, when Odisha strongly objected to the construction of dams, barrages, and other water-control structures undertaken by Chhattisgarh, the upstream riparian state. Odisha argued that these projects could significantly reduce downstream water flow, thereby affecting irrigation, drinking water supply, ecological balance, and the livelihoods of communities dependent on the river basin. According to Panda (2018), the dispute subsequently evolved into a politically sensitive and legally contested issue involving questions of water rights, federal relations, and equitable river governance between the two states.

The interstate conflict intensified when Odisha alleged to Chhattisgarh state that the upstream state had constructed several dams, barrages, and other water-control structures across the river and its tributaries without adequate consultation or consensus. According to Odisha, these constructions significantly affected the natural water flow during the non-monsoon season into the Hirakud reservoir, thereby threatening irrigation, drinking water supply, and ecological sustainability in the downstream regions. The Government of Odisha further characterized many of these water projects as "illegal" and argued that excessive upstream water retention could severely disrupt the river's flow regime, leading to potential water scarcity and ecological stress in the lower basin areas. Concerns were also raised about the potential environmental degradation of the Mahanadi delta and the adverse impact on agriculture, fisheries, and livelihoods dependent on the river system (Pandia, 2018). A major source of tension between the two states was the perceived lack of transparency surrounding the construction of these projects. Odisha alleged that

Chhattisgarh had undertaken the development of several barrages and dams without adequately informing or consulting the downstream state, despite the interstate nature of the river basin. This created uncertainty and suspicion regarding the objectives, scale, and long-term implications of the projects. As noted by Pandia (2018), the absence of effective coordination and information sharing intensified the interstate water dispute.

To Ratha (2019), the Mahanadi conflict has become progressively complex because of the water diversion projects by both Odisha and Chhattisgarh. It altered the natural flow of the river. Furthermore, the Government of Odisha has alleged that the existing and proposed upstream projects in Chhattisgarh may extensively reduce the river's flow, particularly during the non-monsoon period. It would thereby adversely affect the livelihoods of local communities, agriculture, industries, and the ecological balance of the downstream areas (Prava, 2021). In response to Odisha's concerns, the Government of Chhattisgarh maintained that the construction of barrages has been carried out transparently and primarily for developmental purposes. The state argued that these structures are intended to regulate excess floodwater that would otherwise flow unused into the sea, rather than disrupt the normal course of the river. Chhattisgarh further emphasized that the barrages were developed mainly to support irrigation and improve water availability for the farming communities of the state. Rejecting the claims made by Chhattisgarh, the Government of Odisha argued that the upstream projects were not primarily intended for the welfare of farmers, but rather to meet the growing water demands of industrial establishments within the state. In this context, the Mahanadi water dispute may also be viewed as a consequence of the rapid industrialisation taking place in both Odisha and Chhattisgarh, which has intensified pressure on the river's water resources. Moreover, it has been argued that although both state governments justify their positions in the name of protecting farmers' interests, the larger share of river water is, in reality, being consumed by water-intensive industries rather than the agricultural sector (Purohit, 2016).

Subsequently, the Government of Chhattisgarh maintained that it possesses the legitimate right to utilize the waters of the Mahanadi River for agricultural and developmental purposes, provided that such utilization does not intentionally obstruct the interests of Odisha. Nevertheless, Odisha, as the lower riparian state, strongly objected to the increasing upstream utilization of river water by Chhattisgarh. As a result, the dispute gradually evolved into a contest over water rights, significantly affecting the inter-state relationship between the two governments. Over time, the Mahanadi water dispute also acquired a strong political dimension. Political leaders in both Odisha and Chhattisgarh increasingly used the issue as a platform for electoral mobilization and political positioning. The conflict gained further political significance due to the presence of the Biju Janata Dal government in Odisha and the Bharatiya Janata Party government both at the Centre and in Chhattisgarh during the period of the dispute. Both sides raised concerns regarding water rights, ecological protection of the river, and the socio-economic and cultural interests of the people dependent on the Mahanadi. Consequently, the issue was debated not only in political forums but also through legal and institutional mechanisms. Therefore, understanding the diverse perspectives on water rights is crucial for analyzing the nature and dimensions of the Mahanadi River water battle.

III. WATER RIGHTS AND THE MAHANADI CONFLICT:-

The key perspectives of water rights over the Mahanadi River during the period of water battle are mentioned below:-

1. Environmental Perspective of Water Rights:-

The environmental perspective plays a significant role in sustaining and preserving river ecology. The Mahanadi River dispute is not merely a question of water sharing; it also carries significant environmental consequences. One of the major concerns arising from the conflict is the hydrological modification. This happens due to the expansion of water projects in the upstream regions of Chhattisgarh. Such interventions have dislocated the natural and seasonal flow patterns of the river. The disturbance to the river's natural flow has emerged as a serious challenge for riparian communities and intensified environmental concerns in the basin. According to Ratha and Mahapatra (2017), another critical environmental issue associated with the dispute is the rapid industrialization pursued by both Odisha and Chhattisgarh. Industrial expansion in the river basin has significantly degraded the river's natural health. Both states have been criticized for encouraging extractive, water-intensive industries that have contributed

to rising water pollution and ecological degradation. In this context, the growing industrial civilization supported by the river basin appears to be in direct conflict with the ecological civilization traditionally associated with the river system. Although both states actively compete to attract industries and investments within their territories, they are often accused of neglecting their commitments related to irrigation, environmental sustainability, and equitable water management.

In the pursuit of economic development, both disputing states have increasingly promoted mining activities and industrial expansion, particularly thermal power projects, which have contributed significantly to environmental degradation and a decline in agricultural productivity. The growth of mining and industrial activities has generated excessive pollution and ecological stress in the Mahanadi basin region. In particular, thermal power plants located in the Jharsuguda district of Odisha have been accused of disposing fly ash in ways that adversely affect the surrounding environment and public health. The environmental consequences of such industrial activities have been strongly reflected in the experiences of local residents living in the riparian areas. Gobinda Karali (a resident of Darlipali village) witnessed that rapid industrialization has relentlessly damaged the ecological balance of both the town and the river. According to him, local communities are facing acute air and water pollution along with severe water scarcity. He pointed out that mining activities contaminated the village's primary drinking water source, destroyed the perennial stream (Phuljore & Lilari Nullah). As a result, villagers have become dependent on an irregular supply of tanker water, and during shortages, they are compelled to use polluted water from Lilari Nullah for their daily needs. He further highlighted that many residents suffer from chest pain, cough, skin diseases, and other health-related problems caused by increasing air and water pollution. The experiences narrated by the residents of the riparian villages demonstrate that the Mahanadi row is not merely an inter-state political conflict but also a serious environmental and human rights issue. The ecological degradation caused by unchecked industrialization has placed the livelihoods, health, and environmental rights of the riparian communities at considerable risk (Prava, 2021).

The livelihoods of riparian communities in Chhattisgarh have also been significantly affected by a large-scale water development project (Kelo Dam Project). The project has altered the river's ecological balance and adversely affected the socio-economic conditions of villages in the river basin. Environmental activist Ramesh Agrawal observed that the project has disrupted the traditional livelihoods of riparian communities. The fishing communities were increasingly facing water shortages. He further pointed out that inadequate water availability has also contributed to agricultural distress and crop failures in the region. The Mahanadi water dispute has broader ecological implications, particularly regarding biodiversity and the sustainability of riverine ecosystems. The reduced downstream flow of water has disturbed several ecologically sensitive areas within the Mahanadi basin, including wetlands associated with the Hirakud Reservoir and estuarine ecosystems such as Chilika Lake. Furthermore, excessive and unregulated withdrawal of river water has increased the vulnerability of these ecosystems and intensified climate-related challenges such as droughts and floods. Consequently, the dispute highlights the close interconnection between water governance, ecological sustainability, and the livelihoods of communities dependent on the river system.

2. Socio-Cultural Perspective of Water Rights:-

The socio-cultural perspective highlights the profound social and cultural implications of the Mahanadi dispute. The controversy has directly affected the lives of local communities residing along the river basin. The construction of water projects in the upstream regions has resulted in the displacement of tribal populations and rural communities, thereby disrupting their traditional patterns of life and livelihood. The reduced downstream flow of the river has particularly affected farming communities, many of whom are marginal farmers who depend heavily on the Mahanadi River for irrigation and agricultural production. Similarly, fishing communities have experienced severe livelihood challenges due to declining fish stocks resulting from ecological degradation and changing water conditions. In addition, people living in downstream regions frequently face seasonal water shortages and deteriorating water quality as a consequence of upstream water diversion and industrial discharge. These developments have intensified concerns regarding community rights over river water and equitable access to natural resources. Beyond its economic importance, the Mahanadi River holds a central place in the cultural and spiritual life of the communities along its banks. The river is deeply associated with local rituals, festivals, and temple

traditions. It is considered sacred and is widely used during traditional festivals: Boita Bandana and Kartika Purnima (Sahu, 2025).

According to Ratha (2019), the River also sustains traditional fishing practices that are integral to the cultural heritage of many communities. Furthermore, the people of both Odisha and Chhattisgarh share strong emotional and religious bonds with the river. Numerous Shiva temples are located along the riverbanks, and devotees from both states collect water from the River to offer on the Shivling as part of religious rituals and acts of consecration. However, the expansion of water infrastructure projects has disrupted this cultural continuity by altering sacred landscapes, affecting pilgrimage routes, and interfering with long-standing religious and cultural practices. Thus, the Mahanadi conflict is not only an environmental and political issue but also a socio-cultural challenge that threatens the traditional identity and heritage of the riparian communities of both states.

3. Economic Perspective of Water Rights:-

The third significant perspective is the economic perspective. It highlights the far-reaching economic implications of the water dispute for both conflicting states. The conflict has had a considerable impact on agriculture and industrial development. It had regional economic planning. Odisha, being predominantly an agrarian state, relies heavily on the river for irrigation and agricultural activities. However, the construction of multiple water diversion projects in the upstream regions has adversely affected agricultural productivity by disturbing crop cycles, reducing water availability, and lowering crop yields in downstream areas. At the same time, both Odisha and Chhattisgarh have promoted rapid industrialization as part of their economic development strategies. The expansion of industries has increased the demand for water resources in both states. In this context, water retention and diversion by the upstream state have created concerns regarding adequate water supply for industrial activities in Odisha. Such uncertainties over water availability pose significant challenges for industrial growth, economic output, and future investment opportunities in the region. The Mahanadi River also possesses substantial potential for hydroelectric power generation. The Hirakud Reservoir, one of the major multipurpose river valley projects in India, plays a crucial role in irrigation, flood control, and electricity production in Odisha. However, the construction of dams and barrages in upstream areas raises concerns regarding reduced inflow into the reservoir, which may negatively affect hydropower generation and water management capacities. Furthermore, irregularities in the river's natural flow, combined with the growing impacts of climate change, have created long-term uncertainties in economic planning and resource management in the Mahanadi basin. Consequently, the dispute reflects not only a struggle over water allocation but also broader concerns related to sustainable economic development, energy security, and regional stability (Sahu, 2025).

4. Political Perspective of Water Rights:-

The political perspective is the fourth major perspective. It highlights the deep political extents of the Mahanadi water row. The conflict is not merely a disagreement over water sharing; it has evolved into a broader political contest involving inter-party rivalries, regional interests, and electoral strategies. The dispute has also raised important questions regarding the functioning of cooperative federalism in India and the effectiveness of the Union Government in addressing inter-state river water conflicts. On the one hand, Odisha has consistently alleged that Chhattisgarh's construction of dams and barrages has reduced the natural flow of water into downstream regions, thereby adversely affecting the state's ecological and economic interests. On the other hand, Chhattisgarh has defended its actions by arguing that the use of river water is lawful and within the constitutional and legal framework governing inter-state rivers. These competing claims have intensified tensions in Centre-State as well as inter-state relations, where the riparian states increasingly pursue independent water policies in the absence of effective federal coordination and consensus-building mechanisms.

Another significant issue in the water conflict is the allegation of political favoritism. There is biasness in matters: Central intervention, environmental clearance, and data sharing related to water projects. Over time, the dispute emerged as a major electoral issue in both Odisha and Chhattisgarh. The BJD government in Odisha used the issue to strengthen regional identity, emphasize state autonomy, and portray Odisha as a victim of resource exploitation and denial of water rights. In contrast, political parties such as the BJP and the Indian National Congress in Chhattisgarh justified mounting water resource projects

as necessary for development, agricultural growth, and self-reliance. Thus, the Mahanadi water dispute has increasingly become part of the political agenda and electoral discourse in both states. As a consequence, the environmental and ecological dimensions of the river have often been marginalized or inadequately addressed in public and political debates (Jena and Singh, 2025).

5. Legal Perspective of Water Rights:-

The last perspective is the legal perspective. This highlights the legal, constitutional and jurisdictive dimensions of the Mahanadi conflict. The conflict involves important issues related to constitutional provisions, inter-state river water laws, and environmental jurisprudence in India. From a legal standpoint, the Government of Odisha approached the Supreme Court of India (Article 131 of the Indian Constitution), seeking the constitution of a water disputes tribunal to adjudicate the matter. This tribunal was constituted under the Inter-State River Water Disputes Act, 1956. Following the Supreme Court's directives, the Central Government established the Mahanadi Water Disputes Tribunal. It was founded on March 12, 2018, to address the issue rightfully. The Mahanadi conflict also reflects differing legal interpretations advanced by the two states. Odisha has largely based its arguments on the principles of prior use and historical dependence on the river's water, emphasizing the traditional and long-standing use of the Mahanadi for irrigation, livelihood, and ecological purposes. In contrast, Chhattisgarh has defended its position by invoking the principle of territorial sovereignty and the lawful use of river water for the state's developmental needs. These competing legal claims have complicated dispute resolution and deepened inter-state tensions. Although the Supreme Court directed the Centre to establish the tribunal, it refrained from directly adjudicating the substantive issues and avoided passing any interim order (sharing or regulation of river water). Consequently, the responsibility for examining the legal, technical, and administrative aspects of the conflict was entrusted to the Mahanadi Water Disputes Tribunal (MWDT).

IV. ROLE OF CIVIL SOCIETY IN WATER RIGHTS ADVOCACY:-

In the Mahanadi water conflict, civil society organizations and other non-state entities played a significant role. They engaged with the issue in advocating for the rights of riparian communities and promoting sustainable water governance. Various civil society groups actively highlighted the socio-economic and environmental dimensions of the conflict. They also mobilized public opinion around the issue of water rights in the Mahanadi basin. With the increasing politicization and commercialization of river water, several people's movements emerged in opposition to the industrial exploitation of the river and the large-scale construction of water projects. One of the prominent movements that emerged in Odisha was the 'Mahanadi Bachao Andolan'. It played an important role during the election campaign in Odisha by the then Chief Minister of Chhattisgarh Raman Singh. The organization organized a protest popularly known as the "Jal Satyagraha" or "water protest" to oppose the unlawful construction of water projects by the Chhattisgarh Government. The protest was largely symbolic and peaceful in nature. During the protest, Sashibhusan Behera, then Chief Spokesperson of the BJD stated that silent "Jal Satyagraha" programmes would be organised in Cuttack and Sambalpur during Raman Singh's visit. He further explained that party members would stage peaceful demonstrations and organise "Sandhya Alati" (evening worship rituals) along the banks of the Mahanadi River in order to symbolically protest against the alleged support extended by the Union Government to the Chhattisgarh Government in completing various water projects. According to him, Odisha had already pursued legal and administrative measures regarding the dispute, but the Union Government had failed to respond adequately to the concerns of the state. In response, Dharmendra Pradhan criticized the Odisha Government, alleging that the BJD-led administration was politicizing the water issue and using it to weaken the political position of the BJP in view of upcoming the Panchayat elections in Odisha (Business Standard, 2017). Hence, the Mahanadi dispute not only generated legal and environmental debates but also became an important arena for civil society activism and political mobilization.

Furthermore, Sashibhusan Behera alleged that the Chhattisgarh Government had adopted a biased approach against Odisha as state initiated and operationalized several water projects without prior consultation or adequate information sharing with Odisha. As a result there is reduction of water flow in the downstream areas. He argued that the mere exchange of official letters between the two states would not be sufficient to resolve the issue. He emphasized the need for public protests, marches, and mass mobilization to secure water justice for Odisha. Similarly, Sasmit Patra, the then spokesperson of the BJD stated that the Mahanadi River is the 'lifeline' of Odisha. He asserted that the party would continue its struggle until the

state received equitable water rights and a logical resolution to the dispute (Pradhan, 2019). Behera further criticized Raman Singh, accusing him of pursuing policies that were “anti-Odisha and pro-Chhattisgarh” by allegedly obstructing the natural flow of the Mahanadi River, which he described as the “helping hand” of Odisha.

In addition to the BJD, several other organizations, including the state unit of the Samajwadi Party and the Odisha Chhatra Yuva Sangathan, organised protests across Odisha to oppose Raman Singh’s election campaign visits to the state (The Indian Express, 2017). At the civil society level, Sudarsan Das organized a silent “Jal Satyagraha” to draw attention to the deteriorating condition of the river. Das was the convenor of the Mahanadi Bachao Andolan (MBA). During the visit of Narendra Modi to Cuttack for a party meeting, Das submitted a memorandum requesting the Prime Minister to direct the Chhattisgarh Government to open the gates of the Kalma Barrage to ensure minimum water flow to Odisha. He warned that the river was gradually ‘dying’ due to the excessive obstruction of water flow through the Kalma Barrage (The Indian Express, 2018).

Alongside the activities of the MBA, several activists and social organizations also initiated protests and awareness campaigns in support of water rights and river conservation. Noted water conservationist Rajendra Singh announced a silent “Jal Satyagraha” at Gadagadia Ghat in Cuttack. During the movement, he emphasized the collective responsibility to protect the river and declared that every effort would be made to prevent the river from diminishing and to preserve its ecological sustainability. Similarly, Sudarsan Das, convenor of Agami Odisha stated that a ‘Padyatra’ would be launched from Gadagadia Ghat with the objective of safeguarding the Mahanadi River from the unjust and unlawful activities of the upstream state. According to him, the movement aimed to protect the river and ensure water security for the people of Odisha (Sambad English, 2017).

Addressing a press conference, Sashibhusan Behera criticized the Chhattisgarh Government and alleged that Singh continued to act against the interests of Odisha despite repeated requests made by the Odisha Government. The Chhattisgarh Government had failed to halt the construction of barrages which is discriminatory and contrary to the spirit of cooperative federalism. In response to these allegations, Dharmendra Pradhan stated that neither he nor the Bharatiya Janata Party intended to interfere directly in the dispute, as both states possessed democratic rights to express their positions regarding the water issue. At the same time, he accused Naveen Patnaik of politicizing the Mahanadi issue for electoral advantage and using the dispute as a political strategy to mobilize public opinion and counter opposition parties in Odisha (Ommcom News, 2017).

Naveen Patnaik, the then Chief Minister of Odisha launched a large-scale protest and awareness initiative popularly known as the ‘Save Mahanadi Campaign’ (Pandia, 2018). The movement was organized by the Biju Janata Dal Government as a public mobilization campaign aimed at protecting the interests of Odisha. Naveen Patnaik formally inaugurated the ‘Mahanadi Surakshya Abhiyan’ (Save Mahanadi Campaign) near Sukhasoda in Jharsuguda district, the point where the river enters Odisha. The campaign sought to create awareness among the public regarding the ecological, economic, and social consequences of reduced water flow into the state. During the campaign, Prasanna Acharya stated that the movement would cover nearly 1,595 Kms across the Mahanadi basin region and would reach most blocks and urban areas in fifteen districts of Odisha. He further noted that various sections of society, including farmers, fishermen, students, and women, would actively participate in the campaign, thereby transforming it into a broad-based people’s movement. Similarly, Debi Prasad Mishra asserted that party MLAs, MPs, and Panchayat representatives would join the movement to expose what he described as the ‘collusion’ between the BJP-led Union and the Chhattisgarh Government in allegedly endangering the Mahanadi River and transforming it into a ‘dying river’ (The Times of India, 2018). Therefore, the Save Mahanadi Campaign became not only a political mobilization programme but also an attempt to generate public awareness regarding river conservation and water rights in Odisha.

Another youth-based organization known as ‘Jai Odisha’ also played a prominent role in the public mobilization surrounding the water dispute. The organization actively participated in the ‘Save Mahanadi Campaign’ with the objective of creating awareness among the general public and generating support for Odisha’s claims over the river water. As part of its activities, the organization organized a human chain programme in which nearly 500 volunteers participated and staged protests against the Chhattisgarh Government. Besides the demonstrations, the organization initiated a signature campaign to strengthen

public participation and express solidarity with the movement for water rights. The campaign was headed by Rudranarayan Samantaray, who emphasized the historical, cultural, and economic implication of the Mahanadi River for Odisha. Explaining the objectives of the movement, he stated that the river represents the rich heritage, identity, and resilience of Odisha and serves as a vital source of livelihoods for millions of people. Through the campaign, the organization aimed to mobilize larger sections of society who were affected by water scarcity and were seeking 'water justice' for Odisha (Singha, 2016).

V. KEY CHALLENGES AND THE FUTURE COURSE:-

Key Challenges:-

- ❖ Due to the increased political contention between Odisha and Chhattisgarh, the Federal Government faced challenges. Both conflicting states used the water issue for vote-bank politics. They try to address regional sentiments in water conflicts. There were political ambitions that prompted public sentiment to reap the vote bank.
- ❖ The lack of transparency in data sharing (hydrological data) creates a climate of mistrust and accusations between the conflicting states. This is a major challenge for the tribunal to resolve the water dispute.
- ❖ The Mahanadi Water Disputes Tribunal failed to pass an interim order for the minimum flow of water required by Odisha for the survival of its ecology.
- ❖ The unregulated construction of water resources projects by the upstream state was the greatest challenge to the Federal Government, making the issue convoluted and distressing the river's ecology.
- ❖ There was no permanent dispute-resolution mechanism to address the issues immediately. In the case of the Mahanadi, the tribunal was formed after the Hon'ble Supreme Court's direction and Odisha's approach to the Centre. The tribunal's actions have also been slow and unproductive.
- ❖ There was no permanent interstate water-sharing agreement between Odisha and Chhattisgarh. As a result, the water issue became complex.

The Future Course:-

- ❖ There is an insistent need for an interim water-sharing arrangement between two states with the active involvement of the Center and be achieved through negotiation and dialogue between the two riparian states. A negotiated interim agreement would help to ensure the equitable dissemination of water. To ensure the effective implementation of the interim arrangement, there is also a need to establish a Joint Monitoring Committee under the supervision of the Union Government or an authorised institutional body. The committee should include representatives and stakeholders from both Odisha and Chhattisgarh and should be entrusted with monitoring river water flow, regulating water usage, and supervising compliance with the agreed provisions. Such a mechanism would help reduce mistrust and improve coordination between the disputing states. Another important short-term measure is ensuring transparency in data sharing between the two states. The regular exchange of reliable hydrological data regarding water availability, storage, and utilization, particularly during the non-monsoon period is essential for resolving the dispute in a constructive manner. Greater transparency in data sharing would not only enhance mutual trust but also create a more cooperative environment for negotiation and long-term conflict resolution.
- ❖ To address the prolonged water dispute, there is also need of long term measures. One of the most important requirements is the establishment of a River Basin Authority for the integrated management of the Mahanadi basin. Such an authority would facilitate coordinated planning and ensure the sustainable, equitable, and efficient utilisation of river water resources, particularly in the agricultural and industrial sectors of both states. Furthermore, a comprehensive water-sharing agreement is essential for achieving long-term water security and justice for the riparian communities. The agreement should be based on the principles of equitable distribution, mutual cooperation, and recognition of the developmental as well as ecological needs of both Odisha and Chhattisgarh. A balanced framework for water allocation would help reduce inter-state tensions and promote cooperative river governance. In addition, the formulation of an effective water conservation policy is crucial for the sustainable management of the Mahanadi River. Such a policy should aim to prevent the unauthorized and excessive use of water resources while ensuring adequate water availability for the lives and livelihoods

of riparian communities. To achieve this objective, both states should adopt modern water-saving technologies, promote efficient irrigation systems, and encourage sustainable agricultural and industrial practices. These measures would contribute significantly to long-term ecological sustainability and responsible water management in the Mahanadi basin.

- ❖ Institutional measures are equally important for solving the water dispute in an effective and sustainable manner. There is a need to strengthen the existing institutional mechanisms responsible for addressing inter-state water conflicts. In particular, the role and functioning of the Mahanadi Water Disputes Tribunal should be reinforced to ensure a timely and comprehensive resolution of the dispute. In this regard, Union-level institutions and agencies should play a more proactive and facilitative role in promoting dialogue, coordination, and dispute settlement between Odisha and Chhattisgarh. Additionally, capacity-building initiatives at the institutional and stakeholder levels are essential for the effective and sustainable management of the Mahanadi River basin. Training programmes, technical cooperation, and awareness-building measures can help improve water governance, enhance administrative coordination, and encourage the scientific management of river resources. Public participation is another crucial element for the sustainable management of the Mahanadi River. The active involvement of local communities, civil society organizations, environmental groups, and other stakeholders can promote transparency, accountability, and cooperative decision-making. Greater public participation would also strengthen mutual trust and encourage collaborative efforts between Odisha and Chhattisgarh in managing the river and resolving the long-standing water dispute.
- ❖ Legal measures are also essential for the effective resolution of the Mahanadi water dispute. The Inter-State River Water Disputes Act, 1956 should be suitably amended in accordance with contemporary challenges and the changing dynamics of inter-state water governance. Updating the legal framework would help improve the efficiency, transparency, and responsiveness of dispute resolution mechanisms in India. There is also a growing need for technologically advanced and scientifically informed water laws and regulatory mechanisms to ensure the proper management of river water and prevent its illegal or excessive utilisation. Such legal provisions should safeguard the water rights and interests of all stakeholders associated with the competing states while promoting equitable and sustainable use of river resources. Furthermore, a more effective and time-bound dispute resolution mechanism should be established to ensure the prompt settlement of inter-state river conflicts such as the Mahanadi dispute. Strengthening legal and institutional procedures would help reduce prolonged litigation and encourage cooperative approaches to water governance. For the ecological preservation of the river basin, Environmental Impact Assessments (EIA) should be made mandatory and rigorously implemented before the construction of dams, barrages, industries, or other large-scale water projects. Environmental assessments would help minimize ecological degradation and protect the sustainability of the river ecosystem. In addition, despite ongoing disputes over water allocation, it is essential to ensure a minimum ecological flow of water in the river, particularly during the non-monsoon period. Maintaining a minimum flow would support the socio-economic needs of riparian communities, sustain aquatic biodiversity, and preserve the ecological balance of the Mahanadi River system.

VI. CONCLUSION:-

From the analysis presented above, it is evident that the Mahanadi interstate water conflict can be resolved through a cooperative, sustainable, and inclusive approach. Both riparian states must work together to protect the river's ecological health. It is the duty of both states to preserve the river ecosystem. To ensure ecological conservation and sustainable river management, new rules, regulations, and policy frameworks should be formulated. The river is not only a source of life but also a foundation of livelihood for millions of riparian communities. Therefore, both Odisha and Chhattisgarh should adopt measures to restore rivers and reconstruct ecosystems. Furthermore, the Mahanadi dispute should not be platform for partisan political competition, in its place; both states should address the issue constructively and cooperatively. It should be addressed within the framework of Indian federalism. In protecting community rights over the river's waters, special priority should also be given. In this context, Union institutions should ensure water security, sustainability, and equitable access to water resources for the riparian residents. Effective interstate basin cooperation further requires catchment protection and integrated river basin management. Civil society organisations should strengthen networks of collaborative strategies focusing on river conservation and

community rights. Maintaining ecological balance within the river ecosystem must remain a central objective of all policy interventions.

From an environmental standpoint, sustainable river governance should prioritize livelihood protection, climate resilience, ecological sustainability, and long-term environmental stewardship. From a social stance, the river's water is closely connected to the rights, identity, and survival of river-dependent communities. From a cultural perception, the Mahanadi River signifies heritage, belonging, and spiritual identity for the riparian communities of both states. Preserving the river's cultural heritage may offer new pathways for sustainable water governance. Traditional culture and rituals related to river water can foster interstate harmony and mutual understanding. To preserve the river from the cultural angles, the roles of the cultural stakeholders are highly essential. From economic perspectives, a cooperative and transparent water-sharing framework is necessary. There must be cooperation between the economic development and ecological sustainability with regard to the use and control of the river water. From the political outlooks, political will of the political leader of the disputant states and the involvements of the federal government are highly required. Inter-state cooperation is the best platform to solve the controversy. Water-related constitutional and statutory mechanisms should be employed effectively and in a time-bound manner to strengthen the spirit of cooperative federalism in water governance.

In the Mahanadi water conflicts, Odisha state fights for the equitable distribution of water resources because the river serves as a lifeline for millions and a basis of livelihood for Odisha's agrarian and fishing communities. Lifelines, livelihoods, and litigation in the context of water conflicts cannot be understood without addressing the political-ecology of the disputes. The conflict is profoundly surrounded by unequal power relations, state-centric developmental policies and contending claims over natural resources. There must be close relations between politics and ecology with attention to social justice, environmental ethics, and the voices of riparian communities in the Mahanadi water controversy. The researchers on water disputes should examine the issue and rethink it to recognize the importance of the Mahanadi River for human survival and environmental sustainability. Balanced politico-ecological governance is the need of the hour to sustain the Mahanadi as a river of water, not as economic resources, but as an ecological and cultural entity.

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