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INLAND FISHERIES OF TELANGANA - SOCIAL POLITICAL AND ECONOMIC ISSUES

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Abstract: *This research delves into the inland fisheries of Telangana, examining the social, political, and economic dimensions of the sector. Telangana, endowed with an extensive network of water bodies, has undertaken ambitious initiatives like Mission Kakatiya to restore and maximize the utility of its tanks and reservoirs. The Godavari and Krishna riverine systems, along with numerous reservoirs, contribute significantly to the state's rich aquatic ecosystem. The research explores the diversity of fish species, development strategies, and the impact of schemes like Mission Kakatiya and Pradhan Mantri Matsya Sampada Yojana on the fisheries sector. Additionally, it investigates the socio-economic status of fishermen and the role of fisheries in poverty alleviation.*

Keywords: *Inland Fishing in Telangana State, Strategies for development of Fishermen, Issues*

Introduction

Telangana is renowned for its abundance of dams, reservoirs, lakes, tanks, and canals, surpassing other South Indian states. By the year 2012, India had witnessed the construction of nearly 3200 major and medium dams and barrages. In a dedicated survey focused on minor irrigation tanks in Telangana, the government identified over 45,000 tanks and lakes. The initiation of Mission Kakatiya on March 12, 2015, by Chief Minister Sri Kalvakuntla Chandrasekhara Rao marked a crucial step towards the program's objectives.The primary goal of Mission Kakatiya is the comprehensive restoration of these tanks, aiming to make 250~270 TMC of water accessible for agricultural, irrigation, livestock, and drinking purposes. The ambitious endeavor involves the refurbishment of age-old tanks to enhance their water-holding capacity,

catering to the diverse needs of irrigation, livestock cultivation, and groundwater replenishment in villages.In the earlier undivided state of Andhra Pradesh, a rich aquatic ecosystem was evident, housing 158 fish species within 68 genera. The restoration efforts under Mission Kakatiya are poised to increase fish production in these tanks, facilitating the timely introduction of seed stock and thereby contributing to the growth of various fish species. The stocking ratios in monoculture and polyculture tanks play a crucial role in this enhancement process (Rama Rao, 2016-18).

Inland Water Resources in Telangana

Telangana's water resources offer a conducive environment for both capturing and cultivating aquatic organisms, encompassing rivers, ponds, tanks, and reservoirs. The prominent Godavari and Krishna rivers, coursing through the region, stand out as highly productive areas for fish production within the state (Suresh et. al. 2018).

1. Godavari Riverine System: The Godavari River, ranked as the second-longest river in India and the longest in South India with a total length of 1440 km, originates near Maharashtra's Nasik district. Its course extends eastward across the Deccan Plateau, ultimately meeting the Bay of Bengal near Narasapuram in Andhra Pradesh. The Godavari basin boasts the highest number of dams among all river basins in India, totalling around 350 major and minor dams and barrages by 2012. The river exhibits a diverse species composition, dominated by Cypriniformes with 44%, followed by Perciformes (28%), Osteoglossiformes (11%), Siluriformes (11%), and Synbranchiformes (6%).
2. Krishna Riverine System: The Krishna River, ranking as the fourth-largest in terms of water inflows and river basin area in India, spans nearly 1,300 km. Originating near Maharashtra's Mahabaleshwar, it flows eastward across the Deccan Plateau, meeting the Bay of Bengal near Hamsaladevi in Andhra Pradesh. Serving as a crucial irrigation source for Maharashtra, Karnataka, Telangana, and Andhra Pradesh, the Krishna River hosts a rich species diversity of approximately 109 fish species belonging to 7 orders, 19 families, and 46 genera. These include prominent species like Catla, LabeoRohita, and Channa marulius.
3. Reservoirs in Telangana: Telangana boasts 74 small, medium, and large reservoirs, covering a water spread area of 1.85 lakh ha. Among them, 53 reservoirs have a water spread area below 1000 ha, 17 reservoirs fall between 1000 to 5000 ha, and 8% of reservoirs exceed 5000 ha. Additionally, the state features 35,031 tanks, comprising perennial, long seasonal, and seasonal tanks with a water spread area of 4.01 lakh ha, aquaculture ponds covering 781 ha, and rivers and canals stretching over 5,573 km.
4. Species Diversity in Inland Water Bodies: In Telangana, the understanding of fish culture remains limited among the populace. Traditional methods are

employed in capturing and cultivating fish in various regions. The inland waters of Telangana host 165 fish species, categorized into 11 orders, 29 families, and 74 genera. Cypriniformes families dominate, being captured and cultured across diverse resources in the state. Additionally, non-native species such as Carps, Freshwater prawns, American whiteleg shrimp, Pangasius, and Genetically Improved Farmed Tilapia (GIFT) have been introduced in aquaculture areas due to factors like seed availability, compound feed use, fast growth rates, disease resistance, and adaptability to new environments.

Fisheries Development in Telangana State

Telangana has achieved several milestones in fisheries development, establishing itself as a trailblazer in the field. It proudly holds the distinction of being the first state to fully fund the stocking of fish seed and prawn juveniles, coupled with their meticulous geo-tagging, in all suitable open water bodies.The state boasts an impressive water spread area of 7.75 lakh hectares in tanks and reservoirs, the highest in the country. Notably, Telangana takes the lead with 4634 Fishermen Cooperative Societies, ensuring the insurance coverage of 3,36,799 active inland fishermen.In a groundbreaking move, Telangana has brought all Minor Irrigation (MI) tanks under the purview of the Department of Fisheries, marking a significant step towards comprehensive fisheries development. This strategic control aims to optimize the potential of these tanks for the benefit of the fishing community.Recognizing the importance of inclusive development, the government has empowered women from backward communities by supplying 150 Mobile Fish Retail Outlets. The overarching goal is to augment fish production and productivity while establishing backwards and forward linkages. This approach not only enhances the livelihoods of fishers but also works towards achieving self-sufficiency in fish seed production. Moreover, the government is committed to ensuring the availability of fish to consumers at an affordable price and in hygienic conditions.In line with these efforts, Telangana is actively improving marketing infrastructure and implementing welfare programs, demonstrating a holistic approach towards sustainable fisheries development *(https://nfdb.gov.in/).*

Fisheries Development Strategies in Telangana State

Over the past years, an investment of Rs. 296.52 Crores and Rs. 42.76 Crores has been made to supply 344.61 Crores fish seed and 19.57 Crores prawn juveniles, respectively. This substantial effort has yielded positive results, with fish and prawn production increasing from 2,68,362 tons in 2014-15 to an impressive 3,48,851 tons in 2020-21.

The market value of these fisheries has seen a commendable surge, rising from Rs. 2637 Crores in 2014-15 to Rs. 5229 Crores in 2020-21. Furthermore, it is anticipated to reach Rs. 5425 Crores in the fiscal year 2021-22. The Fisheries Department has played a pivotal role in this success by diligently implementing various central-sponsored and state schemes.

A noteworthy initiative involves the allocation of Rs. 180.10 Crores for the stocking of fish seed and prawn juveniles, with 10.76 Crores exclusively dedicated to all open water bodies, subsidized at 100%. The Murrel Wyra fish seed farm has been effectively utilized to promote Murrel culture in the state.

Centrally Sponsored schemes, including the Blue Revolution scheme and Pradhan Mantri Matsya Sampada Yojana, have been instrumental in enhancing the fisheries sector. Additionally, state-level schemes such as the Integrated Fisheries Development Scheme (IFDS), Rashtriya Krishi Vikas Yojana, and the provision of Mobile Fish Retail outlets to women have been implemented to provide comprehensive support to the fishing community. These initiatives collectively ensure timely assistance and sustainable growth for the fishermen.

Within the ambit of these schemes, the state has spearheaded numerous innovative projects aimed at augmenting fish production. These initiatives encompass the establishment of Fish Seed Rearing Units, the construction of new fishponds, the implementation of Re-circulatory Aquaculture Systems, the introduction of Biofloc units, and the development of Cage Culture and Pen Culture units. Each of these projects plays a vital role in diversifying and modernizing the fisheries sector, contributing to increased productivity and sustainability. The State's commitment to adopting cutting-edge approaches underscores its dedication to fostering growth and efficiency within the fisheries industry (Ibid).

Pradhan Mantri Matsya Samapda Yojana (PMMSY)

The PMMSY received allocations of Rs. 5,405.165 lakhs and Rs. 9,080.43 lakhs for the fiscal years 2020-21 and 2021-22, respectively. The Government of India disbursed the central share, amounting to Rs. 1,558.67 lakhs and Rs. 1,298.752 lakhs during 2020-21 and 2021-22. Successful completion of fish seed stocking in reservoirs has been achieved. The sanctioned components, including the establishment of 21 fish seed hatcheries, construction of fish culture ponds spanning 400 hectares, and the initiation of 5 large and 6 medium Recirculatory Aquaculture systems/bio floc units, installation of 650 cages, supply of 200 three-wheelers, 20 insulated vehicles, 185 mobile/stationary fish retail outlets, 20 live fish vending units, and the establishment of 4 mini feed mills, are making commendable progress. Livelihood support has been extended to 6,000 fishermen, while the PMMSY Group Insurance scheme covers 3,36,920 active fishermen (Ibid).

Integrated Fisheries Development Scheme

The Integrated Fisheries Development Scheme, with a budgetary allocation of Rs. 1,000.00 crores, has significantly impacted the fisheries sector. The state has successfully established 14 freshwater fish seed hatcheries, developed fish culture ponds spanning 673 hectares, instituted fish seed rearing units covering 85 hectares, and implemented 24 pen culture units. Furthermore, the initiative has led to the establishment of 25 Recirculatory Aquaculture Systems and 160 Cage culture units.

The creation of essential infrastructure and assets for the betterment of fishermen includes the distribution of vending units equipped with 2 and 4-wheelers for marketing, fishing nets, boats, fish food kiosks, wholesale and retail markets, landing centres, ice plants, fish feed mills, fish processing units, ornamental fish units, laboratories, training centres, and more.In a bid to enhance domestic fish consumption, the brand "Telangana Chepalu" was introduced. Notably, Rs. 657.20 crores have been effectively utilized for the implementation of these schemes, benefiting a substantial count of 1,18,000 fishermen (Ibid).

Group Insurance to Fishermen

Within the framework of the PMMSY-Group Insurance scheme for active fishermen, notable enhancements have been made to the sum assured. In the unfortunate event of accidental death or permanent disability, the sum assured has been raised from Rs. 2.00 lakhs to Rs. 5.00 lakhs. Similarly, in the case of partial disability, the sum assured has been increased from Rs. 1.00 lakh to Rs. 2.50 lakhs. Additionally, there has been a substantial augmentation in hospitalization expenses, escalating from Rs. 10,000/- to Rs. 25,000/-. To ensure comprehensive coverage, the state government has demonstrated its commitment by disbursing a premium of Rs. 97.60 lakhs. This financial provision has been instrumental in safeguarding the lives of 3,36,799 active fishermen, providing them with enhanced protection and support (Ibid).

Telangana State Policy for Fishermen

The state has been unwavering in its commitment to judiciously implement development and regulatory measures, with a distinct focus on environmental protection and the safety of fishermen. The enhancement of fishery wealth has been pursued through strategic interventions such as stocking advanced fry (35-40mm) in seasonal water bodies, introducing fingerlings (80mm) in perennial tanks and reservoirs, and promoting intensive aquaculture in Recirculatory Aquaculture Systems, Biofloc, and Cage culture.

To ensure the conservation of fishery wealth, proactive measures have been taken, including the imposition of a ban on African catfish culture, and stringent regulations on seed production, marketing, and transport. The use of Alivivala, a net associated with catching small-sized fish, has also been prohibited. Moreover, closed seasons are observed in selected reservoirs to protect brood fish from fishing activities.

In alignment with the MGNREG Scheme, the state has undertaken the excavation of 47.00 acres of rearing ponds and deepened ponds in 10 Government fish seed farms, resulting in the rearing of 10 crores of spawn. The collaboration with NRLM, NFDB, and assistance from the Government of India has paved the way for planning the construction of fish ponds in three aspirational districts.

On the educational front, the state is making significant strides with the imminent completion of a new full-fledged HRD institute, The State Institute of Fisheries

Technology, located near Hyderabad city in Medchal. Additionally, there exists an Inland Fisheries Training Centre at Hanamakonda.

The organized efforts extend to the social structure, with fishermen organized into Fishermen Cooperative Societies (3,04,424) and Fisherwomen into Societies (32,509). Over the last three years, a commendable 125 training sessions, awareness programs, and exposure visits have been conducted. Capacity-building initiatives have seen the participation of 18,250 individuals, including fishermen, fisherwomen, project staff, line department staff, and elected representatives. These collective endeavors underscore the state's comprehensive approach towards sustainable fisheries development (Ibid).

Awards and Recognization

The state's exemplary progress in the fisheries sector has been recognized through several prestigious awards, underscoring its commitment to excellence and innovation (Ibid):

1. Telangana was honoured as the Best Performing Inland State during WFD, 2021, a testament to its outstanding achievements in the fisheries domain.
2. The Telangana State Fishermen Cooperative Societies Federation Ltd. received accolades as the Best Inland Fishermen Cooperative Federation during WFD, 2020, highlighting the effective collaboration and performance of fishermen cooperative societies in the state.
3. Telangana earned the distinction of being awarded the Best Upcoming State by Argo-food Empowering India in 2021, recognizing its noteworthy contributions and advancements in the agricultural and food sectors, including fisheries. These awards collectively underscore Telangana's commendable strides in the development and management of its fisheries resources.

Socio-Economic Status and Livehood of Fishermen

The socio-economic condition of the inland fisher community is generally characterized by poverty, with the relationship between fisheries and poverty being complex. The lack of a nuanced understanding of poverty and its interaction with the engagement of fishers in alternative livelihoods has resulted in poorly conceived fisheries management and interventions (Bene, 2006). Contemporary perspectives on poverty emphasize its multi-dimensional nature, encompassing elements of political disempowerment, limited access to crucial investments like education, and economic exclusion, beyond a mere assessment of wealth.

The term 'livelihood' has been extensively debated among academics and development practitioners (Ellis, 1998; Batterbury, 2001; Chambers and Conway, 1992; Carney, 1998; Bernstein, 1992; Francis, 2000, 2002; Radoki, 2002). A widely accepted definition by Robert Chambers and Gordon Conway posits that "a livelihood comprises the capabilities, assets (including both material and social resources), and activities

required for a means of living" (Carney, 1998). Another definition by Ellis (2000) describes livelihood as "the activities, the assets, and the access that jointly determine the living gained by an individual or household." Livelihoods are intricately linked to resources such as land, crops, seed, labor, knowledge, money, and social relationships, and these resources are influenced by changing political, economic, and socio-cultural circumstances.

Small-scale fisheries play a role in enhancing local livelihoods by generating income and limited wealth for fishers, who can access cash year-round by selling their catch. Fisheries act as a 'bank in the water' for rural fisher populations without access to formal financial systems (Heck et al., 2007). The fisheries sector also serves as a 'safety net' in many areas, with informal traders and subsistence farmers turning to fisheries as alternative livelihood opportunities in the face of adverse economic, climatic, or ecological events such as drought, blight, or crises. This shift is observed in open waters like reservoirs and floodplain wetlands. In South Asia, such shifts provide income opportunities and a direct food supply to the poor, including female-headed households excluded from most agricultural technology innovations (Gupta et al., 2003). Importantly, fisheries contribute indirectly to job security through processing and trade, generating hundreds of thousands of jobs and significantly contributing to the national economy and the achievement of the Millennium Development Goals.

Findings

1. Inland Water Resources: Telangana's Godavari and Krishna riverine systems, reservoirs, and tanks support a diverse array of fish species. The restoration efforts under Mission Kakatiya aim to enhance fish production in these water bodies.
2. Fisheries Development: Telangana has made significant strides in fisheries development, leading in water-spread areas, cooperative societies, and comprehensive management of minor irrigation tanks for optimal fisheries utilization.
3. Development Strategies: The state has implemented innovative projects, such as Recirculatory Aquaculture Systems and Biofloc units, resulting in increased fish and prawn production. Schemes like PMMSY and the Integrated Fisheries Development Scheme have played a crucial role in augmenting the sector.
4. Awards and Recognition: Telangana's exemplary progress has been acknowledged through awards, showcasing its commitment to excellence and innovation in fisheries management.
5. Socio-economic Status: The socio-economic condition of inland fisher communities is explored, emphasizing the complex relationship between fisheries, poverty, and alternative livelihoods.

Suggestions

1. Enhanced Awareness: Promote awareness programs to educate the populace about fish culture and its potential to improve livelihoods.
2. Diversification of Initiatives: Continue diversifying development initiatives, incorporating modern techniques and sustainable practices to further boost fisheries productivity.
3. Community Involvement: Strengthen community involvement in fisheries management through cooperative societies, fostering a sense of ownership and responsibility.
4. Market Linkages: Improve market infrastructure and linkages to ensure fair prices for fishermen and increase the availability of fish to consumers.

Conclusion

Telangana's inland fisheries sector has witnessed commendable growth through strategic initiatives, schemes, and community involvement. The state's focus on comprehensive development, sustainable practices, and recognition of the socio-economic dynamics of fisher communities highlights a holistic approach. Continued efforts in awareness, diversification, and market linkages can further enhance the sector's contribution to livelihoods, economic growth, and environmental sustainability. The accolades received underscore Telangana's commitment to excellence in fisheries management, providing a model for other regions to emulate.

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