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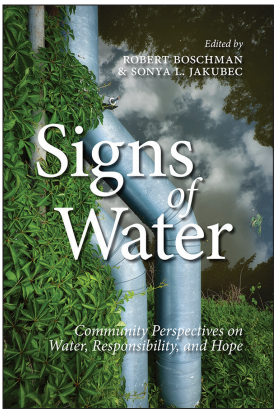

SIGNS OF WATER: COMMUNITY PERSPECTIVES ON WATER, RESPONSIBILITY, AND HOPE

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Taming the Tambraparni River: Reservoirs, Hydro-Electric Power Generation, and Raising Fish in South India

Arivalagan Murugeshapandian

Introduction

In South India in the second half of the nineteenth century, the colonial government transformed the environment significantly. In the Tambraparni River basin, it built reservoirs both in the plains and mountain forests to store river and rain waters and thus expand agricultural lands as well as generate electricity. In order to achieve this undertaking, the government produced alarmist discourse regarding flood potential in the guise of protecting local peoples and their property. Its engineered structures were used as instruments to take control of, and wrest water resources. During the post-colonial period that followed, the government gave priority to hydro-electric power generation over irrigation. The electricity department criticised local farmers as "unauthorised cultivators" and characterised their lands as "unauthorised lands" when farmers demanded the release of stored water from the reservoir. Electricity was sold to urban areas to power, among other things, a modern cotton mill, cinema halls, tube-well

irrigation, and street lighting. All these activities were noted as modernisation of the district. Similarly, the volumetric space of the reservoir was utilised by the post-colonial fisheries department to raise commercially valuable fish stocks. This venture entailed dispossessing an Indigenous tribal community of their traditional rights; instead, Indigenous peoples were compelled to pay angling fees while catching fish for consumption.

This chapter engages and uncovers archival sources to explore the history of hydro-social relations governing the Tambraparni River system, and delineates the historical complexity of the system over a period of intense change, from the second half of the nineteenth century to the 1960s. I demonstrate how colonialism initially transformed surface waterscapes from irrigation to electricity regeneration in order to regulate and control water sources, and how, when India gained its independence, the new government transformed the region again by raising fish stocks in the reservoir created in the preceding period.

In the field of water history, there are two sorts of dominant historical river narratives: one concerning the dead river and a second regarding the conquered one. According to Tevdt and Jakobsson, the latter focused on "harnessed rivers" and "how control of rivers also meant social domination of some people over others."[1] This chapter adopts the second category of narratives, "The Conquered River," in order to analyse the Tambraparni River and its impact on socio-economic relations during and after the colonial period in this particular river basin in South India.

The Tambraparni River System

The river is seventy-five miles long, from its point of origin in Periya Pothigaimalai in the southern tip of Western Ghats to the Gulf of Manaar, Bay of Bengal. It travels through the Tirunelveli and Thoothukudi districts of Tamil Nadu State, South India. In 1879, A. J. Stuart described the river system as a "narrow green winding ribbon, with a silver thread in its centre, [which] represents the Tambraparni with its irrigated land—the wealth of *Tirunelvelly*."[2] The river contributes immensely to the anicut and supply channels constructed in the pre-colonial period for irrigation. In the 1920s, the Tambraparni drained an area of about 1,750 square miles both in the mountains and plains. In the *Tirunelveli District Gazetteer* in 1916, this river system was considered "first class" and "the chief river

of the district."[3] Smaller rivers used to irrigate the upper basin paddy fields situated in the foothills, while in the plains the river has six major tributaries. Additionally, the Tambraparni has two sets of offshoots stemming from the mountains: the chief tributaries of Peyar, Ullar, Pambar, Kariyar, and Servalar; and the secondary tributaries of Sopar, Mylar, and Gowdalaiar. The river has a catchment area of 200 square miles in the forests and receives rainfall from both the southwest and northeast monsoons. Historically, rainfall has been heaviest during May to November with "rain in all months of the year at that elevation".[4] Hence, this massive river system is considered perennial.

Productivity of the Tambraparni

Pre-colonial Indigenous rulers channelised the flow of the Tambraparni River by constructing eight anicuts to irrigate paddy fields located near the basin. In the 1870s, the colonial authorities praised the masonry skill visible in these pre-colonial constructions. The river supplied water to 891 tanks to irrigate the fields; another 37,830 acres were irrigated through channel-fed tanks. The river and irrigation system were considered "the principal feature in the district"[5] in terms of their perennial supply of water to a total of 64,671 acres of fields, which produced two paddy crops every year without fail. A large number of tanks located in the plains were fed by rainfall drainage in addition to the river. A.J. Stuart, the nineteenth-century water collector of Tirunelveli, elaborately described it as follows:

> Even when tanks are connected by channels and anicuts with the rivers or streams which cross the district, the bulk of the supply beyond ten miles from the foot of the ghats, excepting only in the case of the Tamrapurni, is derived from the surface drainage of the country during heavy rain, by which the rivers are suddenly swollen into rapid torrents, whose waters are diverted by dam below dam, and led by channel after channel to multitudes of tanks with so much effect that it is rare that any water reaches the sea.[6]

Stuart admired the old irrigation system as "very ancient, … very complete with numerous anicuts cross the Tamrapurni and its affluents, and supply

channels and tanks in a manner which reflects the highest credit upon the skill and energy of the ancient governments who constructed them."[7] The canal-fed irrigation system was classified into upper and lower systems. While the upper system fell into the Ambasamudram region, where paddy was cultivated as the prime crop, the lower system produced other crops such as turmeric, plantain, betel-leaves, and sugarcane. However, the colonial authorities criticised the old irrigation system when it started to build its own new anicut at Srivaikuntam situated in the lower system. It began to produce alarmist discourses on floods so as to justify the construction of a modern reservoir in both the plains and mountain forests.

Manufacturing Hydraulic Fears

From the outset of British colonization, the colonial government reviewed the old irrigation system and concluded that it was "not very efficient."[8] The government proposed to build new reservoirs at Srivaikuntam and the Papanasam lower hills in order to tame the floods. The colonial government's intention was not only to expand agriculture to generate revenue, but also to use the river system as a tool to take control of the forests from Indigenous peoples.

The authorities cited earlier floods to justify dam building. They argued that about twelve floods had occurred between 1810 and 1931. As mentioned earlier, the plains and the foothills have historically received rainfall from the northeast monsoon while the mountain forests received rainfall from the southwest monsoon. The district witnessed the "most serious"[9] floods in 1810, 1827, 1847, 1869, 1874, 1877 (twice), 1880, 1895, 1914, 1923, and 1931. According to the colonial authorities, these floods caused "a great deal of damage"[10] to irrigation networks, roads, and livestock. Frightening narratives about the floods were publicized. J.B. Pennington, then the water collector of Tirunelveli, estimated the damage at about 30,000 rupees during the floods of 1880. Further, the collector produced the following statement: "What would have been the result if there had been heavy rain on the Papanasam hills and six or seven feet more water in the Tambraparni proper, as might easily have happened, it is impossible to contemplate without very serious anxiety. Almost certainly the river would have topped the banks above Srivaikuntam and swept away everything right down to the sea more completely than even in 1877."[11]

The colonial government depicted the Tambraparni, flowing from the mountain forests above Papanasam down to the sea, as the "most dangerous river."[12] The sloped nature of the terrain, it was argued, made the flow more forceful. Hence, a reservoir was proposed to shield the existing irrigation networks, roads, and fields from flooding.

In 1881, the Tirunelveli irrigation department requested that the government appoint a public works officer "to specially investigate under the Tambraparni"[13] with the purpose of expanding the existing irrigation system. The district collector, Pennington, proposed increasing the capacity of the existing tanks and constructing new tanks for protecting the valley from drought. In the 1881 Proceedings of the Madras Government, he argued that "building infrastructure would make the land valuable and bring benefits to the government." Moreover, Pennington was quite confident of the project's success and its acceptance by the locals. He said that the district had "the extraordinary enterprise of the people: only provide water and the people will do all the rest. There is no fear of their declining it or failing to utilize every drop."[14] Ultimately, the Madras Board of Revenue deputized an officer to investigate the feasibility of the scheme.

The Srivaikuntam Anicut

Srivaikuntam is situated in the lower basin of the Tambraparni River system. Historically, the system supplied water to tanks located at Srivaikuntam through Marudur Kilakal and two other main channels from both sides of the river. Similarly, channels cut from the river system in Srivaikuntam six miles below on the north and south banks fed tanks situated in Korkai and Attur, from which stored water was distributed through chain tanks to far-off fields. The ancient system irrigated about 12,800 acres. This was the situation until the construction of Srivaikuntam anicut or dam in 1868. As mentioned earlier, the colonial authorities evaluated the existing irrigation system and concluded that it was "most defective" and "the head-sluice of the southern channel was … completely silted up." Under these circumstances, the district engineer made it clear in 1855 that the proposed Srivaikuntam dam project was meant "to enlarge and improve this decrepit and wasteful system."[15]

The final construction of the proposed anicut in the Tambraparni River was instrumental in the massive agricultural expansion on the

Table 8.1. Expansion of Agricultural Land

Faslis*	Increase of Revenue (Rs.)	Area Irrigated (Acres)
1870	- 2,750	18,712
1871	+ 16,321	21,222
1872	- 15,327	17,183
1873	+ 23,140	22,648
1874	+ 37,504	26,255
1875	+ 41,452	30,019
1876	+ 22,351	33,451
1877	+ 44,873	34,255
1878	+ 51,283	35,238

**Fasli* means calendar of 12 months from July to June. In India, it was introduced for land revenue and record purposes. Faslis 1280 to 1288 correspond to 1870 to 1878. *Source*: *Proceedings of the Board of Revenue*, 1879, Board No. 3, 256.

south bank of the river during the last quarter of the nineteenth century. In 1875, the then water collector of Tirunelveli, R.K. Puckle,[16] reported on it elaborately. The Srivaikuntam dam construction brought 100% of uncultivable lands into the fold of cultivable fields and resulted in the doubling of agricultural revenue in the lower Tambraparni River system.[17] Table 8.1 illustrates the revenue increases of irrigated land in the region over time between 1870 and 1878.

The 100% increase in revenue highlighted not only the benefits of constructing the dam, but also local farmers' efforts and acceptance of the project. It was proposed that the revenue generated would subsequently be used to build a reservoir in the hills. The government also declared that it built the anicut in the plains to tame floods. Now, it would focus its attention and energies on constructing reservoirs in the mountains to store river water.

Measuring Rainfall and the Construction of the Reservoir

In the late nineteenth century, with the Srivaikuntam anicut completed, the colonial government proceeded to build two reservoirs on the lower slopes of the mountain forests. To implement the scheme, it started to measure water sources to establish the viability of setting up a rain-gauge in the catchment areas. Farmers belonging to the Tambraparni upper basin formally asked the government for the same in the Papanasam forests.

In 1885, the colonial government set up rain-gauges to measure rainfall in the elevated forests as well as the plains. It conducted precipitation measurement for two reasons: to find "the relation between the total rainfall … and the water-supply to the river during the same period" and to capture "the changes which may take place in the water-supply during the comparatively dry season."[18] The data assured that the rainfall on the hills accounted for "the greater part of the annual supply available for irrigation" in the district. In 1912–1913, the government again conducted[19] rain-gauge readings in connection with the mountain reservoir project. In 1922, the landed proprietors[20] of Kannadiyan Canal located in the river valley requested similar measurements. The proposed reservoir construction, in reality, took fifty years to reach fruition.

Regulating the Water

The colonial state explored the possibility of tapping revenue from other forest resources in the beginning of the twentieth century.[21] It regulated surface water utilisation to create revenue in addition to funds collected from irrigation usage. Temples accessed river water freely to fill temple tanks for common usage, but the government questioned this and asked the temple trustees to pay a water tax. Yet, at the same time, the government also allowed a modern mill to access river water without taxation. The contemporary landscape of the Papanasam Upper Dam is featured in Figure 8.1.

In 1883, the Messrs A. and F. Harvey & Co sought permission from the government to construct an anicut and channel half a mile above the head of Papanasam falls to provide sufficient water to operate 150 horsepower turbines. It planned to start a cotton spinning mill at the foothills, and needed "a quantity of water not exceeding 20 cubic feet per 1' [minute]

Figure 8.1. The Contemporary Landscape of the Papanasam Upper Dam. Photo by Arivalagan Murugesapandian.

throughout the year to operate a turbine of a cotton factory."[22] The company claimed that the project was "new to this Presidency [Madras] or even to India."[23] Further, it assured that it would neither pollute nor diminish the water supply. The collector of Tirunelveli enquired with the board of revenue "whether any charge will be made for the use of water, and if so, how the charge is to be calculated."[24] But the board reiterated that "no charge for the use of the water-power should be made."[25]

As far as the quantity of water was concerned, the superintending engineer, H.R. Meade, noted that the 20 cubic feet per 1" was sufficient to irrigate 1,330 acres. Further, the engineer observed that the government should allow 10 cubic feet per 1" only for this operation and should not give exclusive right over the river water. A clarification was issued that the quantity would depend on the availability of water. The company replied that "we trust the Government will not impose any unnecessary stipulations, as we find it not easy to induce English capital to embark

in such industries in India, and, if heavy restrictions be imposed, it will become impossible."[26] However, the collector of Tirunelveli strongly recommended "the concession of an exclusive right to the water for a limited term of years, certainly not less than 15, … because the enterprise is of a novel description and its success can hardly be considered to be at all assured."[27]

In the end, the board of revenue supported[28] the application but without assurance on the exclusive right to use water. Still, it would not ask anything for accessing the water. In effect, then, the government permitted the company to commence the venture on the lower forest slopes without charging a water tax. It considered the opening of a spinning mill a modern enterprise, a progressive venture, and a march towards civilization.

Meanwhile, the local temple trustees had accessed river water to fill the temples' tanks for centuries, as this was considered an absolute traditional right. In the 1930s, the government tried to abolish this right and asked the temples to pay a water tax. The trustees opposed and sued[29] the government based on the following grounds: the worshippers used the temple tanks to wash before entering the temple; conducted a special worship in the tanks during festivals, and used the water to wash vessels and irrigate the temples' flower garden; and, significantly, the general public also accessed the tank for washing purposes. The trustees argued that the temple tank water was accessed for common usage and not as a commercial venture.

The Papanasam Scheme: Agricultural Production vs. Hydro-Electric Production

In 1938, the government instituted a hydro-electric power project on the lower forest slopes where it constructed two reservoirs from upper and lower dams. It used the reservoirs[30] to generate hydro-electric power with the intention to supply power to neighbouring districts in addition to irrigation. It built the lower dam at Pechiammankoil, where the estimated submerged area was about 260 acres.[31] The upper dam constituted a major project at Kariyar with an estimated submerged area of 360 acres. The hydro-electricity department contracted to provide a powerhouse with 4,000 KW capacity near the Papanasam lower dam. When in 1944 the

hydro-electric powerhouse came into operation,[32] the post-independence government stated that it would be "self-remunerative in nature."[33]

Just over a decade later, Tambraparni farmers approached the government to release water from the Papanasam reservoir to save the kar season's paddy crop. The kar constitutes a double-crop cultivation season falling between June 15 and September 15, regulated by the southwest monsoon. According to the farmer's association,[34] farmers cultivated paddy in an area of 3,500 acres that required water for about a month. They petitioned the government to release water from the reservoir to save the crop. At the same time, the authorities received another petition[35] from the Kadamba tank farmers in Tiruchendhur taluk[36] concerning cultivators below the Kadamba tank. Farmers there had cultivated the third crop for the year after the failures of the first two crops. Indeed, this had been the pattern for the past seven years. They now asked the authorities to release water to reap a harvest.

The collector of Tirunelveli argued that the existing crop season of kar cultivation was raised after the harvesting of "advance kar crop" and therefore warned that farmers had planted "at their own risk"; they would "not be considered" for a "special supply of water."[37] The electricity department accused these farmers of making an "unauthorised cultivation" of "unauthorised crops."[38] Water was critical also for the paddy crop variety used, given its long maturity period—between 90 to 100 days—and which, according to the same department, required large quantities of it. However, the chief engineer for irrigation stated[39] that the water storage position in the reservoir was "satisfactory"; he requested the release of 1,400 cusecs (cubic meter per second) from the reservoir for one week. The electricity department agreed to release the water for four days; it was reluctant to discharge water for cultivation after considering the inflows in Papanasam reservoir, because it was "less than normal" and had "poor" inflow. Furthermore, the department complained that the water release would cause a power shortage and that it would be "difficult to allow further special releases for irrigation from the reservoir in the present circumstances."[40]

Farmers from Tirunelveli sub-division sent another petition[41] to increase the water supply because they received "a very poor supply" of water from the reservoir; cutting off the special supply of water for cultivation

would adversely affect them. Tirunelveli farmers responded with profound worry. They argued that the electricity department's decision would "dangerously affect the crops" and bring "a serious catastrophe" to the cultivation system. They again requested a special release of water from the reservoir to "save thousands of acres of paddy crops … and save thousands of families from ruin." The government ordered the release of 1,400 cusecs for twelve days from the Papanasam reservoir and the electricity department discharged the water despite warning of power cuts.[42]

"Tail End" — "Poor Storage"

In 1956, tail-end farmers, particularly from the village of Iruvappapuram, Srivaikuntam taluk, sent a telegraph to the Minister of Public Works asking for the release of water to protect the advanced stage of their paddy crops.[43] These farmers cited instances from the colonial period when the government had released water for irrigation, even though the reservoir at that time was low. During that period, the reservoir had weak inflow contributing to poor storage in the two tail-end anicuts, while affecting 5,700 acres of paddy crop that required two spells of watering before harvest. Under these circumstances, farmers had demanded that the colonial government release water from the reservoir, which demand was accepted.

In response to this current crisis, the chief engineer for irrigation requested the release of 900 cusecs of water for five days to meet the situation, which was reported as "really bad."[44] He calculated the amount of water deemed necessary based on the inflow into the reservoir. Though the electricity department reported that the Papanasam reservoir had, what it called, "the poorest storage,"[45] it nonetheless released the required amount of water for saving the crop. But it underscored that any future special release of water would be "extremely difficult." Later, the villagers, land owners, members of legislative assembly, and cultivators telegraphed the Chief Minister, the Ministers of Public Works, and the Minister of Agriculture regarding this matter.[46] The electricity department cautioned that the special release would bring the water to draw-down level in the reservoir and that would affect power generation. Again, the irrigation department requested the discharge of 500 cusecs for about eight or 10 days to save 55,000 acres of paddy, though it would cause power cut.[47] Finally,

the required amount of water was discharged for a week to save the standing crop after getting inflow from the catchment area.[48]

Conflict

In Tirunelveli district, Indigenous farmers had traditionally used the Tambraparni River to cultivate two seasonal crops (kar and pishanam).[49] This changed after the construction of Papanasam reservoir and powerhouse in the mountain forests. Both the electricity department and the irrigation department had never encountered problems distributing water to farmers when the flow was sufficient from the catchment areas to the reservoir. But the two departments inevitably encountered difficulties during poor inflows because each required water for its own purposes—power-generation and irrigation respectively.[50] Lack of water set the stage for conflict.

The electricity department gave preference to hydro-electric power generation over releasing water for irrigation. In 1948, the government formulated a regulation regarding the release of water from the reservoir to try to tackle the situation.[51] It revised the regulation in 1954,[52] when the post-independence government ordered the release of water from the reservoir with an increase in the quantity from 2,000 cusecs to 3,000 cusecs, from June 16 to March 31. Additionally, as an alternative for weather contingencies, it also ordered the retention of 2,000 cusecs for release at any time during the year. Finally, the government announced that "any balance [in the reservoir] not drawn within two fortnightly periods after that in which impounding was made or before November 1 whichever is earlier shall lapse and become part of the electricity department storage."[53]

In response, the district water collector requested that the two fortnight period for withdrawal of impounded water be cancelled, as it could not deploy the full quantity of water allocated for irrigation purposes during the rainy season. Against this background, the collector remarked that it was "impossible to operate on this credit within this short period. The rule should be amended to permit this extra quantity being drawn up to the end of March."[54] Further, "if the rule is not amended, what will happen is that the credit will accumulate during the rainy season and will lapse before the rainy season ends so that during January and February, when water is required for irrigation, we may not be able to take advantage of the

additional storage that was received during the rainy season."[55] The electricity department argued with the collector saying that the timeframe of November 1 was fixed "with a view to have greater head and storage during the North-East monsoon period and subsequently to meet power requirements during the summer months." It was also noted that "the interests of power storage for which the dam was built will not be safeguarded."[56] In the end, the government made it clear that the Papanasam reservoir was "purely a power project and the power storage" had "to be safeguarded."[57]

"Written with Tears of Blood"

In 1957, lower basin farmers, particularly from the Srivaikuntam and Maruthur anicut regions, faced water shortages for their kar paddy crops comprising more than 25,000 acres. Farmers reported the situation as "very serious"[58] and that the crops were "sure to fail" without immediate assistance. They took their grievance[59] to the government through petitions and personal meetings, urgently requesting water from the Papanasam reservoir and complaining to the Minister of Public Works about the stubborn attitude of the executive engineer. In their petition, they used phrases like "the petition is written with tears of blood" to highlight their plight and begged the minister to take stern action against the engineer's inaction. "We swear in the name of Gandhi through submitting a remorseful letter that if this sort of executive engineer serves in each district there will be no choice left to farmers but to starve and beg after leaving agriculture."[60]

Farmers from the villages of Arumugamangalam, Maramangalam, and Kottarakurichi also urgently requested water from the reservoir connected to the Srivaikuntam dam. The tank there dispensed water to 2,500 acres of double crop wetland situated in the three villages. The villagers primarily depended on agriculture for their livelihood. This was highlighted in their petition as follows: "many poor families with their cattle who are mainly depending on agriculture income alone will have to meet untold sufferings and hardships and lead to chaos and death from starvation. In the last kar season also there was a partial failure."[61] The water problem was addressed not only by the cultivators belonging to the affected villages, but also by their farmers' association.

At the same time, the Tirunelveli farmers' association demanded the discharge of water by arguing for priority to agricultural production over

power generation. Their petition underlined the importance of agriculture in the wake of the food crisis in the country during that period. The association cited recent instances in which water had been discharged from the reservoir. The year before, in 1956, the government had discharged water to the upper and tail-end areas when the reservoir water level was lower than twenty-seven feet. Now, one year later, when the water level was seventy-two feet, the government refused. Farmers represented by their association were distressed and perplexed. They admitted that the seventy-two-foot level would "not be sufficient to water the 80,000 acres of kar paddy crops and at the same time produce the normal quantity of electricity also,"[62] but the association nevertheless urged the government to discharge the water immediately to save the paddy crops. The members argued that small industries such as rice mills and cinema theatres could manage power cuts if water was released to irrigate the paddy fields. "Government will come to the correct conclusion of saving the kar crops and lakhs of kottahs of kar paddy, especially at this juncture when our whole country is undergoing a food crisis because of so many reasons."[63]

The Kalloor Melakkulam farmers tried another strategy to provoke the government to discharge water from the reservoir: they remembered how the former colonial authorities had "protected the cultivators by dispersing water from the Papanasam reservoir to save their crops at a critical situation, even when the reservoir hit the water at the lowest level of 40 feet." They criticized the post-independence government for failing to address the grievances of its own people: "We have realized that nothing is going to happen in this country when incompetent officials occupy office."[64] The Public Works Department[65] asked the Electricity Department to release 1,800 cusecs of water from the Papanasam reservoir for ten days, but the Electricity Department agreed to discharge only 1,200 cusecs. The discharge did not serve the purpose, so the Irrigation Department suggested the release of 800 cusecs and 300 cusecs again from the reservoirs of Papanasam and Manimuthar respectively. Still, conditions remained "very precarious" even after the Irrigation Department demanded[66] another 1,100 cusecs of water release from the Papanasam reservoir.

"A Purely Power Reservoir"

Time and again during the mid- to late-1950s, the Electricity Department encountered opposition from various quarters—from farmers, members of the legislative assembly, and a host of associations—for not releasing water to protect standing crops. Cultivators, especially from the tail-end lower and upper basin of the Tambraparni, sent repeated, urgent petitions. Yet the Electricity Department refused to budge, maintaining that the reservoir was what it called "a purely power reservoir"[67] not meant for irrigation. It explained that its department employed stored water solely for running hydro-electric turbines.

As demand for released water remained high during this period, there was not enough water for irrigation infrastructures to save many standing crops. According to the department's estimate, unauthorised cultivation varied between 1,900 to 10,000 acres during 1950 and 1955. Illegitimate cultivation was in and around 4,102 acres in 1950, 3,900 acres in 1951, 10,000 acres in 1952, 8,500 acres in 1954, and 1,900 acres in 1955. Given this situation, the department suggested the levy of "the maximum penalty" against the unauthorised cultivators to prevent illegitimate cultivation. Further, it remarked that the cultivators ignored the warning issued about the illegal extension of cultivation owing to "a wide margin of profit [from agriculture], despite the penal assessment." The department strongly recommended the elimination of unauthorised cultivation in order to run the power-house turbine without interruption. It said this of the functioning of the power house: "it is absolutely essential to work the Papanasam reservoir to the extent of rotating the generators at least, to maintain the voltage in the area. If the generators do not revolve, voltage regulation will be impossible and there will be failure of power supplies with the result that several industries in the southern areas will be badly hit." The electricity department established two arguments to dismiss the cultivators' requisition, namely that the dam was "a purely power reservoir," and that the cultivation was unauthorised. It considered power generation as indispensable for "the march of civilization."

Utilising Volumetric Space

The post-independence government later used the volumetric water space for aquaculture by introducing commercially valuable fish seeds. Conflict emerged between the forest and fisheries departments in terms of controlling the revenue generating from the fish rearing. Fish breeding intruded into Kanis' traditional rights of fishing in certain rivers.

The fisheries department approached the government to regulate inland fishing in the reserved forests after building reservoirs in the mountains. In 1949, the government issued a sanctioning order[68] to the fisheries department to take control over the water spread areas of upper dam, lower dam, and Tambraparni River up to Papanasam bridge located near the temple in the foot-hills for five years. By 1950 the aforementioned water spread areas were brought[69] under the India Fisheries Act, 1897 to exploit aquatic resources by issuing licenses. The fisheries department issued fishing licenses[70] and managed these resources under the supervision of one field man and three fishermen. They were involved in guarding the fishery, preventing illicit fishing, collecting fingerlings, and conducting systematic exploitation of the fish stocked in the reservoir. The department sought[71] three years extension from the government to continue its control over the water-stored areas.

In 1958, the lake was opened to professional fishermen to fish with nets, in addition to licensed anglers. The fisheries department issued licenses under the condition that "fishing of all kinds except with one line with not more than 25 hooks"[72] was banned in the water-stored areas. It also permitted the license holder to fish only after making prepayment of the prescribed fee. The department prohibited the catching of gourami and mirror carp and permitted fishing within 100 yards of any masonry work near the jetty, while banning the display of the catch for sale near the water-stored areas. It collected eight *annas*[73] per day, two rupees per month, and twenty rupees for a year for one angler with one line and not more than 25 hooks.

"Original" vs. "Introduced Fish"

The forest department raised the issue of "original" vs. "introduced fish" after settling the matter of who had the authority to issue fishing licenses. It objected to the fisheries department's crediting the revenue of fisheries into the forest department's account. The fisheries department paid a nominal rent to the forest department for having its water-spread areas in the reserved forests. Even so, the forest department demanded suitable compensation for the task of protecting the fish population within the waters in the reserved forests. The board of revenue defended the fisheries department saying that the department alone should conduct the cultural operations in the water-spread areas to increase fish population.

However, the forest department countered that "the product [fish population] is a product given by nature [that] has developed within Reserved Forest. As such, the Forest Department is entitled to it."[74] It also criticized the introduction of fresh water fish in the upper reaches because the fish found in the locality was the salt water variety, which came from the seas to spawn and breed in the creeks of the reserves. The fish population increased in the water stored areas "without the interference" of the fisheries department and not because of the cultural operations. The forest department claimed that it protected and conserved the fish population in the reserved forest. It also clarified that the river system already had its own fish population and that it should be entitled to that. The department also justified its claim by stating the following: "The areas of Papanasam Upper and Lower dams, though not dis-reserved, have been handed over to the Electricity Department collecting land value and the fishing right in these dams are not sold by this Department nor the revenue credited to the Forest Department."[75] In this context, it demanded that the fishery revenue "must be credited" to its account.

The board of revenue dismissed the claim of the forest department. Here, both departments competed for the volumetric aquatic space and the revenue obtained from it. Later, the fisheries department harassed the Kani tribal community for fishing in the Tambraparni River between the upper and lower dams where the community did angling or fishing for their own consumption. For a while, they were forced to pay the fee for fishing and were not allowed to practice their traditional rights.

Conclusion

This chapter outlines how fluvial potentialities were tamed to generate revenue at the expense of poor farmers and Indigenous peoples. First, the colonial Indian government churned out an alarmist discourse on floods to build reservoirs to store water for irrigation, with the long run aim of expanding agriculture for revenue purposes. Second, it tried to abolish the common rights of access to temple tanks while permitting modern industrial mills to access river water without any tax. Third, it utilized the reservoir to generate hydro-electric power to modernize the state. In the post-independence period, the same strategy was followed in the name of "the march of civilization." The post-independence government, however, gave preference to power generation and, in the process, marginalized cultivators while also using stored-water areas to breed fish.

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