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Damming the Mahanadi river: The emergence of multi-purpose river valley development in India (1943–46)

Rohan D'Souza

Ciriacy-Wantrup Fellow, Energy and Resources Group,
University of California, Berkeley

Nehruvian monumentalism has often been described as the most significant driver for large dam construction in independent India. Political and popular imagination has, until recently, not only largely hailed the pursuit of multi-purpose river valley development (MPRVD) as heralding the nation into the modern moment, but, more significantly, the latter has been celebrated as a part of an apolitical consensus for national development. This article argues that MPRVD schemes were introduced in India in a political context where Indian capital and the colonial state were constituting a new rhetoric and paradigm for rule.

In the early 1940s, British India was witness to a seismic shift in state-directed strategies for harnessing the subcontinent's hydraulic endowments. The previous emphasis on constructing perennial irrigation schemes (weirs, barrages and canals) was replaced by a wholehearted embrace of Multi-Purpose River Valley Development (large dams and reservoirs). Ecologically, it meant that the colonial authorities' previous focus on the semi-arid interfluves of the Indus and Ganges rivers on the north-west¹ was now reoriented towards the relatively volatile and flood-prone deltaic segments of the Mahanadi and Damodar rivers, which drained

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¹ Following the 'Sepoy Mutiny' of 1857, the Colonial government constructed several irrigation schemes across the Indus river system. Beginning with the Bari Doab canal (1859), the drive climaxed with the 'most ambitious' irrigation project of the colonial period—the Triple Canal Project (1916). See Elizabeth Whitcombe, *Agrarian Conditions in Northern India*, Vol. I, Berkeley, 1972; Ian Stone, *Canal Irrigation in British India*, New Delhi, 1985; and Imran Ali, *The Punjab Under Imperialism (1885–1947)*, New Delhi, 1988.

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into the Bay of Bengal in the East.² Ironically, the Multi-Purpose River Valley Development (MPRVD) was initiated precisely in those regions where canal irrigation schemes had, in the nineteenth century, been recorded as abject financial failures.³ This drastic reconfiguration in state-directed strategies for utilising India's vast and magnificent river systems, at the cusp of the end of colonial rule and imminent independence, has as yet escaped academic scrutiny. An examination of this shift is particularly salient in the light of the post-colonial Indian state's subsequent aggressive pursuit of large dam construction.⁴

The global model for MPRVD was pioneered in the United States in the early 1930s with the establishment of the Tennessee Valley Authority (TVA) and the construction of a series of dams on the Tennessee River and its tributaries. By the latter half of the 1930s, the TVA's experience with comprehensive river regulation acquired the status of what James Scott has termed as a 'module' of high modernism—a pre-packaged project that could be deployed in other regions of the world.⁵ In subsequent years, engineers, agronomists, economists, regional planners and scores of scientific and technical staff associated with the TVA were dispatched and charged with the onerous mission of replicating MPRVD in different river basins.⁶

The historical juncture at which the TVA module became a much sought after icon of modernity is significant. The era was marked by the rapid decline of the European colonial powers and the emergence of the United States as the new centre of capitalist dynamism. The pre-eminence of the United States as an economic and political power was paralleled by the imagining of a new ideological gloss for world domination: a range of discourses that emphasised and linked technological choice to economic growth. Conceptually, these discourses provided critical influences for re-mapping the world into zones ranked and distinguished under the broad rubric of developed, underdeveloped and developing nations.⁷ Termed as the 'politics of productivity' by historian Charles Maier, many of these

² The Damodar Valley Project (1943) and the Mahanadi Scheme (1946) were conceived primarily as flood control works, but included facilities for irrigation, navigation and hydroelectricity. See *Eight Years of D.V.C.* Damodar Valley Corporation, Calcutta, 1956, and A.N. Khosla, ed., *Mahanadi Valley Development Hirakud Dam Project*, Simla, June 1947.

³ In a review in 1887–88, the colonial administration had concluded that all four of its canal schemes in the Bengal Presidency (Tidal canal, Sone, Orissa, and Midnapur Schemes) were financial failures. See National Archives of India, New Delhi (hereafter NAI), *Irrigation Works of India: Statistical Review of the Financial & Agricultural Results Obtained From Them in 1887–88*, Calcutta, 1889.

⁴ India, the United States, China, Japan and the former Soviet Union (now CIS) were the leading large dam building countries from the 1950s onwards. See Patrick McCully, *Silenced Rivers: The Ecology and Politics of Large Dams*, London, 1996, p. 3.

⁵ James C. Scott, *Seeing Like a State: How Certain Schemes to Improve the Human Condition Have Failed*, New Haven, 1998, pp. 262–306.

⁶ David Lilienthal, *TVA: Democracy on the March*, New York, Quadrangle Paperbacks, Chicago, reprint 1966. See Appendix C for a list of countries which initiated projects inspired and modelled on the TVA.

⁷ For a broad survey of discourses on development see Frederick Cooper and Randall Packard, *International Development and the Social Sciences*, Berkeley, 1997, pp. 1–41.

discourses attenuated an earlier concern with issues of political inequality and social conflict, and instead sought to encourage an apolitical consensus around the notion of economic growth.⁸ However, the politics fuelling the export of the TVA module, as correctly argued by Klingensmith, cannot be narrowly or simplistically ascribed to a mere extension of American tutelage or hegemony. Rather, what needs to be explained is why ruling elites in different countries from across the ideological spectrum chose to accept, adopt and on several instances aggressively solicit American expertise and equipment for constructing MPRVD schemes. Many national governments in the immediate aftermath of the second World War, especially in recently liberated territories, often displayed an over zealous enthusiasm for large dam construction and hailed such projects as heralding the nation's arrival into economic modernity.⁹ In other words, the adoption of MPRVD was inextricably linked to the political economy of decolonisation and nationalism.

Unravelling the events and factors that facilitated the import of MPRVD into British India, therefore, offers the possibility of exploring aspects of a critical political moment. I will argue that the decision to dam the Mahanadi River resulted from the broader calculus of post-colonial rule, and was not simply a seduction by the technologies of MPRVD. However, given that the introduction of MPRVD in British India drew greatly upon the context created by the TVA experience and its proponents, a brief detour into the origins of the latter is necessary before proceeding to the main thrust of the argument.

The Era of Multi-Purpose River Valley Development

In the turbulent first 100 days of the Presidency of Franklin Delano Roosevelt (1933–45), 15 major bills were pushed through in the US Congress between 9 March and 16 June. After legislating upon a clutch of new relief programmes and establishing a number of government agencies such as the Civilian Conservation Corps, the Federal Emergency Relief Administration and the National Recovery Administration, the Roosevelt administration, instituted the Tennessee Valley Authority by an Act on 18 May 1933. Amongst the several tasks outlined for the TVA, besides the industrial and agricultural development of the Tennessee Valley, was a plan for the comprehensive control and utilisation of the flood waters of the Tennessee River.¹⁰ This was one of the first comprehensive multi-purpose schemes deployed to simultaneously deal with flood control, navigation, electrical power generation, soil conservation, irrigation and public health. The rhetoric celebrating the economic possibilities of the TVA, however, tended to obscure the fact that it was most significantly an attempt to address two discrete but inter-related

⁸ Charles Maier, 'The Politics of Productivity: Foundations of American International Economic Policy after World War II', *idem. ed., In Search of Stability: Explorations in Historical Political Economy*, Cambridge/New York, 1987.

⁹ Daniel Klingensmith, "'One Valley and a Thousand': Remaking America. India and the World in the Image of the Tennessee Valley Authority 1945–1970', unpublished Ph.D. dissertation, University of Chicago, August 1998.

¹⁰ The Tennessee Valley Basin comprises an area of about 41,000 sq. miles (106, 200 sq. km).

developments that had come to haunt America in the 1930s: electrical modernisation and the fall-out of the Great Depression (1929–33).

In the early decades of the twentieth century, electric power had displaced steam power in the United States as the primary source of energy and had become vital for the advance of manufacturing in particular and industrialisation in general.¹¹ Technological advances in generation and transmission had enabled private utilities to create significant economies of scale and consolidate their stake as monopoly players in the electricity market.¹² Consequently, by 1926, private utilities controlled roughly 90 per cent of the entire electricity that was then being generated in the US.¹³ This monopoly concentration in utility ownership in time provoked a strong popular reaction against its pricing and service operations, which soon snowballed into a well articulated demand for federally controlled and regulated power production. Some of the prominent public power advocates of the period such as Gifford Pinchot (Governor of Pennsylvania), George Norris (Senator, Nebraska), La Follette (Governor of Wisconsin) and J.D. Ross (Superintendent of the Seattle City Lighting Department) persuasively argued that these private utilities were divorcing ownership from responsibility and had created *ententes* and cartels which kept electricity rates artificially high.¹⁴ These critics argued for the introduction of 'Giant Power'; the conversion of all primary energy resources into electricity and their common pooling into regional grids that would be coordinated to feed into a nation-wide electrical transmission system. They also lobbied for the construction of federal power projects on the 'Yardstick Principle', i.e., state-run utilities would take on the task of driving down the inflated electricity charges of private companies by offering cheaper rates.¹⁵ J.L. Brigham, in a study on the electrical industry in the United States, argues that the intense and bitter battles over electricity in the 1920s was at heart a quest for electrical

¹¹ In 1929, electric motors accounted for 78 per cent of the total capacity for driving machinery. The use of electricity also enabled industry to obtain a greater output per unit of capital and labour input. See Warren D. Devine Jr., 'From Shafts to Wires: Historical Perspective on Electrification', *The Journal of Economic History*, (hereafter *JEH*) Vol. 43(2), 1983, p. 349.

¹² Three types of holding companies existed: holding companies that acquired utilities primarily as financial investments; operating utilities as compensation for engineering services; and large interconnected utility services such as the Commonwealth Edison Company of Samuel Insull.

¹³ Jay L. Brigham, *Empowering the West: Electrical Politics before FDR*, Lawrence, 1998, pp. 28–49.

¹⁴ In terms of a social base, public power advocates drew upon a predominantly rural constituency, which in the United States had a long history of being anti-monopoly and against big business. Several urban Congressmen also supported the drive for federal power as a measure for work-relief programmes. See Philip J. Funigiello, *Toward a National Power Policy: The New Deal and the Electric Utility Industry, 1933–1941*, Pittsburgh, 1973.

¹⁵ The TVA helped bring down private power rates in large parts of the south-east in the United States by directly competing with private utilities. Nevertheless, it took the enactment and implementation of the Public Utilities Holding Companies Act of 1935 to force a reduction in the then prevailing electricity rates. For Franklin Roosevelt's role in fighting the private power trusts, see Richard Rudolph and Scott Ridley, *Power Struggle: The Hundred-Year War over Electricity*, New York, 1986.

modernisation, while private utilities were merely interested in pursuing electrification. For public power advocates, electrical modernisation referred to the growth of electrical consumption through the cheapening of electricity rates and the proliferation in the use of electrical appliances. Electrification, on the other hand, was limited to the objective of transmitting electrical current to a defined geographic region. In other words, the private utilities were regarded as an obstruction to the further development and growth of the electrical and manufacturing industry in the United States.¹⁶

For reasons of scale and efficiency hydroelectric projects became pivotal to the federal involvement in electric power production. The Grand Coulee, the Bonneville, Shasta and many other such large dams were built in this period by the federal government and aimed largely at diluting the monopoly control of electrical production by private utilities.¹⁷ Harnessing the volatile and flood-prone Mississippi, Tennessee, Colorado, Columbia and Missouri rivers, however, required the entwining of flood control strategies with that of hydroelectric generation. A broad conception of river regulation and development was, therefore, needed and the idea of MPRVD rapidly acquired appeal. In effect, MPRVD, as a technological complex, was crafted to address the imperative of unifying the objective of flood control with hydroelectric generation.¹⁸

The concrete realisation of a technological achievement is, however, often compelled to await the catalytic influence of a specific political moment. The execution of the TVA as a project followed from the ramifications of the Great Depression of 1929 and the subsequent package of policies that the Roosevelt administration initiated to arrest the economic slide. The construction of dams on the Tennessee was now invested with the task of reviving the American economy by becoming an outlet for federal spending and generating employment.¹⁹ These objectives were central to the New Deal programmes and were largely directed at boosting effective demand in the national economy.²⁰ The imperative for public power and electrical modernisation through hydroelectric generation, nevertheless, remained central to the overall schema of the TVA.²¹ In fact, the coupling of flood control (through reservoirs) with hydroelectricity became so overwhelmingly

¹⁶ Jay L. Brigham, *Electrical Politics before FDR*, passim.

¹⁷ William E. Warne, *The Bureau of Reclamation*, New York, 1973, pp. 86–103. Also see Richard White, *The Organic Machine: The Remaking of the Columbia River*, New York, 1995, pp. 59–88.

¹⁸ See the interesting discussion on how the idea of the MPRVD was constituted in Herman Finer, *The T.V.A. Lessons for International Application*, Montreal, 1944, pp. 5–14.

¹⁹ For two recent reviews of some of the major debates on the New Deal, see Fiona Venn, *The New Deal*, Edinburg, 1998, and Ronald Edsforth, *The New Deal: America's Response to the Great Depression*, Massachusetts, 2000.

²⁰ For an excellent discussion on the consequences and impacts of various New Deal programmes see Anthony J. Badger, *The New Deal: The Depression Years 1933–1940*, London, 1989.

²¹ Colignon argues that hydroelectric production was the real aim of the TVA, and its structure and goals were shaped by the conflicts and tensions between private and public power advocates. See Richard A. Colignon, *Power Plays: Critical Events in the Institutionalisation of the Tennessee Valley Authority*, New York, 1997, pp. 57–74.

critical to the industrialising drive that manufacturing interests rapidly lost their interest in state governments that failed to unify the two. Most notably, in the New England States of Connecticut, Massachusetts, Vermont, New Hampshire and Maine, flood control schemes on the TVA model could not be built on account of the inability of their respective ruling elites to coordinate through interstate compacts between 1927 and 1950 and the obstruction by private utilities. The consequent absence of cheap hydroelectricity in these regions, in time, became one of the leading causes for the flight of a large number of their manufacturing industries to the southern states.²² In sum, MPRVD in the United States was assembled by the intersection of the drive for public control over the generation of power with that of the peculiar context of the New Deal. While the former was necessary for escalating a fresh and radical phase in industrialisation,²³ the latter involved the restructuring of American capitalism through Keynesian inspired state-directed planning.²⁴ The TVA phenomenon was as much an artefact shaped by a specific political economy for rule as an intervention for river regulation through a complex of hydraulic technologies.²⁵

MPRVD Unbound: Recovering the Field of Development

In response to a 'catastrophic' flood that overran the Damodar river basin in 1943, the Bengal government assembled a 10-member enquiry committee with the Maharaja of Burdwan as chairman, Dr N.K. Bose as secretary and the distinguished scientist Meghnad Saha as one its members.²⁶ The Damodar Flood Enquiry

²² William E. Leuchtenburg, *Flood Control Politics: The Connecticut River Valley Problem 1927–1950*, Cambridge, 1953.

²³ In 1949, hydroelectricity was the chief source of power in many countries: 96 per cent of installed capacity in Canada, 94 per cent in Switzerland, 90 per cent in Italy, 80 per cent in Sweden. See Colin Chant, *Science, Technology and Everyday Life 1870–1950*, London, 1989, p. 110. In the United States, hydroelectricity was the chief source of power for the manufacture of weaponry throughout the period of the Second World War. See Marc Reisner, *Cadillac Desert: The American West and its Disappearing Water*, New York, 1986, pp. 161–68.

²⁴ I draw this perspective from Thomas Ferguson's persuasively argued assessment of the New Deal as a new 'historical bloc', constituted by President Roosevelt, of capital-intensive industries, investments banks and internationally oriented commercial banks. See Thomas Ferguson, 'From Normalcy to New Deal: Industrial Structure, Party Competition and American Public Policy in the Great depression', in Dubofsky & Burwood, eds, *The Great Depression and the New Deal*, New York, 1990, pp. 184–237.

²⁵ See Erwin C. Hargrove and Paul K. Conkin, *TVA: Fifty Years of Grass-Roots Bureaucracy*, Urbana & Chicago, 1983; Richard A. Colignon, *Power Plays: Critical Events in the Institutionalization of the Tennessee Valley Authority*, New York, 1997; Preston Hubbard, *Origins of the TVA: The Muscle Shoals Controversy, 1920–1932*, Nashville, Tennessee, 1961. For a critique of the performance of the TVA, see William Chandler, *The Myth of TVA: Conservation and Development in the Tennessee Valley, 1933–1983*, Cambridge, Massachusetts, 1984.

²⁶ Dr Meghnad Saha, though an astro-physicist by profession, possessed a keen interest in the flood problems of the Bengal delta and contributed several knowledgeable articles on the subject. His interest probably stemmed from the fact that he grew up in a flood-prone village near Dacca (modern day Bangladesh). For a biographical sketch see Santimoy Chatterjee and Enakshi Chatterjee, *Meghnad Saha (Scientist with a Vision)*, New Delhi, 1984.

Committee, as it came to be known, was charged with the task of evolving a plan for flood control and examining the possible impact of such a scheme on railways, roads, irrigation and health in deltaic Bengal. In its second sitting in March 1944, Meghnad Saha circulated an exhaustive note to the members of the Committee, which detailed in glowing terms the performance of the TVA and the urgency for its replication in India.²⁷

Of all the river basins in the world, the Damodar Valley presents the closest parallel to the Tennessee Valley, though on a smaller scale. The radical solution of the problem of the Damodar Valley lies, therefore, in the adoption of similar procedure as has been done by the U.S. government through the TVA, with necessary modifications.²⁸

In the course of the Committee's deliberations, Saha's note was endorsed and in August 1944 its recommendations were forwarded to the Central authorities via the offices of the government of Bengal. In a subsequent series of administrative actions, through Lord Halifax, then British Ambassador to the United States of America, W.L. Voorduin, a senior engineer on the staff of the TVA, was hired to provide the necessary technical input for introducing MPRVD in India. Voorduin, after being appointed as member of the Central Technical and Power Board (CT&PB), was prompt in outlining a plan for the Damodar basin, which he unhesitatingly stated would essentially be a replication of the TVA experience.²⁹

The colonial administration's enthusiasm for adopting MPRVD was, however, unceremoniously brought to a standstill by the thorny and sensitive question of provincial autonomy and inter-provincial coordination.³⁰ Much to their chagrin, the central authorities realised that schemes dealing with water, which included projects for its storage and for power generation, were an item in list II of the seventh schedule of the Government of India Act of 1935. All works relating to water management and allied activities, therefore, fell under the purview of provincial control.³¹ The Act of 1935 virtually debarred the central government from

²⁷ The Note was subsequently reproduced as an article. See Meghnad Saha, 'Taming of the Tennessee River', *Science and Culture*, (1944), in Santimoy Chatterjee, ed., *Collected Works of Meghnad Saha*, Calcutta, 1987, pp. 101–14.

²⁸ See Saha, 'Taming of the Tennessee River', p. 114.

²⁹ *Report of the Damodar Valley Corporation Enquiry Committee, (1952–53)*, New Delhi, June 1953, p. 11. This Committee was also known as the Rau Committee and was instituted to enquire into the several delays and malpractices that plagued the Damodar Scheme.

³⁰ The India Office realised early on that administrative and political problems were bound to crop up when development works that required strong central direction compromised aspects of the relative economic autonomy ensured to the provinces in the 1935 Govt. of India Act. L.S. Amery, Secretary of State for India, in a note circulated to several members of government, observed 'that the problem (post-war reconstruction) is bound up with that of the relations between the Centre and the Provinces and indeed with the future course of constitutional changes in India as a whole'. See letter of Amery to Bevin, India Office, 21 January 1944, in Nicholas Mansergh, ed., *The Transfer of Power 1942–47*, Vol. IV, London, 1973, pp. 659–60.

³¹ National Archives of India, New Delhi (hereafter NAI), Finance Department, Planning Branch, I & II (1945–47), File no. 6(20)-P/45, Regional Schemes-Financing of—Should Centre Undertake to Finance Such Schemes Fully, G.O.I, A.S. Lall, Joint Secretary Planning, 30.11.1945, p. 3.

assuming executive authority over provincial subjects or from intervening in inter-provincial matters. Even the Inter-Provincial Council, which under section 135 of the Act could investigate or discuss matters relating to the provinces, was a purely advisory body with no executive power.³² In effect, provincial autonomy became the most significant obstacle to 'rapid development', a dilemma that was poignantly summed up by Keith C. Roy, private secretary to the Member of Finance:

Almost the entire field of development lies in the Provincial sphere, e.g. education, agriculture, canals, drainage, embankments, water-power, communications But post-war development on so ambitious a scale as is now contemplated involves strong Central direction, control and co-ordination in a field which is almost entirely provincial.³³

Besides recovering subjects from the provincial list, implementing technologies for MPRVD also required a hitherto unprecedented scale of administrative, legal and executive intervention. Dr B.R. Ambedkar, Member for Labour (1942–46)—the department responsible for irrigation and hydroelectric power—in the Viceroy's Executive Council, after surveying the formidable list of obstacles confronting the execution of MPRVD projects highlighted three issues which, in his opinion, warranted speedy resolution:

- (a) To develop a new instrument of executive authority for the regional control and management of projects on rivers flowing through more than one state.
- (b) To evolve a definite development approach towards water and hydroelectric power resources of interstate rivers.
- (c) To evolve an administrative set-up with a pool of technical experts to develop a national irrigation policy and render technical and other services to the provinces.³⁴

Between 1944 and 1945, not unexpectedly, the three issues and the task of asserting the Centre's control over subjects listed as provincial concerns consumed the Government of India, which was now compelled to walk a fine line between riding roughshod over regional sentiment and mobilising the latter through procedures of consultation and cooperation. This balancing act, however, often remained short on tact; whenever possible the proponents of the centralising impulse dropped all pretence of being interested in participating in a process involving dialogue

³² N.D. Gulati, *Development of Inter-State Rivers Laws and Practice in India*, New Delhi, 1972, p. 80.

³³ NAI, Finance Department, Planning Branch, I & II (1945–47), File no. 6(1) P/45, The Central Waterways and Irrigation Commission, G.O.I. Keith C. Roy, Private Secretary to the H.M. Finance, Routine Note. 17.10.1944, pp. 18–19.

³⁴ *Ambedkar's Contribution to Water Resources Development*, New Delhi, 1993, p. 22.

and discussion. On 9 September 1944, for example, Ambedkar, upon approving the establishment of the Central Irrigation and Water Advisory Board (CI&WAB), opposed any provincial consultation on the subject, allegedly because it would 'cause considerable delay'.³⁵ Ambedkar's excuse was simply less candid than the admission of B.C.A. Cook, Secretary Planning & Development, who, in an internal communication, underlined that the Centre's impatience was chiefly motivated by the desire to recover the 'field of development' from the provinces by quickly instituting mechanisms such as supra-regional authorities for the task.

[The] Labour Department have the support of the Planning & Development Department in the proposal to constitute a Central Irrigation and Waterways Advisory Board *The object is to take over as much responsibility as possible in respect of waterways control.*³⁶ (italics mine)

To the Central authorities, nonetheless, the likelihood of a backlash from the provinces against the loss of their autonomy and control over resources remained a tangible concern, and perhaps explains why the former often chose to adopt a language of conciliation, ambivalence and nuance rather than straightforward fiat.³⁷ This tactic is transparently evident in one of the very first letters from the Viceroy on the subject of the Damodar valley project. In a fairly long-winded letter sent to the governor of Bengal in October 1944, the Viceroy sought to imply that the CI&WAB had the limited objective of merely providing 'advice' to the provinces on matters connected with drainage and river control.³⁸ To pre-empt possible doubt, he also added that even in the event of authority being vested in a supra-regional corporation, the Centre would 'consider becoming partners with the Provinces in the enterprise'.³⁹

A second clarification of the momentum for MPRVD followed, with another letter issued two months later in December 1944 by H.C. Prior, Secretary Labour, which informed the provinces of the Centre's proposal to create another federal agency named as the Central Waterways Irrigation and Navigation Commission (henceforth CWINC) that would be headquartered at Delhi. The CWINC's concerns were listed as: 1) Irrigation; 2) River controls; 3) Conservation and control

³⁵ Ambedkar's *Contribution to Water Resources*, p. 180.

³⁶ NAI, Finance Department, Planning Branch, I & II (1945–47), File no. 6(1) P/45, The Central Waterways and Irrigation Commission, G.O.I, B.C.A. Cook, Department for Planning & Development, Note, 3.10.1944, p. 10.

³⁷ R.G. Casey, then Governor of Bengal, as late as 11 May 1945, made it known in a private conversation with A.N. Khosla that there was 'reluctance' from other provinces as well on the question of surrendering their provincial autonomy to 'any Commission on the TVA model'. Oriental and India Office Collection, The British Library, London (hereafter OIOC), MSS. Eur. F48/4, Personal Diary R.G. Casey, May 1945–February 1946, p. 14.

³⁸ On the controversy surrounding DVC's autonomy and its implications for Centre-State relations (especially between Bihar and West Bengal) see Marcus F. Franda, *West Bengal and the Federalising Process in India*, Princeton, 1968, pp. 62–128.

³⁹ See Ambedkar's *Contribution to Water Resource*. Appendix II.3, p. 166.

of flood water; 4) Hydroelectric development; 5) Soil conservation; 6) Tidal problems; 7) Navigation. In the hope of emphasising the need and urgency for regional cooperation, H.C. Prior took the initiative to enclose extracts of J.S. Ransmeier's glowing account of the TVA, which indicated the immense economic advantages of coordinated planning.⁴⁰ In response to the second letter, nine out of the then 11 provinces, in addition to several Princely states, welcomed the proposal for the formation of a commission.⁴¹ Despite the fact that Madras and Bengal were the two redoubtable provincial objectors, the Labour Department decided to set up the commission on the plea that the majority of the provinces had agreed on its formation.⁴² Having thus satisfied itself by acquiring sanction for constituting a federal water agency, the Labour Department issued its third and final letter in March 1945 entitled as a Memorandum on the Sone River Valley Authority. This time around, however, the Labour Department struck an entirely different tone, and the provinces and states were informed that on the setting-up of a federal agency they were to surrender 'full authority' over the concerned river to the constituted body. The water agency was entitled to have not only the sole right to generate electricity and prevent the provinces and states from abstracting water without its approval, but also had the sanction to locate dam sites and submerge lands in the territories on 'such terms as may be arranged'.⁴³ Furthermore, though the agency would legally derive its powers from the government, it was nevertheless also to be invested 'with the necessary flexibility and initiative' to develop the resources of the river basin. The implication was that the agency was not necessarily obliged to consult the provincial or state governments on all of its actions. Though the Memorandum stated that the sphere of control of the river basin authority was to be circumscribed to the extent the provincial and state governments deemed necessary, it was repeatedly also asserted that the constituted body would nevertheless be invested with supra-ordinate power to plan and develop the 'future of the river':

Provinces and states must therefore realise that if an Authority is set up that Authority must be given certain of their [Provinces and States] powers and responsibilities if it is to operate and must be given a measure of financial independence.⁴⁴

Finally, through a resolution on 5 April 1945, the Government of India constituted the Central Water Irrigation and Navigation Commission with A.N. Khosla

⁴⁰ NAI, Finance Department, Planning Branch, I & II (1945–47), File no. 6(2) P/45, Post War Irrigation: Question of a Regional Approach to River Basins and the Role of the Government of India in Promoting It Where More than One Province is Concerned, G.O.I, H.C. Prior, Secretary to the Government of India, to all Provincial Governments, 8 December 1944, p. 15.

⁴¹ *Ambedkar's Contribution to Water Resource Development*, Appendix IV.I, p. 181.

⁴² *Ibid.*

⁴³ *Ambedkar's Contribution to Water Resource Development*, Appendix II.I, p. 161.

⁴⁴ *Ibid.*, p. 162.

(1945–53) as its first chairman. On paper, at least, the CWINC was still defined as a central fact finding, planning and coordinating organisation for the purpose of ‘advising’ the central and state governments with regard to irrigation, navigation and waterways.⁴⁵ In practice, however, a different equation from that stated in the resolution seems to have operated; an equation in which the CWINC functioned largely as a bureaucracy committed to its own agendas and accountable solely to the central government at Delhi.⁴⁶ Some indication of the CWINC’s highly centralised style is indicated in a communication in late 1951 sent by Hare Krushna Mahtab, Minister of Industry and Supply in Nehru’s Cabinet, to Nabakrushna Chaudhuri, then Chief Minister of Orissa.

The position is that the Central Government has sanctioned a loan to the Orissa government for the construction of the Hirakud project. The Orissa government have entrusted the CWINC with the work of execution which means both the engineering and the administration. The CWINC is a part of the Government of India and, therefore, whatever the CWINC proposes is sanctioned by the Finance Ministry here [Delhi]. The sanction of Orissa government with regard to any proposal of the CWINC has not been sought nor made. I went through the papers and found out that even the creation of an additional post of Superintendent Engineer in which Palit was fixed up, the Finance Ministry here sanctioned it. So far as the execution of the project is concerned the entire responsibility is CWINC’s.⁴⁷

There were complaints that Khosla had behaved autocratically and had transformed CWINC into a personal fiefdom. The temperamental Meghnad Saha was, on this score, sufficiently provoked to state in Parliament that

. . . the Chairman [A.N. Khosla] was combining in himself the functions of Brahma, Vishnu & Maheshwar. He drew up the designs, he executed the schemes himself and as Secretary he passed the whole thing himself.⁴⁸

While an investigation into the functioning of the CWINC is not relevant to this argument, the above anecdotal evidence suggests that the introduction of MPRVD

⁴⁵ NAI, Finance Department, Planning Branch, I & II (1945–47), File no. 6(1) P/45, Central Waterways and Irrigation Commission, Department of Labour Resolution, 5 April 1945.

⁴⁶ The CWINC operating as a self-serving bureaucracy parallels in significant ways the functioning styles of the US Bureau of Reclamation and the Army Corp. of Engineering in the United States. See Marc Reisner, *Cadillac Desert: The American West and its Disappearing Water*, New York (revised edition), 1993.

⁴⁷ Nehru Memorial Museum and Library, New Delhi, H.K. Mahtab’s Papers, (1st Instalment), Subject File No. 36 (Economic), Letter to Nabakrushna Chaudhuri, 19 June 1951, p. 5.

⁴⁸ Meghnad Saha, Lok Sabha speech, 6 April 1954, in Santimoy Chatterjee and Jyotimoy Gupta, *Meghnad Saha in Parliament*, Calcutta, 1993, p. 52. For an excellent autobiographical sketch and assessment of the career of A.N. Khosla, see Daniel Klingensmith, *One Valley and a Thousand*, pp. 335–57.

projects in India ran alongside, or rather was premised, on the whittling down of the provincial government's control over and access to their hydraulic endowments. The Colonial government initiated an altogether new legal and executive context through supra-regional authorities that fundamentally realigned the relationship between the central authority and the provinces in order to accommodate the logistics for MPRVD.

Damming the Mahanadi

With the CWINC finally constituted, the Government of India lost little time in referring to it the 'problem' of the Orissa delta and in May 1945, A.N. Khosla personally undertook an investigation of the Mahanadi basin; following which, in a rhetorical flourish, he concluded that 'the only cure for the many troubles of Orissa, namely floods, droughts, poverty and disease lay in the control, conservation and utilisation of the enormous water wealth of its rivers by means of storage dams'.⁴⁹ Official sanction for a scheme was immediately pressed for with the convening of the Orissa Multi-Purpose Rivers Conference on 8 November 1945, which met at Cuttack, and was attended by representatives from the Eastern Agency States, the Orissa Government and the adjoining Central Provinces. The deliberations ended with B.R. Ambedkar, as chairman of the Conference, endorsing Khosla's plan in letter and spirit;

Orissa must therefore adopt the method which the United States adopted in dealing with the problem of its rivers. That method is to dam the rivers at various points to conserve the water permanently in reservoirs.⁵⁰

The Mahanadi Valley Scheme, as envisioned by Khosla, involved the construction of three dams which he believed could be coordinated to simultaneously harness the river for hydroelectricity, navigation and irrigation. The first dam was to be located at Hirakud, roughly 2 miles from Sambalpur; the second at Tikkerpara, some 130 miles downstream of the first, and the third dam near Naraj, about 10 miles upstream of Cuttack. Two hundred thousand kilo-watts of hydroelectricity were to be generated and the irrigated area was expected to cover 2½ million acres.⁵¹ The total cost was estimated at Rs 550 million, with the Hirakud dam itself accounting for Rs 160 million.⁵² Within four days of the Cuttack Conference,

⁴⁹ A.N. Khosla, ed., *Mahanadi Valley Development Hirakud Dam Project*, CWINC, Simla, June 1947, p. 10.

⁵⁰ Opening Address of Dr B.R. Ambedkar, Labour Member, Government of India, at the Orissa Multi-Purpose Rivers Conference at Cuttack, 8 November 1945, in A.N. Khosla, ed., *Mahanadi Valley Development*, p. 106.

⁵¹ NAI, Finance Department, Planning Branch, I & II (1945–47), File no. 9(7) P/46, Summary prepared by Works, Mines & Power Department, 26 May 1946, p. 16.

⁵² NAI, Finance Department, Planning Branch, I & II (1945–47), File no. 9(7) P/46, Mahanadi Project: Construction of Hirakud Project, P.N. Suri, Joint Secretary, Finance Ministry, 15.10.47, p. 28.

Khosla despatched a letter to B.K. Gokhale, Advisor to the Governor of Orissa, in which he set out an almost frenzied pace for construction:

We should aim at completing the preliminary surveys by February [1946] so that we can proceed with the preparation of a detailed project. If we can in the meantime come to an understanding with the States regarding submergence of areas, there is a good possibility of being able to start with the preliminaries for the construction of the first dam by October 1946. Investigations for materials of construction will be taken up simultaneously with the topographical and geological surveys.⁵³

By early 1946, however, it became apparent that the Scheme was going to provoke strong opposition and resistance from the Eastern States, who were expected to bear the brunt of the losses from the submergence of their territories by the reservoirs of the Tikkerpara and Naraj dams.⁵⁴ The project consequently had to be drastically revised as only the Hirakud dam at Sambalpur appeared to be politically feasible. As a strategic manoeuvre, H.C. Prior, Secretary Labour, recommended that the Government of India press on with the construction of the Hirakud dam as an independent project, and on completion its irrigation potential could be dangled as a carrot with which an agreement with the Eastern States could be renegotiated for the other two dams.⁵⁵ The rapid retreat to a single dam option possibly acted to heighten the authorities' fear that in time even the decision to dam the Mahanadi at Sambalpur could run into trouble, which in turn perhaps accounts for B.R. Gokhale's anxious attempts to get the foundation stone of the Hirakud dam laid as early as March 1946, i.e., barely five months after the Cuttack Conference. A similar haste was displayed in sorting out the bureaucratic clearances for the dam, often with very little concern for technical detail and assessments on the feasibility of the project. Completing the formality of the foundation ceremony, in fact, now became the main focus and caused H.C. Prior to dash off a letter to S.C. Mazumdar, Member CWINC, enquiring if progress on the Hirakud dam was sufficient to justify the Labour Department approaching the Finance Department for sanction. In the same letter, Prior also raised three points that he assumed would need clarification before the Finance Department could be approached:

- (a) The Minimum amount of storage that would be required to achieve any measure of flood control and the approximate cost per acre foot of such storage.

⁵³ NAI, Finance Department, Planning Branch, I & II (1945–47), File no. 6(18) P/45, Unified and Multi-Purpose Development of Orissa, A.N. Khosla, Office of the Consulting Engineer to the Government of India for Waterways, Irrigation and Navigation, Labour Department, to B.K. Ghokale, Advisor to H.E. the Governor of Orissa, 12 November 1945, p. 4.

⁵⁴ The eastern states that faced the possibility of submergence were Sonpur, Baudh, Khandhpura Baramba, Narisingpur, Athgargh and Tigria.

⁵⁵ NAI, Finance Ministry, Planning Branch, I & II (1945–47), File no. 9(7) P/46, Mahanadi Project: Construction of Hirakud Project, H.C. Prior, 16.2.1946, p. 8.

- (b) The probable availability of perennial power whether solely by utilisation of hydro or by joint scheme for hydro and thermal, and the probable demand for such power.
- (c) The probable amount of water available for irrigation and the amount that might be covered by the sale of such water.⁵⁶

Mazumdar, however, was not only unable to furnish information on any of the three questions, but, significantly enough, revealed that most of the surveys for the dam, initiated only in December 1945, were at an extremely preliminary stage and hence the estimates were tentative, if not highly unreliable.⁵⁷ In effect, much of the euphoria that surrounded the Mahanadi Scheme, even as its construction was considered a foregone conclusion, was based on a narrow set of incomplete investigations, at best. This yawning gap in reliable and accurate data, nevertheless, did not deter Narahari Rao, Secretary Finance, from being satisfied by mere 'further discussions' with Khosla on the matter, and made clear that the Finance Department had no objections to the ceremony taking place.⁵⁸ Moreover, according to Narahari Rao, the Viceroy's 'personal interest' in the subject of MRPVD had been communicated to his department.⁵⁹ Consequently, Member Finance also gave a no-objection certificate, which H.C. Prior was careful to record:

Honourable Member Finance says that he does not care a damn about the proposal to lay the foundation stone as he is all in favour of schemes of this type and does not think that the ceremony [foundation stone] should be put off merely because the question of incidence of expenditure, as between the Centre and the Province, has not yet been finally settled. He is therefore in favour of the ceremony taking place, provided the engineers are satisfied that a dam will be necessary at the site proposed.⁶⁰

The Central government continued to make allowances with another note from Narahari Rao on 6 February 1946, stating that it would not insist on the Scheme being fully self-financing as long as it was technically sound and likely to yield

⁵⁶ NAI, Finance Ministry, Planning Branch, I & II (1945–47), File no. 9(7) P/46, Mahanadi Project: Construction of Hirakud Project, H.C. Prior, Labour Department, 23.1.1946, p. 1.

⁵⁷ NAI, Mahanadi Project: Construction of Hirakud Project, H.C. Prior, Labour Department, 23.1.1946, pp. 1–3.

⁵⁸ NAI, Finance Ministry, Planning Branch, I & II (1945–47), File no. 9(7) P/46, *Mahanadi Project: Construction of the Hirakud Project*, V. Narahari Rao, Secretary Finance, 6.2.1946, pp. 4–5.

⁵⁹ NAI, Mahanadi Project: Construction of the Hirakud Project, V. Narahari Rao, Secretary Finance, 6.2.1946, pp. 4–5.

⁶⁰ NAI, Finance Ministry, Planning Branch, I & II (1945–47), File no. 9(7) P/46, Mahanadi Project: Construction of Hirakud Project, H.C. Prior, Labour Department, 16.2.1946, p. 5.

substantial benefits through 'flood control and other ways'.⁶¹ The Government of India's insistence on the project being technically sound was not, however, pursued with any vigorous conviction, despite the Finance Department's repeated declarations and observations that reliable estimates were not provided to them by CWINC. Much of the project continued to be carried out in the near absence of proper studies⁶²

Post-War Anxieties and MPRVD

On the surface, the Government of India's enthusiasm and seemingly unchecked zeal for pursuing MPRVD projects is perplexing, and appears to run contradictory to the familiar calculus of colonial governance. Not only did the government, with inexplicable urgency, carry out a substantial overhaul of several key administrative, legal and constitutional instruments in order to accommodate the logistics for constructing river-valley schemes, but, more significantly, the import of the TVA model was tantamount to an outright solicitation of American expertise, capital and by implication, the extension of the latter's influence into British India. However, when placed against the backdrop of colonial anxieties about empire in the period, this hurried drive for a certain type of centralisation and the reckless manner in which MPRVD projects were planned, assessed and approved for implementation, suggests the emergence of an altogether different blueprint for sustaining imperial influence in the region. In effect, the introduction of MPRVD in British India signalled the forging of a new political moment and a substantial revision of the existing social and economic equations. At the heart of the rapidly changing arrangements for rule was the complicated relationship between Indian industrial capital and the colonial government.

As early as August 1937, the Congress Working Committee (CWC) of the Indian National Congress (INC) had resolved to establish a Committee of Experts, who were to be entrusted with the task of taking up the questions of MPRVD and industrialisation in India.⁶³ The connection that the CWC chose to draw between MPRVD, industrialisation and the need for a planning body was by itself a significant expression of the INC's growing awareness of the urgency to elaborate an economic agenda for a national government. The vexed question of Indian industrialisation had already become a battleground of sorts in this period over which

⁶¹ NAI, Finance Ministry, Planning Branch, I & II (1945-47), File no. 9(7) P/46, Mahanadi Project: Construction of Hirakud Project, quoted in J.B. Shearer, Joint Secretary Finance, 19.2.1946, pp. 8-9.

⁶² R.M.G. Rangaiya, then retired Chief Engineer and Secretary of the Mysore P.W.D. prepared a comprehensive critique of the Hirakud Dam, which he published in August 1947. Rangaiya's report noted that the project was proceeding on a very thin number of surveys and technical studies. See R.M.G. Rangaiya, *Mahanadi Valley Development: Hirakud Dam Project*, Bangalore, August 1947.

⁶³ Raghendra Chattopadhyay, 'The Idea of Planning in India 1930-50', unpublished Ph.D. thesis, Australian National University, Canberra, 1995, pp. 91-92.

an intense struggle was waged between the colonial government, leaders of the nationalist movement, and Indian capital. The battle lines, however, were far from clearly drawn, with the political and economic agendas of the above groupings overlapping as often as they were irreconcilably poised against each other in certain arenas.

The colonial government, following the rapid broadening of the social base of the anti-colonial struggle after 1917, had been seeking throughout the subsequent decades, somewhat unevenly, to enlist the support of the Indian business class, and neutralise or prevent them from joining the nationalist camp.⁶⁴ Indian capitalists, on the other hand, were increasingly alarmed by what they perceived to be a strong drift towards left-wing populism on the part of the leadership of the Congress party.⁶⁵ Despite their apprehensions, they nevertheless continued to perceive the INC's mass mobilisation capabilities as vital towards sustaining pressure on the colonial government to ensure the protection of Indian industry, by creating infrastructure through public investment and regulating capital, commodity and labour markets for indigenous business expansion.⁶⁶ The Second World War had in the meantime created conditions favourable for the Indian economy, with war-time demand giving a massive fillip to domestic production and causing a dramatic expansion in industrial activity and employment opportunities.⁶⁷ Casting a shadow on the industrial boom, however, were fears that once war-time demand ended and production in ordnance factories and civilian industrial establishments was curtailed, a vast section of the labour force was bound to be rendered unemployed. This, alongside the demobilisation of a large number of soldiers, could lead to a potentially explosive political situation.⁶⁸ These fears were, in fact, repeatedly expressed within the ranks of the colonial government and amongst the leading sections of Indian business. As early as 1941, for example, in the proceedings of the first meeting of the Reconstruction Committee, Sir A.R. Mudalier, Member for Supply in the Viceroy's Executive Council, solemnly observed:

⁶⁴ Claude Markovits, *Indian Business and Nationalist Politics 1931–1939*, Cambridge, 1985, pp. 11–14.

⁶⁵ In 1936, 21 prominent businessmen from Bombay signed a statement criticising Nehru for what they perceived to be his overt embrace of socialist ideas. See Claude Markovits, *Indian Business and Nationalist Politics 1931–1939*, pp. 110–12.

⁶⁶ On the fractures and tensions between Indian business and the colonial state, see B.R. Tomlinson, *The Economy of Modern India 1860–1970*, Cambridge, 1993, pp. 92–155.

⁶⁷ An industry-wise break up of profits and production for the war years in India is available in Andrew J. Grajdanzev, 'India's Economic Position in 1944', *Pacific Affairs*, Vol. 17, December 1944, pp. 460–77.

⁶⁸ Britain was to spend over Rs 4,500 million in India as part of the war effort in 1944–45. This accounted for nearly one third of total government expenditure of Rs 12,000 million that year. Both these expenditures were slated for a sharp decline in the event of the end of the war. See Raghabendra Chattopadhyay, *The Idea of Planning in India 1930–1951*, pp. 213–14.

In every country industrial labour is a problem and unemployed industrial labour is certainly one of the grave problems It will be disastrous from the point of view of the national economy if we were to let loose a number of skilled labourers on the one hand and a number of unemployed sepoys [soldiers] on the other.⁶⁹

The subsequent 'Quit India' campaign in August 1942 launched by the Indian National Congress under Gandhi's leadership further alarmed the colonial authorities by exposing the seething volatility in the Indian political landscape through an intense burst in popular and radical militancy.⁷⁰ By October of that year the India Office and the Government of India were already discussing Prime Minister Winston Churchill's 'sudden brainwave', which was explained as a plan to 'side track' the political crisis in India by implementing a policy of social and economic reform.⁷¹ In the space that was opened up for reconsidering the India situation by the War Cabinet in London, Ernest Bevin, Minister of Labour and National Service, and Stafford Cripps, Minister of Aircraft Production, teamed up to argue for a bold initiative that, in their opinion, should

. . . secure the support of the mass of Indian opinion during the war by a large scale programme of social improvement supported by a propaganda campaign designed to show that these benefits were due to British initiative.⁷²

The Bevin-Cripps proposals, in fact, went to the length of suggesting that the Government of India should provide mass welfare measures in India as a strategic manoeuvre to uncouple popular loyalties from the elite leadership of the Indian National Congress.⁷³ Though the Bevin-Cripps proposals were much ridiculed by the Government of India, an immediate off-shoot of their campaign was an increasing awareness amongst official circles that formulating an appropriate public

⁶⁹ OIOC, T.E. Gregory Papers (1890–1970), Part IV, Mss. Eur. D1163, Proceedings of the 1st meeting of the Reconstruction Committee held in the Committee Room, Shimla, 23 June 1941, Speech by Sir A.R. Mudalier, p. 5.

⁷⁰ The 'Quit India' agitation of 1942 had revealed quite starkly the possibilities for independent initiative from below. See Sumit Sarkar, *Modern India*, New Delhi, 1983. For an insight into the radical potential and violence in the Quit India upsurge, see the collection of documents listed under the theme 'Aftermath of Quit India Movement', in Partha Sarathi Gupta, ed., *Towards Freedom: Documents on the Movement for Independence in India 1943–1944*, Vol. I, New Delhi, 1997, pp. 1–644. Also see the excellent monograph on Bihar by Vinita Damodaran, *Broken Promises: Popular Protest, Indian Nationalism and the Congress Party in Bihar (1935–46)*, New Delhi, 1992.

⁷¹ Amery to Linlithgow, 30 October 1942, in Nicholas Manserg, ed., *The Transfer of Power 1942–47*, Vol. III, London, 1971, pp. 170–71.

⁷² Memorandum by the Secretary of State for India, India Office, 9 April 1943, in Nicholas Manserg, ed., *The Transfer of Power 1942–47*, Vol. III, p. 883.

⁷³ For a discussion on the Bevin-Cripps proposals, see Raghavendra Chattopadhyay, *The Idea of Planning in India 1930–1951*, pp. 143–46. Also see the collection of documents in Chapter 7 in Nicholas Manserg, ed., *The Transfer of Power 1942–47*, Vol. III, pp. lxx–lxxii.

works policy with an emphasis on employment 'generating schemes such as anti-erosion works, road and building construction would be critical towards addressing the imperatives of the new political context'. Not unexpectedly, therefore, the idea of MPRVD found quick and ready appeal in this period as a means of generating employment for a great number of labourers in construction activity.⁷⁴ Such plans received a further boost from the fact that the war had drastically altered the balance of trade position, with India now possessing a positive Sterling balance vis-à-vis Britain.⁷⁵ Funds for a variety of developmental works could, therefore, in theory at least, be drawn from those reserves and several provincial governments were alerted to the possibility that infrastructure projects could be undertaken in their territories.⁷⁶ Alongside the enthusiasm for industrial expansion, a new perception about 'regional interests' also began acquiring prominence and possibly explains the aggressive solicitations for projects by provincial governments in this period. In Orissa, for example, the Chief Minister H.K. Mahtab, in his speech to the Assembly during the debate on the Mahanadi Valley Project, announced that a scramble for funding was on and it was, therefore, imperative that the

⁷⁴ Many within the Indian government and certain members of the CWINC perceived the construction of MPRVD projects as a vital complement to the overall national plan to generate employment. Such sentiment is evident in several communications that were made to the British Board of Trade in the initial years following India's independence. See, for example, J.N. Mckelvie's note to V. Thomson, Private Secretary, Board of Trade. Mckelvie reports that in a meeting with S.A. Gadkari, then hydroelectric Member, CWINC, the latter opined that:

... irrigation and hydro-electric projects will contribute more towards solving the unemployment problem than the food deficit, which he said was not more than 6 per cent.

See OIOC, Economic and Overseas Dept. Collection 58, L/E/9/38, Note from J.N. Mckelvie to V. Thomson, Private Secretary, Board of Trade, 13 September 1949.

⁷⁵ The Bombay Plan (19 January 1944), prepared by India's leading industrialists, estimated that a positive Sterling balance of Rs 10,000 million would accrue in India's favour by the end of the war. According to Dharma Kumar, on 31 March 1939, the Indian government had a Sterling debt of approximately Rs 4,700 million. By the end of the Second World War, not only was this debt wiped out, but the Reserve Bank of India had accumulated foreign assets mainly in Sterling of over Rs 17,000 million. See Dharma Kumar, 'The Fiscal System', in idem, ed., *The Cambridge Economic History of India, c.1757-c.1970*, Vol. II, 1984, Delhi, p. 944. G. Balachandran put the figure at Rs 15,120 million on the eve of India's independence. In the subsequent three years, however, financing commodity inputs, capital outflows payment to Pakistan, pension annuities and making payments to Britain for surplus military stores whittled down this amount. Consequently, Indian sterling balances stood at Rs 8,250 million by the end of 1949. See G. Balachandran, *The Reserve Bank of India (1951-1967)*, New Delhi, 1998, pp. 593-95.

⁷⁶ NAI, Finance Department, Planning Branch, I & II (1945-47), File no. 6(1) P/45, The Central Waterways and Irrigation Commission, Routine Note by Keith C. Roy, Private Secretary to the H.M. Finance, 17.10.1944, p. 16.

... we [Finance department] have not taken a narrow view of the financial assistance which the Central Government should afford to the provinces in the matter of Post-war development ... We have made it amply clear that the revenue surplus of 500 crores [Rs 5,000 million] would be available for post-war development schemes of the central government and for grants to the provinces.

provincial government quickly overcome obstacles and any likely opposition to projects in order to position themselves to receive investments from the Centre.

With regard to the Bengal, Bihar, U.P., the Punjab and Orissa projects, very keen competition is going on amongst these provinces to secure help from the Government of India and this will explain why Mr Gokhale, as advisor to the Government of Orissa was so much keen as to go out of his way to invite the Viceroy to lay the foundation stone before even the preliminary survey was made . . . he [Gokhale] wanted somehow or other to commit the Government of India to the scheme, even if after preliminary survey the site might be changed or the entire scheme might be abandoned . . . As you know, so far as Orissa is concerned this scheme will cost about Rs. 60 crores. So far as is known this is the rough cost; it may be more or it may be less, but this amounts to 25 years revenue of the Province of Orissa . . . In view of this competition we think it will be wrong on our part to show our disinclination about this scheme by any means to the Governor of India, either by asking them to delay the survey work or by asking them to abandon the work . . .⁷⁷

Planning for Rule

The motivation of the Government of India for undertaking a relatively deeper interventionist role in the economy through investments and infrastructure projects was to now turn on a fresh social and economic equation. The Government of India opted for turning the Bevin-Cripps proposal on its head through a range of policies directed essentially at lending coherence to an alliance of sorts between the colonial state and the fledgling class of Indian industrial capitalists.⁷⁸ Though by the early 1940s Indian business was frustrated with the colonial government largely due to the latter's monetary policies, austerity budgets and allowances to foreign capital,⁷⁹ the rise in popular militancy in several parts of India, nevertheless, became a source of shared anxiety. Consequently, in the drive to counter the threat of a radical attack against property in general, the Government of India attempted to open fresh lines of cooperation with Indian capital through the rubric of post-war reconstruction planning. In March 1943, the largely defunct Reconstruction Committee set up in June 1941 was replaced instead by a Committee of the Viceroy's Council, also termed as the Reconstruction Committee of Council (RCC). The RCC, with the Viceroy as chairman, was constituted as a body with powers to exercise initiative in coordinating and sanctioning plans for economic

⁷⁷ See H.K. Mahtab, Motion Regarding the Proposed Mahanadi Valley Project in *Orissa Legislative Assembly Proceedings*, Thursday, 5 September 1946, Vol. II—No. 5. Bhubaneswar, p. 125.

⁷⁸ M.N. Roy, in an essay titled 'Democracy versus Capitalism' (21 March 1943), described the entente as the 'most curious feature of the Indian situation is the anxiety of the Government to put capitalism in the saddle'. See M.N. Roy, *Poverty or Plenty*, Calcutta, 1944, p. 27.

⁷⁹ B.R. Tomlinson, *The Political Economy of the Raj 1914–1947*. Great Britain, 1979, pp. 57–103.

development. In this regard it was provided a separate secretariat and allowed to decompose into several policy committees to deal with various aspects of the plans. It was, in fact, through these policy committees that the entente between the Government of India and business became plainly visible, with the entire spectrum of Indian and European industrial and commercial interests well represented in the various committees.⁸⁰

Not unexpectedly, therefore, post-war planning by the RCC tended to very closely shadow or supplement several of the strategies that had already been drawn up by Indian capital for industrialising the economy, which the latter revealed in a document released to the press in January 1944, popularly referred to as the 'Bombay Plan'.⁸¹ The period (1944–47) of collaboration, or rather close correspondence, between Indian capital and the Government of India was nevertheless marred by several complications, especially in the manner in which the colonial state configured new linkages between the Indian economy and American and British capital.⁸² On the issue of MPRVD, for instance, a number of British engineering firms unsuccessfully waged a particularly bitter campaign to break what they considered to be an American stranglehold over the water projects sector in India. The India Office in London and the Board of Trade repeatedly pressed the Government of India to act in favour of British consulting and engineering firms in what was clearly emerging as a giant market for electrical equipment, heavy machinery and engineering expertise. On 26 October 1945, the India Office in London even sent a compilation of papers that carried criticisms of the TVA to the Board of Trade, with instructions to circulate them as a 'counterblast' to American propaganda.⁸³ At the heart of much of British anxiety and concern was the assessment, in the words of G.H. Baxter, assistant under-secretary at the India Office, that America's 'Empire aspect was obvious' as:

American experts would advise the use of American plant, American plant leads to the employment of American technicians and when replacements or extensions of plant were required it is natural that they should be sought from the same source.⁸⁴

⁸⁰ For an assessment of the plans, see D.S. Nag, *A Study of Economic Plans for India*, Bombay, 1949; K.B. Krishna, *Plan for Economic Development of India*, Bombay, 1945; S.N. Agarwal, *The Gandhian Plan*, Bombay, 1944. Also see Kesava Iyengar, 'Industrialization and Agriculture in India Post-War Planning', *The Economic Journal*, Vol. 54(214), June–September 1944, pp. 189–205. For a review of the plans and an assessment of their political implications, see Chattopadhyay, 'The Idea of Planning in India', pp. 139–269.

⁸¹ The leading Indian industrialists who sponsored the Bombay plan were Sir Purshottam Thakurdas, J.R.D. Tata, G.D. Birla, Shri Ram and Kasturbhai Lalbhai.

⁸² Indian capital maintained an ambivalent relationship with the colonial state. For all its frustrations against the British, Indian capital was overwhelmingly reliant on foreign capital for capital equipment, services and technology. See Michael Kidron, *Foreign Investments in India*, London, 1965, pp. 19–24.

⁸³ See the collection of letters in OIOC, Economic and Overseas Department Collection. 58, L/E/9/385, pp. 1–35.

⁸⁴ OIOC, Economic and Overseas Department Collection. 58, L/E/9/381, Notes of a Meeting held in the Committee Room, India Office, 8 October 1945.

Despite London's alarm and repeated protestations, the Government of India continued its embrace of both TVA expertise and equipment, signalling clearly that the previous influence and leverage of certain British business' in this period vis-à-vis the Indian government was being curtailed and undermined in some respects. Maria Misra, in her excellent study, convincingly argues that in the early stages of the Second World War the Government of India, in seeking to conciliate their Indian collaborators while simultaneously devising new strategies to secure Britain's long-term economic interests in India, was compelled to drastically jettison the old and familial routines of support to British business. On the other hand, British capital's attachment to its traditional autonomy, ideas of racial exclusivity and lack of cohesion for collective political action tended to hobble their own efforts to pressurise the Government of India.⁸⁵ In fact, the general intransigence of British capital in their attitudes and styles of conduct was evident on the issue of MPRVD schemes as well, viz., in the manner in which they sought to compel the government of India to grant them engineering and consultant contracts as exclusive privilege. In making such demands, British business, besides displaying a fatal incomprehension of the delicate nature of the political moment, was clearly choosing to persist with its insensitivity to the interests of Indian capital. This, perhaps, accounts for then Secretary of Labour H.C. Prior's blunt communication to several British firms during parleys with them that the basis of their entry into contracts for MPRVD would require them to consider:

(i) Whether the firms would be prepared to establish branches in India to undertake the projects that may come their way, (ii) whether they would be prepared to incorporate Indian consultants therein, and (iii) whether they would be prepared to afford facilities for Indian qualified engineers approaching the partnership level to work for periods of say two or three years in the London offices to gain experience.⁸⁶

In other words, the Government of India was neither interested in providing protection or safeguards to certain sections of British capital nor willing to endorse their practices of racial exclusivity. Rather it was expected that they would compete against or collaborate on their own initiative and means with their Indian and American counterparts. However, the centre-piece of the varied plans of the colonial government for radically modernising sectors of the Indian economy was premised very significantly on the plank of political stability; a calibrated dose of industrial expansion was viewed by dominant sections within the

⁸⁵ Maria Misra, *Business, Race and Politics in British India, c.1850-1960*, Oxford, 1999, pp. 162-81. Also see idem, 'Gentlemanly Capitalism and the Raj: British Policy in India between the World Wars', in Raymond E. Dumett, *Gentlemanly Capitalism and British Imperialism: The New Debate on Empire*, London, 1999, pp. 157-76.

⁸⁶ OIOC. Economic and Overseas Department Collection. 58, L/E/9/385, Note of a Meeting Held in Mr Rumbold's Room on 7 November 1945, p. 7.

Government of India as a strategic intervention that could probably help break the high wave in popular mobilisation and labour militancy.

The political context fuelling industrial expansion in British India also resulted in a distinct transformation in the tone and temper of the Imperial rhetoric of governance. In the high discourses of rule, British India was now recast in the image of an underdeveloped region weighed down by 'population pressure', and putatively crying out for a rapid increase in productivity through economic modernisation.⁸⁷ Declarations on the need for state-sponsored development were amplified in discussions on post-war reconstruction and to typify this new spirit and intent, Viceroy Wavell (1943–47), in a Memorandum in November 1943, unambiguously declared that the colonial administration was now 'expected to carry out a large program of improvement'.⁸⁸ Along the axis of such reasoning R.G. Casey, Governor of Bengal (1944–46), in a radio broadcast in late 1945, underlined the new urgency for hydraulic management in the Bengal Presidency as arising from the administration's need to liberate the cultivator from the 'tyranny of the monsoon'. The debilitation and poverty produced by nature's uncertainties would be corrected by the 'rationalisation and control' through technical interventions in the otherwise volatile river systems.⁸⁹ In effect, British India's impoverished millions were increasingly portrayed, in a growing number of development-narratives, as victims created by the fatal interplay between population growth and natural scarcities, the resolution of which lay not in the realm of political freedom and justice, but economic modernisation through developmental initiatives by the state. The emergence of a peculiarly colonial rhetoric on state welfare in British India was, however, in step with the broader pattern of capitalist restructuring in the period, wherein industrial expansion and state-directed efforts to sustain effective demand in the economy were touted as being foundational to the existence of the modern nation state.⁹⁰ Consequently, emulating the TVA module in India as the harbinger of rapid industrialisation was portrayed as the very *raison d'être* of post-war reconstruction planning. In one of his despatches to the

⁸⁷ OIOC, T.E. Gregory Papers (1890–1970). Mss Eur. D1163. T.E. Gregory, then Economic Advisor to the Government of India, in a paper entitled 'India and the Economic Order' (2/3/1943), in several ways sets out the emerging official paradigm of discourses on Indian underdevelopment as essentially a problem of over-population and inadequate technical development. In effect, questions about the skewed dynamics of power and property and the colonial legacy of exploitative social and political relations are rendered invisible.

⁸⁸ OIOC, Wavell Collection, Private Weekly Letters 1943–44, L/PO/10/21, Governors' Meeting, November 1943, Post War Reconstruction, Memorandum by the Viceroy, pp. 31–33.

⁸⁹ OIOC, Personal Diary R.G. Casey (May 1945–February 1946), MSS Eur. 48/4, 'Poverty or Plenty'. Broadcast Speech on All-India Radio, Calcutta, Saturday, 8 December 1945.

⁹⁰ Kidron argues that the drive for planning in capitalist countries in the post-war era was a response to a need for 'internal coordination' for new production cycles, technological innovations, and the increasing interdependence between national economies. See Michael Kidron, *Western Capitalism Since the War*, London, 1968, pp. 17–43. Also see Philip Armstrong, Andrew Glyn and John Harrison, eds, *Capitalism Since World War II: The Making and Breakup of the Great Boom*, London, 1984, pp. 193–212.

provincial governments, H.C. Prior succinctly summed up the role of MPRVD schemes in the new paradigm for governance:

Post-war development is now considered one of the most vital matters before the Govt. of the country. The broadcasting of the Electrical Industry and the development of hydro-electric power are inextricably connected with the development of industries and food production. The expansion of irrigation, the conservation of soil and the control of floods are directly connected with the food supply of the country and the general contentment and prosperity of the people.⁹¹

Concluding Remarks

The foundation stone for the Hirakud dam was laid by Hawthorne Lewis, the Governor of Orissa, on 15 March 1946.⁹² Barely four months elapsed between the decision at the Cuttack Conference (8 November 1945) to pursue the project and the foundation stone ceremony. Feasibility studies assessing the technical viability of the scheme, inappropriately enough, were completed only in June 1947, more than a year later.⁹³ On 12 April 1948, the then Prime Minister Jawaharlal Nehru laid a second foundation stone and the actual construction work on the dam was begun in the latter part of that year. The final design for the Hirakud Dam was approved in June 1951, and the earth-cum-concrete and masonry dam was completed in 1957. After its inauguration on 13 January 1957, the reservoir was filled to capacity in the monsoons of 1958.⁹⁴

The decision to dam the Mahanadi river at Hirakud and the import and adoption of MPRVD into British India was not only emblematic of a specific consensus between fledgling Indian industrial capital, the colonial government and certain sections of the nationalist leadership. More significantly, it was in sync with the larger momentum of capitalist restructuring in the period, which in turn drew

⁹¹ See Letter from H.C. Prior to all Provincial Governments, 8 December 1944, in *Post War Irrigation: Question of a Regional Approach to River Basins and the Role of the Government of India in Promoting It Where More Than One Province is Concerned*. GOI, Finance Department, Planning Branch, File no. 6(2) P/45, p. 11. Prior's schema bears an uncanny resemblance to David Lilienthal's notion of unified economic development, outlined by the latter in his much celebrated book on the TVA, published in 1944:

... the lessons of the unity of resource development; [was] the close inter-relation between electricity and industry, between industry and farming, between farming and the building of the soil, between the soil and flood control.

(David Lilienthal, *TVA: Democracy on the March*, Chicago, 1966, p. 137).

⁹² *Ambedkar's Contribution to Water Resources Development*, p. 113.

⁹³ A.N. Khosla, ed., *Mahanadi Valley Development Hirakud Dam Project*.

⁹⁴ *Report on the Benefits of Hirakud Irrigation (A Socio-Economic Study)*, Bhubaneswar, 1968, pp. 10–11.

from the context of the TVA: the politics driving New Deal programmes, macro-economic planning and Keynesian fiscal and pump priming measures that had emerged in the backdrop of the great economic depression in the United States in the early 1930s.⁹⁵ In arguing that the origins of MPRVD in India were a result of a particular political moment, this article attempts to offer a corrective to the notion that Jawaharlal Nehru's sense of monumentalism or personal allure for the modern provided the main vectors for large dam construction in post-independence India. Undoubtedly, the Nehruvian rhetoric about dams being 'temples of modern India' served as a powerful endorsement to and encouragement for MPRVD schemes, but ascribing a determining role to his personal will tends to obscure and decontextualise aspects of political economy and rule that were significant in influencing the administration's selection of MPRVD schemes for large-scale hydraulic manipulation. More specifically, I have sought to argue that British India's embrace of MPRVD was integrally linked to the colonial authorities' attempts to place Indian capital in the saddle at the cusp of independence, in an attempt to silence the strains of popular radicalism asserted in the anti-colonial struggle. MPRVD schemes, not surprisingly, were soon worked into an ideological rubric for calibrating a social temperature for rule; an aspect that was made even more glaringly evident in the post-independence phase. Nehru's speech delivered to the Constituent Assembly on February 1948, in response to a resolution moved by Kazi Syed Karimuddin, is particularly instructive in this regard. Karimuddin sought to have the Assembly resolve in favour of India adopting a socialist economy that was 'based on the principle of nationalisation of key industries and cooperative and collective farming . . .'. In a somewhat chaotically formulated response, Nehru argued that the new possibilities for dramatically raising levels of economic output with the help of science and technology made the question of distribution relatively less significant and river valley schemes, as part of the new edge in technological innovation, could provide the 'basis of all future growth' by solving the food problem and providing power for industrial growth.⁹⁶ Nehru's retort that technological advancement could trump issues of distribution had by then, in fact, already become part of a widely deployed rhetorical device by planners, administrators, industrialists and members of the new Indian ruling elite

⁹⁵ For an accessible, readable and engaging survey of the discipline of economics and its treatment of the notion of capitalism see Douglas Dowd, *Capitalism and its Economics: A Critical History*, London, 2000.

⁹⁶ Kazi Syed Karimuddin's Resolution read as follows:

This Assembly is of opinion that the economic pattern of this country shall be socialist economy based on the principle of nationalization of key industries and co-operative and collective farming and socialization of the material resources of the country and that the Government of India shall adopt the said principle immediately.

For Nehru's response, see 'Our Economic Policy', in Jawaharlal Nehru, *Independence and After*, New Delhi, 1949, pp. 163–72.

to explain the economic and political objectives of post-independence development.⁹⁷ In sum, the dynamic for the adoption and deployment of MPRVD schemes in pre- and post-independent India was promoted largely as part of an equation between Indian capital, the state and as a new rhetoric for rule.⁹⁸

⁹⁷ See, for example, the Indian Government's Industrial Policy Statement (6 April 1948), which bears the following passage:

Any improvement in the economic conditions of the country postulates an increase in national wealth. A mere redistribution of existing wealth would make no essential difference to the people and would merely mean the distribution of poverty. A dynamic national policy must, therefore, be directed to a continuous increase in production by all possible means, side by side with measures to secure its equitable distribution.

(D.S. Nag, *A Study of Economic Plans for India*, Bombay, 1949, pp. 161–62).

⁹⁸ Studies on the dilemmas and anxieties of the Indian capitalist class vis-à-vis industrialisation on the eve of India's independence are limited. See the recent revision of the thesis that the Indian capitalist class was keen on state planning in Vivek Chibber, 'Locked in Place: State Building and the Failure of Industrial Policy in India, 1940–1970', unpublished Ph.D. dissertation, University of Wisconsin-Madison, 1999. In Chapters 4, 6 and 7, Chibber provides fascinating new source material to convincingly argue that the Indian business class was effectively opposed to the kind of disciplinary planning that was necessary for a developmental state.