The Oxford-Nagoya
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THE ENVIRONMENTAL HISTORIES OF EUROPE AND JAPAN

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Dam Japan No More! A Half Century of Planning and Protest

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Abstract

Taking James Scott's arguments in *Seeing Like a State* as its starting point, this essay explores ways in which post-war Japan has dealt with local communities in developing its regional plans for flood control. It explores these relations through a case study of the Yanba Dam project in Gunma prefecture and contrasts the degree of local input into riparian civil engineering projects in pre- and post-war Japan, finding problems Scott identified with authoritarian regimes in democratic Japan.

Keywords

Flood control, dams, state-society relations.

Perhaps no other purely domestic Japanese controversy in the past year has attracted so much attention as that over the Yamba dam project.[2] The lightening rod for growing anti-dam, and more broadly, anti-public works, sentiment, it embodies the broad array of trajectories and issues that have accumulated in the post-World War II decades. The immediate stimulus for the project was a major flood, abetted by the transformed political and economic environment of post-war Japan. The controversy over the dam, like many other projects, initially lay in the allocation of costs versus benefits to the residents who would be most affected by its construction reservoir. The post-war emphasis on the promotion of democratic processes and principles created consistent opportunities for anti-dam advocates to push back against a planning bureaucracy that has stuck with the rudiments of the initial plan with quiet but ferocious tenacity for some sixty years.

The story is not only of consequence in post-War Japanese history, it also sheds light more broadly on a widely-publicized view of the role of state visions in failed mega-projects, political scientist James Scott's take on *Seeing Like a State*. His analysis focused on doomed large-scale projects as symbols of modernization, constructed to announce a nation's "arrival" as a partner in advanced international economic, business and government stages and designed to induce large-scale improvements in society. Scott identifies four requirements for clumsy, bound-to-fail large-scale state action:

1. Administrative ordering of society: an array of standardized images of applied across society, e.g., modern maps, censuses (with their fixed categories), and the like, a characteristic, he says, that marks modern states generally, but which takes on a different, rather sinister characteristic when combined with the following three traits.

[2] The other really big, persevering issue involves foreign policy, the dispute over location of the U.S. military base in Okinawa.

2. High modernist ideology which, as a FAITH, stresses an optimistic assessment of the modern technical, scientific and economic capacity to address social objectives and limit the impacts of nature (again, common to modern states, and by itself, not problematic).
3. An authoritarian regime willing to marshal all its muscle to implement a massive project.
4. A weak society incapable of effective opposition to the designs of its authoritarian overlords.[3]

Each of these characteristics arguably applied to pre-World War II Japan: It had an autocratic, undemocratic government that rode roughshod over its political opposition. It used its power to "map" Japanese society by modern scientific cartography, censuses, production statistics, taxation, justice systems, constitution and the like, having these techniques and their outcomes well in hand by the time of Japan's first modern national census in 1920. These were elements of a broader range of policies designed to "civilize" Japan by making it as modern as Western Europe and North America. While historical work tends to idealize opposition to the Meiji Oligarchy and its successors, especially those which gained control in the 1930s, that interest is always framed by its clear failure to prevent domination by aggressive, right-wing military forces in the 1930s and 1940s.

By contrast, Japan since 1945 is generally treated as having eliminated the last two of the critical elements in Scott's paradigm. One can still see a well-mapped society and for most of the post-war era, one that arguably embraced high modernism. Japan, however, was liberated from autocracy and its civil society was substantially enabled through democratic institutions, capable of voicing its opposition to unwanted government policies. Under these circumstances, there presumably was some control on overly ambitious schemes that might run roughshod over any local opposition.

The discussion below suggests a more complex picture. Scott's own prefatory discussion suggested that what he presented in his book was just a part of what he originally envisioned: He cut out all the material he had gathered on the Tennessee Valley Authority (TVA) in the U.S., a state clearly not dominated by an authoritarian regime in most peoples' imagination. Why would he even think about analyzing such a development, one often viewed very positively?

One possibility lies in the inherent challenge of efforts to control flooding by managing rivers, one that inevitably creates "losers:" water, and the streams through which it flows, are what some have called fugitive resources. Neither water nor the streambeds stand still. They move. What one does on one part of a river will necessarily impact another segment. This fugitive resource crosses the boundaries of both well-integrated human communities as well as administrative boundaries. On the one hand, dividing up control among small communities can avoid some of the problems that Scott deplores – e.g., the loss of local knowledge useful an adapting to flood hazard risk. Coordination with other communities is still needed, and during Japan's early modern era it was very effectively implemented, so that upstream communities generally did not take actions that seriously damaged downstream communities over the long run.[4] Conversely, the lack of regional coordinating control limited the resources available to invest in riparian control. It also meant that in many in-

[3] James C. Scott, *Seeing Like a State : How Certain Schemes to Improve the Human Condition Have Failed*, Yale Agrarian Studies. (New Haven [Conn.]: Yale University Press, 1998), 4-5.

[4] There were many, many disputes, and local archives are filled with documents that reveal these contests, however, these were typically resolved in ways sensitive to the needs of all involved, even though not everyone was entirely happy with the outcome.

stances coordinated riparian planning was not possible. With this challenge in mind, the Shogun took a number of initiatives to coordinate cross-boundary river development efforts on streams that affected its own territories, e.g., the Tone River in the Kanto.[5] But even in these efforts were geographically limited relative to the size of the drainage basin.

The Tokugawa could not control such a fugitive resource in its entirety; today's modern state can, however. In so doing it introduces new sets of stakeholders in riverine resources, necessarily complicating the process of achieving trust among participants and negotiating solutions tolerable to all. In the Tokugawa era, residents in Edo had no input in flood control on the headwaters of the Agatsuma river in the mountains of central Japan (near the borders of modern Gunma and Shinano prefectures), for example, while its modern counterpart, Tokyo, does.

While the democratic circumstances of post-war Japan provided some means for incorporating the interests of diverse stakeholders, the situation was not all that benign – as we shall see below.

Background to Dam Building in Japan

Before more closely examining the Yamba project, the focus of this essay, some general background on dam building and the Japanese riparian environment is in order. Data on large dams clearly show the post-war acceleration in Japanese dam-building. To a considerable degree this trajectory reflected more than modern technological developments. Just how much dam-building blossomed bears some adumbration, for it reveals the scale of Japan's increased stress on so-called brute force technologies to deal with its natural environment, as well as a significant shift in the use of and rationale for building dams.

Small Reservoirs: First, it is worth noting that while Egypt's Gamal Abdul Nassar and others have been enthralled with construction of large dams like the Aswan, Japan's geography does not offer the kinds of opportunities present in Egypt, India, China and other sites well-known for their large dams. While there are some spectacular dams, e.g., Kurobe Dam on the river of the same name, Japan's mountainous topography creates relatively small-scale drainage basins, at least by comparison with many other areas of the world. The Tone, Japan's largest drainage basin by area (and its second longest), drains some 16,840 square kilometers. In contrast, the Rhine drains 185,000 square kilometers, and the Danube, 817,000.[6] National total dam reservoir area for Japan is 22.2 billion cubic meters, not even the equivalent of just one dam in the U.S., the Hoover Dam (40 billion cubic meters).[7] Dams are built typically in quite difficult-to-construct environments, settings that demand high dams but create relatively small holding ponds, and dam sites are often located in difficult to access places. In combination, these circumstances presented a set of technical challenges that frequently were not overcome until after 1945 and raise the costs of dams.[8]

The small size of Japanese potential holding ponds also means that it is not possible to build one large dam to solve the flood problems of a major river basin. Instead, it is neces-

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[5] Conrad Totman, "Preindustrial River Conservancy: Causes and Consequences," *Monumenta Nipponica*, no. 47 (1992). See also, William W. Kelly, *Irrigation Management in Japan : A Critical Review of Japanese Social Science Research, Cornell University East Asia Papers No. 30* (Ithaca, N.Y.: China-Japan Program Rural Development Committee, Cornell University, 1982).

[6] Japan Commision on Large Dams, *Dams in Japan: Past, Present and Future* (London U: Taylor & Francis Group, 2009), 182.

[7] Ibid., 11.

[8] Ibid., 16.

sary to construct multiple dams on tributaries. For example, Japan's longest river and its third largest by drainage area, the Shinano, has only one dam on the main stream, and it is designed to generate hydro-electric power, and not to create a reservoir for regulating water flow.

General Trends in Large Dam Building: The following trends in dam-building are clear: 1) Post-war Japan has generated a spurt in large dam construction. 2) Large dams built before 1900 tended to be the smaller sort, less than fifteen meters high. 3) The largest dams (generally over fifteen meters) were overwhelmingly built after 1945.[9] The greatest period of dam-building was from 1946 to 2008, Japan's democratic era, not the period from 1900 – 1945, the period of the mature autocratic governance. Within this trajectory, a diversification of functions for dams is evident.[10] 1) Multi-purpose dams, are comprised primarily of the largest class of large dams. 2) Dams designed for flood control purposes overwhelmingly are found the largest class of large dams. 3) Flood control functions apply to less than 17% of all existing large dams; overwhelmingly dams serve other purposes. Even among dams built for flood prevention, larger classes of dams were overwhelmingly a post-war phenomenon. All these developments were part of an all-out program of civil engineering aimed at flood control, irrigation, power development and promotion of other infrastructure designed to reinvigorate and expand the post-war economy, first to recover from the war, and subsequently to promote broad prosperity in the 1970s and 1980s or, in late-century, to support a flagging economy.

What explains the dramatic shift from pre-war to post-war trends in dam building? One important element is the elimination of large-scale military expenditures which freed up significant funds to invest in civil engineering. In addition, projects that served to promote industrial growth and improve communications, public safety and the like, and which also employed lots of people, tended to get government support. Civil engineering filled that bill and in significant measure, so did the development of riparian civil engineering. It fostered economic recovery and growth in multiple sectors, e.g., broad provision of hydro-electric power for industrial use, with the bonus that dam construction provided demand for Japanese-produced iron, steel, cement and power equipment which created further jobs. Riparian projects generated a sense of national pride as well. Exploring the plans for the Tone River basin after Hurricane Kathleen, one Japanese newspaper article crowed that the combined project "surpasses the Panama Canal!"[11]

We can, however, over-stress circumstances related just to Japan. World-wide construction of large dams accelerated after World War II, led by China (the number one builder of large dams, constructing some 46% of them over the past century), the U.S. (second, at 14%), India (third at 9%), Japan (6%), Spain (3%), Korea and Canada (about 2% each), Turkey, Brazil and France (at about 1% each).[12] This listing of the top ten agents of large dam building indicates the prominence of fast-growing Asian nations (half the top ten, if we count Turkey, and three-fifths of the top five). Given the numbers of dams built in these countries, they were interested in more than using them to demonstrate their arrival as "modern" societies (Scott's emphasis). The implicit focus for dam-building was on pro-

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[9] By the World Commission on Large Dams' definition, all dams of 15 meters height or greater are large dams (5-15 meter dams with storage ponds of 15,000,000 cu meters also meet that definition, but are not reflected in the Japanese data since Japan's short, steep, narrow valleys create circumstances which do not create such ponds with dam heights of 5-15 meters).

[10] Table A3.3 Number of Existing Dams by Purpose, (*Dams in Japan*), 183.

[11] "Panama unga shinogu Tone dai kōji," *Yomiuri shinbun* (Morning edition), February 16, 1949, 2.

[12] World Commission on Dams, *Dams and Development: A New Framework for Decision-Making* (London and Sterling VA: Earthscan Publications Ltd., 2000).

motion of infrastructure to support effective economic development: hydroelectric power, to be sure, but equally or more important, provision of water for both industrial and agricultural use, and protection of economically productive areas (flood control). The willingness of public entities to invest in these projects, especially in the command economy of China, has been a clear factor. Even in capitalist economies, however, the scale of new projects (think Three Gorges Dam) and the new technologies they employed were increasingly expensive, and this degree of dam-building required financial resources beyond those contemporary private companies could typically justify.

Fig. 1 Damage from Hurricane Kathleen, 1947

Dams as a Response to Post-War Floods. The big thrust toward flood control came as a consequence of multiple post-war floods, and that concern with inundation remains a persistent issue for Japan today. Japan is widely subject to damage from hurricanes and extended, sometimes torrential rains. According to the World Commission on Dams, some 50% of Japan's present population – even after development of extensive riparian works to limit flooding -- is still subject to such hazards.[13]

In the immediate post-war years a series of major storms and floods added a special sense of urgency. Scholars and commentators widely credit one of these events, hurricane Kathleen, as the immediate stimulus for planning Yamba and its sibling dams in the Tone and

[13] Ibid. On September 1, 2010, "Disaster Prevention Day," NHK broadcast a special, "The Capital Submerged," that detailed the challenges faced by the Tokyo metropolitan area in dealing with heavy rains now that many rivers have, in effect, simply been converted into storm sewers, and miles of subways threaten to serve as overflow outlets for them, based in no small part on Tokyo's recent experience with floods.

Arakawa river basins of the Kanto. Kathleen struck Japan in mid-September, 1947, wreaking havoc with its intense rains and 90 knot-per-hour winds. Careening along Japan's Pacific seacoast over three days, its force burst dikes and caused flooding throughout the greater Tokyo metropolitan area.

Kathleen was not the largest typhoon to hit Japan, however, and although the worst of these did not hit the Tokyo area, there were repeated storms that wracked the region. This repetition may have been as much the stimulus to regional flood planning as anything else. To be sure, this was also the capital district, home to Japan's most powerful economic and political figures, as well as Japan's largest metropolitan population and major concentration of wealth-generating enterprises, all likely factors in focusing heavy attention first on the Kanto.

Fig. 2 Location of Gunma Prefecture and Naganohara

Yamba

The planning configuration that underlay the Yamba Dam differed from pre-World War II efforts, and contrary to images of overbearing authoritarianism pre-war planning in Japan involved calls for significant local inputs. Although pre-1946 prefectural governors were appointed by Tokyo rather than elected locally, they could not act alone, and local inputs for riparian projects were actively sought. The first comprehensive legislative/legal context established by the River Law (1896) framed pre-war riparian management and engineering, but even before this time local forces were active in pressing for national funding.[14] If there was local opposition, it was largely focused on debates within prefectures before legislatures voted on, and recommended particular projects, or enacted corollary legislation authorizing

[14] See, e.g., Michael Lewis, *Becoming Apart : National Power and Local Politics in Toyama, 1868-1945*, Harvard East Asian Monographs (Cambridge, Mass.: Harvard University Asia Center, 2000), Philip C. Brown, "Constructing Nature," in *Japan's Natural Legacies*, ed. Brett L. Walker, Julia Adeney Thomas, Ian Miller (forthcoming).

expenditure of local funds, permits, and the like preparatory to a project.

There were no pre-war plans for a dam in the Naganohara area of Gunma Prefecture and the development of Yamba dam there illustrates several characteristics associated with post-war dam planning and construction. First, in the case of Yamba, there was no apparent residential or town input in developing plans for the dam. Second, its long history illustrates just how long-term the planning could be. Despite early plans to develop a dam on the Agatsuma River as part of efforts to regulate flooding on the Tone River system after Kathleen, serious efforts to advance its actual construction did not begin until some four decades later, long after such plans would likely have been abandoned as outmoded and unnecessary in other national contexts. Third, this trajectory hints that while Kathleen was the stimulus for the Yamba dam, it was, at best, the push that got the ball rolling. Even in the context of flood prevention, however, the object was not protection of the people in Naganohara, or even downstream within Gunma, but concern for Tokyo and its immediate environs. Fourth, the orientation toward the needs of the Kanto played out in other ways as well, especially regarding plans for adequate water supply to the burgeoning metropolises in the Kanto Plain, a prominent focus of late twentieth century proponents of the dam.

Early Planning and Development. Given the lack of plans grounded in any local needs at all, the first public announcement that Naganohara was considered the prime location for a dam on the Agatsuma river provoked vigorous and effective local opposition.

The planning which included Yamba Dam began in April, 1948, at the national and regional level, with the creation of the Tone River Flood Control Realization League (Tonegawa Chisui Kisei Renmei). In 1950 it merged with the Tone River Flood Control Association (Tonegawa Chisui Kyōkai), also created in 1948, to form the Tone River Flood Control Alliance (Tonegawa Chisui Dōmei), comprised of representatives from Tokyo and the five prefectures of Gunma, Ibaragi, Tochigi, Saitama and Chiba, all the prefectures from which the Tone River drew its waters.

This organization represented a clear effort to get prefectural administrations involved in the design and development process. That said, it should be borne in mind that Prefectural Governors were only first popularly elected in 1947 (they had been appointed by Tokyo up to that time) and they were just beginning to work out their new relationship with the central government. In addition, it is clear from later reaction of both citizens and town officials that prefectural officials made no effort to discuss plans with Naganohara local officials.

By 1949, the Alliance completed plans to develop a system of dams on the Tone River network. It identified their construction as the key policy thrust in controlling floods on the Kanto. While the outlines of the plan had solidified, the specific locations for each of the dams had not yet been determined.[15]

Among the Flood Control Alliance planners there may have been general discussion of a dam on the Agatsuma, but the mayor of Naganohara was first notified that his town had been selected as the preferred dam site only on May 16, 1952. The immediate local reaction was summarized in the town report, *Naganohara chōhō*, which complained, "Why should we have to sacrifice for the people of the lower Tone River?"[16] At the August town council meeting, a group of residents presented a petition protesting location the dam in Naganohara and created an organization to oppose the dam, the Yamba Dam Taisaku Iinkai (Committee on Countermeasures to the Yamba Dam).

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[15] Tonegawa Hyakunen Shi Henshū Iinkai, *Tonegawa Hyakunen Shi* (Tokyo: Kensetushō Kantō Chihō Kensetsu Kyoku, 1988), 926-928.

[16] Yamba Damu wo Kangaeru Kai, *Yamba Damu Wa Tomaru Ka: Shuttoken Saigo No Kyōdai Damu Keikaku*, Iwanami Bukuretto (Tokyo: Iwanami Shoten, 2005), "Yamba damu keikaku kanren nempyō."

By the Diet's lower house elections in the fall, 1952, the dam was a focal point of discussion for the campaigns in Gunma Prefecture's Third Election District in which Naganohara was situated. Two men who later became Prime Minister, Fukuda Takeo and Nakasone Yasuhiro, were among the candidates. Fukuda took a pro-dam stance, Nakasone was closer to dam opponents and drew support into his party on that basis, with some 100 anti-dam voters becoming members.[17]

The following February (1953) the mayor, accompanied by some four dozen citizens travelled to Tokyo to hand-deliver anti-dam petitions to members of the Diet, including meetings with key figures such as Satō Eisaku (Chief Secretary of the Liberal Party, later Prime Minister) and Obuchi Mitsuhei (father of yet another Prime Minister). This was the first of a series of petition presentations that included the Governor of Gunma Prefecture, its legislature, and the Keizai Shingichō (Economic Conference Board). In some instances, multiple petitions were submitted to local representatives, local members of the Diet, and an array of administrative organizations.

Fig. 3 Degeneration of nails in acidic Agatsuma River water (author's photograph)

By the end of this round of petitions, planners in the Ministry of Construction had finally been made aware of the pitfalls of proceeding without benefit of local knowledge (a key concern in Scott's thinking): they became aware that the river on which they planned the Yamba dam posed a special problem for construction, a problem hinted at by the Agatsuma River's nickname, "Dead River" ("shi no kawa") because of very high, naturally occurring acid content, no fish swam in the river. Water from the Agatsuma was not potable, or even useful for irrigation.

More importantly, the acidity quickly damaged not only iron and steel, but concrete as well. Nails were eaten away to nothing in ten days (Fig. 3). Concrete took longer, but damage was clear within a week, and severe within a month.

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[17] Suzuki Ikuko, *Yamba Damu: Keikaku Ni Furimawasareta 57 Nen* (Tokyo: Akashi Shoten, 2009), 320.

Local Support Emerges. To this point, the key local actors all appear to have been in alignment against the dam; but cracks began to appear. The mayoral election of 1954 resulted in the election of Sakurai Takeshi who remained in office for a total of twenty years. Sakurai was an ally of Fukuda Takeo, the Diet candidate who had specifically supported construction of the Yamba Dam. Over time supporters and those willing to accede to dam construction exerted their influence, but not before others interceded.

The key opposing players through the first two years after the dam's announcement were the planners at the national level and the opposition Mayor and citizens' groups at the local level, but with the appearance of concern over the impact of acidity on the proposed dam, a third appeared, the prefectural government. It had had representatives involved in the post-Kathleen regional planning, and its organs had been the targets of petitions, but it did not initiate action. In response to the possible cancellation of the project because of the water acidity problem, however, the prefecture took a more active role.

The first clear manifestation of prefectural interest in building the dam appeared in 1957, when the Gunma developed a plan for regional development, the "Project for the Overall Development of the Agatsuma River." Preliminary surveys for the project were carried out in the same year. One significant part of the plan focused on improvement of water quality, a focus that meant doing something about the high acidity of the Agatsuma. It developed a plan to neutralize acidity by introducing a lime mix into affected streams. A neutralizing plant was to be built on the Yu River, one of three tributaries of the Agatsuma most responsible for the introduction of acid into the stream. Construction started in 1961 and was completed in two years.

While this plant was the responsibility of Gunma Prefecture, it could not achieve its full purpose without construction of an unusual dam, the Shinaki, downstream on the Yu River. This dam was located on the Yu below its conjunction with the Tanizawa and Ozawa rivers, the other rivers that fed poison into the Agatsuma. Construction began in 1961, about the same time as the neutralizing plant, and was finished in 1965, shortly after the plant's completion.

The purpose of this dam was to hold waters from all three streams to allow the limestone mix to eliminate acidity from the combined streams before entering the Agatsuma. The dam itself prevented no floods, served no recreational purpose, and only supplied water to the Agatsuma, not to hydro-electric or industrial plants, businesses or private homes. Multiple outcomes resulted from its construction, but all were associated with its impact on the Agatsuma River.[18] Once the dam was completed, the neutralizing plant operated (and continues to operate), 24 hours a day, seven days a week.[19]

The Shinaki was built by the central government, and while the neutralizing plant may have been directed by the prefecture, it is clear that both the central government and prefecture collaborated. To understand why this collaboration developed and why the prefecture cooperated rather than taking up the cause of Naganohara dam opponents, one must understand that, from the time of the Meiji Restoration and the implementation of a national land tax system, prefectures have had very restricted autonomous revenue streams. Much of the revenue they received (and continue to receive) was funding of prefectural operational expenditures and special projects by the central government. The central government provided incentive funding for prefectures to undertake projects it deemed in the national interest.

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[18] Water is taken from the lake through a separate conduit to generate hydroelectricity at a plant located on the shores of the Shirasuna River, into which the Yu River empties.

[19] To date, one limestone mountain has been removed to supply lime for the plant, demolition of a second is under way. A third source is nearby, but plans after it is gone are unclear.

Even today such funding typically constitutes a significant fraction of the total costs, and therefore allows prefectures to increase the impact of local funds they put on the line. Under these circumstances, the state wields a very effective, attractive carrot.

Beyond these incentives, the collaborative projects typically have enticements of other sorts. In the case of the neutralizing plant, the Agatsuma was given a new life. It is no longer a Dead River. Trout thrive, the water is potable. The river can now supply irrigation water. Each of these developments provide economic benefits for the region, enhancing not only its charm as a tourist attraction, but also business and agriculture. During construction monies were injected into the local economy: local labor was employed and local business benefitted from local sales to construction-related personnel and businesses. Especially for largely rural prefectures such as Gunma Prefecture, all of these economic benefits were (and are) hard to resist.

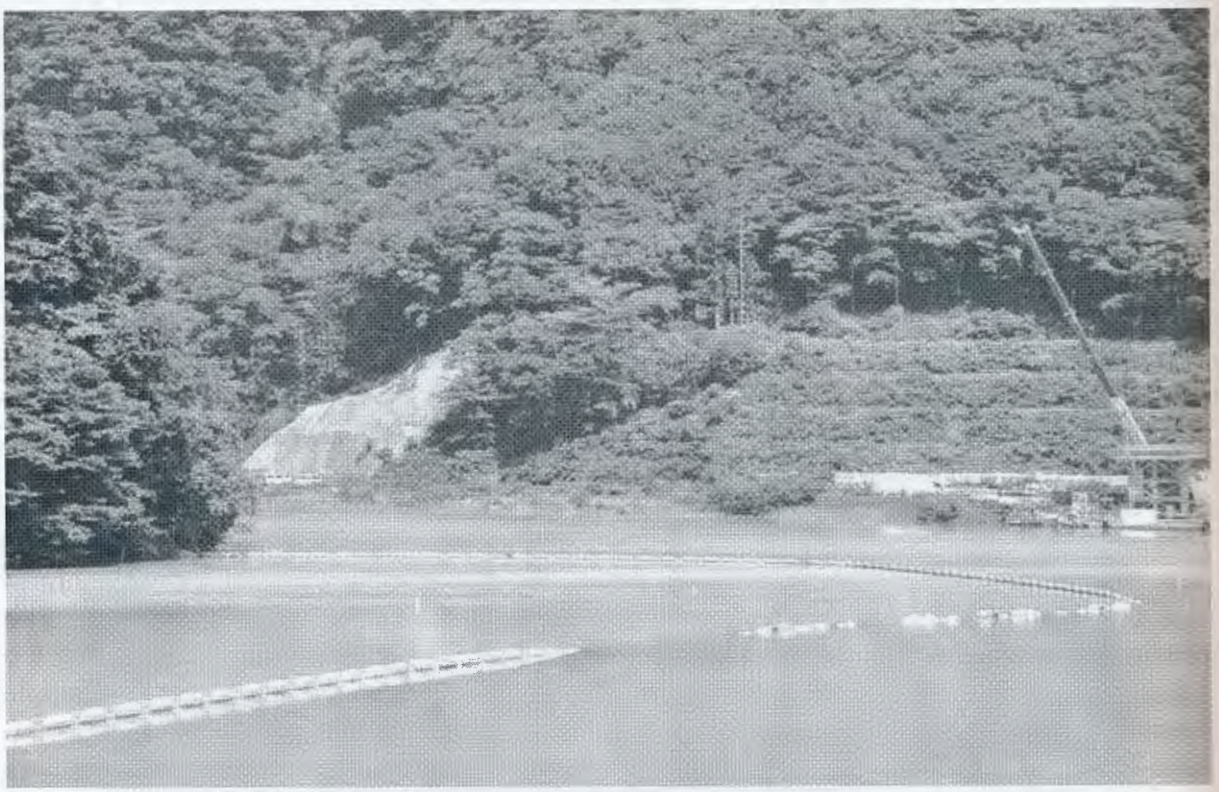

Fig. 4 Shinaki Dam reservoir (author's photograph)

While work on the neutralizing plant and Shinaki Dam continued, opponents of the Yamba Dam did not feel particularly threatened. There was sufficient justification for these projects apart from the Yamba project so that opponents actually continued to feel that they had won their battle to defeat it. They were wrong.

When the prefecture called in the Mayor and notified him in March of 1965 that the dam would be constructed and he communicated this at a town meeting, all in attendance were clearly taken aback. As more detailed plans were passed through the prefecture to Naganohara, it became clear which sections of the town would be completely inundated by the dam. Especially irate were the residents of Kawaharayu, the hot spring district that drew many tourists to the area. The town council again passed a resolution of opposition to the dam. Chief among their objections was the inability to re-locate displaced residents in the town, the loss of the local hot springs and two other tourist attractions, interference by the reservoir in local transport essential to the area's economic health, local opposition and, not

least, distrust of the Ministry of Construction.[20]

The projected loss of sites essential to tourism again clearly demonstrates the top-down planning of the Yamba project, a perspective that was simply ignorant of local geography and the meaning of that geography for residents and their businesses. One has the impression that planners simply looked at topographic maps, identified the narrowest stretch of the Agatsuma River, and then checked geologic maps to assess the potential dam foundation prior to sending inspectors to actually examine the site. A visit to the site makes it readily understandable why this would make a good dam site: the valley is steep and narrow, and both the base and walls of the valley are solid rock, essential for successful construction of a large dam. But that same visit reveals the charms of the site as well.

Ultimately the Ministry of Construction yielded to protests on the location of the dam. In a partial victory for opponents, they agreed in 1973 to re-locate the dam some 600 meters upstream from the originally planned site. This concession saved the designated scenic locations and some of the town's attractiveness as a tourist destination.

To get the government to agree to change the original dam site took almost eight years of vigorous contest, but it was not all a conflict between opponents, the prefecture, and the central government. Now, significant numbers of residents were willing to cooperate with the proposed dam and they organized, too. The opponents now had to contend with residents who, while they may not have been happy to have to move, were willing to relocate and accept the changes the dam would bring – if the government met certain conditions, all focused on adequate provision for their welfare.

The division between local groups was intense, and it continued to be heated for the next decades. Even prior to the formal announcement of the Yamba dam there had been further discussion in February, 1965 regarding construction of a dam on the Agatsuma. The governor asked Mayor Sakurai to explain plans for such a dam to the town council. In March, the head of the Gunma Prefecture Planning Office (Kikakukyoku) came to Naganohara, explained the plan, and asked that planning surveys be initiated. In response, the town council established a committee (Agatsuma Damu Chōsa Tokubetsu Iinkai) in April to investigate the possibility of constructing a dam. To push further, representative Fukuda Takeo, now Minister of Finance, visited Naganohara in August to urge local cooperation and announced the proposed dates for the start and completion of construction of the dam (1967 and 1969 respectively). Since Fukuda had, from the early 1950s been a supporter of the project, his position was not surprising.

Even given the presence of a cooperative party, opposition remained strong. Nonetheless, the central government moved ahead with testing the rock foundation for the dam, even in the face of the town government's refusal to allow the Ministry of Construction to present its plans to the community. In 1967, the opponents of the dam won a clear majority of seats on the town council and soon passed an ordinance to prohibit any testing or inspections to advance construction of the dam without permission of the town (June, 1968). As the confrontation between local dam opponents and central government planners intensified, Governor Kanda Kanroku proposed that he act as an intermediary to negotiate some kind of settlement, but clearly the prefecture was not impartial given its prior role in establishing the neutralizing plant.[21] Even as the prefectural assembly wrestled with the anti-dam petitions from

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[20] Yamba Damu wo Kangaeru Kai, *Yamba Damu Wa Tomaru Ka: Shuttoken Saigo No Kyōdai Damu Keikaku*, 8-9

[21] Suzuki Ikuko, *Yamba Damu: Keikaku Ni Furimawasareta 57 Nen* , 317. In 1973, Governor Kanda would become a supporter of passing national legislation designed to enable construction of dams like Yamba by providing funds to reduce the burden on relocated populations.

Naganohara, the governor sought and got funding to investigate the prospects for the dam.

Pushing Ahead. Despite continued intense opposition, the prefecture and national governments now had a foothold among local Naganohara voters and leaders; although halting, the government persistently pushed ahead, making concessions along the way, but keeping its eye fixed on ultimate construction of the dam. In addition to changing the proposed dam site, in 1973 it enacted national legislation (supported by Gunma governor Kanda) to provide funds for populations dislocated by dam construction and reducing the economic burden dams imposed on local populations. Although difficult to quantify, over time the additional support for displaced families and businesses garnered even more local cooperation. By this time it was clear that opponents, who had initial support in local government and the prefecture, were in more defensive circumstances.

What of the one influential Liberal Democratic Party member who affiliated with the dam opponents, Nakasone Yasuhiro? By the early 1970s, his rising star had repeatedly made him a member of Prime Minister Satō's cabinet. When he visited Naganohara in 1970, he no longer urged opposition to the dam, but now he simply urged caution on the opponents. Thereafter, he did nothing to support them. His change of heart and his lack of support for opponents led many opponents to conclude that earlier statements of opposition were just a pose to build his political base, to distinguish himself from, and burnish his reputation vis-à-vis Fukuda Takeo, his political rival and factional opponent within the LDP.

National Visibility. Although the opposition struggled on, by 1984 even the Mayor had reached agreement with the prefecture on plans to cooperate in construction of the dam. At this point, opposition to the dam entered its final stage. From here on out, concerned citizens, less optimistic about possible success in defeating the dam, focused attention on details of the plans, and sought to minimize socio-economic disruption, identify safety concerns, and assure effective relocation of displaced residents.

Citizens groups continued to operate, but increasingly linked up with a growing number of similar anti-dam groups throughout Japan. In 2007, well-known singer Katō Tokiko held a benefit concert in Tokyo in support of one of these groups. Well-known civil engineering professors and former supporters of dam construction such as Okuma Takashi (Niigata University) joined in criticizing the project and made presentations in a variety of public venues. Through links to other citizens groups, publicity provided by activities of Katō Tokiko and critical civil engineers, Yamba Dam became a poster-child for criticism of excessive dam construction in Japan.

In tandem with increased visibility, by the early twenty-first century the intellectual ground underlying the project shifted away that underlying its initial conception. Justified initially as an essential part of flood prevention on the Tone River, the failure to actually treat the project as urgent for more than a half century appeared to many – and especially to many of those distant from Naganohara and the Kanto – to give lie to its potential for flood hazard amelioration. In response, proponents increasingly stressed the need for the dam to provide additional water to the people and industries of the Kanto Plain. Opponents directly disputed such claims, citing government data that indicated demands for water in the Kanto were not growing.[22]

With this increased visibility for concerns about damming the Agatsuma River, Yamba became the most well-known example of a "useless" dam in the 2009 campaigns of the

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[22] These various positions of disputants are now widely available on their respective web sites of organizations like Yamba Ashita no Kai (Society for Yamba's Tomorrow, a critical group) and Yanba Dam Kōji Jimusho (the Yamba Dam Construction Office).

Democratic Party, the first opposition party to take majority of the Diet's lower house in the post-war era. Upon election and formation of a new government, Maehara Seiji, newly appointed Minister of Land, Transportation and Infrastructure, announced suspension and cancellation of the Yamba Dam along with cancellation of several hundred other projects, including decommissioning of many dams already in operation. All of these projects were characterized as excessively expensive and essentially providing no real benefit.

The immediate reaction of vocal Naganohara residents was stiff opposition to cancellation of the plans. Why? Because once again, through Maehara's initial statement, the central government had shown no concern with the impact of cancellation on the town. Many residents had already been moved from areas to be inundated. Others had oriented their future plans to accommodating a transformation of their community. What would happen to them now? In anticipation of the flooding of the hot springs district a number of new hotels had been built, and the old hotels that had not yet moved were losing business to them. By cancelling the dam, what would happen to any assistance to them? No one had discussed such concerns with local government or residents and no answers were immediately forthcoming from the new administration. Bearing in mind national concerns and failing to understand the complexities of Naganohara citizens' attitudes toward the dam, Maehara simply re-enacted the lack of communication between national administrative organizations and local populations.

Conclusion

Although there have been adjustments in policy since Maehara's announcement of a new dam policy, no final decision has been reached, and the response to his cancellation of the Yamba Dam brings us back to James Scott's theme of "seeing like a state." Although he cast his concerns in terms of autocratic governments trampling on locals, it is clear that Yamba, like the treatment of the TVA that Scott deleted from his final manuscript, raises serious questions about regional planning, local knowledge, and efforts to control the potential for flooding on an extended, complex drainage basin, even in a democratic society. In the context of Japanese history, the Tone River basin, and Yamba Dam in particular, we observe the following:

Technological change has complicated the already challenging political tasks of river management, at least in Japan. Pre-war technology had limited potential to build in remote locations on the relatively marginal streams of a drainage basin. Improvement in technology and expanded revenue bases to finance use of brute force technologies, along with dependence of local governments on national funding has made it possible for Tokyo to think about "colonizing" the natural resources of places farther away from its core than ever before. As a result, small rural communities now have to share control of local resources with more intrusive, remote and powerful stakeholders.

Involvement of planners in Tokyo and other non-resident actors meant policy was crafted or influenced by people who did not understand local conditions well. Planners initially designed their project based solely on their own interests, what they knew about geography and geomorphology generally, and not any understanding of local circumstances. They were ignorant of the acidity of the Agatsuma and the challenge that posed for dam construction. They were unaware of the cultural and economic importance of the Agatsuma Gorge, even though the it was registered as nationally important by a sister central government agency. Lack of local knowledge hampered planning for relocation of residents, dam siting, and the like. Lack of adequate provision for affected residents, both as resident fami-

lies and as participants in the local economy, can in part be traced to a lack of knowledge of the locality. Planners clearly did not understand the characteristics of the land or potential places to relocate residents. Ultimately, protests resulted in additional compensation, but even that did not satisfy many.

The Ministry of Construction and its successor agencies have showed a remarkable persistence over the decades, slowly responding to problems, and building alliances over time. They altered the location of the dam, made provision to solve the problem of acidic water, and to assist Naganohara residents. Gradually, by 2000 they had won over the prefecture and even major elements of the local population, rendering the opposition impotent as long as the Liberal Democrats held power. Flexibility in small things meant survival of the initial plan in the long term, even when the initial justification for the project – flood control – receded into the background. In the process, one could reasonably argue that they substantially compromised the long-term survival of Naganohara, only to benefit of the Kanto.

From many different perspectives this part of the Tone River development program has been a significant policy failure, whether at the hands of the LDP and its immediate predecessors or the Democratic Party. Naganohara residents are saddened at the negative impacts of the project on their town. They are understandably tired of the long-term and recent approach of the government, and lack confidence that their needs will be addressed. The nature of Japan's small river valleys has meant that the impact of this project affects a relatively small number of people, many tens of thousands fewer than China's Three Gorges Dam. The impacts of poor planning are also much more restricted than the colossal failures James Scott analyzed – ruralization in Nyrere's Tanzania, Soviet collectivization and even the TVA – but the difference is arguably one of quantity, not kind.

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