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**IRRIGATION WATER RIGHTS DISPUTES IN JAPAN**  
**— AS SEEN IN THE AZUSA RIVER SYSTEM**

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This paper is being circulated in a pre-publication form to elicit comments from readers and generate dialogue on the subject at this stage of the research.

## I. IRRIGATION SYSTEMS AND LOCAL LEADERSHIP

### 1. Land Improvement and Interregional Clashes

Irrigation and drainage improvement, consolidation of farmland and other forms of land improvement can be undertaken only with respect to fairly substantial tracts of land, and the greater the area involved, the more efficient such improvements will generally be. Furthermore, in Japan's case the predominance of small farmers and canal irrigation make for sharp confrontation between individual farmers, between villages, and between different regions in connection with extension of irrigation systems.

The preponderance of small farms in Japan, most of them engaged primarily in rice cultivation, makes it difficult for independent irrigational operations on the part of individual farmers. In other words, notwithstanding interregional conflict with respect to construction, maintenance, and management of irrigation and drainage facilities, it is absolutely necessary that such facilities be used in common in a harmonious fashion.

In many cases, moreover, irrigation canals and other irrigation facilities belonging to what were natural villages in the Edo Period or individual farmers remain just as they were back in those days, with the same maintenance and water allocation arrangements. Accordingly, small farmers, whose operations have always been unstable, are apt to put up stiff resistance against any change in established

farmland conditions and irrigation practices through new irrigation works or farmland consolidation. This conservative reaction, which is in a way indispensable to the continuation of agricultural production, also eventually gives rise to unity within the region for the purpose of resisting the pressures from without and inevitable intensification of conflicts of interest between different regions. Hence the need for people who are able to work out such conflicts of interest and for institutional arrangements for this purpose.

Needless to say, change in systems of landownership and in market conditions for commodity crops and particularly large-scale land improvement projects will result in change in irrigation systems and arrangements and in the leadership with respect to them, and after sharp interregional confrontation new irrigation systems and arrangements will emerge with basic retention of established practices.

## 2. Landowners and Government Authorities

In spite of considerable development of the tenant farming system in the latter part of the Edo Period and continuing on into the Meiji Period, as late as the fourth decade of the Meiji Period most landowners were still living in rural communities as independent farmers, and many of them, either because of their wealthy circumstances or old age, leased some of their land out to tenants and farmed the rest with regular and casual hired labor. Particularly in the first half of the Meiji Period these resident landowners enjoyed considerable local prestige and power because of the carry-over of the agricultural

technology and rural community social structure of the Edo Period.

Furthermore, these resident landowners were not only interested in improvement of their tenant and other farming operations, but also had a strong and active interest in improving their communities and maintaining peace within them as local leaders. In other words, the improvement and development of irrigation facilities by landowners in the Meiji and successive years was prompted not just by personal interest in terms of being able to put more of their own land under profitable cultivation and getting more rent from their tenants but also by a sense of mission with respect to improvement of agricultural production and the standard of living of farmers throughout the region. In fact, one might very well say that successful land improvement efforts in all areas of Japan have depended on the active roles of such prominent local figures.

Particularly in the case of small-scale irrigation works and farmland consolidation within the old Japanese village it has been possible to adjust differences between farmers with respect to such projects because of the very fact that they have been either undertaken by such prominent local figures or supported by them behind the scenes. When it comes to large-scale irrigation projects, however, covering several villages, scores of villages, or even several counties, such adjustment has been a task cut out for men of a still higher level of prestige such as very large landowners, country squires who have figured prominently in the region since the Edo Period, and members of prefectural assemblies.

These resident landowners and wealthy farmers capable of serving as a cohesive force for entire villages and rural areas were also incorporated in the system of terminal control of centralized government power which included the prefectural, county, and village systems of local government established around 1887, the Interior Ministry - prefecture - county network of control through regular irrigation cooperatives, and control of rural communities by industrial cooperatives and farming associations.

In other words, these resident landowners and wealthy farmers had a double role as local leaders and mediators in the vein of local autonomy and as landowners per se or members of the chain of power.

Around 1897, however, these resident landowners began to leave their rural communities to become parasitic absentee landowners as progress was made in industrial and urban development, regular hired labor flowed out of the countryside to the cities, the leasing of farmland to tenants became more profitable as the price of rice rose, and investment in securities offered better and better opportunities.

Beginning about 1905 irrigation development came to figure most prominently in land improvement efforts as well as being undertaken on a larger scale, and this resulted in more and more cases of complicated interregional confrontation where adjustment of interests proved to be beyond the capacity of the prominent resident landowners and wealthy farmers. In their stead, large absentee landlords owning land over

wide areas began to have a bigger and bigger say in large-scale irrigation projects, as in the case of the group of "Thousand Chobu (1 chobu = 0.973 ha) Landlords" of the Kambara Plain of Niigata Prefecture, including the Ichijima, Itoh, Shirase, and Tamaki families and the Mitsubishi Co., and the Honma family of the Shonai Plain of Yamagata Prefecture.

Along with such increases in scale of land improvement projects, farmland consolidation associations, irrigation associations, and "doko" (civil engineering) associations began to assume an increasingly important role. At the same time, the large landlords who had come to have a bigger and bigger say with respect to such projects began to exercise greater control over their areas and persuaded prefectural and national authorities to put a greater effort into such projects, including the provision of more subsidies. Beginning in 1908 national subsidies became available for prefectural land improvement projects and other such projects subsidized by prefectures, and the national and prefectural authorities came to have a bigger and bigger say with respect to them.

In the case of areas where there were few large landlords, such as Nagano Prefecture, large-scale irrigation improvement projects and farmland consolidation were not readily promoted by local people, particularly in view of the unfavorable topographical conditions, and instead the prefectural authorities played the leading role in this respect.

### 3. Financial Capability and Technology in Relation to Land Improvement

The next greatest difficulty in land improvement projects to adjustment of interregional differences is procurement of funds. In the Meiji and subsequent years it was the rule for land improvement projects to be privately financed, the only exception being reclamation projects for former feudal retainers. Furthermore, since there were no financial institutions specializing in agriculture until about 1897, in most cases such projects depended on loans from ordinary banks and individuals. Moreover, the low turnover rate and the generally low profitability of agriculture made it hard to make ends meet in land improvement projects relying on borrowed money.

This being the case, in addition to the prestigious figures that were able to overcome interregional differences, persons of considerable financial means made their appearance on the scene as promoters of land improvement projects. In the early Meiji years, of course, wealthy farmers and other individuals played both these roles, but later on as such projects grew in scale, such prestigious local figures no longer found themselves capable of procuring the amount of funds required, and this resulted in the participation of enterprising wealthy merchants. For instance, the Shimoosa-Sakura and Kogane reclamation projects of 1869 saw the participation of such wealthy merchants as the Mitsui, Ono and Shimada groups. In the case of the Hata Canal, built on the very upper reaches of the Azusa River, great difficulty was experienced not only with respect to adjustment with existing irrigation canals downstream but also with respect to procurement of funds.

Around the end of the century, however, the role of such wealthy merchants in such development became less important as the development of the capitalism brought about better industrial and other investment opportunities than investment in land improvement and as financial institutions specializing in agriculture were established. Furthermore, with the growing scale of land improvement projects, they naturally came to involve a greater direct financial burden than such wealthy merchants were willing to assume. At the same time, as smaller farmers began to organize, it became increasingly difficult to increase tenant rents, and this resulted in a gradual slackening of the rate of earnings on land investments of parasitic absentee landlords. This being the case, the prefectural and national governments came to subsidize the construction costs of land improvement projects and, beginning in 1910, low-interest loans were made available for this purpose by the Deposits Department of the Ministry of Finance, which increased the government say with respect to such projects on the financial side as well.

Initiative in land improvement technology also passed from the private to the government sector. Small-scale irrigation and drainage works, farmland consolidation and underdrainage as well as simple midstream barriers to slow down flow and other flood damage prevention measures were based on accumulation and improvement of agricultural technology developed by farmers since the Edo Period. In particular, daily maintenance and management and construction work within the old villages as well as measures for coping with flood damage were undertaken as "village work". However, as the projects got bigger and

bigger, a need arose for experts with Western-type school education not only in the planning and design work but even in the construction work. Moreover, with the development of cement and other materials and generalization of the use of pumps and other equipment, traditional agricultural technology became inadequate in more and more respects.

Needless to say, since the Edo Period the construction of river barrages, water intake facilities, and main irrigation and drainage channels was work that was to be undertaken at least in part by the ruling class, for the areas involved were very extensive, and even influential local figures found it difficult to overcome interregional conflicts of interest. In fact, the ruling class was able to take advantage of such basic infrastructural facilities to consolidate its position by increasing food production and maintaining its control over the lives of the people. Furthermore, as traditional agricultural technology alone became inadequate for coping with construction of branch irrigation canals and, starting at the end of the Meiji Period, with repair works, government technology became predominant not only in terms of flood and irrigation control but also in terms of land improvement.

## II. INTERREGIONAL RIVALRY OVER WATER RIGHTS

Since agriculture in Japan centers on rice cultivation based on flooding by irrigation, the maintenance and preservation of irrigation channels is a must. Furthermore, in view of the fact that Japanese agricultural communities consist of small, intensive farming operations and the natural constraint of water having to come from somewhere else, maintenance and management of irrigation facilities has to be based on regional linkage and on respect for established practices.

This being the case, agreement and joint action over fairly wide areas are easily realized with respect to the control of flood waters as a basic requirement for the maintenance of irrigation systems and farmland. On the other hand, however, there is apt to be conflict of interests and sharp confrontation with other areas upstream and downstream with respect to drainage, although within relatively small areas themselves there is little difficulty in achieving cooperation.

Interregional disputes are particularly heated with respect to the amounts and timing of water allocation. Common reasons, for example, are changes in established irrigation practices subsequent to construction of new irrigation facilities; an increase in demand of irrigation water as the result of the opening of new irrigation channels, reclamation of new paddy fields, or turning of dry fields to paddy fields; and shortages of irrigation water for allocation owing to droughts or other circumstances.

On the right bank of the Azusa River there is comparatively little interregional confrontation with respect to flood damage caused by heavy rains. Rather, there is a satisfactory amount of cooperation in measures to prevent such damage. Nor is there much interregional confrontation with respect to drainage, thanks to the compound fan-shaped terrain that characterizes the area, and it is common for use of the same channel first for irrigation, then for drainage, then for irrigation again, and so on alternately down the line.

Accordingly, especially important elements of interregional confrontation in this area have been the problem of water sharing in connection with construction of the new Hata Canal, the problem of change of irrigation practices in connection with the construction of new irrigation facilities, and the problem of water sharing and provision of water by order of priority in times of drought.

1. The Problem of Water Rights that Arose in Connection with Modification of the Canal in 1916

As an example, let us consider the water sharing problem and the problem of provision of water by order of priority that arose at that time of the serious drought of May-June 1916.

Besides the Hata Canal, which, as already mentioned, was completed in 1882 on the uppermost reaches of the Azusa River, the river's canals for irrigation purposes have consisted of six "upstream" canals - the Wada and Niimura Canals on the right bank and the Ryuda, On,

Yokosawa, and Shono Canals on the left bank - and a number of "downstream" canals - the Kureki, Shima, and Takamatsu Canals (the last two having been consolidated as the Shimauchi Canal) on the right bank and the Nakagaya, Kitakata (no longer in existence, presumably having been consolidated with some other canal), Matoba, and Iida (not presently identified) Canals on the left bank. Even at time of drought it was possible to furnish the amount of water needed by the six "upstream" canals, but as a result there was an insufficient amount of water supplied downstream and even complete water supply stoppages.

Accordingly, the upstream and downstream areas were very much at odds with one another during droughts with respect to the question of how to allocate the available water, with repeated clashes and even action in the courts since the Edo Period. In the Meiji period the five "downstream" canals began, on the basis of traditional practices, to reduce their individual intakes from upstream during droughts in order to share the water more equitably, a representative of the Kureki Canal, the one farthest upstream in the "downstream" area, being responsible for making the arrangements with respect to this cooperative effort. After sharing the downstream water twice, it was possible for the five downstream canals to ask the six upstream canals to share their water with them if the water shortage got to be even more serious. In such a case the water sharing gate at the Hata Canal would be closed so that the water could go downstream and if there was still not enough water downstream after doing this twice, the five downstream canals began to take in water in turn. If even this arrangement proved to be

inadequate, it was the practice to demand that the upstream canals do the same.

Although this was the established way of dealing with emergencies in years of severe drought, there were times when even the upstream canals were short of water and for that reason refused to share their water with the downstream canals or take turns in using it, which resulted in heated controversies.

The Wada Canal which was most advantageously situated for taking water from the Azusa River, was able to secure a stable supply for itself even during droughts. Since in the Edo period it had the additional advantage of being located on land belonging directly to the Shogunate, it was customary for it not to participate in arrangements whereby the canals would take water in turn during droughts, and this prompted disputes over water with other areas.

The Niimura Canal, next to the Wada Canal in spite of its small intake on the Azusa River also did not participate in the arrangement for taking water by turns because it was able to use water leaked or discharged from the Wada Canal.

At the end of the Meiji Period, however, flood control and irrigation works on the Azusa River began. As the first step, a water damage prevention association was organized in March 1911 at Niimura and made plans to undertake works along the Azusa River for prevention of flood damage and restoration of flood damage already done, this

program corresponding to the works for remodelling of the prefectural intake near the Niimura Canal that were carried out in 1912. As an incidental part of this construction program the small intake at the Niimura Canal was replaced with an 11 m intake.

Needless to say, these works had an effect on the established irrigational practices in the area, particularly the amount of water that could be taken in by the five downstream canals. But for a while no disputes over water arose because the change in the situation did not hurt anyone as long as there was the normal level of water.

From about the beginning of May to June 16, 1916, however, the area was hit by one of the severest dry spells in recent times, which made it impossible for the five downstream canals to provide terminal irrigation, resulting in the withering of the young rice plants. In the face of such a desperate situation, the downstream canals requested a further allocation of water from five of the upstream canals and got it, but since that was still insufficient, they requested that the water be taken in turns both upstream and downstream. Furthermore, contrary to usual practice, they requested the participation of the Niimura Canal as well in such an arrangement in view of the fact that its intake had been widened.

The people at the Niimura Canal, however, resting on their usual prerogative, flatly refused to go along, and this refusal threw a monkey wrench into the whole proposed arrangement, with the three

left-bank upstream canals presumably objecting. The downstream canals had no other resource than, with the approval of the upstream canals and especially the Ryuda, On, and Yokosawa Canals on the left bank (the Wada Canal being excluded as usual), to appeal to the governor of Nagano Prefecture, as the top supervisor of irrigation associations in the prefecture, to intervene in the dispute.

This petition, signed by the mayors of Shimauchi and Shimadachi villages on the right bank of the downstream area of the Azusa River (Wada Village and Niimura Village, against which the petition was being made, being excluded, of course) and eight towns and villages on the left bank, requested that the governor tell the Niimura Canal to participate in the arrangement for taking water in turns so that the available water could be equitably distributed and that the canal intake be restored to its original smaller size in the event of noncompliance.

It is not clear exactly how the situation developed from that point. From the fact however, that the Niimura Canal did not participate in the proposed arrangement even then, it would appear that the petition failed. The intervention on the part of the governor, however, did result in written confirmation of the established practice of complying with requests from the five downstream canals for sharing of the available water when there is less of it than usual as a result of droughts to the extent that such sharing would not impede the operations of the upstream canals themselves, provided that such request be a formal one in writing and signed by officials of the canals making it or committee members concerned.

This example is a clear indication of how interregional controversy arose over alteration of the irrigation setup that had prevailed up to then as a result of the change made in the intake of the Niimura Canal. It also underscores one of the characteristics of irrigation in Japan - dependence on intervention from above because of lack of ability on the part of the parties concerned to settle their own differences between themselves.

Such interregional conflicts over irrigation matters and the practice of official intervention in them prompted the Ministry of Agriculture and Commerce to launch an "Agricultural Irrigation Survey Program" in 1921. The mayors of towns and villages along the Azusa River immediately applied to be included in this program, and as a result the "Azusa River Agricultural Irrigation Improvement Plan" was completed in 1923 and made public the following year by the ministry. This plan served as a basis for concretization of the first phase of works for improvement of agricultural irrigation in the area, centering on a joint intake for all of the irrigation canals on the right and left bank sides of the river. Since Professor Tamaki discusses in his paper how the situation developed after that, including the conflict between the Wada Canal and the other canals, I will not go into it here.

## 2. Priority Rights of Old Paddy Fields in Connection with the Azusa River Land Improvement Project

The first phase of the prefectural irrigation improvement project

along the Azusa River got underway in 1926 and was completed in October 1930, giving the irrigation canals of the Azusa River basin a joint intake for the first time. The next year saw inauguration of the Azusa River Right Bank Irrigation Association as an organization bringing together the Wada, Niimura, Kureki, and Shimauchi Canals and another organization of the same kind grouping the Ryuda, On, Yokosawa, Shono, Nakagaya, Matoba, and other dams on the left bank of the river; and a federation of the two was established in March 1933. With rationalization of the intake facilities, there was organizational expansion while at the same time retaining the independence of the individual canals. The offices of the federation and of the right bank association were set up on the premises of the village office of Wada Village, the village best situated in the Azusa River system, and it became the practice for the mayor of the village to serve as the head of both the federation and the association (the offices of the left bank association were located at the Azusa village offices at the upper extreme of the river, with the mayor acting as its representative).

Since, however, the Akamatsu head works, where the joint intake was located, consisted of a closed barrage, there was considerable inflow of gravel from the Azusa River, which often made intake difficult, and there was no end to damage from both floods and droughts. This being the case, work was started in January 1943 on a "new Akamatsu head works" about two kilometers upriver as an intake of the water gate type, this being the second phase of the prefectural irrigation improvement project. It seems that there was considerable

difficulty in arranging a settlement regarding relocation of the intake of the Hata Canal, necessitated by the fact that the new construction site coincided with that waterway, but eventually a solution was found. The subsequent turn for the worse in the war situation slowed down the works, and they had to be discontinued at Japan's defeat in August 1945, not to be resumed until January 1947 under the Agricultural Land Development Corporation. Subsequently, in October 1948, they were transferred to national supervision, and they were completed in October 1950.

Furthermore, in order to save on construction costs it was decided to use the distance between the new and old head works for multipurpose power generation, and the Showa Denko Akamatsu power plant, which was built for this purpose, was completed in October 1950. As a result of this second phase construction work, the barrage were converted to the water gate type, reducing high water damage. However, besides failing to solve the water shortages at times of drought, new contradictions arose. For instance, because of this water channel type of power generation, fall in the water level at peaks and rapid rise in the water level if water was released when it was at a high level became a problem, and an idea therefore took shape regarding a dam for maintaining of the quantity of water.

After promulgation of the Land Improvement Law in June 1949, the Azusa River Right Bank Land Improvement District was established in September 1951 as a reorganization of the Right Bank Irrigation

Association, and the left bank association was similarly reorganized in January 1952. Then, in June 1952, a federation of the two land development districts was set up, the offices and representatives of both the federation and the associations remaining where and as they had been before.

Around 1950, the year of completion of the Sakuma Dam on the Tenryu River, a period of comprehensive development centering on electrical power development was ushered in, and the Azusa River basin went along with this new trend, local representatives getting together in November 1954 to organize a league for Comprehensive Development of the Azusa River System, presided over by Yasuo Kamijo, which got the Nagano Prefecture Comprehensive Development Council to adopt its petition for a Kamikochi Dam, which, although included in the prefecture's West Matsumoto Daira Large-Scale Reclamation Plan of 1941, had not yet been built.

Even after the plan for the dam had been put in mothballs, there were local figures who did not give up hope of seeing it realized someday. For instance, some local village mayors, including Yasuo Kamijo and Hideo Yoshizawa, even inspected the proposed site of the dam in 1949, when the second phase irrigation works on the Azusa River were nearing completion, in order to try to get the project moving again.

With the further formation of the League for Promotion of Erosion Control Works in the Shinano River System in July 1955 as a lobby with the Ministry of Construction, again headed by Yasuo Kamijo, and other similar developments, the movement for the dam project began to gain momentum.

In the meantime, there was a strong local upswell in opposition to the project, particularly after a serious drought in 1955 that caused considerable damage in the downstream area of the Azusa River. As for the matter of the bearing of the construction costs of the project, on many occasions the people on the left bank side, most of which belonged to the Matsumoto Clan in the Edo Period spoke out against footing the bill. On the right bank side, however much of which had been owned directly by the Tokugawa Family, there was an expressed willingness to pay for new construction work if it was needed. (This same difference between the right and left bank sides of the river still exists today with respect to the third phase of the national land improvement project for the Chushindaira area.)

In the downstream area, and particularly at the Nakagaya and Matoba canals located furthest downstream on the left bank side, where the people were very much worried about the amount of water being released downstream being reduced if the proposed Kamikochi Dam were built and about their chances of getting the amount of water they needed in times of drought, opposition to the project stiffened. In fact, in August of 1955 the majority of the officials at the Nakagaya

Canal resigned in protest against it. The main argument put forth by the protesters at these two canals, the service areas of which contained approximately a quarter of the members of the Left Bank Land Improvement District was that even though the construction of the dam might increase the overall supply of water, the "old paddy fields" in the downstream area which had always suffered in times of drought in any case, would still have reason to worry about the adequacy of their water supply in view of the fact that the available water would eventually have to be shared with nearby agricultural areas that would be newly developed in the future. In a way, one can hardly blame the downstream farmers, who had always had a hard time in securing enough water for their needs, for not readily going along with the proposed project in spite of the advantages it professed to offer as a large-scale, modern undertaking.

Still, the chairman and other officials of the Left Bank Land Improvement District did what they could to persuade the opposition to come around to their way of thinking, and an acceptable solution was finally found in the form of a written guarantee by the chairmen of the right and left bank districts that the downstream area would not be deprived of an adequate supply of water in the event of construction of the proposed dam upstream.

In October 1956, however, the Ministry of International Trade and Industry conducted a boring survey of the proposed dam site, and the results indicated that the site was not suitable. In March of the

next year the Nagano Prefecture Comprehensive Development Bureau surveyed an alternative site for the dam at Nakawado, and this new site was subsequently adopted for the project. In May of the same year the national government decided to conduct a survey for the comprehensive development program for the Chushindaira area, and a survey was begun for the Nakawado power plant project by the Tokyo Electric Power Company in June 1958. Then, in September of the same year, officials of the local land improvement districts and others organized a League for Comprehensive Development of the Chushindaira Area again headed by Yasuo Kamijo and concretization of the "Third Phase Land Improvement Program" finally got underway.

As the surveys and design work by the Ministry of Agriculture and Forestry for the National Chushindaira Agricultural Irrigation Project progressed, a local movement got underway for protection of the vested water rights of existing rice paddies. Plans called for provision at commencement of the national project in October 1965, of irrigation water for 5,263 hectares of old paddy fields (2,773 ha on the right bank side and 2,490 ha on the left bank side of the Azusa River) as well as 289 ha of more recently developed paddy fields in the Hata Canal area, 172 ha in the Kurokawa Canal area, and 568 ha elsewhere, 1428 ha of rice paddies to be newly developed, 333 ha of farmland convertible between paddies and fields, and 2,848 ha of fields.

In that year, 1958, there was a boom in development of new paddy fields that resulted from a sharp fall in silk cocoon prices. In the

right bank area alone, for instance, there were plans for development of new paddy fields at Kambayashi in 1958, work was completed on similar programs at Okubo and Miyahara in 1959, and work got started on the development of new paddy fields at Wadanishihara in 1960.

These circumstances in part explain why farmers owning existing paddy fields on both the right and left bank sides of the river came to share the anxiety about securing an adequate supply of water that had been expressed by the farmers in the Nakagaya and Matoba Canal areas downstream on the left bank side in 1955. As a result, leagues for the protection of water rights were organized for both banks in June and July of 1960 with the backing of the land improvement area organizations but as separate entities from them, and in August they were merged as the Federation for the Protection of Water Rights in the Azusa River System, headed by Shiro Mitsumizo, which strongly appealed to the head of the Planning Section of the Tokyo Area Office of the Agricultural Land Bureau, Ministry of Agriculture and Forestry, and other high officials to give "old paddy fields" priority consideration so as to protect vested water rights.

In August the plans for the Chushindaira Land Improvement Project were made public, and at the end of December of the same year the overall project implementation plan survey area was determined, and the implementation design work was begun, with the construction work scheduled to be started in fiscal 1965. As preparation for this development, the federation of the right and left bank Azusa River

land improvement districts decided to merge the two associations in the Nagano Prefecture Azusa River Land Improvement District, which was done in April 1964 after construction of new offices in January.

As the designing and planning for the national, prefectural (to be implemented beginning in fiscal 1967), and other development projects for land improvement in the Chushindaira area took shape and the organizational arrangements for them were completed, the points of contention between the national project in particular and the Azusa River Land Improvement Area Association and especially the members of it owning old paddy fields became very sharply defined.

The first point was the problem of change of position of the intakes, the second that of water channel design in connection with the 5 ton/sec increase in water supply during the harrowing period and of the cost thereof, and the third that of a water intake agreement between the new water demand areas, including the Chushindaira Right and Left Bank Land Improvement Districts and the Azusa River Land Improvement District, for the purpose of giving priority to the "old paddy fields".

In connection with the first problem, the rough plan for the national project initially called for location of the intake for the newly developed areas directly below the spillway of the New Ryushima power plant upstream of the New Akamatsu head works of the Azusa River Land Improvement District. The reason for the opposition was

that since the Azusa River Land Improvement District was to continue to draw its water from the New Akamatsu head works on the Azusa River the extra water from the new development would be used, and the "old paddy fields" would not get priority consideration. This problem was discussed at the outstart, and already at the finalization of the national project plan in January 1962 the head of the Planning Section of the Tokyo Area Office of the Agricultural Land Bureau made a firm promise that the necessary amount of water would be supplied on a priority basis to those with vested water rights, thereby getting the approval of those who had hitherto opposed the plan. Furthermore, in the detailed design phase after adoption of the national project plan it was promised that the plan would be changed in this respect.

However, once the project entered the implementation design phase, the Ministry of Agriculture and Forestry kept putting off any such change in design. In September 1964 the head of the Design Section of the Kanto Agricultural Administration Bureau (former Tokyo Area Office of the Agricultural Land Bureau) made a statement to the effect that it would be the new farmland that would be given priority supply of irrigation water, adding that adjustment apparatus would be provided to maintain automatically a constant water level even at times when the amount of water in the Azusa River declined. As was to be expected, this met with strong opposition from the Azusa River Land Improvement District since what it meant was that the rights of the "old paddy fields" would be ignored.

On the left bank side, which stood to benefit considerably from the new development, some were of the opinion that the Ministry of Agriculture and Forestry plan should be accepted, if reluctantly, rather than jeopardizing the entire Chushindaira development project by opposing it. The right bank side, however, was absolutely opposed to the plan, and as a result, the Azusa River Land Improvement District submitted a petition to the Ministry of Agriculture and Forestry's Kanto Agricultural Administration Bureau on October 2, 1964, stating its intention to withdraw from the national Chushindaira land improvement project and to protect, under whatever circumstances, its vested rights in connection with the national Chushindaira new land development irrigation project.

On October 12 a representative director of the Azusa River Land Improvement District directly petitioned the head of the Construction Department and other high officials at the Kanto Agricultural Administration Bureau in the presence of the head of the Nagano Prefecture Farmland Section, and at last it was decided that the Ministry of Agriculture and Forestry would reconsider the design of the intake. Moreover, a promise was made that the intake for the newly developed areas and that for the Azusa River Land Improvement Area would be located together, letters of confirmation to that effect being exchanged by the two parties. Thus, it turned out that the Azusa River Land Improvement District got its way with regards to the first problem.

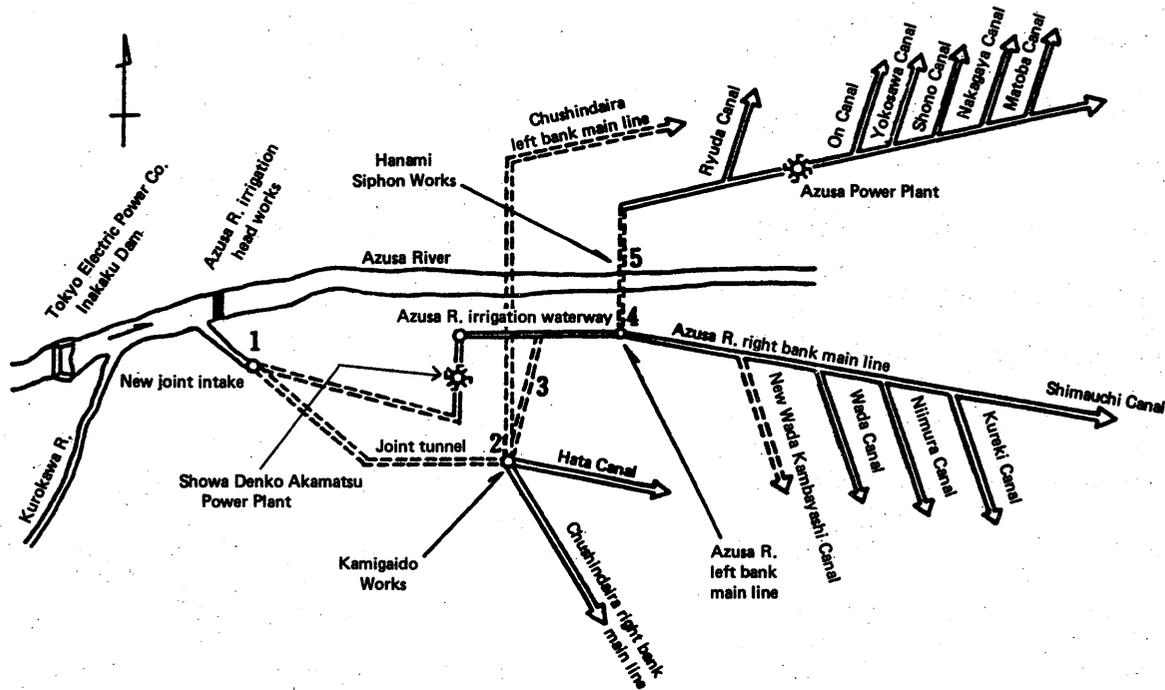
The next year, however, in which construction work on the national project was scheduled to get started, the tug of war between the Azusa River Land Development District, on the one hand, which was bent on defending its vested water rights and established practices, and the Ministry of Agriculture and Forestry and the newly developed areas on the other, got increasingly serious, with the Azusa River Land Development District submitting a questionnaire to the Ministry regarding design changes and other problems at the end of March prior to announcement of the overall design of the national project and another petition on May 6 regarding points on which satisfactory answers had not been given in the questionnaire.

For one thing, in connection with the plan to build a joint tunnel canal branching from the Azusa River at its irrigation head work to divide the water supply into four parts at the Kamigaido for the Chushindaira right bank, the left bank main line, the Hata Canal, and the Azusa River area (an additional 5 tons/sec in the harrowing period), the Azusa River Land Improvement District wanted to have the water involved released into the Azusa River so that it would tap it at the old Akamatsu head works instead of participating in the joint tunnel, which would involve an enormous expenditure on its part for an increase in its water supply during only one month each year.

The Ministry of Agriculture and Forestry, on the other hand, argued that since the Azusa River was of the underflow type, there would be difficulty in tapping the 5 tons of water per sec downstream after

releasing it in the mainstream and that it would therefore be more advisable to get that extra supply by way of the joint tunnel and therefore refused to make any changes in the design.

Finally, in September 1965, the head of the Nagano Prefecture Agriculture and Forestry Department intervened in the dispute and arranged a compromise accepted by both sides concerning change in design and the amount of money the Azusa River Land Development District would have to contribute toward the cost of the joint tunnel for the extra 5 tons/sec. Although it is not apparent how the situation developed thereafter, one can surmise that some kind of reduction was made in the amount the Azusa River Land Development District would have to contribute toward the tunnel since there was no subsequent change in design.



The Chushindaira Irrigation System

The second point of contention between the newly developed areas and the Azusa River Land Improvement District was the question of whether or not there should be an agreement giving priority to "old paddy fields". As we have seen, the problem of allocation of water during periods of drought had long been a basic factor of interregional strife in the Azusa River basin. For instance, in more recent times there was the opposition of Wada Village to a joint intake in connection with the first phase irrigation works that began at the end of the Taisho period based on a desire to protect its vested rights, and there was a strong conflict of interest between the downstream canals of the Azusa River and the Hata Canal newly built farthest upstream in the Meiji Period. Because of these precedents, the Azusa River Land Improvement District was anxious to get the newly developed areas to recognize the priority of its "old paddy fields" before agreeing to any new arrangement concerning the supply of irrigation water.

There were, no doubt, objections to this in the newly developed areas. For instance, the planned maximum flows per second during the harrowing period at the new main lines in 1965 were only 1.537 tons (2.632 tons between transplanting and harvesting) at the upper section main line, 3.776 tons (3.332 tons between transplanting and harvesting) at the right bank main line, and 6.313 tons (5.248 tons between transplanting and harvesting) at the left bank main line. With this there was supposed to be development of 652 ha of paddy fields, 147 ha of farmland convertible between paddies and fields, and

2,132 ha of fields on the right bank side and 777 ha, 186 ha, and 715 ha, respectively, of the same on the left bank side. On the other hand, the existing dams were to supply a maximum flow per second during the harrowing period of 22.339 tons (22.582 tons with the additional supply and for 2,773 ha of paddy fields) on the right bank side of the Azusa River and 18,683 tons (18.871 tons with additional supply and for 2,490 ha of rice paddies) on the left bank side.

Finally, in August 1965, a written agreement was reached between the chairmen of the Chushindaira right and left bank land improvement districts, representing the newly developed land, and the chairman of the Azusawa Land Improvement District, representing the "old paddy fields", in the presence of the head of the Ministry of Agriculture and Forestry Kanto Agricultural Administration Bureau Construction Department and the head of the Nagano Prefecture Chushindaira Agricultural Irrigation Improvement Office to the effect that it was understood that even during the most extreme droughts the "old paddy fields" would have priority over other farmland in being supplied with irrigation water, which amounted to formal recognition of the priority rights of the "old paddy fields" by the newly developed areas.

This is a good example of how a sharp interregional clash over vested water rights in connection with the implementation of a new large-scale land improvement project was resolved between the parties concerned through the intervention of the administrative officials concerned.

As a result, the construction work for the national Chushindaira Area Agricultural Irrigation Project got underway in October 1965 (to be completed in fiscal 1977), and that of the prefectural project corresponding to it got started in 1967. Also in October 1965 the Chushindaira Land Improvement District League got started tentatively (with offices in the Azusa River Land Improvement District) as an organization embracing the Azusa River Land Improvement District, the Hata and Kurogawa Canals, and the new Chushindaira right and left bank land improvement districts, to be formally established in April 1976.