

Systematized River Management by River Administrator

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ABSTRACT The concept and practices of Japanese river administration system under the river law (in 1964,1997) is introduced as an example for many monsoon countries for the holistic river basin management.

1. INTRODUCTION

Many countries have a movement to establish River Basin Organization as an apex body for integrated water and environment management of the basin. From the review of previous weakness such as, although many water-related agencies have endeavored to strengthen their administrative functions under numerous social requests, their responsibilities were limited narrowly under sector management. But, RBO is difficult to pursuit it's objectives, if it has no practical scope of activities and mandate. What is necessary and what should be done. Basic activities and mandate are clear in Japanese unique river administration system. It can be as an example for many monsoon countries for holistic basin management. Japanese River Law was enacted in 1896 and major revision in 1964 and 1997. Environmental and people's opinion were concern in 1997. Ministry of Construction (MOC) was merged with Ministry of Transport and others in 2001 then became Ministry of Land Infrastructure and Transport (MLIT).

2. Definition of River

According to the Japanese River Law, river means "public streams and water areas including river facilities" those who are designated by River Law. This means legally rivers include not only natural streams and water bodies such as rivers, lakes and marshes but also such artificial streams like flood-way, etc., that have been constructed to serve a purpose for the general public. This term does not include artificial streams and water areas provided for a special use, such as channels for agriculture or power generation, sewer, irrigation ponds, etc., Firstly, it is necessary to distinguish rivers provided for public use from the others.

<River Administration Facility>

This term means "a dam, weir, sluice, levee, revetments, ground sill, pump or other facility, which has the function of preventing public benefits from water of a river or of eliminating or decreasing public losses which may be caused by the water of a river"

The river administration facilities are managed by the river administrator.

3. Responsibility of River Administrator

River Law defines that the river administrator be a person who administrates the river designated by the law. This means that the river administrator shall perform the river works, and permit or regulate the water use and land use in the river area. It can be said River Law clarifies his many exclusive duties and authorities on the river.

4. Classification of River and River Administrator

The legal rivers are classified to class A river or class B river decided according to river system's socioeconomic importance by the below setting.

4-1. Class A rivers belong to Class A river systems bearing closely on the national economy and people's living, and are designated by Minister of Land Infrastructure and Transport. The administrator of these rivers is Minister, but administration of specifically designated sections of such rivers without trunk rivers is generally entrusted to prefectural governors, except the approval on specified water rights.

4-2. Class B rivers belong to Class B river systems bearing closely on the public interest, and are designated by prefectural governor. The administrator of these rivers is the prefectural governor.

4-3. In addition to Class A and B rivers, there are so many rivers that necessitate administering from the viewpoint of local interest and inhabitant's daily life amenity, etc. The provisions of the law are applied to each river designated and administrated by the head of the city, town or village.

4-4. Other smaller waterways than the above, to which River Law is not applied at all, are administrated under Local Government Law or National Property Law.

5. Classification of River Area

5-1 River Area

The river area means the area where land or water occupancies and acts excluding river works shall be regulated, and River Law stipulates the different concept and purpose of the following three parts of the river area by the cross section.

a. Area No.1: the land where water of river flows continuously and similar to that condition, but excluding lands which present temporality due to floods, etc.

b. Area No.2: the site of river administration facilities.

c. Area No.3: the land on the riverside designated by the river administrator as necessary to perform unifiedly with the area mentioned in Area No.1

5-2 River Conservancy Area

When the river administrator deems it necessary for the conservancy of the river bank or river administration facilities, he may designate an area adjacent to the river area as a river conservancy area. This regulation is necessary to conserve environments and facilities on rivers in advance.

5-3 Projected River Area

In case the river administration deems it necessary for execution of any river works, he can designate as a projected river area a stretch of land which is to have a lane included in the river area by execution of the river works. After he has obtained the title of the land of the projected river area, the land shall be regarded as land within the river area even before the land becomes the river area as far as the application of this law is concerned. Projected River area is an effective to promote big projects on river works.

6. Administrative River Management

The river management consists of Administrative jobs, Facility Management and other necessary jobs, including legal permissions and regulations, river registers, etc.

6-1 River Register

The river administrator should prepare and update of registers of the rivers, which comprises a register of the present river condition and a register of water use, for the purpose to ensure the existing rights and grasp the present river condition for the systematic management.

6-2 Permissions

Any person to do the following acts shall obtain permissions of the river administrator.

- a. Occupancy of the river water.
- b. Occupancy of land within a river area.
- c. Gathering of earth, sand, stone from a river area.
- d. Construction, reconstruction or removal of a structure within a river area.
- e. Land excavation, banking, cutting or any other act which alters the land configuration within a river area.
- f. Planting or felling of trees within a river area.

6-3 Prohibitions and Restrictions

Any acts of the following are prohibited without approvals of the river administrator.

- a. Floating trees, bamboo down a river and the passage of boats and rafts.
- b. Acts which are likely to hinder the river administration by affecting the course, cleanliness, discharge, etc., of the running water.
- c. Use of structure built without permission

any person permitted by article 26 shall pass a completion inspection.

6-4 Coordination

- a. Coordination of new water use
- b. Coordination in case of drought

In cases where no agreement among permitted water users is reached or it may seriously harm the public benefit without urgent coordination, the river administrator can make necessary intermediation for the coordination of water uses.

6-5 Regulations in Dam Construction and Operation

River Law stipulates a dam to be permitted shall keep the following regulations, considering that dam's construction and operation may serious consequences to existing functions of rivers. Water users of dams shall keep these regulations managed by the river administrator.

- a. Maintenance of existing function of river
- b. Observation of water stage, discharge, etc.
- c. Report of condition of dam operation
- d. Preparation of "Regulations for dam operation"
- e. Measures to prevention of harm
- f. Preparation of record on dam operation in flood
- g. Appointment of engineer as chief superintendent

6-6 Instruction for Flood Control

In cases, a disaster has been caused or is probably caused by floods, the river administrator can instruct the owner of the permitted dam to take necessary steps on the dam operation to prevent or minimize the disaster considering the overall situation in the river system.

6-7 Supervisory Dispositions

River Law stipulates that if a permitted person in accordance with the provisions of the law violates the provisions or terms of the approval, the river administrator can annul the permission or approval, make some alternation to it, suspend its effectiveness, or etc.

7. Concept of Water Use Rights

Water use rights are based on River Law that "any person who want to occupy the water of a river shall obtain the permission from the river administrator", related to the occupancy of land and construction of a structure. Water use rights are classified by water-user's purpose to four types (domestic water, industrial water, irrigation water, hydro-power). Moreover, they are historically classified to permitted water use right and customary water use right (habitual water use had existed occupied before River Law enactment and legally it is taken as permitted water use right). From the continuity of water uses, water use rights should be stable and exclusive. However, since quantities of river flows are susceptible to various meteorological factors, it is important to consider various drought possibilities in water use permissions. To avoid serious

water shortage, the river administrator sets a target of safety measure against drought (mostly, 10 years return period), and he permits every new water-use only in case of no influence to this target and existing water-uses. Exceptionally, there can be a temporary water-use right, which is given only in the case that a river flows sufficiently, the related water resources development is going on, and it is a quite urgent and important water-use.

8. River Planning

8-1 Master Plan for River Works

The river administrator should prepare “Master Plan for River Works”. The master plan contains the objectives for flood mitigation, water resources development, river environment improvement, and other targets which shall be the basins for executing river works, by taking into consideration design flood discharges, past flood damages, present water uses, water demands, land uses, land developments, and river environments.

8-2 Master Plan for River Environment Management

The river administrator should conserve, improve and manage for the better river environments on water quantity, natural landscape, water life, etc. Therefore, he prepares “Master Plan for River Environment Management”, which consists of the water environment management (monitoring of water quality and quantity, the facility control, improvement project, etc.) and the spatial management (suitable conservation and utilization of river open space, river open space improvement, advice to river works and permissions, coordination for projects, etc.).

9. River Administration Facility Management

9-1 River Works

According to River Law, river works means works executed on a river in order to increase public benefits, or eliminate or diminish public losses by the water of the river. Generally, river works include earth works (banking, excavation), constructions and repairs of structural facilities such as a levee, dam, weir and others, countermeasures for storm surge, improvement of river environment, etc. In River Law, river works and other works are classified by the following items.

<River works by the river administrator>

- a. Executed on the above Master Plan, which includes the following case d.
- b. Urgently executed for disaster restoration of a river administration facility.
- c. Executed for repair of a river administration facility.

<River works by a person other than the river administrator>

- d. Executed after the river administrator’s agreement, in case that a river administration facility and another person’s facility is built as one for a joint use.

e. Executed for a compensatory work necessitated by another person's work which affects a river, after river administrator's instruction.

f. Executed after river administrator's approval. (article 20)

<Works other than river works by the river administrator>

g. Executed for an incidental work necessitated by river works.

h. Executed for maintenance of a river administration facility.

9-2 Operation of the River Administration Facility

The river administration should prepare "Operational Regulation for the River Administration Facility" for the main facilities (dam, weir, gate, etc.), and operate properly according to this.

9-3 Maintenance Work

The river administration facility need be maintained in good condition. It includes the daily or periodical maintenance, inspection and cleaning on structures, facilities, machinery, revetments, river space (weeding, redressing, cutting down assorted trees, removing dust), etc. Also, the daily patrol along rivers is important.

10. Conclusion

This paper introduces Japanese experience as having set up river administrator under the river law for thinking the activities of well managed water and basin. There are other important arranging activities as a river administrator such as, Structural Safety and Technical Standards, Non-Structural Measures against Floods, expenses on River Management, Data Collection, Investigation and Survey, Outreach activities, and River Council. The world trend is to holistic approach from individual facility management, but if the holistic body does not have the practical activities as it mentioned above, it will make grate loss. Flood, drought and environmental deterioration may not be overcome. This paper mainly bases on 1964 River Law, but the general concept of river administration has not changed

11. Reference

1: River Law of Japan (1964, 1997)

2: Okano and Kawasaki (1996), "Integrated River Basin Management" at Seminar in Malacca

3: <http://www.pfwrman.com/default.php> (Japan)