

## **Towards Integrated Basin Management in Lake Biwa and Yodo River Basin -Past and Future--**

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1. In order to meet increasing needs of water for human and environment, and to allocate water appropriately/effectively among water sectors, an **integrated PLANNING -- development/conservation by transversal approach among ministries/departments --** is necessary and **coordinator's role** is very important.

To balance both needs of downstream's population/industry demands, and of upstream (lake basin)'s flood control and water quality conservation, **Lake Biwa Comprehensive Development Plan** was determined based on a special national law. In process of planning a regional office of a national ministry played a role of coordinator, coordinating both downstream/upstream governments, many ministries (Construction, Health and Welfare, Agriculture, Industry, etc.) among expected water users. The plan itself has multi-objectives: to achieve water resource development, conservation, flood control at the same time. The 25 year plan's completion owes much to this institutional setting by plan, and it is one the most integrated plan for water resource development in Japan.

2. Importance of integration of human and environmental needs increasing, stakeholder's participation is indispensable, and for that purpose **stakeholder's organization at each sub-basin level is of big expectation.**

For sustainable use of water resource of Lake Biwa, succeeding Lake Biwa Comprehensive Development, **Lake Biwa Comprehensive Conservation Plan (Mother Lake 21)** is being implemented, putting more emphasis on water quality and ecosystem management of the lake. For water development, the construction of facilities (dikes, weirs, sewerage, etc.); i.e. governmental projects used to weigh much, however, **in the management stage, all stakeholders/residents' action in the basin weighs much more.** A "**Sub-Basin Level Association**" is being organized voluntarily by residents, NGOs, agricultural/industrial organizations, etc., with support of municipal/prefectural government in each lake inflow river basin. It is expected as an efficient way to encourage people's participation and coordinate various actions.

3. Meeting to **increasing ecosystem needs; we need to re-start with more Innovative ideas**

**Importance of environmental needs increasing for managing developed water resource**, we need to have more integrated approach of human and environmental needs in water resources management. Shiga Prefecture is paying more attention to environment/ecosystem needs of the lake, and is starting some innovative programs by Plan-Do-See (evolutional) and participatory approach. Monitoring is also implemented for the outcome (success and failure), and those programs will be reviewed for the future improvement. Those new programs includes; **Lake's Leisure Use Regulation Ordinance, Lake Restoration Program from reclaimed land** for agriculture, **Restoration the lost watercourse between lake and rice paddy fields** for fish spawning, etc.

4. To meet new challenge in Lake Biwa and Yodo River Basin, we need to pursue **new framework for the Integrated Lake Biwa Yodo River Basin Management**

Because **Lake Biwa has strong connection with downstream** in water use, environment and ecosystem, industry, culture, etc., problems of Lake Biwa cannot be solved without considering total Yodo river basin. Moreover, **Lake Biwa and Yodo River shares common problems**, e.g. degradation of water quality and ecosystem, loss of original landscape, weakening of relationship between human and water, declining of urban vitality, etc. In addition, we must pay more attention to the possible affect of climate change to Lake Biwa, and the **continuous maintenance and risk management of water related facilities** constructed in last 4 decades is also necessary. For those purpose, we need to have **a new system of integrated basin management in Lake Biwa and Yodo River Basin.** In 2005, "**Renaissance of Lake Biwa and Yodo River Basin Area**" Project started and some of the basin-wide projects are being implemented. The investigation on necessary and possible system for the integrated basin management and its organizational structure is also in process among riparian prefectures and cities.