

**Multi-disciplinary research for understanding interactions
between humans and nature in the Lake Biwa-Yodo River watershed:
Support to find resident's required vision of a river basin and adjustment between classes**

Takuya TANAKA

Research Institute for Humanity and Nature

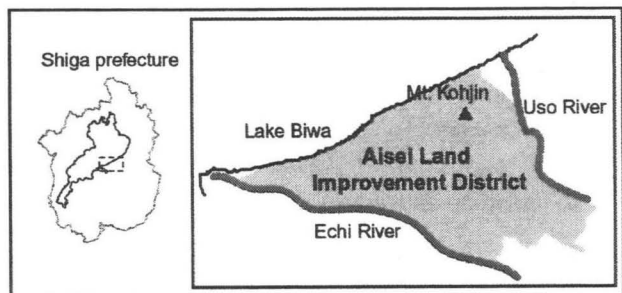
From a concept to a theme in the study area

We have narrowed down to the following two themes in the field to verify our concept. The first theme is to support in bottom-up creation of the target image of river basin environment. It is development of the technique in which the residents themselves grasp their subjects and needs in river basin environment, and the researchers feed back the result to residents. It is our theme to visualize the mutual connection among those target images. The second theme is to support adjustment between the target image obtained from the bottom up and a top-down policy. We focus on pollution load by agricultural drainage. We are studying for the method the environmental preservation activity in a land improvement district and a rural community is simultaneously connected to decreasing pollution load to Lake Biwa, i.e., environmental preservation-activity on a macroscopic class. We plan to clarify what tool is effective in adjustment between classes.

Outline of Aisei land improvement district (Inae area in Hikone city)

Aisei land improvement district is located in south part of Hikone city in east side of the Lake Biwa, and the area is 28.22km². A northeast side of it touches Uso river, a southern side of it touches Echi river, and Jinjo-numa(a attached lake) is in the center of the district near a lakefront. Except for Mt. Kohjin(262m), farmland spreads in a gently sloping plain, and 29 rural communities, the residential section, apartments and factories are included. 3,867 households and 13,684 persons (2000, National Census) live there, and the number of farmhouses is 1241 inside (1995 Agricultural Census). The range of old Inae town which merged with Hikone city in 1968 overlaps the district, and community association are organized under the influence of the town.

A great portion of agricultural water use of the district is based on pumping from Lake Biwa. Moreover, the city waterworks is fixed as domestic water mainly from groundwater. River water and well water are also used although it is the limited range. A part of the drainage from the household is processed in a river-basin sewerage and flows into Lake Biwa from the northernmost end of Hikone. On the other hand, the sewage processed in the rural community sewerage, the merger septic tank, and untreated life waste water and agricultural drainage mostly are flowing into Lake Biwa via a small river and a drainage canal within the area.



Present activities in environmental management and our target

The activity which manages and preserves environment, such as rural community sewerage management, lakefront cleaning, river cleaning, and water quality preservation, is seen in this district. The collaborative activities by residents, such as a water supply organization, and rural

community farming, maintenance of a temple and shrine, park management, existed mostly, though it had the problem. Moreover, there are the farmhouses trying to cut down inflow of the murky water to Lake Biwa. But we did not encounter the example in which the residents themselves found out the future image and the index of river basin environment. Moreover, we did not see the example in which the impact from a river basin to Lake Biwa is measured on the spot and the policy of pollution load reduction is customized, either. We think that our project can support such a point. Until now, our plan to make a future image of a river basin by the residents and create their index for its management was proposed in the district. I will report subsequent progress. In accordance with agricultural drainage, I will show the present idea that I divide both load reduction measure in a water rice field place level, and load reduction measure in a drainage canal and a small river level, and advance a proposal on adjusting a macroscopic policy with the beneficiary of each level.