

Hierarchical Watershed Management

– bridging the stakeholders dispersed over the different spatial levels–

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Abstract :

In this paper, I talk about two interdisciplinary researches on watershed management in the Lake Biwa watershed, Japan. A watershed is regarded as rational unit of sustainable water management because it is a physical unit of water and material cycling. Its hierarchical structure, however, blocks communication of stakeholders dispersed over the different spatial levels, which would generate conflicts of interests. How to bridge the gap between different spatial levels is a key issue to achieve sustainable watershed management.

The first research focused on the management of non-point agricultural turbid water issue conducted at RIHN (2002-2006). The soil paddling of rice farming causes turbid water to flow out of the paddy fields through rivers in rural communities and finally into Lake Biwa. In the background of this environmental problem is the Japan's agricultural modernization policy. Although agricultural productivity was greatly improved, farming communities today have pressing problem, the discouraging prospects for farming. The rural communities' ability to manage the aquatic environment was unintentionally diminished. The sustainable watershed management must face the mismatch of the urgent issues between different spatial levels.

The second research, successor of the above one, seeks for watershed governance that Lake Biwa ecosystem and human well-being of local communities to be improved interdependently in a sustainable manner. The "hierarchical watershed management" is a guiding concept (**Fig.**), which facilitate communication of stakeholders at different spatial levels.

