

Adaptive measures in flood control

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Considering future precipitation increase, design flood peak discharges need to be further raised if present flood safety levels are to be maintained. However, it is sometimes extremely difficult to construct structures, including river-improvement and flood-control structures, which can accommodate such increased discharges, because of social and other constraints. However, keeping present design discharges would result in severe drops in flood safety level in the future, and the risks of floodings and inundations may increase.

To solve these issues, the increment in external forces caused by climate change should be included and coped with in flood control policies

Specifically, future flood control policies should be multilayered. In addition to traditional "flood control policies to secure safety at the river level" through river improvement and the construction of flood control structures to meet target discharge levels for past and current river projects, "flood control policies to secure safety at the basin level" through preparation for possible increase in excess floods should also be implemented.

We will implement flood control policies in river basins in ways that are suitable in light of the regional situation of land use, including flood control structures such as retarding ponds, runoff control measures such as rainfall detention /infiltration facilities, and measures using secondary levees, ring levees, and earth fills from road and railroad construction to prevent flooding from spreading.

To cope with sea level rise and intensified typhoons, storm surge barriers should be implemented in an appropriate way. Concrete barriers should be rebuilt higher to enhance their protection capacities against intensified external forces, especially at a time of renewal so that the frequency of inundation can be reduced.



Photograph 1. An example of retarding ponds (Multipurpose retarding pond of Tsurumi River, Kanagawa Prefecture)

Transportation planning in Arakawa Ward

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The transportation sector produces about 20% of Japan's carbon dioxide emissions, and most of this is due to the use of automobiles. Japan's excessive reliance on automobiles causes environmental problems including noise, as well as other problems for society such as traffic accidents. From the standpoint of sustainable development, this situation needs to be corrected. Many local governments are now developing and implementing plans to decrease reliance on automobiles and reduce carbon dioxide emissions from the transportation sector. The national government is also supporting endeavors such as environmental model cities and Environmentally Sustainable Transport (EST). For example, in Tokyo, Arakawa Ward has established an EST goal of reducing carbon dioxide emissions from the transport sector by 3,548 tons (1% lower than the previous year) from 2008 to 2009. To achieve this target, the ward has decided on car sharing, eco-driving, and mobility management as the primary strategies, based on cost-effectiveness analysis with the participation and collaboration of ward residents, businesses, government agencies, consultants, and scholars, and is in the process of implementing these measures. The ward is also distributing the "Arakawa Transportation Eco-Life Handbook" and encouraging all ward residents to participate and cooperate in this effort.



Arakawa Transportation Eco-Life Handbook