



Case Study

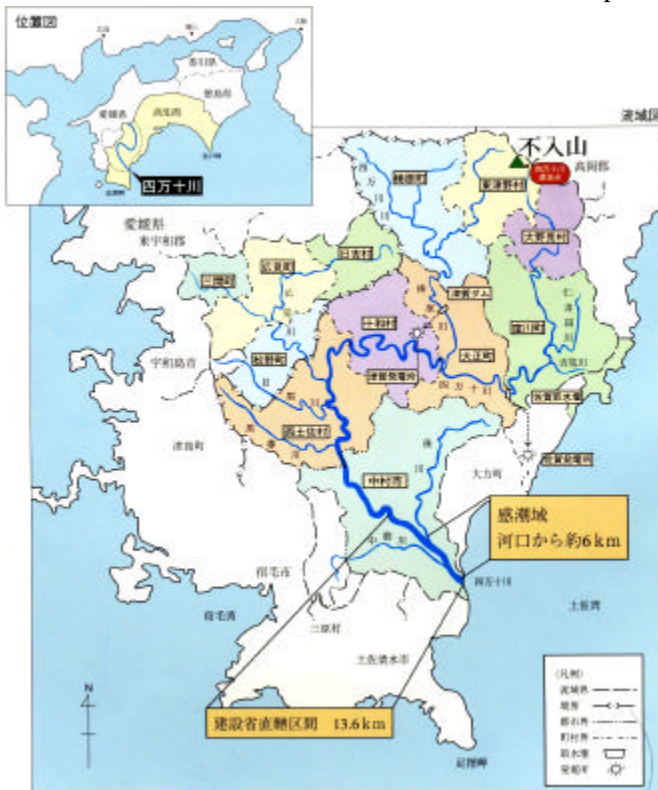
Kochi Prefecture (Japan) General Preservation and Measures along the Shimanto River

Throughout Japan, rivers are being placed at the core of regional development. Civil groups along the Kitakami River in Iwate Prefecture and along the Tsurumi River in Kanagawa Prefecture, as “basin people” transcending the boundaries of administrative districts, are cooperating in active movements such as environmental preservation and nature education. (Global Net, April, 1997)

Here, at Shimanto River in Kochi Prefecture, the local government has taken the initiative in promoting sustainable development and the preservation of the natural environment of the basin, under the intention of "Preserving the last clear streams left in Japan".

The total length of Shimanto River is 196 km long and its basin is 2,270 km² in area. It has 47 subsiding bridges and counts 120 fish species. Unlike many Japanese rivers, it runs down a gentle slope (riverbed gradient of 0.61%) and meanders calmly. The river is well known nationally and was voted “the Japanese river I want to visit most” ('Outdoor' magazine – June, 1997), with large numbers of visitors coming even from both outside the prefecture. Estimates on the intrinsic value of the clear streams of Shimanto River range from 14 to 61.5 billion yen (Kochi Prefectural Policy Research Institute – March, 1996).

Preservation of the Shimanto River, which is a primary factor in tourism and in the stimulation of the local economy, is certainly an important issue for the government, but there has been opposition from some quarters to the implementation of this river preservation policy. It seems that the government staff members had to draw on their strong convictions and make great efforts until the governor made the final decision. The following is an introduction of the comprehensive measures concerning Shimanto River as implemented by the Kochi prefecture.



1. Comprehensive Plan 21 for a Pristine Shimanto River (March 1996)

1) Contents of the Plan

This is a general policy for the development of the entire Shimanto River basin, highlighting a number of problems facing the river and their countermeasures, and presents guidelines and target indices for the implementation of projects in line with the basic philosophy of natural cycles, prevention and harmony.



As a concrete basic plan, objectives have been raised as follows:

Basic Plan

< Establishment of Regulations covering the Basin >

Shimanto River Basin Law (provisional name) shall be drawn up.

*Prospects for establishment of the law are for 1999. Plans are to integrate the Shimanto River Clear Water Preservation Law (December, 1989) and to maintain consistency with laws (e.g. "Shimanto River Clear Water Preservation Law," Nakamura City) established by municipalities along the river.

< Control over the Installation of Single Septic Tanks >

The control over the installation of single septic tanks to manage only urine shall be considered by 1999.

*However, the collaboration of the Shimanto River Method Purification System and other purification systems is an issue to be dealt with. There are concerns that the combination of this system and others will result in double investment and hence a combination of the Shimanto River Method and single septic tanks is also under consideration.

< Promotion of Projects to Create Wood-Scented Roads >

In this project, when road repairs are being undertaken, consideration will be given to the natural scenery and ecosystem through increased use of greenery instead of concrete or bare earth for the banks. Plans are afoot to use native saplings to restore the natural woods. Timber reclaimed during thinning out processes is used to secure the soil and later is decomposed back into the earth. (See the photo below.)

The aim is to boost forestry in this mountainous region by stimulating demand for the production of saplings and for the timber culled from the thinning out process, as well as minimizing the effect of roadworks on the environment.



an example of the project at
Kubokawa-cho



CASE STUDY

< Promotion of the 'Shimanto River Method Purification Technology' >

Aim: To promote the 'Shimanto River Method Purification Technology' which uses a natural cycle system. (Detailed later.)

< Standardized Rule Making for River Use >

Based on the above, the Shimanto River Rule was established and implemented in July, 1998 by the Shimanto River General Preservation Organization.

Guidelines

Under this plan, guidelines to be considered when drawing up projects in regard to clear streams, the preservation of living resources and natural design within the basin have been established. As part of these guidelines, the following common items to be considered have been raised:

- Preservation of clear streams: Prevention of muddying water due to construction work, protection of young 'ayu' (or sweetfish), management of and prevention of the draining of felled trees and prohibition of burning fields on the riverside, etc.
- Preservation of the natural landscape: Preservation of exceptional natural scenery, harmonization with the landscape, and protection of old trees.
- Preservation of living resources: Preservation of important areas for the living environment, adoption of nature-friendly construction, increased greenery in areas where the landscape has been changed, controls on the use of chemicals that are not easily biodegradable, etc.

2) Promotion System

An extensive structure has been necessary for the comprehensive implementation of the 'preservation and use of the Shimanto River' instead of the conventional style of having individual administrative organizations manage each separate issue, such as environment, drainage, development, and disaster. The 'Shimanto River Office' has been established within the prefectural office to cope with such needs.

This office, which is set up within the Environmental Culture Department, is comprised of staff from the prefectural office and eight municipal offices along the river, and has been run as an executive office to promote and determine this comprehensive plan. (Currently, there are six staff members from the prefectural office, and two staff working in shifts from the eight city, town, and village offices.)

3) Establishment of Numerical Targets

58 numerical targets have been set up to measure various aspects of the plan. Some of them are as given below.

Strategies	Items	Guidelines		
		Present (1994)	2000	2005
Creation and preservation of a clear stream	Number of 'Shimanto River Method Purification Facilities'	7	20	35
	Purification rate of domestic drainage*	7.5%	25%	45%
	Percentage of area along the Shimanto River revived to its natural state	94%	94%	100%
Preservation of woods and promotion of forestry	Area of natural forest	+31ha	+300ha	+600ha
Preservation of agricultural land and promotion of agriculture	Volume of compost production within the area	9,400 tons	11,000 tons	12,000 tons
Promotion of nature-based tourism	Number of visitors to the Canoe House	40,888	45,000	50,000
	Number of visitors to the Natural Dragonfly Observatory	46,397	50,000	55,000
	Number of schools visiting on school excursions	9	20	30
Promotion of a friendly river that children can freely play in	Number of places where children can fish freely.	1	5	10
Promotion of cultural exchanges between cities and the countryside	Number of paddy field owners	145	300	500
Cooperation among the Local Basin Society	Number of organizations involved in the Shimanto River Citizen's Network	0	10	20
Support for citizens	Amount saved in the Shimanto River Fund	¥21.56 million	¥400 million	¥1 billion

(*) Defines the purification index for domestic drainage taking into account the diffusion rates of both the public and farming village sewerage systems, the number of single or combined septic tanks installed, and the Shimanto River Method Purification Facilities.



CASE STUDY

4) History and Background to the Settlement

In 1983, NHK featured Shimanto River as the last clear stream left in Japan. Since then, Shimanto River has become nationally well-known but for a while, no active movements were seen towards its preservation.

However, during this period, Shimanto River, which took pride in its untouched nature gradually changed through road improvements and channeling of the river due to its straightening. Water pollution has also gradually worsened.

In 1989, the Kochi Prefecture Clear Stream Preservation Law was enacted and the Shimanto River Clear Stream Preservation Plan was established based on the law in 1991. In 1993, the first machinery of the “Shimanto River Method Purification System” was installed in Towa Village in the midstream area. In April, 1993, in order to promote the improvement and demonstration of this system, the “Kochi Prefecture Natural Cycle Water Management Technology Research Team” was established.

In this way, preservation of the Shimanto River has been promoted from a water purification viewpoint. An extensive structure has been required to comprehensively preserve and utilize the Shimanto River, which could not be achieved using the comprehensive fragmented approach, which included preservation of the ecosystem and water quality, adoption of more considerate engineering methods, urban building and stimulation of the local economy. At the same time, the necessity for similar structural reform across the whole administration was recognized under the initiative of the incumbent head, Governor Hashimoto, and a proposal called “For Kochi Prefecture's Future” was presented by the Kochi Prefecture Administrative Reorganization Committee in 1994.

Under these circumstances, a Shimanto River Office, comprised of staff from the prefectural and eight municipal offices, was established within the Culture Environment Department in the prefectural office.

The first task of the group was to establish the 'Comprehensive Plan 21 for a Clear Shimanto River' as the basic policy for the Shimanto river basin in March, the following year.

This plan was established by the Shimanto River Meeting (secretariat under the Shimanto River Office) of the Kochi Prefecture Cultural Administration Promotion Council under the proposals of the 'Comprehensive Plan 21 for a Clear Shimanto River Observing Committee', chaired by Prof. Satoru Matsumoto of Tokyo University. The committee is comprised of some learned and experienced members, the mayors of the municipalities concerned, journalists, urban planning consultants, and others with agricultural and forestry concerns.

Since the Office was established within the Environmental Department, and hence tends to be regarded a regulative structure, office members responsible for the establishment of the Plan had to spend long hours explaining to related departments that the Plan was not devoted entirely to preservation, but that it was one that promoted both preservation and stimulation, including the improvement of the life of inhabitants of the area along the river infrastructure improvement, information orientation, in order to be understood.

"In general, this sort of plan requires great efforts for its establishment, and usually most of the people involved at the outset have been replaced by the final stage of implementation. As a result, they often fail to be implemented. In order to avoid such a situation, this plan was agreed upon within a relatively short period - just one year. It would never have been implemented were it not for the decisiveness of the current governor," (quotes from the Shimanto River Office.)

Although lacking in strict scientific proof, the plan was rooted in the traditional sense of the relationship between man and river that we have inherited through the wisdom of our elders.



Case Study

5) Implementation Status

- * September 1996 - Establishment of the Shimanto River Method Purification Technology Research Team
- * November 1996 - Shimanto River Forum 21 was held
- * December 1996 - A campaign to re-wood the river basin was carried out in conjunction with local citizens in the Shimanto River Headwaters area.
- * February 1997 - Establishment of the Shimanto River Basin Citizen's Network: The network is comprised of 20 groups from the upper and lower reaches of the river. Joint strategies ranging from preservation work to cleaning are carried out.
- * July 1998 - Determination of the Shimanto River 'Sunken Bridge' preservation policy.
- * August 1998 - Determination of the Shimanto River Rules: Covers for Leisure Drivers and camping etiquette

< Future Schedule >

Establishment of the Shimanto River Basin Law (provisional name)

Creation of the Shimanto River Foundation (provisional name): Promotion of a National Trust.

2. Shimanto River Method Purification System

The Shimanto River flows very slowly, and hence is very susceptible to contamination unlike most Japanese rivers. Therefore, the use of the existing purification system alone is insufficient to maintain the clear stream. The Shimanto River Method Purification System has been developed to solve this problem. This system is based on the water purification that operates naturally in paddy fields, and uses purification functions found in the natural material cycle. It removes biological oxygen demand (BOD), chemical oxygen demand (COD), and suspended solids (SS) without using chemicals, but through an appropriate combination of natural filters, such as charcoal, old wood, and stones, while simultaneously reducing levels of substances that are difficult to remove, such as nitrogen, phosphorus, and anionic surface active agent, using existing methods. It is able to purify the water far more effectively than is required by law, and answers to demands to bring the quality of the river water closer to natural levels.

The Comprehensive Plan defines the “Purification Index for Domestic Drainage” in order to determine the target of the purification of the river basin and makes calculations, taking into account, the diffusion rates of both public and farming village sewerage systems, the number of single or combined septic tanks installed, and the Shimanto River Method Purification Facilities. According to these calculations, the purification index is currently 7.5%. The plan came out with the goal to increase the index to 40% by the year 2005.

The prefecture is currently considering combining the Shimanto River Method with the single or combined purification tank. It plans to increase the number of Shimanto River Method Purification facilities from the present seven to 35.

The installation costs are quite high at 30 ~ 40 million yen for a facility with a 100 ton per day capacity. However, being a very durable system where materials only need to be replenished once every five years at most. With the exception of monthly maintenance, it does not require constant supervision, and hence, running costs are minimal. When one considers its effectiveness, the overall cost is reasonable.



There are examples of installation in other prefectures such as Ibaragi Prefecture which is troubled with the pollution of Kasumigaura.

The effects of this system can be best seen in such projects as the management of domestic drainage near big lakes and ponds, management of water for agricultural use, and those that aim at the revival of ecosystems in water parks such as city parks.

The system is an entirely underground method and hence effective land use can also be promoted.

It is an open system that differs from large-scale sewerage systems, so an increased awareness of environmental issues amongst citizens can also be expected. For example, local citizens can foster a sense of active participation and awareness that they are going to play an active part in preserving the water quality through participation in such activities such as trash removal, which are positioned as the entrance of the system.

3. Others

Furthermore, the Shimanto Friendship Club has also been established to call on people from across the country to support the preservation of the Shimanto River. As the first step, they aim increase their membership to 1,000 (current membership is about 820), for more participation in collecting contributions and PR activities to help preserve the river and actual preservation work and more suggestions towards preservation.

A man from the Shimanto River Office spoke about his ambitions. "I believe that those of us living now have a duty to convey to future generations what a "real natural river" is. Even were rivers all over Japan become contaminated I was to be able to show a real river where one can come in contact with river creatures and a relationship between a river and human beings, and be able to say, 'It was like this in rivers everywhere.'"

4. Budget

The budget for each of these measures is as follows.

Budget for the Shimanto River Office per measure in FY 1998 (Units: 000's)

	FY1998	FY1997
Shimanto River General Coordination Project:	¥7,874	¥7,943
- Projects run by the Promotion Committee of the Shimanto River General Plan 21		
- Shimanto River General Coordination Fee		
Shimanto River General Plan 21 Promotion Project	¥30,899	¥32,264
- Promotion Fee Subsidy		
- Diffusion and Education Projects		
- (New) Shimanto River Basin Preservation System Improvement Project		
Shimanto River Information Release Projects:	¥5,616	¥9,426
- Shimanto Friendship Club Promotion Projects		
- Shimanto Ambassador Promotion Projects		
- Shimanto River Preservation Campaign Promotion Projects		
- Clear Stream Communications Promotion Project		
- Shimanto River Chorus Suite Production / First Performance		



- Shimanto River Basin Utilization Promotion Project

Shimanto River Studies Promotion:	¥1,964	¥11,780
- Shimanto River Method Purification Technology Research Team Promotion Project		
- (New) Shimanto River Foam Generation Mechanisms Analysis Study Project in the Shimanto River		
- Project to prepare for the Shimanto River Academic Meetings		
- Analysis Study Project into the Shimanto River Purification Mechanism		
Renewed authorization for Saga Power Station water use:	¥19,246	¥8,000
Total:	¥65,599	¥69,413

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