

## 2. Study case – River improvement cases of assignments –



Although greening of mild slope dike is adopted, a uniform ruler section is scarcely less for change of flow. In addition, the riverbed width is narrow.



The case of fixed water edge department  
(a low waterway)



Giving priority to mildness of the slope, riverbed width are been narrowed extremely.



about 90% of construction section in river is  
executed in normal flat design.

# Purpose for Nature-Oriented River Management

**“Nature-Oriented River Management” is method of river restoration from the view of natural dynamism.**

**Point1 From a site-by-site nature-oriented approach to an integrated approach taking into consideration the workings of nature in the entire river**

**Point2 Nature-oriented river management that take river management in general into consideration**

**Point3 River management closely connected to local life, history and culture**



**Point1 Native dynamisms of River**  
(Tsuchiya-kawa R. in Iwate Pref.)



**Point2 Riverscape diversity**  
(Kesennuma city)



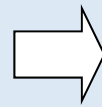
**Point3 River closely connected to local life**  
(Hirai-gawa R. in Tokyo)



## 2. Study case – superior case –

Izumi-gawa River  
Sakai-gawa River basin  
(Yokohama city)

### Waterfront Restoration in View of Whole Valley Environment



Before



After



CA=11.5km<sup>2</sup>

L = 9.5km

B=25~40m

I=1/250~1/300

Q=6-m<sup>3</sup>/s

**Restore Superior Valley Environment**

Improving harmonization of the river and slope forest for the whole spatial structure of valley.

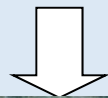
## 2. Study case – superior case –

Nuki-gawa River  
Nuki-gawa River basin  
(Fukuoka Pref.)

### Regeneration of Natural Waterfront and Flow



Before (1991)

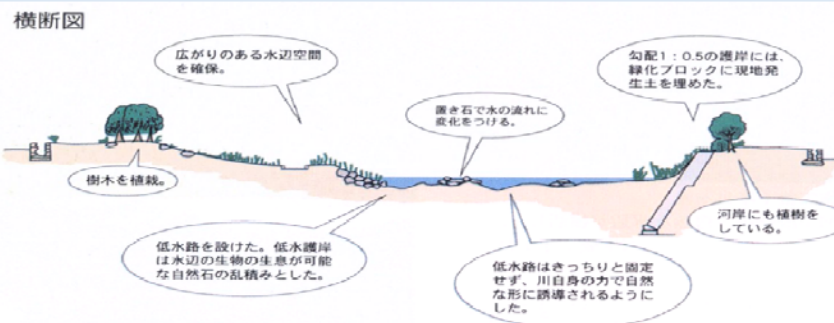


After (1993)



After (1995)

Widen the channel as for regenerating ebb water route



$CA = 10.3 \text{ km}^2$   
 $L = 5.59 \text{ km}$   
 $B = 15 \sim 23 \text{ m}$   
 $I = 1/170$   
 $Q = 130 \text{ m}^3/\text{s}$



## 2. Study case – superior case –

### Yamatsuki-gawa River Gokase-gawa River basin (Miyazaki Pref.)

The rapid flow channel, broadened width, and utilized “grabbles” effectively



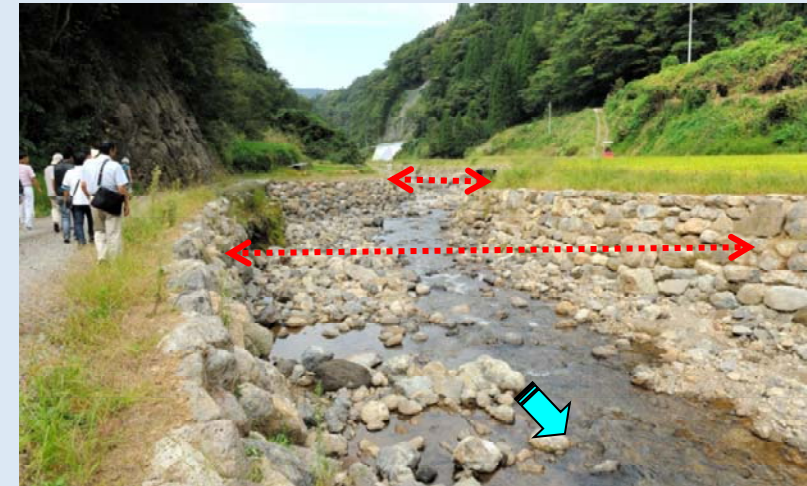
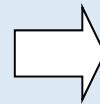
#### As for disaster relief

- ① Under the widening river channel, it is necessary to keep the width of a river wide
- ② To consider a natural landscape Without fixing the alignment
- ③ The huge stone and landscape which public used to be seeing are left

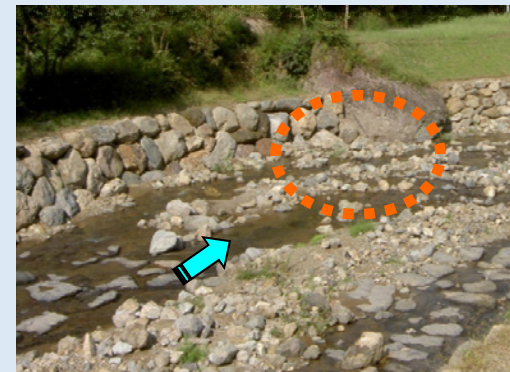


CA=8.18km<sup>2</sup>  
L =4.0km  
B= 10~20m  
I=1/5~1/40

- ◇ Curvilinear execution of crown of revetment
- ◇ The change of slope gradient of revetments



- ◇ Under the widening river channel, it is necessary to do river maintenance in its condition



- ◇ The huge stone is used effectively as a part of revetment
- ◇ The huge stone is used effectively as a drop structure or ground sills

