

Voluntary Disaster Prevention Activities in Tachibana-Cho, Takeo City

~ Looking back on the flooding in July 2009 ~

**Tachibana-cho, Takeo City,
Community Development Council
Chairman Ryoji Torigoe**

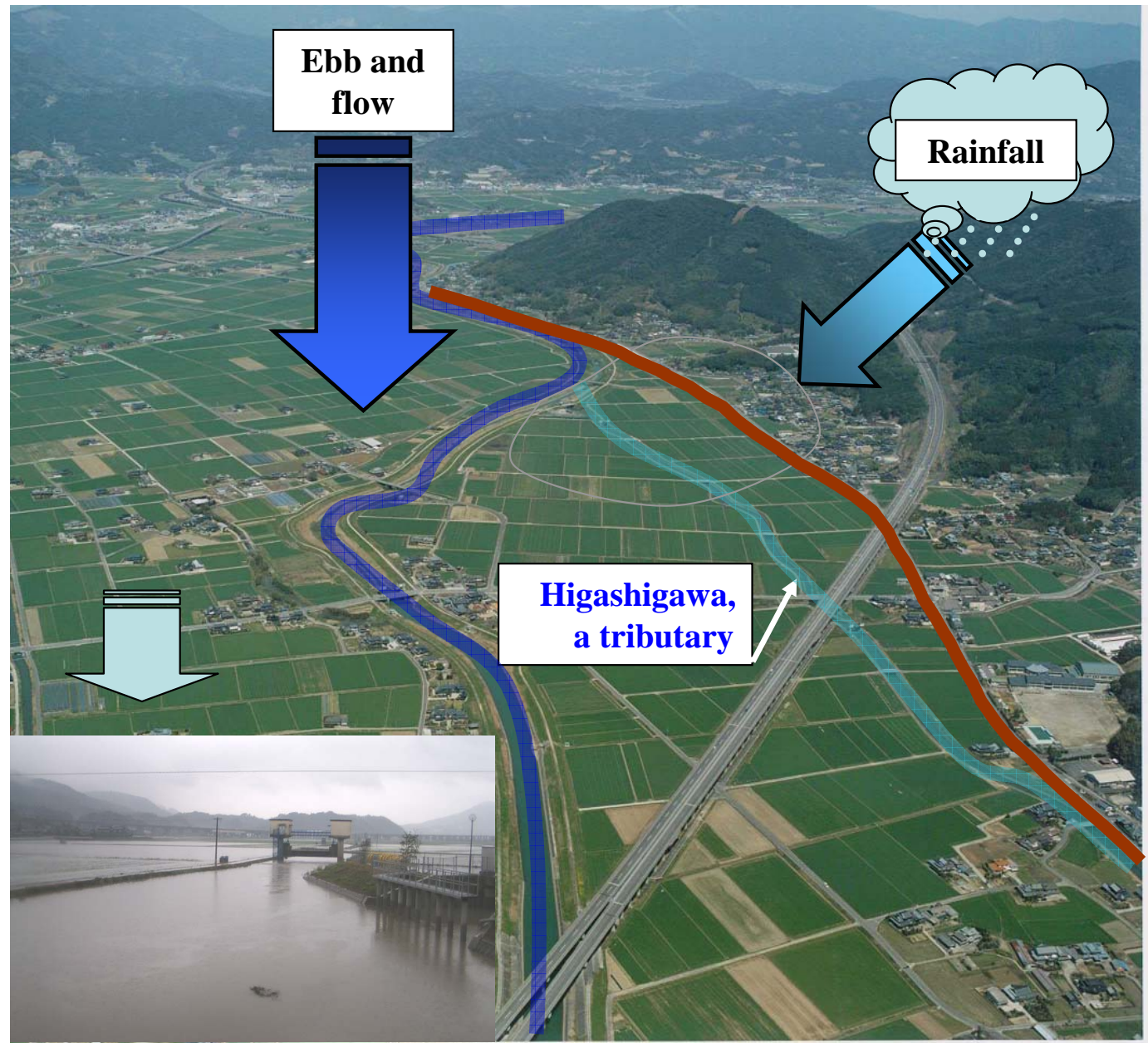
(This document is made through the cooperation of Takeo Office of River,
Kyushu Regional Bureau, MLIT.)

Why are Voluntary Disaster Prevention Activities Needed?

Tachibana-cho is in a **flood-prone area**.

- The Rokkakugawa River **meanders through low flatland** for 47 km from Jinroku-zan mountain to the Ariake Sea.
- At the mouth of the river, **the tidal range is 5-6 m**.
- At high tide, the river **flows backward** to Tachibana-cho.

- During heavy rains, the river **overflows** when the water level of the Rokkakugawa main stream rises and Higashigawa, a tributary, cannot flow out.
- The floodwater **swells** when heavy rain coincides with a high tide.



Why are Voluntary Disaster Prevention Activities Needed?

○ Recent major flooding

July 1-2, 1990 (396 mm)

April 10, 2006 (271 mm), June 25 (166 mm)

July 2-6, 2007

July 2 (151 mm), 4 (127 mm), 6 (242 mm)

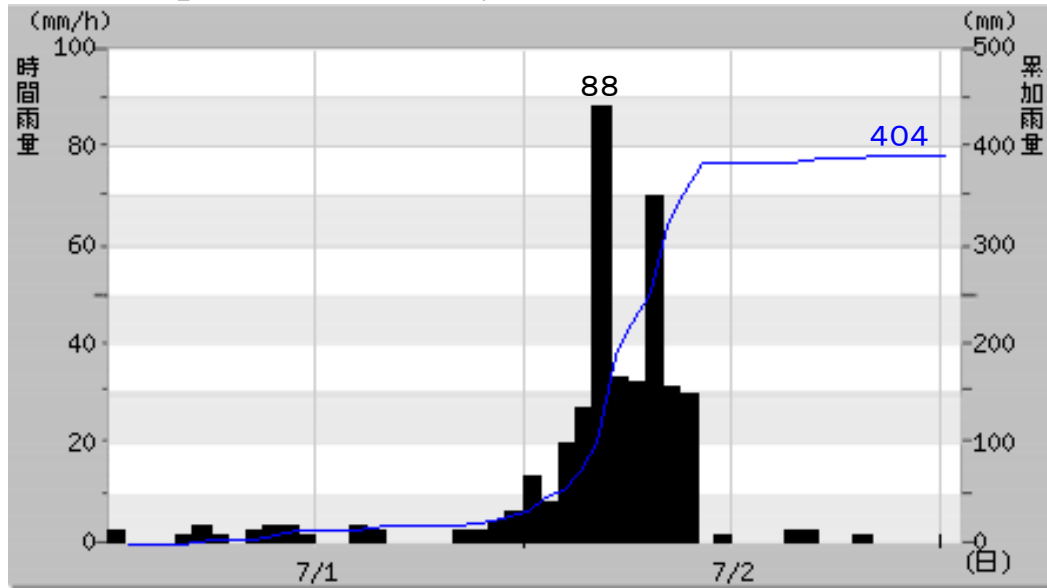
June 19, 2008 (171 mm)

July 24-25, 2009 (236 mm), July 26 (171 mm)

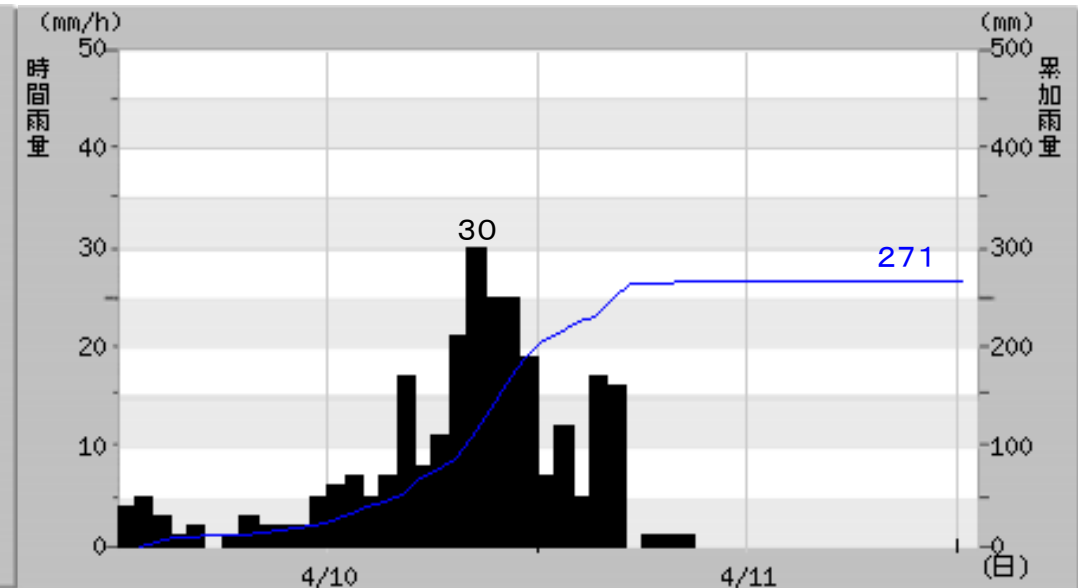
Why are Voluntary Disaster Prevention Activities Needed?

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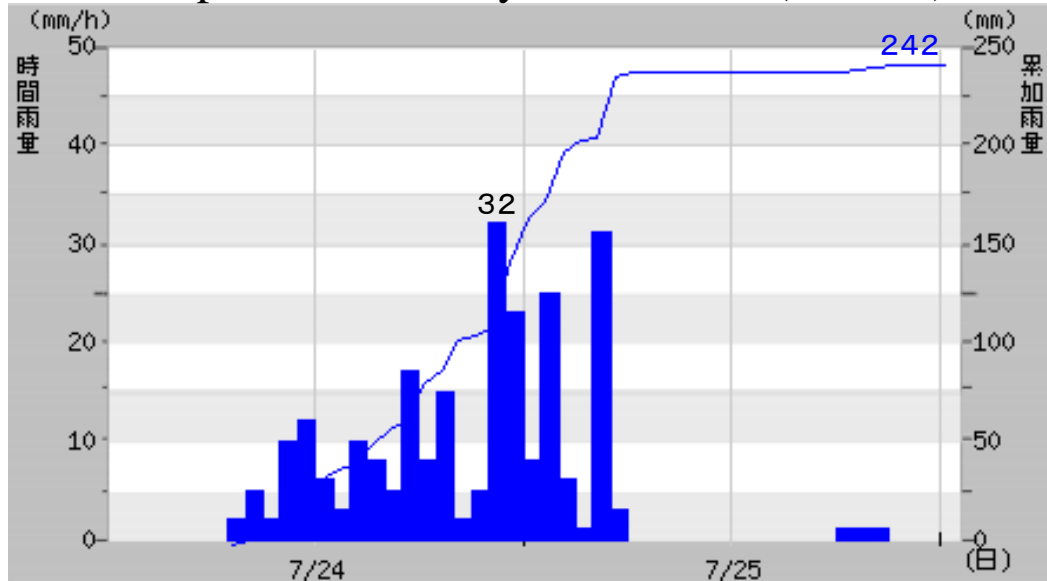
Precipitation data July 1-2, 1990 (Yahazu)



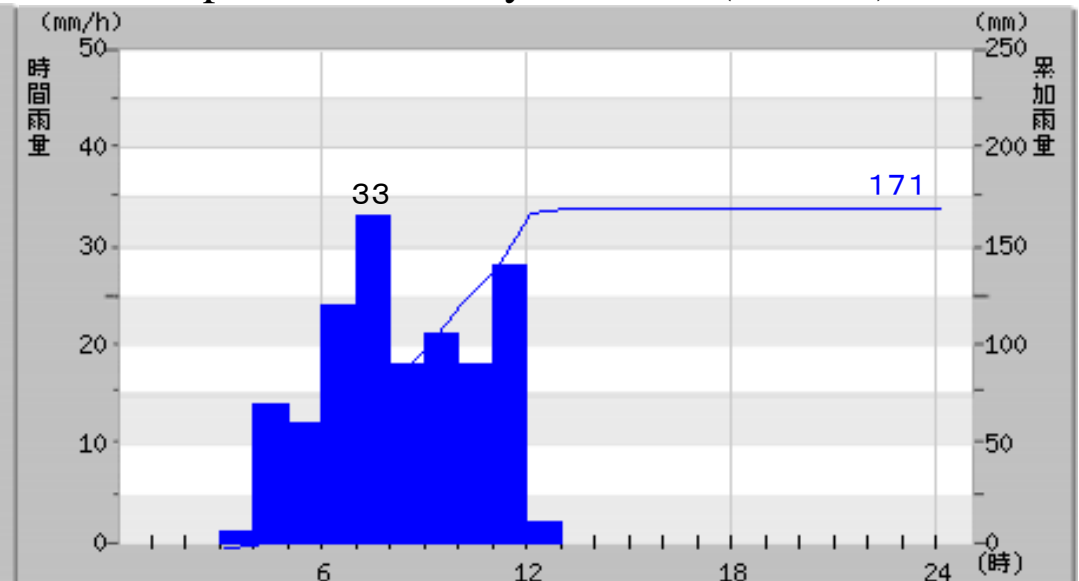
Precipitation data April 10-11, 2006 (Yahazu)



Precipitation data July 24-25, 2009 (Yahazu)



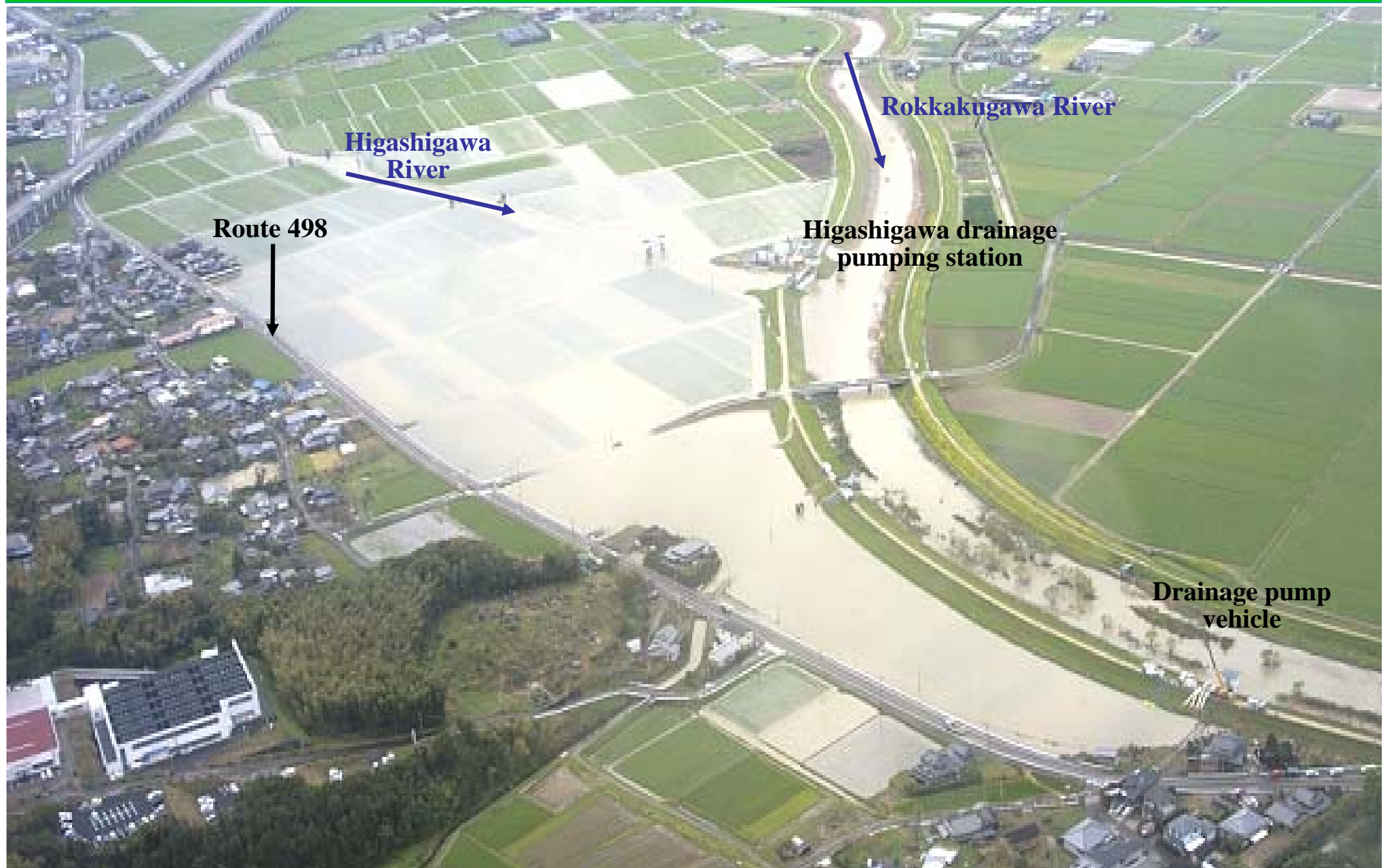
Precipitation data July 26, 2009 (Yahazu)



Flooding on July 2, 1990



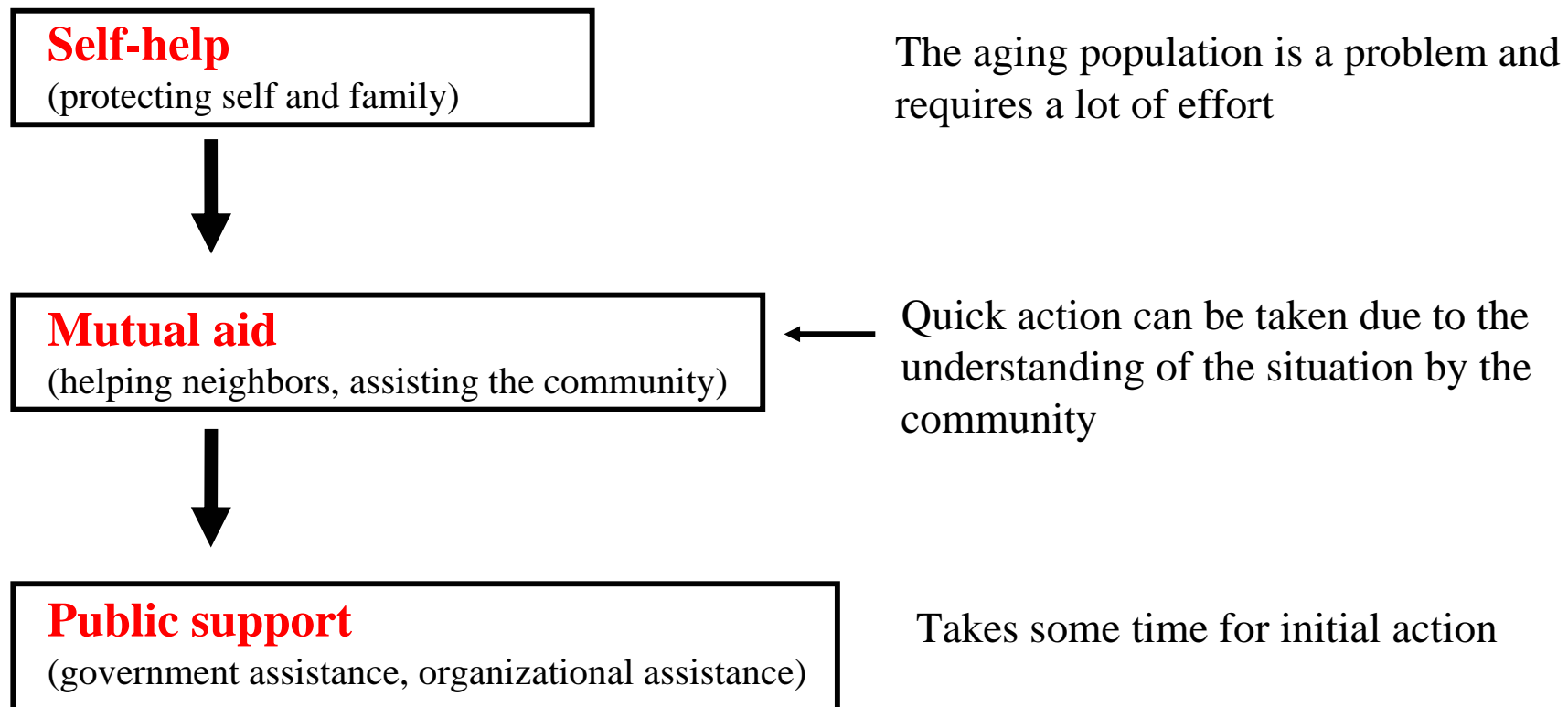
Flooding on April 10, 2006



Why are Voluntary Disaster Prevention Activities Needed?

Protection of the community by the community residents themselves

○ Effective activities in the early stages of a disaster



Voluntary Disaster Prevention Organizations — Efforts for their Formation

Reasons for starting

- Appeals from the government
- Occurrence of a disaster
- Gaining momentum



Formation of working groups

- Using the existing organizations (members)
(District, community centers, women's associations, fire brigade, etc.)
- Establishing the leadership
- Setting up a secretariat
- Government support (Takeo Office of River, Kyushu Regional Bureau, MLIT, Takeo City, Tachibana community center)



Organization through resident's meetings

- Public awareness, dissemination
- Approval of the rules, etc.



Cooperation from the fire brigade

- Cooperation in a disaster

○ Making a “Personal Disaster Prevention Map”



○ Setting rules and making a disaster prevention plan

Any organization needs a minimum number of rules.



Voluntary Disaster Prevention Organizations

— Personal Disaster Prevention Map

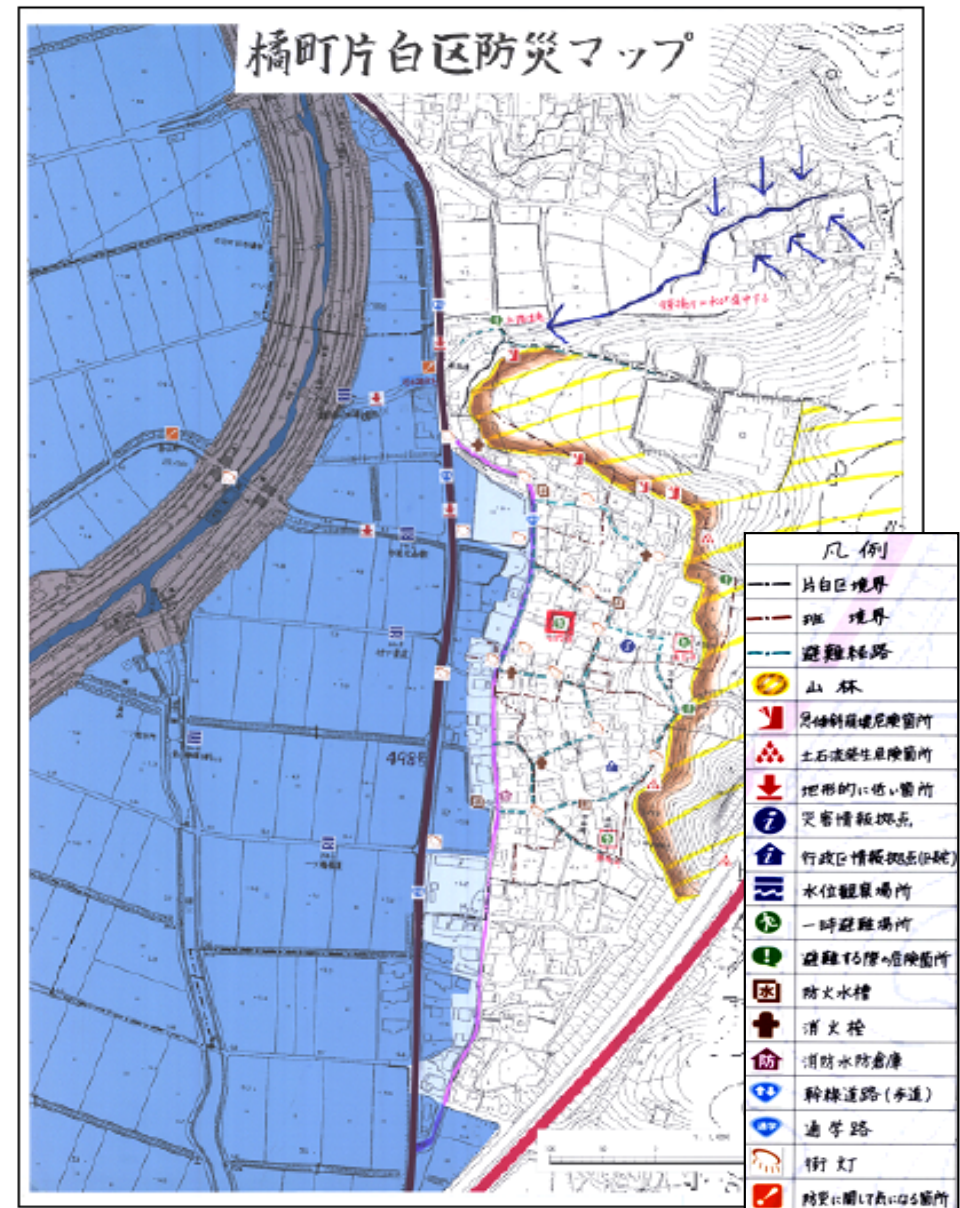
Past **disaster areas** map

For **awareness-raising** among the residents



“Personal **Disaster Prevention** Map”

For disaster prevention **awareness sharing** by the residents



避難場所・避難経路等19項目を表示

Voluntary Disaster Prevention Organizations — Establishment of the System

- Using the “**Manual for voluntary disaster prevention organizations**” published by Saga

[Rules for the Katajiro district voluntary disaster prevention organization]

Preventing and mitigating damage from disasters by conducting voluntary disaster prevention activities through a spirit of cooperation among the residents

- Stipulating that a disaster prevention plan and a diagram of a disaster prevention system should be prepared

○ Disaster prevention plan

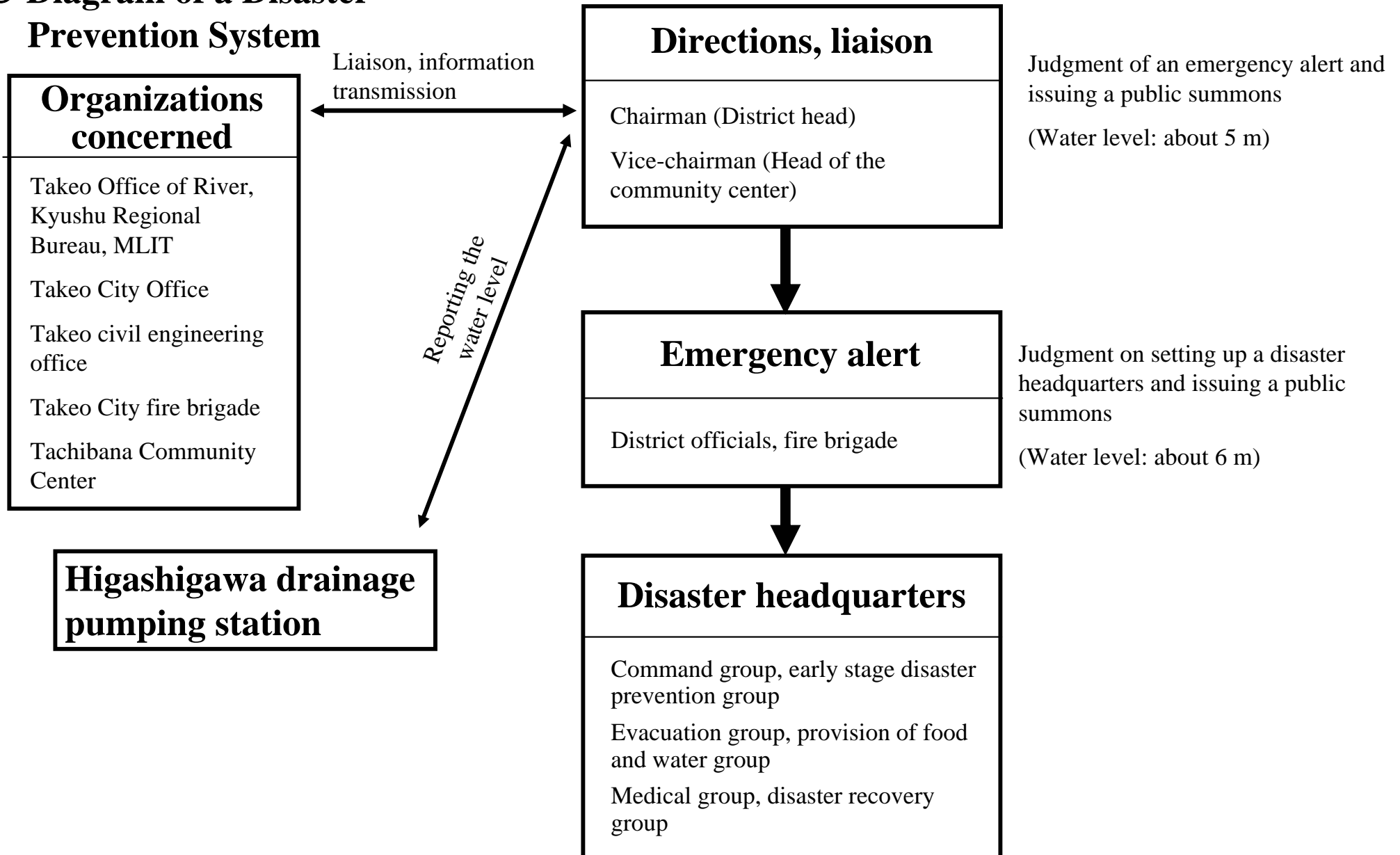
Specifying the necessary matters for the activities of the voluntary disaster prevention organization

- (1) Setting up the disaster headquarters,
- (2) Implementing disaster drills, and
- (3) Disseminating information on disaster prevention

Voluntary Disaster Prevention Organizations

— Diagram of a Disaster Prevention System

○ Diagram of a Disaster Prevention System

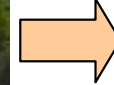
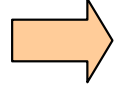


Voluntary Disaster Prevention Organizations — Disaster Facilities Improvement Activities

Setting up disaster prevention equipment (Improving the safe and secure stations)



Building

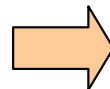


Stored disaster prevention equipment



Dynamos
Chain saws
Searchlights
Helmets
Double ladder
Armbands
etc. 15 goods

Placing water level measurement poles (four places along Route 498)



Voluntary Disaster Prevention Organizations

— Advantages of establishing an organization

Disaster prevention awareness and **communication** are improved.

- At the time of a disaster, a system of cooperation can be formed more easily.
- More people participate in the residents' meetings.

Liaison and cooperation system with the government is established.

- Collection and dissemination of information can be conducted more easily.
- At emergency drills and other events a cooperation system involving others can be formed more easily.
- Cooperation with **the fire brigade** can be established more easily.

Voluntary Disaster Prevention Organizations — Advantages of establishing an organization

Emergency drill (2008)

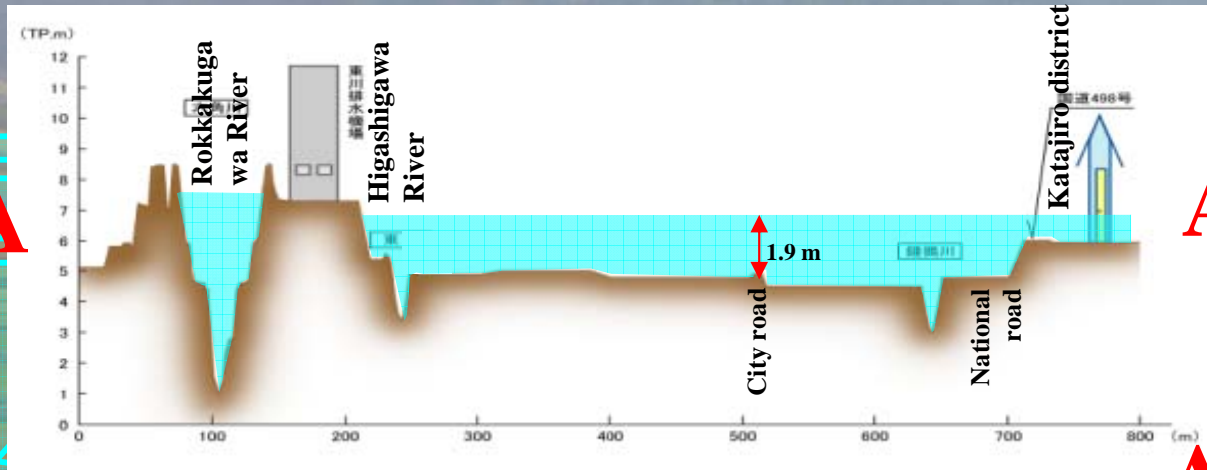


Flooding on July 26, 2009

○ Flooding record

Date		July 26					Notes
Time		- 9:00	11:00	13:00	15:00	17:00	
Precipitation in Yahazu (mm)		101	44	26	-	-	Total:171 mm
Water level (T. Pm)	River water	6.14	7.05	7.56	7.17	6.80	Maximum: 7.58 mm
	Rainfall	5.69	6.25	6.72	6.90	6.82	Maximum: 6.92 mm
Flooded roads	City roads	Katajiro-Hanashima line (Maximum depth of inundation: 1.9 m)					Road closed
		-	-	Former prefectural road (0.55m)			
	National road	-	Route 498 (Maximum depth of inundation: 0.9 m)				
Inundated houses	Above the floor	-	Three households started to be inundated below the floor.	3 households (30cm-15cm)			(Evacuation) 4 persons (community center) 4 persons (neighboring houses)
	Below the floor	-	-	3 households (35 cm-5 cm)			
	Evacuation	-	-	8 persons from 2 households			
Inundated warehouses, etc.		-	10 buildings (55cm-10cm)				
Operation of a drainage pumping station		Operation: From 7:20 to 00:30 of the next day (17 hours 10 minutes)					
Activities of the voluntary disaster prevention organization		Vigilance: 6 persons	Disaster headquarters: 25 persons (10:00 - 20:00)				

Flooding on July 26, 2009



Rokkakugawa River

City road: Hanashima-
Katajiro line

Katajiro
district

Higashigawa
River

Rokkakugawa
River

Higashigawa
River

Route 498

Tachibana
elementary
school

Flooded and

Flooding on July 26, 2009

The Higashigawa drainage pumping station was operated, draining 8 cubic meters of water per second. For 17 hours (From 10:00 to 00:30 of the next day)



2001: 5 m³/s at the establishment

2007: 3 m³/s added

Flooding on July 26, 2009

○ Flooding and inundation (1) Overall view



Flooding on July 26, 2009

○ Flooding and inundation (2) Route 498



Flooding on July 26, 2009

○ Flooding and inundation (3) Flooded city road



Flooding on July 26, 2009

Flooding and inundation (4) Flooded houses



Activities of the **Voluntary Disaster Prevention Organization in one case of a disaster**

Activities of the voluntary disaster prevention organization

[Disaster headquarters: 30 persons]

- Command group . . . Information collection, liaison and command, request for a drainage pump vehicle**
- Patrol group . . . Patrolling the houses that are at risk of inundation and where caution is required, and other activities**
- Urgent disaster prevention group . . . Taking out the household goods and tatami mats from houses inundated above the floor, and other activities**
- Evacuation group . . . Evacuating people to the community center**
- Provision of food and water group . . . Cooking for households whose houses were inundated and disaster prevention staff members**
- Support for outside groups . . . Measures for livestock farmers and cow barns**
- Disaster recovery group . . . Cleaning up after the flooding, clearing away silt from the road**

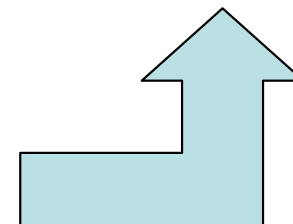
Activities of the **Voluntary Disaster Prevention Organization** in one case of a disaster

○ Patrolling using a boat



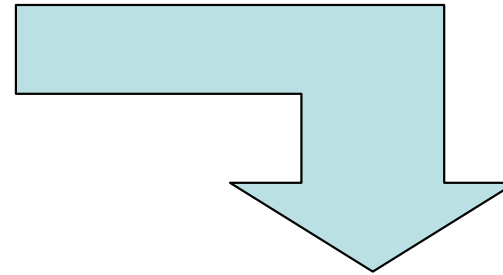
Activities of the **Voluntary Disaster Prevention Organization** in one case of a disaster

○ Taking up tatami mats



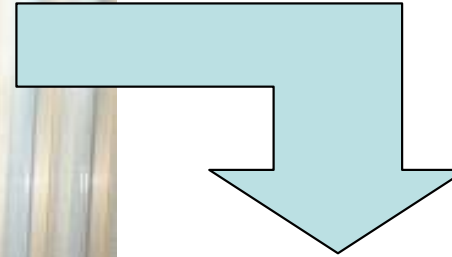
Activities of the **Voluntary Disaster Prevention Organization** in one case of a disaster

○ Cooking and food distribution



Activities of the **Voluntary Disaster Prevention Organization** in one case of a disaster

○ Evacuating people to the community center



Activities of the **Voluntary Disaster Prevention Organization** in one case of a disaster



○ **Placing sandbags to prevent the inundation of a barn**



○ **Placing boards to block waves**

Activities of the **Voluntary Disaster Prevention Organization** in one case of a disaster

○ Cleaning up and washing away after flooding



**Before washing away,
after the flooding**



**Clearing away silt from
the national road**

Future approach

~ in order to Continue the Organization ~

(1) Implementation of emergency drills and other training

- **Implementation of activities is the best form of practice.**

(Example) Review meeting for making improvements

- **Training with practical benefits,** which doubles as joint work for the district

(Example) Sandbag piling training which doubles as district work for the prevention of dirt draining into gutters

Training in the use of disaster prevention equipment, such as chain saws, which doubles as work clearing fallen trees after a typhoon

(2) Implementation of communication activities for the improvement of disaster prevention awareness

(Example) Organizing meetings for social interaction (ground golf competitions, etc.) in concert with community center activities

(3) Training the leaders

- Making the best use of groups involving the same generation

(Examples) Sanyamachi (neighborhood meetings), school alumni reunions, etc.





Future approach

~ in order to Develop the Organization ~

(1) Implementation of community disaster prevention meetings

- Continuing meetings with the local government (two times a year since 2006)

(2) Expanding the number of organizations for voluntary disaster prevention

- Six districts of the 13 districts of Tachibana-cho have established a voluntary disaster prevention organization. Every district will establish one in the near future.

(3) Active participation in Rokkakugawa River improvement-related activities

- Meetings for the promotion of improvements to the reservoir for Rokkakugawa River flood control in Takeo City (Establishment: November 30, 2009)



Thank you for your attention.

What would you do if you could come back one day prior to the disaster?