Investigation of Evacuation Plan through Making Landslide Evacuation Map

Towards Evacuation Planning

Though sediment-related disaster warning areas are designated in many places in Japan, there are no evacuation plans related to debris flow disaster. In Kuna-area in Chichibu city where is mountainous, they held the workshop to make Safe Check Map for being approved as a safe community. Kuna elementary school where is in a sediment-related disaster warning area is an evacuation site, however there is no guidelines who, where and how to evacuate when heavy rainfall happens.

The Application of "nigechizu" to Landslide Disaster

To make the Voluntary Disaster Prevention Plan, we held the consecutive workshops in Kuna-area with applying the method of making Evacuation Map from Tsunami.

Using how to make Tsunami Evacuation Map "nigechizu", we changed some method to reflect characteristic





"nigechizu"

We set the potential evacuation points outside of the flooded areas.

APPLIED

Completed Landslide Evacuation Map

We finally established the way of making Landslide Evacuation Map.

Flow of Making of Landslide Evacuation Map









public hall fill, we evacuate

It's better to stay our house

in this area

near public housing.

Wrote sediment-related disaster warning area on base map as the basis of hazard map.

O Shelters Emergency evacuation sites The building which we don't evacuate if it rain

Discussed about evacuation sites,

dengerous roads and past disaster

areas and wrote them on base map.



We colored roads by the distance that elderly people can walk in 3 minutes (129m) from a potential evacuation point.



We exchanged opinions about Landslide Evacuation Map made and wrote them on it.



Findings through WS

1We could designate the emergency evacuation sites in case of heavy rainfall.

②We could define whether a need to be evacuated immediately or safe to stay.

③We discussed the safety of evacuation sites that were designated currently, and we found points where we should set new evacuation sites.

④We set not only public facilities such as auditoriums but also

We designated the flow of evacuation



Fig.2 Completed Landslide Evacuation Map

Emergency Evacuation Sites(public facilities) Emergency Evacuation Sites(private facilities)

X The buildings which we don't evacuate if it rain Sediment-related disaster special warning area

Sediment-related disaster warning area

- Records such as past disasters
- Points at the time of evacuation
- Topics of discussion
- Points which happened disaster in the past **X** Points cannot pass

private facilities like houses or guesthouses as evacuation sites.

5 We compared evacuation routes by setting various conditions.

The Results and the Issues

We found it was possible to apply the method to make Landslide **Evacuation Map from Tsunami to Evacuations for sediment-related** disasters. But it's more difficult to set the evacuation points of sediment-related disasters than those of tsunami, and it's necessary to discuss when to start evacuation. Moreover, it's important to inform these results to residents and make a disaster prevention agreements in the region.



