

**MANUAL FOR INTRODUCTION OF  
COMMUNICATION SYSTEM AND  
EVACUATION DRILL  
(DRAFT)**

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**Integrated Sediment-related Disaster Management Project**



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## CHAPTER 1 INTRODUCTION

In order to mitigate and prevent sediment-related disasters associated with volcanic activities , it is important to establish non-structural measures such as warning and evacuation system in parallel with structural measures.

Among non-structural measures, this manual shows the technique of communication of information, and the creation technique of evacuation drill .

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# CHAPTER 2 MAKING A COMMUNICATION SYSTEM

## 2.1 Contents of the system

Warning Information against a mud flow and a pyroclastic flow should be rapidly and reliably given to inhabitants. In the Review Master Plan ,proposed information flows is shown in Figure-1. Positioning in the Review Master Plan of this manual is until the siren /speaker warning system (thick arrow) proposed by the Plan works.

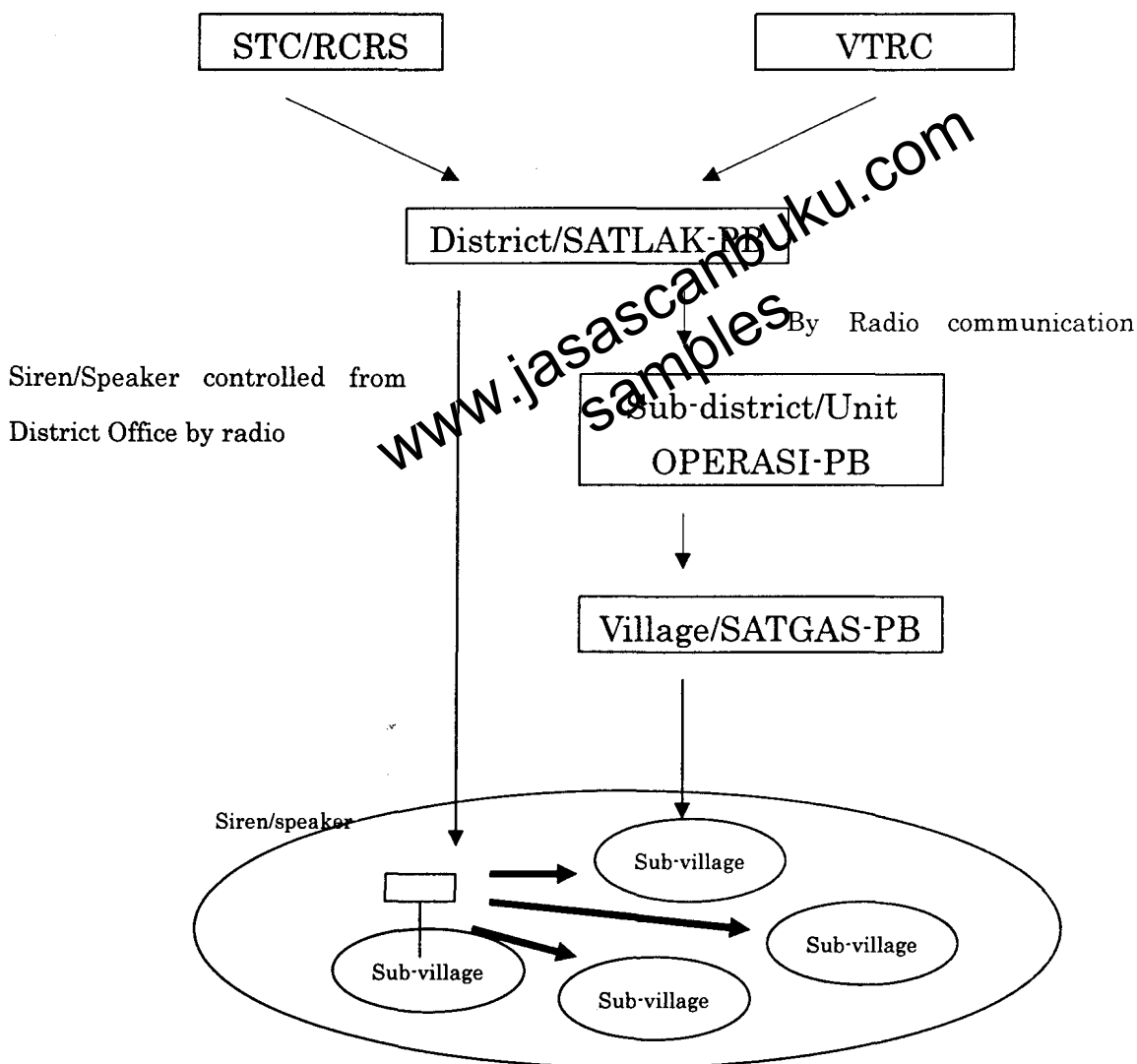


Figure-1 Proposed information flows (In the Review Master Plan)

## 2.2 Procedure to create a system

The flowchart for creation of a communication of information system is shown in Figure-1. To create a communication of information system , fact-finding on the spot is implemented to inhabitants .

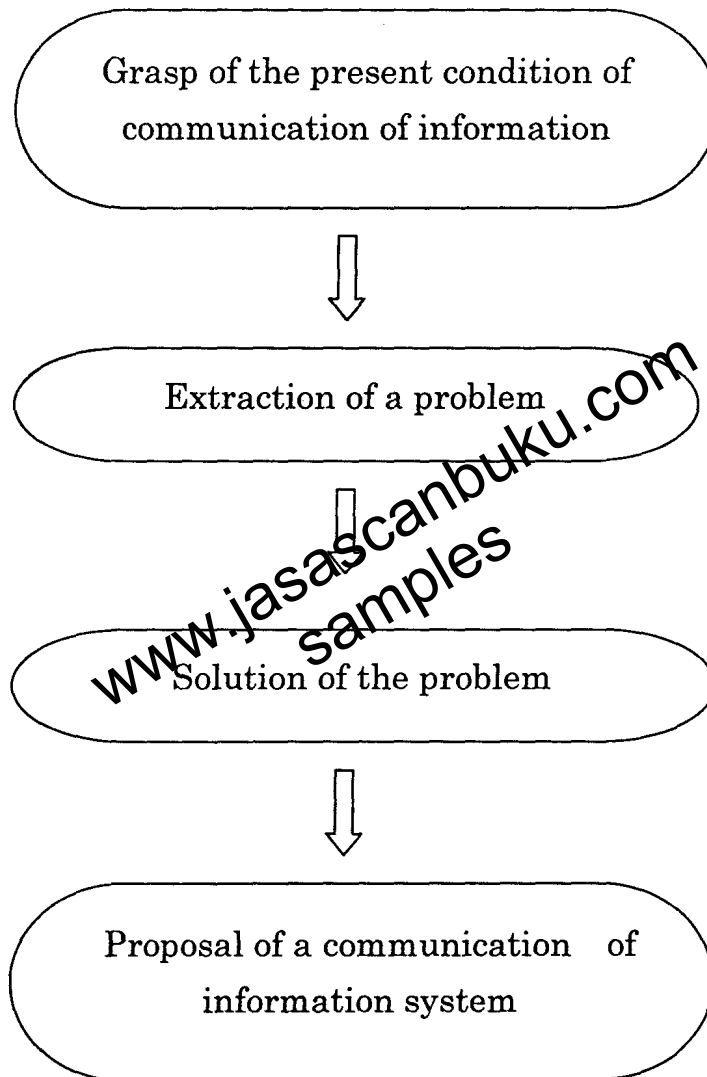


Figure-1 flowchart for creation of a communication of information system

## 2.3 Case in Japan

In Japan, communication of information is performed by the following methods.

- Disaster prevention radio
- Public broadcasting (television, radio)
- Fax
- Public-relations vehicle
- canvass
- etc.

## 2.4 The manual for a communication system proposing

### 2.4.1 Grasp of the present condition of communication of information

Traditional warning system is still practical in surrounding villages of Mt.Merapi. However, this transfer system has the problem of not arriving to a long distance. Therefore, in order to grasp the problem of the present system, fact-finding on the spot is implemented to inhabitants, then problems of the present system are extracted.

#### a) Equipment for fact-finding on the spot

map to grasp the position relation between residents who are implemented fact-finding on the spot, and the present system

#### b) The contents of fact-finding on the spot

1.sediment-related disasters occurred until now ?

( Yes , No )

2.Have you evacuated until now ?

( Yes , No )

If it is "YES", it progresses to 3. and if it is "NO", progresses to 5.

3.On the basis of what have you evacuated ?

(kentongan , others ( ))

If it is "others", it progresses to 4. and if it is "kentongan", progresses to 5.

4. Why didn't you use the kentongan to evacuate ?

( )

5. Have you heard the "kentongan" sounded until now ?

( Yes , No )

If it is "YES", it progresses to 6. and if it is "NO", progresses to 9.

6. Where is the kentongan which you heard ?

( )

7. Why did you hear "kentongan" sound and evacuate ?

( )

8. Why did you hear "kentongan" sound and not evacuate ?

( )

9. Do you understand what kind of warning "kentongan" means ?

( Yes , No )

10. etc.

c) Examination of warning and evacuation system in the Review Master Plan

The position of proposed apparatus is investigated and a problem is extracted. What function and equipment are required for a proposed apparatus?

The investigation apparatus is as follows

- Proposed monitoring stations  
(Nglancar, Kopeng, Jambu, Kaliadem)
- Proposed warning siren and radio speaker  
(Kaliadem)

#### 2.4.2 Extraction of a problem

As a result of fact-finding on the spot to inhabitants, it grasps what is a problem of the present communication of information system.