

In various countries as well as Japan, a series of projects for preventing the disaster have been carried out with an organization under the control of ministry of construction or regional public body.

At present, Peru does not have such an organization. Since it is not possible to realize the disaster prevention measures without the organization, it is recommended to establish an authorized and responsible organization to put into execution the measures in accordance with a comprehensive plan.

It is important to put into execution the measures with a consistent consideration and system throughout the whole basin. Thus, the execution of measures should be controlled under one organization for the whole basin. As adopted in other various countries as well as Japan, it will be effective to provide the executive office in each District under the direct control of an organization such as Rio Rimac Committee.

An example of the conceivable organization is shown in Fig. XII-2-1 for reference.

## 2.6 Establishment of an Organization for Operation and Maintenance of River and Facilities

The river transports much sediment and deposits irregularly in various places, disturbing the smooth river flow. The disturbed river flow frequently attacks and destroys the river banks, causing the flood disaster in the surrounding area. A continuous maintenance work of the river for the matters as mentioned above is considered necessary.

The various facilities in the river as well as the various structures to be constructed in future also require the continuous operation and maintenance works. Otherwise, the disaster will occur due to such a defect. The durability of structures will also be shortened remarkably. The present operation and maintenance works are made individually by the respective community or privately without any consistent consideration. Such works will frequently result in an adverse effect for other places even if one place is favourably improved, requiring the establishment of an organization to carry out the operation and maintenance works for the whole basin with a consistent policy and system.

## 2.7 Training of Engineers

The well-trained engineers who proceed with the plan, design and construction works for the disaster prevention will be indispensable. On the other hand, the present situation of such engineers in Peru is as follows:

Number of civil engineers who graduate from the university or college is approximately counted at 200 to 300 per annum. These civil engineers work mainly in the transportation,

housing, water supply and sewerage, and electric power sectors. Such being the case, the engineers have scarcely been trained in the field of disaster prevention.

In view that the engineers are not enough in Peru at present as mentioned, the necessity of training of engineers is stressed. Then, the establishment of a training center having a well-experienced lecturer, which is considered most efficient for the purpose, is recommended.



## Figures



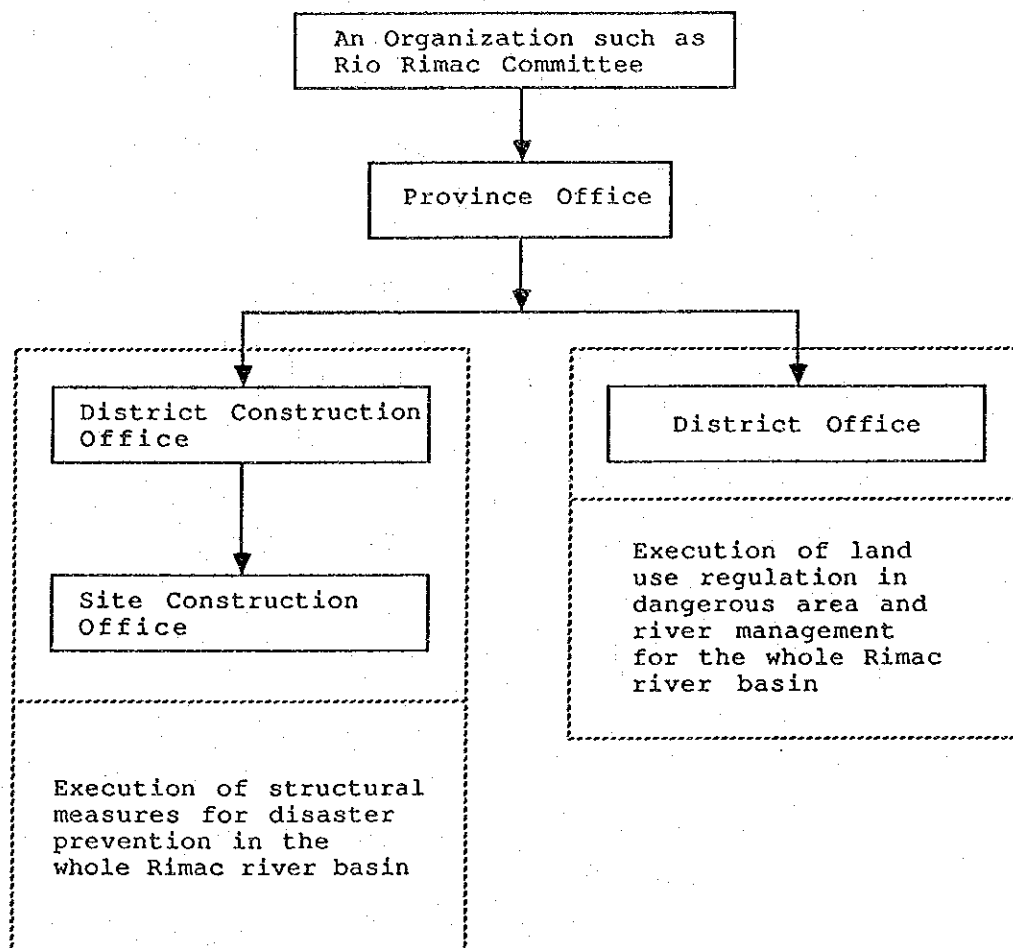


Fig.XII-2-1 An Example of Organization Chart for Land Use Regulation, River Management and Implementation of Structural Measures for Disaster Prevention

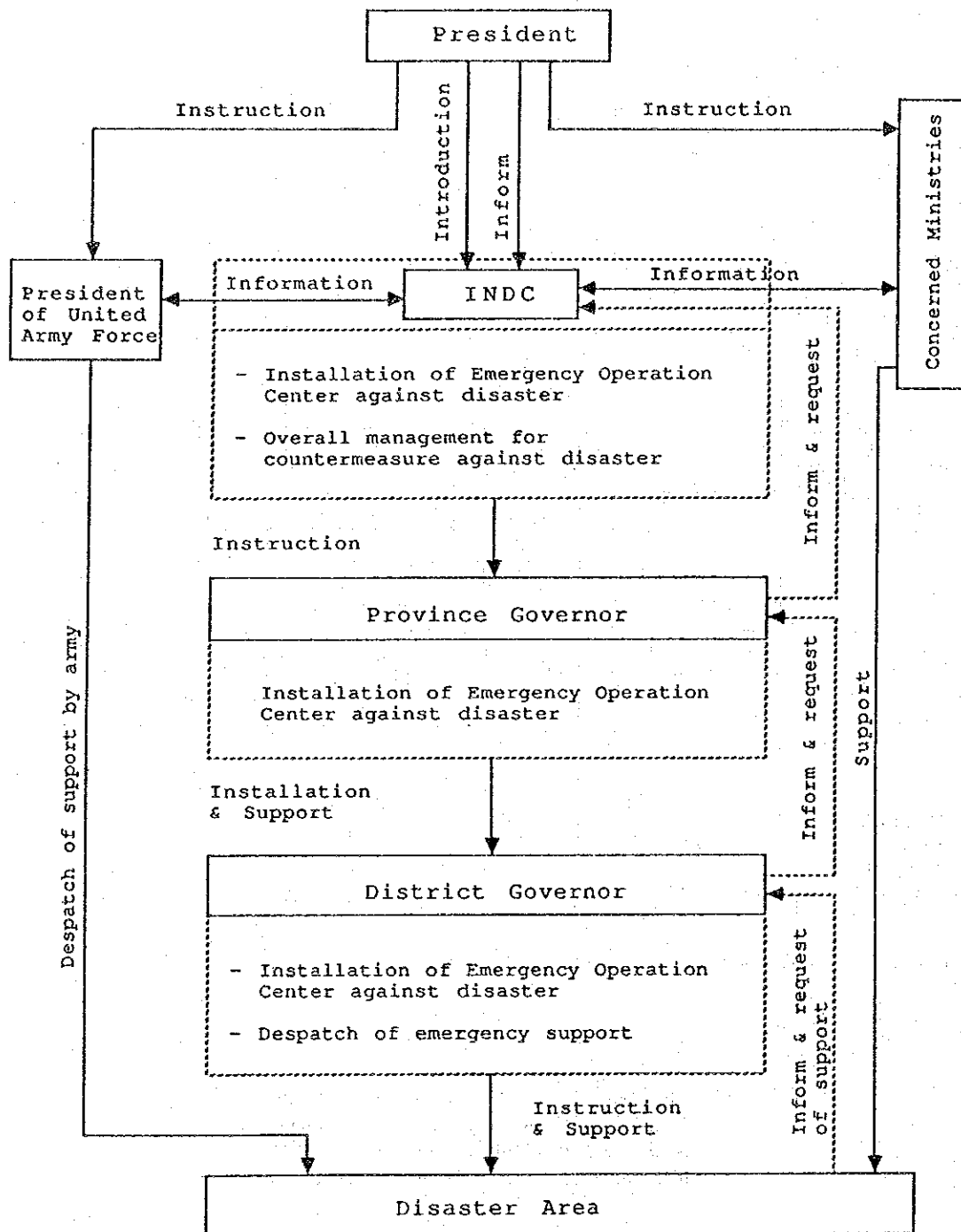


Fig.XII-2-2 An Example of Organization Chart for Emergency Disaster Relief

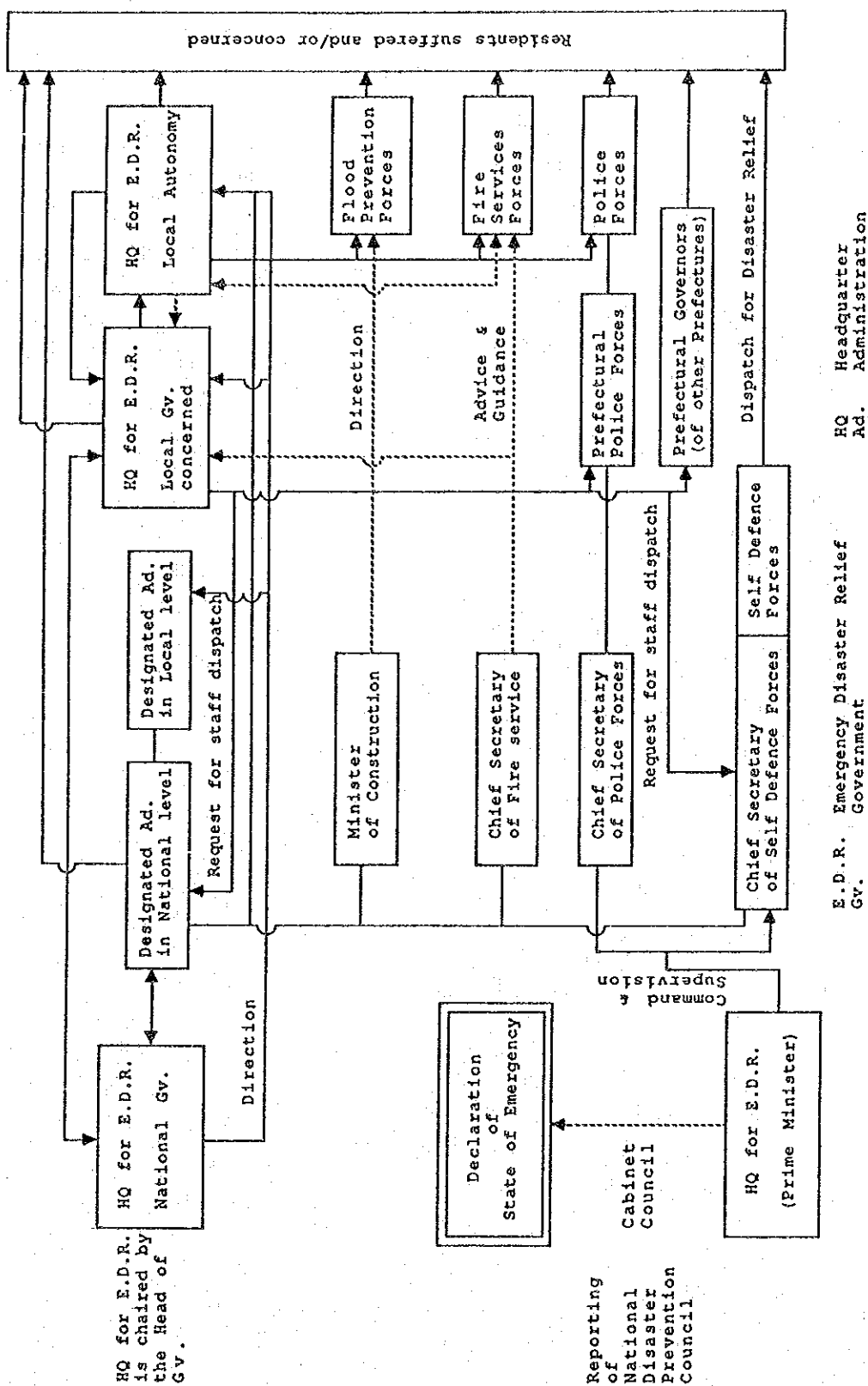


Fig.XII-2-3  
Organization Chart for Disaster Relief in Japan





## ANNEX A

### SUMMARY OF RIVER LAW IN JAPAN



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## 1. History

The River Law is firstly established in 1896 and revised in 1965 reflecting the new constitution established after the second world war.

## 2. Purpose

2.1 Prevention of damage due to floods and high tides, etc.

2.2 Proper use of the rivers

A river is a property for public use and it is used for Water utilization, Occupancy of lands, Taking earth and stones, Navigation and Floating down trees and bamboos, etc.

Prevention of the disasters caused by the above mentioned utilization of the river coordinating the interest of the users concerned is one of the most important purposes.

2.3 Maintenance of the normal function of the river water

Maintenance of quantity and cleanliness of the river water preventing inflow of the sewage, waste water and sea water and closure of the river mouth due to sedimentation is necessary for maintenance of the water level and river course and preservation of plantation and wildlife.

## 3. Covering Area and Structure

The river water and the river administration facilities are the subject of this law and "River Administration Facility" as used in this Law means a dam, weir, sluice, levee, revetment, ground sill or other facility which has the function of increasing public benefits which may be caused by the water of a river.

The River Area is mentioned in (7).

## 4. Use of Rivers and Regulations concerning Rivers

A river is a property for public use and any person who intends to use the water of a river have to obtain the permission which indicates the purpose, time, ways etc. of utilization under certain restrictions and prohibitions.

## 5. Administration of Rivers

Class A rivers are designated by Cabinet order from the standpoint of land conservation or national economy and administered by The Minister of Construction.

Some sections of the Class A river where the Minister of Construction regards it unnecessary to administrate directly can be transferred to administration of the prefectural governor concerned as "designated section".

Class B rivers as used in this law means the rivers designated by the prefectural governor concerned and when the river concerned forms or crosses the boundary between the prefecture concerned and another prefecture, he shall consult with the governor of the other prefecture.

#### 6. Supervision and Penal Provisions

Penal Provisions are stipulated for proper administration of the rivers in The River Law.

The river administrator is able to cancel the permission for utilization of the river water and order the compensation of the loss when the river user makes such loss.

#### 7. Rivers Area

The term "River Area" as used in this Law means an area given in one of the following items.

- 7.1 Area of the land where the water of a river flows continuously and of the land where the topography, condition of growth of vegetation and other conditions are similar to the conditions of the land where the water of a river flows continuously (including the land of the river-bank but excluding the land where such conditions exist temporarily owing to floods or other abnormal natural phenomena).
- 7.2 Area of the land which is the site of a river administration facility.
- 7.3 Of the area of the land on the waterside of the bank (including such land similar to it as may be designate by Cabinet order and such retarding basin as may be designated by Cabinet Order), area designated by the river administrator as an area whose administration must be performed unifiedly with the area mentioned in item 1.

When the river administrator intends to make or change the designation in a harbour area provided for the Harbour Law or a fishing port area provided for Fishing Port Law, he shall consult with the harbour administration of the Ministry of Agriculture, Forestry and Fishery.

8. Prohibition and Restriction of Activity in River Area

Prohibition and Restriction of Permission for Act affecting River Water which is likely hinder The River Administration

Acts affecting river water which is likely hinder the river administration is restricted in the following Article 29.

"Unless provided for in any of the Article from 23 through the preceding Article, acts which are likely to hinder river administration by affecting the course, cleanliness, discharge, width, depth, etc. of the water of a river may be prohibited or restricted or obtaining permission of the river administrator for such acts may be made obligatory, by prefectural regulations."

Water discharge is restricted according to The Water Quality Regulation Law together with The River Law.





## ANNEX B

### DISASTER PREVENTION MEASURES TAKEN IN JAPAN



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## DISASTER PREVENTION MEASURES taken in Japan

### 1. Prologue

Japan are islands scattered in the range of 3000 km from north east to south west are located along the eastern edge of the Eurasian continent and they are the part of the circum-Pacific volcanic belt.

Heavy rains and earthquakes have been frequently recorded in various regions of the islands and the area vulnerable against floods, high-tide and earthquakes are seen along the rivers and coasts.

Population and sophisticated industries are concentrated in the alluvial plains among the said vulnerable area and these area have often been suffered from severe disasters owing to the floods and high tides and earthquakes.

Thus, a large number and various types of disasters are said to be occurred in Japan in comparison with other countries.

The Disaster Relief Law was enacted in 1961 to improve the disaster prevention system to deal with wide-ranged and various types of disasters coordinating regulations and works of the various disaster preventions.

The purpose of this Law is as follows.

- (1) To clarify where the responsibility for conservation of the land governed by several levels of the administrations, such as the National and Local Government, is placed.
- (2) To establish the disaster prevention system in each level of the administrations.
- (3) To reinforce the Disasters Prevention Works.
- (4) To expedite the Emergency Disaster Prevention Works properly.
- (5) To restore the river not only to the original state but to much well reformed one after the disaster occurs.
- (6) To establish the system to finance the administration and institution concerned to carry out the Work.
- (7) To establish the Disaster Prevention system in state of emergency.

The Law concerning much devastating states of the disasters (Devastating Disaster Relief Law) was enacted after Disaster Relief Law was established and National Basic Plan for Disaster Prevention was made.

Devastating Disaster Relief Law that stipulates the designated conditions and exceptions for the Relief was established to support the victims.

National Basic Plan for Disaster Prevention is a summary of the Disaster Prevention Works prepared by National Disaster Prevention Council.

## 2. Organization for Disaster Prevention

Responsibility of the National and Local Government and other public institutions is stipulated in The Disaster Prevention Law.

Disaster Prevention Councils, whose members consist of the staff of the administrations above mentioned and some specialists, are established in national and local levels.

### 2.1 Organization for Disaster Prevention in National Level

#### (1) National Disaster Prevention Council

Twenty-nine (29) designated organs and thirty-one (31) designated public institutions are members of the Council.

Main purposes of this Council are to improve communication among the administrations and institutions concerned and to make investigations and deliberations on important matters placed under its jurisdiction by the Law.

This Council is chaired by the Prime Minister and consists of twenty (20) Ministers and five (5) special members who have profound knowledge and experience concerning the matters.

#### (2) Establishment of Headquarters for Emergency Disaster Relief

The Headquarters for Emergency Disaster Relief is established to coordinate the Disaster Relief Works.

### 2.2 Organization for Disaster Prevention in Local Level

#### (1) Local Disaster prevention Council

The Local Disaster Prevention Council is organized in each Prefecture and Local Autonomy.

The Governor of each prefecture chairs Prefectural Council and its members are appointed among Local Administrative bodies, Police forces and Self defence forces, etc.

Each local autonomy such as city, town or village has its Disaster Prevention Council.

These Councils make and execute the Disaster Prevention Plan at sites, such as collecting information and coordinating the execution works among the administrations and institutions concerned.

Each prefecture has its Prefectural Disaster Prevention Councils and three thousand two hundred and seventy one (3271) Local Autonomies set up their Disaster Prevention Councils in April, 1984.

## (2) Headquarters for Disaster Relief

When The Governors of prefectures concerned or the Heads of the autonomies concerned intend to set up the Headquarter for Disaster Relief, they consult with their Disaster Prevention Council proceedingly.

The Headquarters executes Disaster Prevention Relief based on its Local Disaster Prevention Plan.

## 3. Disaster Prevention Plan

### 3.1 Basic and Operational Plan for Disaster Prevention

The Basic Plan for Disaster Prevention is made by the National Disaster Prevention Council and the Operational Plan for Disaster Prevention is made by the designated administrations and public institutions.

### 3.2 Local Disaster Prevention Plan

Local Disaster Prevention Plan is made for the Local autonomies concerning the Disaster Prevention Works to carry out Disaster relief reflecting real conditions of the site.

Local Disaster Prevention Plan contains Emergency Relief Works such as communication, supply of essential goods for victims and evacuation, rescue and transportation of victims.

The Prefectural Disaster prevention Plan is made in all prefectures and the Municipal Disaster Prevention Plan is made in three thousand two hundred and forty two (3242) out of three thousand two hundred and seventy six (3276) autonomies (98.8%).

The Disaster Prevention Plan is one of the important guidelines for the local administrative bodies and residents in state of emergency.

Therefore, all residents should be educated to recognize the importance of this plan which indicates the dangerous area, communication method and system, ways of evacuation, etc.



4. Emergency Disaster Relief Works in National Level

Emergency Disaster Relief Works contains following items.

(1) Before the Disaster

Patrol  
Evacuation  
Preparation

(2) During the Disaster

Flood defence  
Rescue  
Patrol  
Transportation  
Communication

(3) After the Disaster

Rescue  
Restoration of public facilities  
Sanitation  
Maintenance of social order  
Transportation  
Communication  
Compensation  
Tax exemption  
Insurance

5. Emergency Disaster Relief in Local Level

Same as mentioned in 5. Emergency Disaster Relief.

6. Organization Chart in state of Emergency

The Headquarter for Emergency Disaster Relief Works is established when the national government recognizes the seriousness and necessity of the Emergency Disaster Relief Works.

Organization Chart for the Emergency Disaster Relief Work is shown in Fig. A.

7. Other Measures for the Disaster Relief

7.1 Disaster Relief Assistance Funds for individual victims

7.2 Disaster Relief Assistance Funds for small-to-medium size enterprises

7.3 Disaster Insurance and Loan system for personnels engaged in agricultural and fishing industries

## 8. Restoration to the Original State

When rivers, roads, agricultural facilities, schools and other public facilities managed by national and/or local governments are damaged by disasters, they shall be restored to the original state at earliest possible.

Assistance rates of the Disaster Relief Fund is determined by the state of the disaster and restoration shall be completed within three years.

## 9. Disasters and Disaster Insurance

### 9.1 Nonlife Insurance

Insurance is payable in return for the payment made by the insured and insurance payment is calculated statistically based on the mean ratio of the risk in general.

Therefore, the natural disaster insurance is not commonly used individually but as a part of the general insurance.

Earthquake Insurance is used under the government assistance which the government reinsures personal Earthquake Insurance.

### 9.2 Disaster Relief Assistance system for agricultural, forestry and fishing industries

This Disaster Relief Assistance is done according to "Agricultural Industry Disaster Relief Assistance Law" and "Fishing Industry Disaster Relief Assistance Law" etc.

## 10. Land Conservation Works

Forestry conservations and Flood controls, Coastal conservations, Agricultural land disaster prevention works and Steep slope protection works are mentioned in the Disaster Prevention Basic Plan made in 1963 based on the Disaster Relief Law.

Since Land Conservation Works needs enormous and long-term investments, each of the above mentioned works has a certain limit to accomplish in terms of making facilities and structures.

Disaster Prevention Works for Debris Flows among the other Disaster Prevention Works have performed in only 14% of the total sixty two thousand (62,000) valleys designated as danger spots in 1981.

Thus, the appropriate land use under regulations of the development and disaster preparedness plan which mentions the patrol and evacuation system etc. is recognize to be important for the Disaster Prevention Works.

## 11. Flood Defence Work

The Flood Defence Work is a action to prevent and mitigate the Disaster in the time of flood and/or high tide.

The Flood Defence Law was enacted in 1949 and some articles which stipulates the compensation for accidents in line of duty and the share of the expenditure of flood damages etc. are added and amended in 1955.

The technical development of the weather and flood forecast and flood defense warning system is being performed for swift and accurate Flood Defense Works.

## 12. Conclusion

The National Disaster Prevention Council is held and the appeal concerning Disaster Prevention Works was adopted in May, 1983.

This appeal is to confirm the importance of the Flood Disaster Prevention Works together with the Earthquake Disaster Prevention, Avalanche Disaster Prevention, Volcanic Disaster Prevention Works.

According to the discussion of the Council, the followings are regarded to be urgent to perform in Japan.

1. To investigate the sites and increase the designated danger spots under the jurisdiction of the Law.
2. Improvement of the warning and evacuation system
  - \* Establishment of the communication system in state of emergency
  - \* Securing the place of refuge
  - \* Education and training of the residents and other personals concerned
3. Improvement of the Disaster Prevention Works
  - \* Construction of the structures to prevent debris flow disasters

4. Restriction of land utilization in the danger area

- \* Restriction of building the residential facilities in the area
- \* Removal of the residential facilities from the area



## Figures



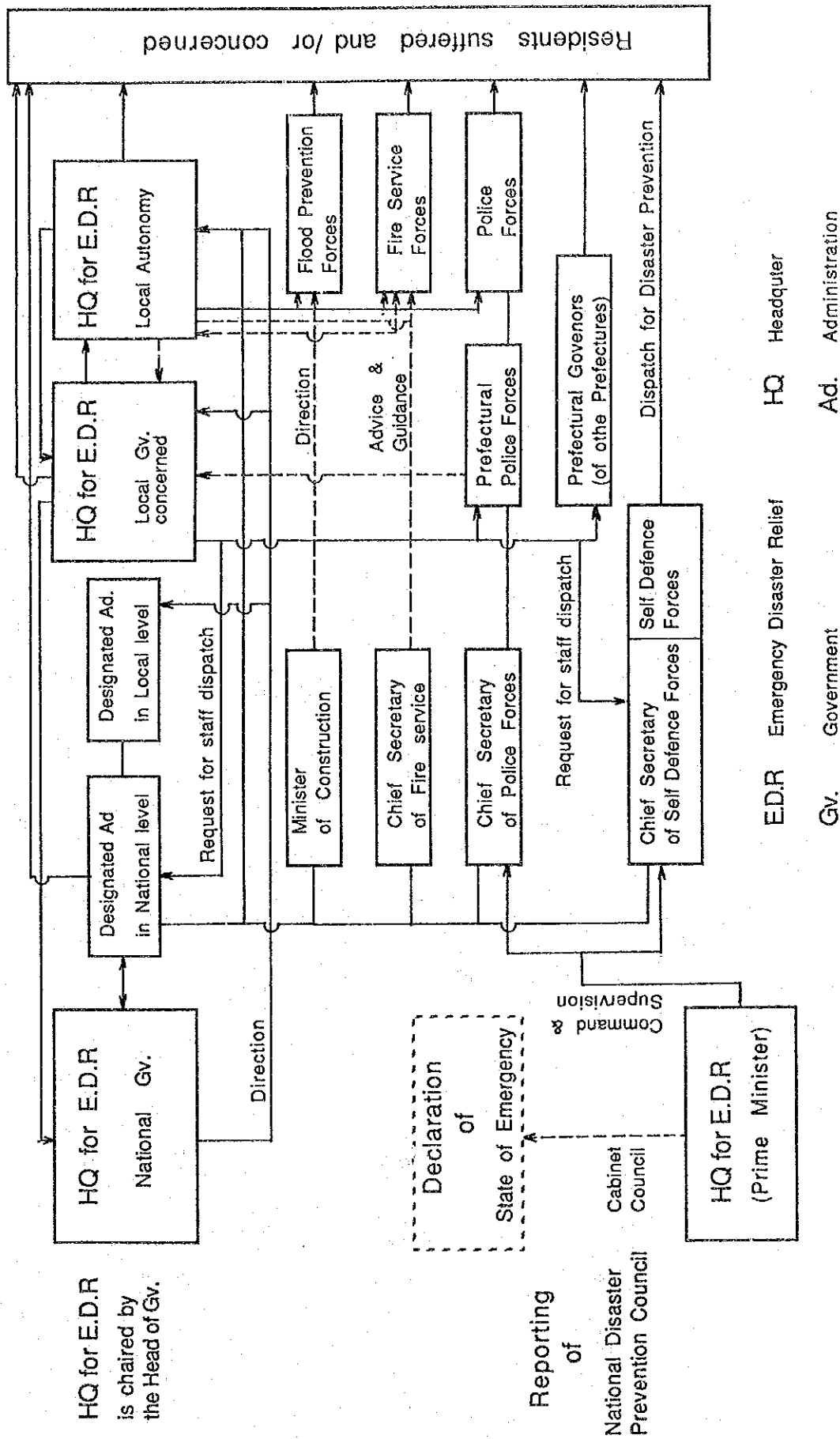


Fig. A Organization Chart for Emergency Disaster Relief in Japan







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