

URBAN PLANNING FOR DIASTER IN JAPAN:  
THE MODEL PLAN OF TOKYO KOKUBUNJI GOVERNMENT

Hachiro Nakamura (I)  
Presenting Author: Hachiro Nakamura

SUMMARY

This paper presents a methodology and system that should serve as a model for urban areas in Japan to develop community resources to make urban communities as safe and as efficient as possible in event of diaster. The following will be discussed: 1) The basis of this methodology is that it is necessary to have an integrated plan for activities that will result in better planning and more preparedness for a diaster when it occurs. The contents of the plan should be consistent with governmental counter-measures and civil preparedness for diaster, as well as a plan which would unify the functions of anti-diaster activities and the establishment of a safe environment. These plans should be developed on two levels, the district level and the smaller urban sub-division level 2) It is necessary that both urban governments and citizen groups equally work together to set up the best system for diaster planning. Urban governments should take initiative to form public facilities and the needed structure to create a system of anti-diaster activities on the district level and for citizens to make a safe environment at their level.

This system was developed and is currently being successfully implemented by the Tokyo-Kokubunji Government.

INTRODUCTION

Even though Japan is one of the most vulnerable countries in the world to the frequent occurrence of natural diaster, there has not been significant planning or systems development for diaster in most urban areas in Japan. Therefore, how to develop community anti-diaster systems for big, crowded and sprawling cities in Japan and how to involve the citizen in this critical issue has been largely ignored. Anti-diaster measures of cities have been devoted only to measures to cope with emergencies only with refuge plans, leaving the problems of regional urban environment unsolved. As a result, even the realization of emergency measures is difficult, and now most urban areas in Japan hardly have any strategy that will overcome diaster in the event of its occurrence.

Under the circumstances, critical issues for urban areas of Japan are the following: 1) How to improve regional environment so that if a diaster strikes urban areas' damage will be minimized. 2) How to plan a possible system of emergency activities when diaster strikes.

The methodology that simultaneously unifies the forming of a diaster-

---

(I) Manager of Diaster Planning, Kokubunji City Hall, Tokyo, Japan

proof environment with the establishment of an emergency system in actual urban areas is what this paper, "URBAN PLANNING FOR DIASTER", wishes to propound. This paper also provides a successful example of a system which has been carried out by the Tokyo Kokubunji Government since 1974.

In order to develop the best methodology and system, it is necessary to do the following things:

- 1) Urban governments and citizen groups should decide together which way to divide responsibility for civil preparedness.
- 2) Both urban governments and citizen groups should share in recognizing the real possibility of diaster and realize that anti-diaster measures must be taken in each urban community.
- 3) Urban governments should develop many citizen leaders who will take action to support community activities for a diaster.
- 4) Urban governments should prepare a system that insures citizen preparedness for diaster and that citizen groups take initiative to make their own plans of action for their own urban community.

#### ISSUES OF URBAN PLANNING FOR DIASTER

The following should be done as anti-diaster measures to eliminate dangerous factors from the urban community.

1) Discover and forecast dangerous factors: Various dangerous factors in urban communities, under the impact of earthquake or wind and rain, escalate the impact of diaster. In order to take precise measures for a diaster, it is most important that urban governments and citizens understand the realities of the dangerous factors and estimate the extent of the damage of these factors.

2) Decrease dangerous factors and control factors which are controllable against diasters: These two factors can decrease danger by control of quality and quantity. When dangerous factors are controlled there is an increase of relative safety during a diaster. It is necessary to simultaneously unify both factors and improve the safety level in urban areas.

3) Prevent the new accumulation of dangerous factors: Urban areas usually have the possibility of the introduction of new danger factors. Therefore it is essential to prevent the accumulation of danger factors through safety control, corresponding to changes in the urban environment.

4) Integrate with ordinary urban activities: It is important to introduce the above fundamentals of anti-diaster measures into ordinary urban activities, which is urban construction or control of the urban government, and neighbourhood activities or an improvement in living conditions of the citizens.

5) Establish a system of emergency activities in the event of diaster. The establishment of measures to cope with emergencies is indispensable to restrict damage, because there is difficulty to forecast diasters and it takes time to develop community resources for a diaster-proof community. The establishment of a system should be correlated with above fundamentals.

## FORMING A SYSTEM OF ANTI-DIASTER ACTIVITIES

Though most local governments of Japan now have diaster prevention plans for the total urban level (the substance of these plans are for emergency activity in the event of a diaster), there are no plans on the district or neighbourhood levels.

A co-operative action between government administration and citizens is the key point to form an efficient system for anti-diaster activities—the forming of a safe environment and a system of emergency activity—in the urban community. Because there is a limit to what government can do in this area and what citizens can do on their own, it is essential that they work together.

The best way to set up an integrated system is to create the following spheres of responsibility and to promote urban community planning.

i) Set up diaster proof districts (Figure 1): It is necessary for public administrators to plan for diaster at the district level. The district should be the size of an elementary school district. This area is the smallest unit of administrative controlled space for public facilities and population. This area should have a "diaster center", which is supported and administered by the urban government. It should be at usual public facilities that have space for citizen groups to meet. At this place diaster information can be disseminated and during a diaster, the citizens can go to this place for help. Therefore these facilities must be in a state of preparedness (Broadcasted information, water, food, medicine, etc.) for when a diaster strikes. It is also important to plan a network of safe roads and small parks in each of these districts.

ii) Form diaster-proof neighbourhoods (Figure 2): Citizens should form neighbourhood groups and take responsibility for diaster planning in their area. Therefore the district is divided into smaller divisions (neighbourhood size). Each group should not only be formed, managed by the citizen group, but it should also take part in activities for diaster prevention. Citizens should sit down with other citizens of their neighbourhood and review what needs to be done to make the community safer in event of diaster and take action on what needs changing.

## PROGRAM TO PROMOTE INTEGRATED PLANNING

Though the system of diaster prevention on the whole city level or the district level becomes possible by completing public facilities and organization through administrative leadership, the efficacy of these plans is definitely swayed by whether neighbourhoods have a self-plan or not. Therefore it is very important that there is significant integration between such larger level's plan and the neighbourhood plan. It is between urban government and citizens groups to develop the most effective diaster planning systems. It is also necessary to integrate emergency citizen activity and environmental planning to improve individual neighbourhoods.

The best way in which citizen groups can develop the best diaster preparedness plan is with the support of the urban government and is illustrated in

Figure 3:

First Step-Stand on Common Ground: An administration and a citizen group should assess the potential dangers during a diaster and show it on a plan form. The responsibility to identify the type of dangers that exist in each neighbourhood should be shared amongan administration, a citizen group and all citizens.

Second Step-Issues and Choice: These groups should discuss issues and set forth solutions and then the most important problems should be identified.

Third Step-Adjustment and Planning: A diaster prevention plan should be formulated. It is necessary to adjust the plan to the larger urban level's plan of administration.

#### Final Step-Implementation of the Plan

Citizen action is the real key to success for this program in an urban community. An administration should develop leaders for neighbourhood activities and should systematically provide citizen groups the opportunity and place for them to take action.

#### A SUCCESSFUL EXAMPLE BY TOKYO-KOKUBUNJI GOVERNMENT

City diaster prevention planning was started in 1974 in Tokyo-Kokubunji City. Over the last ten years the administration and citizens have successfully participated together in diaster prevention projects according to the above points of view and methods. The most significant of the projects over the ten year period are the following:

i) Supply information concerning dangerous areas to citizens: The administration published a map of identified dangerous areas in the city newspaper in 1977 and it was delivered to each citizen in 1978. In view of these facts, citizens could concretely know the neighbourhood dangers in event of diaster. Another result of this project was to increase their interest in planning for a diaster situation.

#### An outline of Kokubunji

- One of 26 cities in the Tokyo Metro politan
- The suburbs located some 25 km from Central Tokyo
- The area is 11.4 km
- The total population is 90,000
- Having 10 elementary schools and 5 middle schools
- The primary dangers of diaster are fire danger, fire spread, land slides, construction collapsed, and flooding from river

ii) A district plan for diaster prevention: The administration set up the district concept for diaster preparedness (the area was divided up into ten districts, each with a diaster center). In view of this fact, the diaster preparedness of the city penetrated to the neighbourhood level and community resources were utilized in an efficient manner.

iii) Diaster Prevention School: The Diaster Prevention School for citizens has operated annually since 1978 until the present. The purpose of the school is to learn about the real and ever present threat of diasters and how

to prepare for them. As a result of this project, 300 volunteers have been trained and 150 members participated in the creation of the diaster prevention committee upon graduation. It is hoped that these leaders will actively work in their neighbourhoods.

iv) Establishment of the system for neighbourhood preparedness: The administration developed a system for diaster preparedness promotion at the neighbourhood level in 1980. This system was promoted according to Figure 3. The administration and the citizens worked together to formulate a common plan, draft a policy and achieve funding for the projects. By the last of 1983, three more divisions will engage in this project. That means that 15% of the citizens of Kokubunji will be in neighbourhoods where this system is carried out.

Nowadays, several other urban areas (neighbourhoods) are already preparing for participation in such a project. Also the methods and systems described will serve as a model for other urban communities in Japan.

FIGURE 1 A SYSTEM OF EMERGENCY ACTIVITY IN THE DISTRICT LEVEL HAVING A DISASTER CENTER

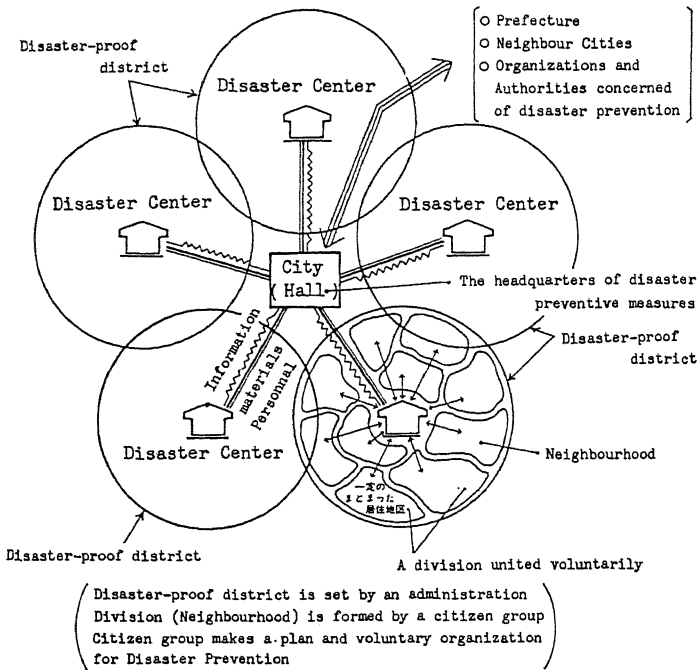


FIGURE 2 A MODEL OF A DISASTER-PROOF DISTRICT AND DISASTER-PROOF DIVISIONS

