Appropriate standards for regional disaster prevention in Asia

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Increasing urbanization and degradation of the natural environment on a global scale are having the effect of increasing the frequency and severity of disasters around the world, with the problem centering on developing countries. Asia is the continent that suffers most from these disasters. In the coming century, it is certain that disaster will become a major concern in Asia. The objectives of this paper are to provide guidelines for analysis of the current situation in Asia with respect to disaster, with standardization of disaster prevention measures as the context. Also, a role is proposed for Japan in the effort to develop such standards.

■ ASIA AS A CENTER OF DISASTER — RISING POPULATION AND URBANIZATION AGGRAVATE DAMAGE

Disaster is defined in this paper to mean an uncontrollable natural hazard, or more technically a physical phenomenon, that results in damage. Taking an avalanche in the Himalaya as an example, it would not be considered a disaster unless it resulted in actual damage to human life or property. A disaster, in other words, has an impact on human society.

Asia is geologically characterized by the Pan-Pacific Earthquake Belt and the Himalayan Earthquake Belt, with other volcanic zones overlapping these major areas. Meteorologically, Asia features frequent typhoons and cyclones in the tropical zones, while temperate low pressure regions that develop in the Himalaya grow as they move eastward, bringing torrential rain along their path. It is apparent that most types of natural force that can cause disaster are present in Asia. What is worse is that the countries badly affected by such natural forces have over-populated capitals and sprawling urban areas.

Population-wise, Asia accounted for about 61% of the world population, about 3.5 billion people, in 1995 and this is expected to grow by 1.4 times to some 4.8 billion by 2025. The population density in 1995 was 109 per square kilometer, 2.6 times the world average,

Table 1 Natural disasters in Asian countries and their severity

	Earthquake	Tsunami	Storm surge and tidal wave	Coastline erosion	Flood	Typhoon and cyclone	Landslide	Volcanic eruption	Urban disaster
Japan	◎	◎	○	Serious	○	○	△	○	◎
China	◎	○	◎	Serious	◎	◎	◎	×	◎
Taiwan	◎	○	△	Minor	○	○	◎	×	◎
Vietnam	◎	○	○	Serious	◎	◎	○	×	◎
Thailand	×	×	○	Serious	○	○	△	—	◎
Cambodia	×	—	—	—	◎	×	△	—	×
Myanmar	○	×	×	Minor	○	○	△	—	×
Philippines	◎	◎	◎	Minor	◎	◎	○	◎	◎
Indonesia	◎	◎	△	Serious	◎	×	○	◎	◎
Malaysia	○	△	×	Minor	○	×	△	×	△
India	◎	×	◎	Minor	◎	◎	△	—	◎
Nepal	◎	—	—	—	◎	—	◎	×	○
Bangladesh	×	×	◎	Serious	◎	◎	×	—	◎
Papua New Guinea	○	○	×	Minor	○	—	○	◎	×
Pakistan	◎	×	×	Minor	◎	×	○	×	○

◎ disaster with a death toll of over 10,000 ○ disaster with a death toll of over 1,000 △ disaster with a death toll of over 100
× disaster that rarely occurs
Urban disasters: disaster occurring in cities, including urbanizing disasters, urban-like disasters, and urban disasters.

and this will of course rise as the population grows. The urban population of Asia accounted for 35% of the total in 1995, and this also is expected to reach 52% by 2025, evidence of the accelerating concentration of population in the cities with all its resultant problems.

Over 80% of Asian population growth in the 1990s took place in urban areas. This is exemplified by the number of cities with a population of over 1 million; there were just 28 such cities in 1950, but this rose to 136 in 1995 and is expected to skyrocket to 243 in 2015 [1].

It is essential in any discussion of the likely characteristics of disaster in the 21st century to keep these figures in mind and to recognize the growing risk of enormous disaster hitting the growing urban areas.

Let me expand on the specific types of disaster that are common in Asia. Table 1 shows the types of natural disaster and the probability of them leading to city-related disaster. Double circles and single circles represent major disasters that could have death tolls of more than 10,000 and more than 1,000, respectively. Triangles indicate those where the death toll may exceed 100, while those marked X are most unlikely to occur. A minus sign in a column means that no such disaster has been known.

In compiling this table, population, social conditions, and data on past events were taken into account in making a comprehensive evaluation. The table suggests that the most vulnerable regions are the Philippines, Indonesia, India, China, Bangladesh, and Japan in order of decreasing risk. These countries are characterized by large populations of over 100 million, except in the case of the Philippines where it is somewhat less than 70 million. (Damage is maximized in the Philippines because of the wide range of natural forces at work there.)

Two types of disaster are particularly likely to cause very serious damage: flood and earthquake. Given the frequency with which wind and flood disasters occur (this includes storm surges, typhoons, and cyclones in addition to flooding), they far outnumber other types in damage severity.

■ STATISTICS ON ASIAN DISASTERS

Table 2 shows annual averages of disaster count, death toll, the number of people affected, and the dollar value of damage for each decade from the 1970s to the 1990s. The tables also compare Asia with the world totals. The definition of disaster used in compiling the tables is an event that killed 10 or more people or that affected at least 100 people. Note that the averages given for the 1990s are actually averages for only the three years from 1990 through 1992.

Table 2 Natural disasters in Asia and comparison with world totals (bracketed figures)

Number of disasters

	Earthquake and tsunami	Flood	Typhoon and cyclone
1970s	5.5 (29.1%)	14.2 (40.7%)	17.8 (54.9%)
1980s	12.5 (35.1%)	30.2 (43.3%)	30.4 (39.5%)
1990s	15.3 (38.3%)	37.0 (51.6%)	36.7 (37.8%)

Death toll (Unit: thousand persons)

	Earthquake and tsunami	Flood	Typhoon and cyclone
1970s	31.27 (72.6%)	4.74 (87.9%)	34.89 (95.9%)
1980s	1.27 (14.9%)	5.22 (81.3%)	5.52 (84.7%)
1990s	1.61 (93.9%)	56.36 (96.3%)	92.60 (99.6%)

Number of people affected (Unit: million persons)

	Earthquake and tsunami	Flood	Typhoon and cyclone
1970s	0.13 (9.4%)	19.91 (92.0%)	3.48 (81.4%)
1980s	2.24 (84.2%)	43.73 (93.7%)	12.08 (99.8%)
1990s	0.74 (75.3%)	118.11 (99.5%)	2.04 (98.8%)

Value of damage (Unit: million dollar)

	Earthquake and tsunami	Flood	Typhoon and cyclone
1970s	817.5 (53.1%)	392.5 (47.1%)	291.9 (18.1%)
1980s	436.3 (6.9%)	1,786.3 (44.9%)	910.7 (20.8%)
1990s	3,431.0 (84.4%)	4,721.0 (62.4%)	9,905.3 (37.4%)

One major trend that these tables make clear is that the number of all types of disasters is growing. In recent years, flood events in Asia have accounted for about 50% of the world total, while other disasters make up about 40% of the total. The most dreadful record is the ratio of Asia's disaster death toll to that of the world as a whole; it is over 90% for disasters in the 1990s.

The figures vary widely over the decades, a result that can be attributed to a few particularly terrible disasters such as the 1976 Tangshan Earthquake in China, which killed about 250,000, and a series of severe cyclones that hit Bangladesh in 1970 with a death toll of about 500,000. The death toll resulting from wind and flood disasters jumped by an order of magnitude in the 1990s, but this sudden increase affected Asia's ratio to the world total by about 15 percentage points because there was a worldwide surge in this type of disaster. Clearly, there is an extreme concentration of victims of such disasters in Asia, and this has shown no change for

many years. These wind and flood disasters affect over 100 times the number of people afflicted by earthquakes and tsunami.

Another substantial increase is clear in the value of damage caused by typhoons and cyclones; it is now running at 10 times the level of the 1980s. Again, however, the ratio has remained almost unchanged, at about 40%, because hurricanes in Central and North America account for more than 50% of the world total (51.2%, 58.5%, and 54.4% in the 1970s, 1980s, and 1990s, respectively). It is sadly worth noting that there has been conspicuous growth in the absolute value of damage in both Asia and the Americas.

The conclusions we draw from the above results are corroborated by other statistics. Take for example the number of cases where material assistance and international emergency relief activities have been provided to disaster areas around the world by the Japan International Cooperation Agency (JICA). There were 187 such occurrences between October 1987 and September 1998, of which 41 were for wind and flood disasters in Asia and 11 for earthquake or tsunami disasters in Asia [2]. The ratio of assistance to Asia for all types of natural disaster, including volcanic eruption and landslide, is as shown in Table 3 for the 25-year period from 1968 through 1992. This table indicates that disasters in Asia account for almost 40% of the world total, while the death toll in Asia is over 40% and the number of people affected is slightly less than 90%. The latter figure is about 2.2 times the ratio of number of occurrences in Asia.

To summarize the discussion so far, wind and flood disasters in Asia far outnumber any other type of disaster in frequency, death toll, people affected, and value of damage. According to data accumulated over the past 25 years, natural disasters in Asia account for about 40% of the world total, while the death toll ratio is about 50% and the number of people affected about 90%, meaning that damage to human life is more prominent than other types of damage.

Table 3 Asia versus the world in 24-year averages

	Asia's ratio to world total
No. of occurrences	38.5%
Death toll	45.7%
No. of people affected	86.7%
Value of damage	30.6%

■ DISASTER PREVENTION POTENTIAL OF ASIAN SOCIETIES

The developing countries of Asia, in common with those in the rest of the world, suffer from the three-pronged threat of decelerating economic growth, environmental degradation, and population growth. Asia has been particularly badly affected by the currency crisis triggered by the fall of the Indonesian rupiah in 1997; the crisis spread through neighboring countries like wildfire, putting a halt to economic growth in all affected countries. Overall degradation of the global environment has caused a collapse of both natural and semi-natural ecosystems, resulting in increased numbers of natural disasters [3]. Further, rapid urbanization and the concentration of population in cities has had the effect of magnifying the severity of those natural disasters that affect urban areas.

It is clearly apparent that a "vicious cycle" exists in the relationship between disasters in developing countries and poverty there [4]. First, provincial areas with a population consisting mostly of farmers experience recurring natural disasters as a result of population growth according to the following process:

(1) The area of productive land per head of population can only fall as population increases; as a consequence, the population moves onto unsuitable and vulnerable land, in many increasing the frequency and severity of disasters.
(2) Farmers settling on land unsuitable for crops suffer damage from disasters, further deepening their poverty. Stricken farmers either go to town for work or become tenant farmers, thus finding themselves trapped in deep poverty.

On the other hand, large cities (including capital cities) also suffer from population inflow and experience disasters with increasing frequency and severity as follows:

(1) Chronic delays in the provision of social infrastructure force 30% to 60% of people to live in closely confined, overly populated areas such as slums. (Population growth in slums is typically double that in other city areas.)
(2) Sprawling residential development encroaches into disaster-prone areas.
(3) The mixing of residential and manufacturing functions, and concentrations of dangerous materials in cities, increases the likelihood of secondary disas-

ters, such as fire, explosion, or chemical pollution and radiation exposure.

These phenomena are illustrated in Figure 1, which shows how disasters often "evolve" [4] in intensity from "rural disasters" through "urbanizing disasters," "urbanized disasters," to fully "urban disasters" as communities change.

Disaster prevention can in a technical sense be categorized into two types of approach: "soft" countermeasure involving no structures and "hard" countermeasure in which structures are introduced [5]. Satisfactory implementation of both approaches to disaster prevention depends on the availability of money and information. In other words, a country needs to be richer to be resistant to disaster. The author earlier revealed that average life expectancy is one appropriate and general index of degree of affluence. The United Nations then defined the human development index (HDI) as a standard measure of the standard of living in a country. The HDI takes into account gross domestic product, average life expectancy, and educational attainment, and the closer its value is to 1, the higher the standard of living. Countries are ranked into three categories depending on the value of this index: the top is for HDIs of 0.8 or more, the mid for HDIs from 0.5 to 0.799, and the low for those less than 0.5. Table 4 ranks Asian countries in terms of HDI.

As this table shows, the countries in the low category are mostly those with population growth greater than 2%, while GNP per capita is as low as 300 dollars or less and the average life expectancy less than 60 years. The risk of death through natural disaster in these countries (that is, the annual disaster death toll divided by the total population), averaged over 25 years from 1968 to 1992, is 3.4 x 10^{-4} for Bangladesh and 4.7 x 10^{-3} for Cambodia. For countries in the mid category, such as China and the Philippines, the risk is 1.1 x 10^{-5} and 3.4 x 10^{-5}, respectively. Japan, a high-band HDI country, had a risk of the order of 10^{-6} until the Hanshin–Awaji Earthquake occurred. Thus disaster-related risk may be indicated as a function of HDI or average life expectancy.

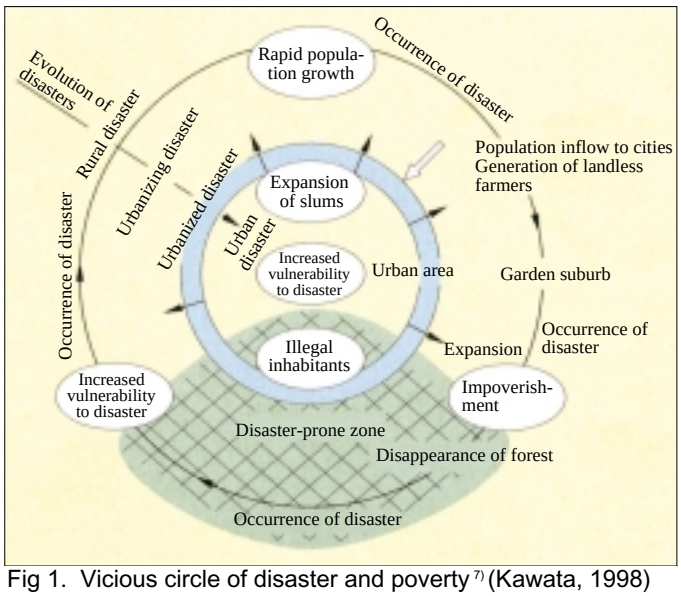

Fig 1. Vicious circle of disaster and poverty [7] (Kawata, 1998)

■ APPROPRIATE DISASTER PREVENTION STANDARDS FOR ASIA

The 21st century is expected to be a period in which cities are the most prominent social feature. One of the implications of this is the certainty that major disasters will affect cities. With approximately 50 countries in Asia, there is considerable danger in discussing a single form of disaster prevention for all of them, since their capacity to handle disasters varies greatly. What, then, should we do about standards for these countries?

In the past, the author suggested that the risk to life through disaster falls dramatically from around 10^{-3} as average life expectancy exceeds 60. Countries with lower HDI values are either too budget-restricted to make direct investments in disaster prevention or, even in cases where funds are available, their investments are far less effective than expected. As a result, the disaster death toll does not fall despite their efforts. One possible solution to this would be indirect investment, whereby a disaster prevention strategy is incorporated into the regular public works function. On the other hand, for countries ranked in the mid or upper categories, direct investment in disaster prevention is more effective, although one may question whether such investment is as competitive cost-wise as in other types of project. The answer is certainly "yes" if the social value of a person's life is fully quantified, and this is clearly the tendency today [6]. When this concept was applied after the Hanshin–Awaji Earthquake, the social value put on the life of a Japanese citizen was calculated to be about 250 million yen. On this basis, 250 billion yen invested in disaster prevention efforts to prevent the death of 1000 people is justifiable. Naturally, the application of this concept will result in a great gap between the value of a person in a developing country and in an advanced country, since it depends on prices, gross domestic product, and other factors unique to each country. Despite the

Table 4 Indexes of social conditions and capacity for disaster prevention in Asian countries

	Population (millions)	Population density (per km²)	Population growth rate (%)	City population (millions)	No. of megalo-posises	Forested area ratio A (%)	Annual reduction of A and ratio (thousand ha, %)	GNP/ person (US $)	Average life expectancy (age)	HDI	Economic growth ratio (%)
Japan	125.5	331	0.3	98.0	2 (10)	66.8	13 (0.1)	39,640	79	0.940	2.1
Thailand	58.8	116	1.1	11.9	1 (1)	22.8	329 (2.6)	2,740	69	0.833	7.3
Malaysia	20.1	63	2.4	10.8	0 (1)	47.1	400 (2.4)	3,890	71	0.832	8.7
Philippines	67.6	234	2.1	38.1	1 (2)	22.7	262 (3.5)	1,050	65	0.672	3.1
Indonesia	197.6	102	1.6	73.0	1 (7)	60.6	1,084 (1.0)	980	63	0.668	7.1
China	1,220.50	127	1.1	382.4	6 (64)	14.3	87 (0.1)	620	69	0.626	10.2
Taiwan	21.3	592	0.9	*	*	*	*	12,291	*	*	6.4
Papua New Guinea	4.3	9	2.3	0.7	0 (0)	81.6	133 (0.4)	1,160	57	0.525	** 3.4
Myanmar	46.5	67	2.1	12.0	0 (1)	41.3	387 (1.4)	241	58	0.475	5.4
India	935.7	283	1.9	255.8	6 (44)	21.9	Increase 7 (0.0)	340	62	0.446	5.4
Pakistan	140.5	163	2.8	48.7	2 (9)	2.3	55 (2.9)	460	62	0.445	4.5
Bangladesh	120.4	821	2.2	22.6	1 (3)	7.8	9 (0.8)	240	57	0.368	4.4
Cambodia	10.3	54	2.8	2.2	0 (5)	55.7	164 (1.6)	270	—	0.348	—
Nepal	21.9	146	2.6	2.3	0 (0)	35.2	55 (1.1)	200	54	0.347	2.9
	1995	1995	1990-1995	1996	2015	1995	1990-1995	1995	1994	1994	1990

* Included in China
** 1993
*** Cities with a population of more than 8 million. Bracketed figure is the number of cities with a population of more than 1 million

Table 5 Example of suitable standards for disaster prevention projects

Country level	GNP per capita	External force involved	Disaster prevention method	Area in question
High level I	$20,000 or more	Extreme natural force	Hard disaster prevention up to design natural force Soft disaster prevention for extreme natural force	Megalopolis and extended urban area
High level II	$3,000 or more	Incremented design external force		
Medium level	$1,000 or more	Design natural force	Hard disaster prevention (mitigation of personal and property damage)	Regional
Low level	Less than $1,000	Current maximum natural force	Soft disaster prevention (mitigation of personal damage)	Local

various opposition likely to arise against widespread use of this concept, it does allow us to carry out a cost-benefit analysis of disaster prevention projects.

Returning to the question of how to pursue standards for all of Asia, the author suggests strongly that Japan should make the country's history of disaster prevention efforts available to Asian countries so that a plan for disaster prevention in Asian countries can be synthesized together [7]. Regarding responsibility for tackling the various problems, including disaster prevention, faced by developing countries, it may be taken as understood that the advanced European countries take care of the African countries and that the USA is responsible for Central and South America. It follows that Japan is qualified to contribute to solving the disaster prevention problems of Asian countries, and this is certainly in line with Japan's national interest from a long-term viewpoint. If Japan fails to commit fully to disaster prevention efforts, we may find ourselves left behind in developing "global standards."

In Table 5, I propose one possible solution to how Japan might contribute. Here, the Asian countries are categorized into four groups: high level I, high level II, medium level, and low level based on the HDI values given in Table 4. The definition of disaster prevention preparedness at each HDI level, as determined for the purpose of this proposal, is that disaster prevention measures are fully in place in countries reaching the high levels; measures are being implemented in the case of the medium level; and measures remain inadequate in the countries categorized as low level. Table 5 gives estimated border levels of GNP per capita between the categories. Based on our experience in Japan, the 1960s marked the end of the era of major damage from wind and floods, with the Ise Bay Typhoon being the last major disaster of this type and also signaling the enactment of the Disaster Measures Basic Law. (At this time, the per capita GNP of Japan was about US$1,000.) By

Photo 1 Cyclone shelter made of corroded reinforced concrete; it is used as an elementary school building for dual lessons

Photo 2 Severely eroded coast

around 1975, most major storm surge prevention measures had been completed (with the then per capital GNP being about $3,000).

Rising from being a medium level nation to join the ranks of the high level group does not mean a sudden gain in capacity to implement measures against extreme natural forces; rather, a realistic approach is to gradually enhance "hard" disaster prevention potential by gradually increasing the design force they are expected to withstand — which can, for example, be done by increasing the return period taken into consideration. For Japan, measures against extreme floods began in 1987, when the per capital GNP was about $20,000.

A useful supplementary indicator, to be used in addition to GNP, might be the reduction in forested area of a country. For example, this may be particularly useful in the Philippines, which has suffered some of the worst deforestation despite its position in the medium level. As a result, it is considered very vulnerable to flood problems. In China or India, which both have large numbers of cities with populations over 1 million, urban disaster prevention is particularly essential. Thus, standards should be developed to meet the needs of all nations and not be based on a simple comparison of countries.

■ APPLICATION TO BANGLADESH

Let us apply the above approach to the design of a cyclone shelter in Bangladesh. If the above-mentioned cost-benefit analysis is used to compare the cost of implementing safety measures and the number of people who might be saved (that is, the social value of their lives), then even if the balance is in favor of the latter, more benefit may be achieved by, say, putting a cyclone shelter to multiple uses on a daily basis. One such use might be as a school for either children or adults. In fact, the school considered here is used in this way. I want to look at a practical approach to this type of measure.

Suppose a cyclone shelter were to be constructed by a Japanese contractor. The cost would be about three times more than if a local Bangladeshi firm were to do the work. Simply put, a local contractor could build three shelters for the same cost. In practice, though, there is more to it than meets the eye. The shelter shown in Photo 1 is clearly in bad shape, with a great deal of deteriorated concrete. This kind of situation is common

around Bangladesh; the problem is poor construction and management practice.

A further consideration is that the majority of islands in Bangladesh consist of alluvial soil brought down by the Ganges, Meghna, and Brahmaputra, which is why the shape of an island never stops changing through continued shoreline erosion and collapse, as shown in Photo 2. (For example, the Sandwip, an oval island extending 30 km north to south and measuring 15 km wide has a population of 150,000 and suffers erosion along its northwestern coast at an annual rate of over 10 m. The eroded soil is deposited at the southeastern tip of the island, where new land appears every year.) This perpetual erosion of the shoreline often results in coastal shelters shifting into the sea. If Japan were to build suitable shelters through financial assistance projects, the appropriate procedure should be as follows:

(1) First, the recurrence period of the design storm surge should be determined, including an evaluation of the possibility of coastal shelters being submerged and the probability of residents experiencing a storm surge in their lifetimes.
(2) Japanese engineers should be developed with all the major special skills required: planning, cost calculation, design, and construction. These engineers should then be dispatched and backed up by a suitable support system for them. (Since, in Japan, contractors use too many engineers on site, resulting in higher costs and reduced competitiveness compared with other advanced countries.)
(3) Japanese civil engineers should be developed who can manage local contractors, develop easy-to-understand methods that facilitate a transfer of quality control and construction management concepts, and prepare alternative plans for different balances of mechanical operations and labor.
(4) Construction experience gained in various locations should be databased to allow contractors in the same line of business to share and make joint use of the information.
(5) The developing countries, though they do have civil engineering researchers, generally have no civil engineering academic association that pulls them all together. This creates an environment where, in a public work project, technical issues fall by the wayside and politicians and bureaucrats make the decisions. The Japan Society of Civil Engineers (JSCE) should help local engineers establish their own associations.

It is not numerical design values that are required in developing Asian civil engineering standards. Rather, the need is for a common understanding regarding the importance of considering the economic, cultural, and environmental conditions prevalent in each country when deciding how to develop and improve the social infrastructure. The JSCE is currently developing drafts of standards for public works in developing countries, and especially the southeast Asian nations, through its Standards Development Support Committee. In order to make the most of all the efforts made so far in Japan and by the JSCE for the betterment of this region, it is an urgent task for Japan to propose a new scheme in this field.

■ TRIALS OF DISASTER PREVENTION EFFORTS IN ASIA

Let me briefly mention a few recently published committee reports on issues the author is involved in[8)9)]. Japan has long worked with developing countries in implementing support projects centering around programs for improvement of the institutional, scientific, engineering, and technological situation of countries in Asia. Unfortunately, social, economic, and anthropological issues were not fully assimilated into such programs. In an attempt to overcome this shortcoming, JICA set up the "Research Committee on Development and Disaster Prevention" in 1997 to discuss better ways of helping developing countries gain improved resistance to disasters in the context of Japan's ODA efforts. The conclusion of this committee was that it would be "impossible to eliminate vulnerability to the damaging natural forces (of natural disaster) without eliminating poverty. In order to solve the poverty problem and enhance disaster prevention capabilities, any assistance should allow residents to have easy access to the various resources necessary for sustainable development through social and economic development, and that full use of these resources must be made. Japan should take this into consideration when providing assistance. In helping these developing countries eliminate poverty, Japan should also implement projects in a variety of fields and on a small scale so as to help the poor — at whom the efforts are directed — receive maximum benefit. Not only should each such project itself be successful, but

also the integration of all such projects must be achieved to multiply the effect of assistance." The committee's recommendation was that we should work to "implement sustainable social development projects, develop capable personnel in developing countries, and improve research organizations."

In 1996, the Urban Disaster Prevention Research Center established a Research Committee on Ideal Cooperation on Disaster Prevention in the Asian Region as part of a project under contract with the National Land Agency to discuss the ideal of "international cooperation for mitigation of human damage due to natural disasters in Asia and for improvement of regional disaster prevention potential against disasters." This committee discussed four major points: (1) current understanding of the disasters likely to face Asian countries and regions; (2) progress and status of information gathering with respect to these types of disasters; (3) obstacles to damage mitigation as determined from disaster-related data and information; and (4) a suitable form of international cooperation. The committee published the results of its deliberations in a report, and in response to its recommendations, the Asian Disaster Reduction Center was established in Kobe in July 1998. One of the committee's roles is to propose guiding principles for the new center's activities. Some of suggested activities include making and publishing maps of the various countries, translation of Japanese disaster prevention manuals into English, and putting Japan's disaster information into databases.

The results of many other studies carried out by various committees of the National Land Agency set up to discuss disaster prevention in Asia have also become available. It is therefore time to integrate all the results into a single plan for how to proceed. It is the wish of the author that this special feature will help accelerate such efforts.

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