Flood Disaster Preparedness Standard

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ABSTRACT: In order to implement the Hyogo Framework for Action, it is necessary to establish an operational mechanism by which communities are encouraged, directed and learn each other to take a rational procedure to make themselves prepared for warning, information dissemination, evacuation, salvation, refugee sheltering, refugee support, recovery, receiving official and volunteer helps, etc. Such procedure may be formally organized as an International Standard, i.e., Disaster Preparedness ISO and put to a political campaign for communities to take it. International Flood Initiative (IFI) is an ideal framework to lead the flood part of its establishment, i.e., Flood Disaster Preparedness ISO. Examples of Japanese efforts are presented.

NECESSARY ACTION TO IMPLEMENT THE HYOGO FRAMEWORK FOR ACTION

One of the five priorities for action declared in the Hygo Framework for Action agreed at the United Nations World Conference on Disaster Reduction held in Kobe Japan in January 2005 is to "Strengthen disaster preparedness for effective response at all levels" as "At times of disaster, impacts and losses can be substantially reduced if authorities, individuals and communities in hazard-prone areas are well prepared and ready to act and are equipped with the knowledge and capacities for effective disaster management."

In order to implement this priority area of the Framework, it is necessary to establish a common mechanism by which a community is encouraged, directed and learns each other to take a rational procedure to make themselves prepared for such as warning, information dissemination, evacuation, refugee sheltering, refugee supporting, recovery, receiving official and volunteer helps, etc. Such procedure may be formally organized as an International Standard, i.e., Disaster Preparedness ISO and put to a political campaign for as many communities as possible to take it.

It is often the case where natural disasters occur, local communities affected are revealed to have had no emergency preparedness and the aftermath becomes enlarged. Introduction of disaster preparedness ISO would improve such situation serving as a guideline for those communities.

OUTLINE OF DISASTER PREPAREDNESS ISO

The Disaster Preparedness ISO is an international standard that any community of any scale is suggested to follow in order to make it prepared for natural hazards and to minimize their negative impacts on people, properties and activities and lead to quick recovery when they occur. The standard is not a list of facilities nor equipments to be installed, but rather a list of institutional procedure that any community commit to follow to assure a positive spiral be installed into its community management system leading to a continuous improvement in disaster preparedness.

ISO is usually designed in the framework of market mechanism where the incentive of obtaining the license is to increase economic profit. In this Disaster Preparedness ISO is totally different. It operates in the framework of public administration mechanism where the incentive is to get public satisfaction and political justification in their performance at the time of disaster.

If a community satisfies the disaster preparedness ISO, it may apply a license and, if awarded, the community will get a visible reward of minimum losses when disaster does occur through well guided community preparedness. The community may also get better support from internal budget allocation or external funding. In addition, the community leaders get good reputation and public support within the community which may lead the leading politicians' re-election in their constituency.

In a sense, the ISO license acts as a guide for community administration to get its excuse for their performance when natural disasters do occur. If community administration has been doing proper preparedness exercise following ISO, they certainly deserve for such excuse. But if they do not and encounter a big disaster, they will face a serious responsibility question.

DESIGN OF DISASTER PREPAREDNESS ISO

In order to design a standard disaster preparedness procedure to assure a positive spiral installed into community management system, the following principles may have to be taken:

1. The procedure is designed, according to the local reality, manageable within the local context and administrative framework. Especially it should be operational within the socio-economic constraints of the community.
2. The procedure is decided, implemented, checked and revised by the community authorities regularly and have a built-in mechanism for continuous improvement in a positive spiral based on plan-do-check-action cycle.
3. The procedure is linked to and consistent with the national and regional emergency management scheme. In order to ensure the wide active linkage, the local procedure should be endorsed by national and regional administration.
4. The procedure is supported by the best practicable technology of early warning system available to the nation/region.
5. The procedure is regularly reviewed and checked internally and externally and the re-licensing process should be built in.
6. The procedure will evolve itself with a change of land use, development or installation of new control measures and any other societal conditions.

Steps to be taken for designing Flood Disaster Preparedness ISO

In order to design flood disaster preparedness ISO, the following steps may have to be included:

1. *Form a community flood defense committee to maintain and improve the community disaster management:* It should start from community itself forming a committee made up of all the players including community leaders, public officers, volunteers and residents who do the real labor work.

2. *Identify the goal of the locality:* The goal may be decided by the committee such as no human losses by any floods while constructing a sustainable flood safe community conserving the current ecological system.
3. *Design a set of rules of procedure for the community to reach the goal:* The ISO requires the committee to design a set of flood preparedness plan and the system to routinely implement, record, review, improve and again implement to complete the plan-do-check-action cycle. This is an important and difficult step necessarily carried out by participatory process with strong support of worldwide preparedness knowledge base.
4. *Identify the annual objectives for improvement:* Once an initial rule is established and routine procedure is being exercised, the committee should decide the short term objectives for improvement that may include concrete targets such as development of some residential area in a flood proof design in accordance with a flood risk map issued, the improvement of particular evacuation routes, the annual flood management training participated by more than 10% of community population etc.
5. Plan and materialize the administrative, technical and financial actions to achieve the annual objectives. The concrete actions should be decided to achieve the annual objective. The ISO requires the local government provides the necessary resources for implementation for the actions committed. This is why the committee has the local government leader as members.
6. *Establish a linkage with the national/provincial level administration:* This step will ensure the integrated emergency operation in nation wise in the case of large scale catastrophic disasters. At the same time, it ensures legal and financial agreement for support with the national/provincial level administration.
7. *Prepare the regular internal and external review process and re-licensing of ISO:* The review process is the key of the ISO. Licensing is just a start. The starting hurdle may be very low but through the regular reviewing process, a positive spiral for continuous improvement of flood preparedness is guaranteed. License may be renewed only if the positive spiral is proven functioning. In order to prepare for review, all decisions and actions should be carefully recorded and filed. This provides the opportunity for analyses and self review for continuous improvement.

JAPANESE EXAMPLE OF PREPAREDNESS INDICES

In Japan, the Parliament enacted the Disaster Countermeasures Basic Law in 1961 (Japanese Parliament, 1961), responding to the catastrophic disaster caused by the Ise-Bay Typhoon and storm surge hit Nagoya area in 1959. It was largely amended in 1995 and 1997 after the great Hanshin Earthquake to reinforce the law.

The law specifies the arrangements for disaster preparedness management in:

(a) organization,
(b) planning,
(c) prevention activities,
(d) emergency response (warning, preparedness, evacuation and emergency administration),
(e) recovery,
(f) financial arrangements,
(g) crisis management,
(h) others.

As an organizational arrangement, National Disaster Prevention Council was established in Prime Minister's Office and Prefectural, Municipalities and Inter-regional Disaster Prevention Councils were formed in regional governments. In emergency cases, Extraordinary Disaster Response Committee and Emergency Response Committees are planned to be formed.

Obviously, this identifies only the procedures of national, prefectural and municipality level governments and not of lower town level or even smaller community level. Preparedness and real emergency response should be in a troika formation by public help, mutual help and self-help together. The systematized counteraction activities are only on the public help components so far.

In October 2004 the self-assessment of prefectural governments were conducted base upon the guideline issued in 2003 by Fire Protection Agency, Ministry of General Affairs, Japan (Fire Protection Agency, 2003). The guideline is made up of about 800 questions to be answered by choosing 2–4 optional answers on natural disasters (earthquakes, storms and floods, and volcanic eruptions), risk material/facilities accidents, nuclear power disasters.

The survey results were reviewed by Fire Protection Agency (2004) classifying the questions into the nine categories of preparedness indices:

(a) risk recognition/assessment and loss estimation;
(b) damage mitigation and prevention means;
(c) institutional arrangements;
(d) information collection and dissemination network;
(e) equipments and prepared resources acquisition and control;
(f) planning of activities;
(g) information sharing with residents;
(h) education and training;
(i) assessment and review.

The results of each category were standardized into 100% and presented in a hexagonal diagram as Figure 1. This investigation was a giant work if all municipalities and towns are included. Even for the cases of prefectural level, it is still a challenging survey and revealed an important fact on the state of preparedness.

According to the results, average marks are 43.5 while the top is Tokyo with 69.4 and the lowest with 25.7. It was found that prefectures are less prepared for hydro-meteorological hazards than for earthquakes. The results may not indicate the real situation of prefectures in precise but as a first trial, it is considered highly meaningful and stimulus for the improvement in the future.
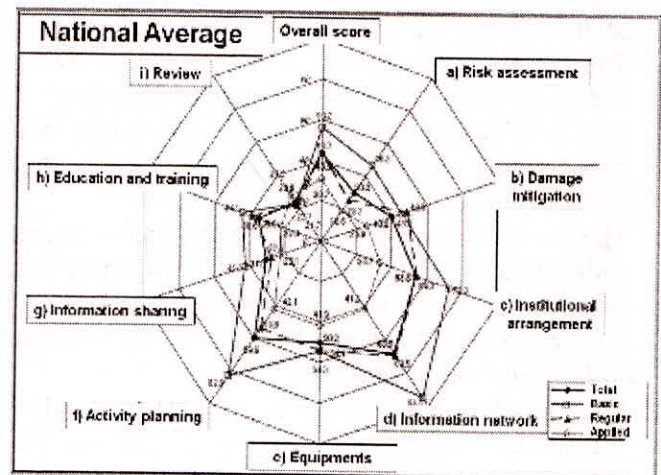

Fig. 1: Average proportion of nine factors of capacity of disaster management in Japan (Ref. 3)

ROLE OF INTERNATIONAL FLOOD INITIATIVE (IFI)

The establishment and activation of the flood disaster preparedness ISO require strong support and promotion by national and international governmental and intergovernmental organizations. It is only possible by a wide collaboration and a strong commitment by each player. For this purpose, the International Flood Initiative (IFI) established by UNESCO, WMO, ISDR and UNU in 2005 is an ideal framework to take a lead the flood part of its establishment.

Collection, analyses and archiving of past knowledge of preparedness worldwide are the key to the proper design of any local preparedness procedure. The IFI can contribute for such aspect of the needs a great deal.

FINAL REMARKS

There have been various efforts of standardization of preparedness although focuses are not necessarily the same. Such includes NFPA (2007) by National Fire Protection Association (NFPA), USA and ISO (2006) International Workshop Agreement, Ref number IWA 5:2006(E) Emergency preparedness, which lead to ISO/PAS 22399, Dec 2007: Societal security—Guideline for incident preparedness and operational continuity management. Such related efforts should carefully be studied and analyzed. The basic concept of NFPA is accepted in ISO business continuity preparedness standards. The scope of such efforts is limited to business continuity mostly in private enterprises and not for public disaster impact mitigation.

In order to bring this proposal into reality, it is necessary to make disaster risk reduction a mainstream of decision making at all levels. The establishment and participation to the disaster preparedness ISO is part of it.

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