



## HOW DO WE EVALUATE IDNDR?

Li-Li XIE<sup>1</sup>

### SUMMARY

In 1984, during the 8<sup>th</sup> World Conference on Earthquake Engineering in San Francisco Dr. Frank Press proposed an International Decade for Natural Hazard Reduction. In 1987, the United Nations General Assembly passed a resolution calling for a Decade--International Decade for Natural Disaster Reduction (IDNDR)--dedicated to reducing "loss of life, property damage, and social and economic disruption caused by natural disasters," especially in developing countries. Now we, earthquake scientists and engineers of the world, are having our 12<sup>th</sup> World Conference and the Decade was just over. It is of great significance to evaluate the Decade, particularly in this occasion.

It was the first concerted effort for mankind to prevent the unnecessary loss of life from natural hazards although human being has lived under the threat of natural disasters throughout history. The Decade provided a unique opportunity for the world community, in a spirit of global cooperation, to use the considerable existing scientific and technical knowledge to alleviate human suffering and enhance the security of sustainable societal and economical development;

The Decade greatly raised the public awareness; in particular, the awareness of governments of various countries. Fatalism is no longer acceptable and disaster could be reduced; governments have the responsibilities for security of their citizens, particularly from natural disasters. The Decade once again proved that international and regional cooperation is extremely important for minimizing the losses during the disasters, in particular for developing countries.

Decade taught the scientific and technical professionals that their roles in reducing natural disasters are especially important. Scientists and engineers have been playing significant roles in creating new knowledge, upgrading and applying existing knowledge, transferring effective technology to those at risk and educating people and governmental decision-makers in coping with potential disasters. Scientists and engineers working in the field of natural hazards further understand that all their activities are linking with minimizing the natural disasters.

It has been convinced that confronting increasing natural disasters, the historically piecemeal approach to natural disasters must be replaced with an integrated approach and all measures towards minimizing losses must be prepared before the occurrence of the disasters. Through the Decade, it has been proved that an integrated approach, including 4P (Planning, Prediction, Preparedness, and Prevention) and 4R (Rescue, Relief, Recovering and Reconstruction), is extremely effective in reducing disasters.

It is widely recognized that the objectives of IDNDR could not be fully reached through one Decade. However, the spirit of the Decade will last forever and under the light of the Decade scientists and engineers will dedicate themselves towards a much safer 21<sup>st</sup> Century.

<sup>1</sup> Inst of Engineering Mechanics China Seismological Bureau 29 Xuefu Rd, Harbin, 150080, China. Email:llxie@public.hr.hl.cn

## **INTRODUCTION**

It has been sixteen years since Dr. Frank Press, the President of the US Academy of Science, made a keynote address at the 8<sup>th</sup> World Conference held in San Francisco, USA in 1984 to propose an International Decade for Natural Hazard Reduction and his idea was widely accepted by the worldwide communities. In 1987, 1988 and 1989, in its resolution of 42/169, 43/918 and 44/236 the General Assembly of the United Nations decided to designate the 1990's as an International Decade for Natural Disasters Reduction with the objective to reduce through concerted international actions, especially in developing countries, loss of life, property damage and social and economic disruption caused by natural disasters.

Now Decade ended and the human-being is entering the 21 Century. At the beginning of the new century we are gathering once again at the 12<sup>th</sup> World Conference on Earthquake Engineering. It provides us a unique opportunity to review what we learned from the Decade and to explore what should be done towards a safer century in the light of the Decade at this occasion.

## **PUBLIC AWARENESS GREATLY RAISED**

Throughout the history of mankind, natural disasters have claimed a heavy toll in death and caused enormous economic damage. Despite recent advances in hazard prediction and in disaster-prevention engineering, the damage inflicted continues to mount, especially in developing countries where the number of fatalities and the proportionately large economic losses impose heavy double burden. Today, when human is facing serious situation, such as: population explosion, urbanization, the deterioration of existing cities, and an excessive dependence on high technology that intensifies the potential for disaster throughout the world, concerted efforts to increase public awareness of hazard prevention and reduce the vulnerabilities to communities worldwide through the activities of the International Decade for Natural Disaster Reduction (IDNDR) are particularly important and indeed timely. On this respect, the Decade played a significant role in raising public awareness, in particular the awareness of governments and decision-makers.

For example, the Chinese Government has been paying great attention to the disaster reduction since the very beginning of the Decade. In China, disaster reduction and environment protection has been decided as one of the fundamental country's policies along with its economic and social development. During the Decade two laws for flood and earthquake disaster prevention have been approved and forced respectively by the Chinese Peoples Congress; a "Ten-Year's Goal of Earthquake Disaster Prevention and Reduction for the major and medium cities" has been stipulated and promulgated by the State Council; "Disaster mitigation and reduction" as one chapter of the 21<sup>st</sup> Agenda of China approved by the Chinese Government. Moreover, a comprehensive national disaster reduction planning was formulated and finally approved by the Chinese government in 1996. As implementation of this plan, 69 major disaster reduction projects have been initiated and implemented. The Decade indeed played a significant role in raising the awareness of publics and decision makers for reducing risks from natural hazards. Under the light of the Decade, Chinese government as well as people has recognized that the China has its population of one-fifth that of the world and if the China can be successful in disaster reduction it would make a great contribution to the Decade, otherwise, it can not imagine a full success of the Decade could be reached.

## **INTERNATIONAL COOPERATION FOR DISASTER REDUCTION PROMOTED**

The Decade as the first joint action of the whole world in the human-being's history in mitigating natural hazards will be a great milestone throwing the light into further cooperation for a safer world from the threat of natural disasters.

In the United Nations' Resolution for designation of the International Decade for Natural Disaster Reduction, it indicated that the international community, under the auspices of the United Nations, will pay special attention to fostering international cooperation in the field of natural disaster reduction. Also the Resolution called on all Governments to participate during the decade for concerted international action for the reduction of natural disasters. Under the guide of the Decade, various kinds of cooperation have been established on the regional and international bases for hazard monitoring and assessment, risk reduction, disaster warning and technology

transfer. Many scientific and technical organizations have done their best in supporting various activities towards disaster reduction including holding the training courses for developing countries.. Unfortunately, we do not have accurate figures in hand, however, it is believed that during the decade the total number of various kinds of training course for disaster reduction, regional and international, should exceed any past decade. Occurrence of natural hazard is without border and no country can immune from the impact of natural disasters. Unfortunately, poverty is still a worldwide problem, particular in developing and less advanced countries. In the world there is still quite a number countries where people are poor, most vulnerable to natural hazards and scarcity of necessary resources for avoiding disaster impacts. To this connection, Decade's goal is far from completion and any stress on international cooperation will not be overemphasized.

### **TECHNOLOGY TRANSFERRING ACCELERATED**

As a major goal of the Decade, the General Assembly of the United Nations had emphasized the significance of disseminating existing and new information related to measures for the assessment, prediction and mitigation of natural disasters and developing measures for assessment, prediction, prevention and mitigation of natural disasters through program of technical assistance and technology transfer, demonstration projects, and education and training. It was undoubtedly that the Decade greatly facilitated the process of transferring of the existing effective technology. Many programs as well as its projects such as GSHAP, RADIUS and others received very successful results in disseminating and transferring the existing knowledge and technology for disaster reduction. It has benefited many regions, especially for developing countries. Various training courses also played significant role in transferring modern technology for hazard assessment, risk mitigation, and early warning means. By using the modern information dissemination ways, such as internet, videos and films, scientific and technical resources can be easily, rapidly and effectively transferred.

In comparing with the need for disaster reduction for developing countries and the extend of existing knowledge and technology for transferring, there is still a long way to go. International scientific and technical organizations can play essential role in disseminating know-how and information, scientific and technical applications and integration of useful risk mitigation means to assist in the development of disaster-resistant capabilities for developing countries.

### **INTEGRATED APPROACH IS INDISPENSABLE**

Decade taught the scientific and technical professionals that their roles in reducing natural disasters are especially important. Scientists and engineers have been playing significant roles in creating new knowledge, upgrading and applying existing knowledge, transferring effective technology to those at risk and educating people and governmental decision-makers in coping with potential disasters. Scientists and engineers working in the field of natural hazards further understand that all their activities are linking with minimizing the natural disasters.

It has been convinced that confronting increasing natural disasters, the historically piecemeal approach to natural disasters must be replaced with an integrated approach, including 4P (Planning, Prediction, Prevention, and Pre-warning) and 4R (Rescue, Relief, Recovering and Reconstruction), It has been proved that the integrated approach is extremely effective to enable all communities to become resilient to the impacts of natural disasters, reducing the compound risks they pose to social and economic vulnerabilities within modern societies. The Decade had also emphasized that all measures, pre-disaster measures and post-disasters measures, towards minimizing losses must be well prepared before the occurrence of the next disasters.

Since occurrence of hazards is inevitable, and the elimination of all risk is impossible, there are many technical means, traditional practices and public experiences that can be applied to reduce the losses caused by natural disasters. To this context, close cooperation among scientists, engineers, planners, sociologists, economists and experts of disaster management is particularly needed in implementing the integrated approach for reducing natural disasters.

## CONCLUDING REMARK:

### THE DECADE ENDED, THE SPIRIT OF DECADE WILL LAST FOREVER

In the year of 1999, the Decade entered its final stage and concluded. Despite the achievement made during the decade, it is needless to say that the objective and goals of the Decade are far from completion. In comparing the long history of human suffering from natural disasters the Decade is only a very short period. The end of

**Table 1 Evolution of direct economic losses caused by natural disasters in China**

YEAR	DIRECT ECONOMIC LOSSES (in Billion Chinese Yuan)	PERCENTAGE of GDP(%)
1989	52.5	3.3
1990	61.6	3.5
1991	121.6	6.1
1992	85.4	3.6
1993	99.3	3.2
1994	187.6	4.3
1995	186.3	3.2
1996	288.2	4.3
1997	197.5	2.7
1998	307.2	3.9

Decade is by no means the end of concerted efforts of the world in reducing natural disasters. The reason is simple that the losses caused by natural disasters are still escalating. As an example, the annual direct economic losses caused by natural disasters in China during the decade are listed in the Table 1. It is shown that despite the great effort taken by the Chinese government and people for minimizing natural disasters, the economic losses are still increasing along with the country's economic development. This is not the situation only for China. It is also the case for most other parts of the world today.

The losses caused by the recent natural disasters such as the 1999 Chi-Chi Earthquake of Taiwan China, 1999 the Izmit, Turkey Earthquake, 1998 Yantze River Flood and others in the world reminded us once again that the objective and goals set by the Decade are far from completion. A safer 21 Century is still a dream. Realization of the great dream needs further continuous efforts of the whole world and close cooperation among different countries and among politicians, scientists, engineers, sociologists, economists and publics are absolutely essential. The leading role of the United Nations in disaster reduction is indispensable.

## REFERENCES

- (1) Resolutions of the General Assembly of the United Nations No.42/169[1987], 43/918[1988] and 44/236[1989];
- (2) Wang Xiushan, "The disaster situation and its relief work in China, 1997", Disaster Reduction in China, vol. 8, No.1, Feb., 1998. (in Chinese)
- (3) Wang Ansheng, Li Jishun, Liang Bijun et al., "A big step in China during the IDNDR Preparing for establishing China's Center of Disaster Reduction", Natural Disaster Reduction in China, Vol. 7, No.1, February 1998, Beijing, China.
- (4) The State Statistical Bureau, "The bulletin of statistical report on the 1998 national economic and social development of the People's Republic of China", Beijing, China, 1999.