

III-3 The Second Seminar-1 (Main)

The Study on Earthquake Disaster Mitigation in Kathmandu Valley

Main Seminar

Organized by Department of Narcotics Control & Disaster Management, Ministry of Home Affairs and JICA Study Team

1. Date and Venue

January 17, 2002 10:00-15:30

Conference Hall, Himalaya Hotel, Kupondole, Lalitpur

2. Purpose

- To introduce the result of the Project especially on Disaster Mitigation Planning
- To discuss measures in view of Earthquake Disaster Mitigation Planning

3. Program

A. Opening Session 10:00-10:30

Chaired by Mr. K. Poudyal (Director General, Dept. NC & DM, Ministry of Home Affairs)

Mr. K. Poudyal (Director General, Dept. NC & DM, Ministry of Home Affairs)

Mr. E. Mitoma (Res. Rep., Japan International Cooperation Agency)

Dr. Y. Egawa (Leader, JICA Study Team)

Tea Break 10:30 ~10:45

B. Study Results (Mainly for Recommendations and Proposals by JICA Study Team) 10:45-12:15

Chaired by Mr. K. Poudyal (Director General, Dept. NC & DM, Ministry of Home Affairs)

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|--|----------------|
| 1) Scenario earthquake, Hazard & Risk map, Database System | Mr. N. Toyama |
| 2) Proposal for Sustainable Development | Dr. Y. Egawa |
| 3) Proposal for Maintain Governance | Dr. Y. Egawa |
| 4) Proposal for Protect Life and Property of People | Dr. N. Sthapit |
| 5) Proposal for Strengthen Socio-Economic | Dr. N. Sthapit |
| 6) Recommendable Projects Composed of Proposals | Mr. F. Kaneko |

Lunch Break 12:15 ~13:15

C. Discussion for next step to earthquake disaster mitigation in Kathmandu Valley 13:15-15:30

Chaired by Dr. M. B. P. Chhetri (Director, Dept. NC & DM, Ministry of Home Affairs)

(As a clue of discussion)

- 1) Present Situation on Preparation of Tenth National Plan in relation to Earthquake Disaster Mitigation (Tentative)
Mr. U. B. Malla (National Planning Committee)
- 2) Disaster Management System from Central to the Local Bodies
Mr. L. N. Pokharel (Section Officer, Dept. NC & DM, Ministry of Home Affairs)
- 3) What should be done for the Earthquake Disaster Management in Local Bodies
Mr. S. Regmi (Joint Secretary, Ministry of Local Development)
- 4) Discussion
Comments for recommendations and Proposals, their prioritization

Moderator: Mr. P. Jha (Executive Director, Human Resource Develop. Centre)

The Study on Earthquake Disaster Mitigation in Kathmandu Valley

**Proceedings of
MAIN SEMINAR**

**Organized by
Department of Narcotics Control and Disaster Management
Ministry of Home Affairs
&
JICA Study Team**

**January 17, 2002
Himalaya Hotel, Lalitpur**

MAIN SEMINAR

1. **Background**

His Majesty's Government of Nepal, having been concerned about earthquake disaster management in Kathmandu Valley, requested the Government of Japan to implement the Study on Earthquake Disaster Mitigation in Kathmandu Valley. As a result, the Government of Japan and Japan International Cooperation Agency (JICA), the official implementing agency for Official Technical Cooperation, dispatched a preliminary survey team to Kathmandu on August 2000 and exchanged Scope of Work with HMG. Nippon Koei Co. Ltd. and OYO Corporation entered into a contract with JICA and conducted this study from January 2001 to February 2002.

Upon completion of the Draft Report of the study, the Main Seminar was held in the Conference Hall, Himalaya Hotel, Kupondole, Lalitpur in the morning of January 17, 2002. The participants of the Seminar comprised the JICA Study Team, Ministry of Home Affairs (MOHA), representatives from a host of government ministries, departments, Municipalities, donors, NGOs, INGOs, Professional societies and academia. It was organized by the Department of Narcotics Control and Disaster Management, MOHA and the JICA Study Team. The Seminar was moderated by Mr. Parimal Jha, Executive Director, Human Resource Development Centre.

2. **Purpose**

The purpose of the seminar was:

- To introduce the result of the Project especially on Disaster Mitigation Planning;
- To discuss measures in view of Earthquake Disaster Mitigation Planning.

3. **Program**

3.1 **Opening Session - Address by Chairperson**

The Opening session was chaired by Mr. K. Poudel, Director General, DoNC&Disaster Management, Ministry of Home Affairs (MOHA). The first program was the opening remarks from the chairperson. which is summarized hereunder:

The Earthquake Safety Day organized this week has made us share with many people the suffering of what must have happened during the Great Earthquake of 1934. JICA has made this event even more sober by bringing us here together at this time of commemoration hoping that an Earthquake disaster in Kathmandu Valley is not inevitable. However, nature takes its own course as scientific findings reveal. Therefore, we should be prepared to live with disaster and their possible consequences by coping with them as best as we can. I hope that this seminar will come up with conclusions the findings such as enforcement of the Building Code, where we have been very lax and lenient.

We should sensitize civic society, elected bodies, the districts and villages to be prepared for an Earthquake disaster. Moreover, there is a great need of cooperation amongst the Government agencies, civic society and the private sector. What we lack is an effective system of review, monitoring, information network and effective implementation of an Action Plan. Let us look closely at the findings of the JICA Study Team and make commitments to implement than.

We are grateful to the Government of Japan for providing the resources for this study. We are indebted to JICA for choosing this important field of study. Where people thought that it was non-sense to discuss Earthquakes, now they have been sensitized to the valuable worth of such

a study. Civic society is also coming up to acknowledge this fact. The credit goes to the Government of Japan, the Japanese people and the JICA Study Team.

I would like to thank Dr. Egawa, Team Leader of the Study, and the Resident Representative of JICA Nepal Office, Mr. E. Mitoma for making this study possible. With the leadership of JICA, let us make it possible for other donors also to come in the field of Earthquake disaster mitigation, as Nepal lacks the financial resources and the technology for mitigation. I request your valuable suggestions for implementing the recommendations of the Study. The main difficulty for His Majesty's Government is lack of funds and technical expertise. This Study is the outcome of very experienced brains.

Finally, I wish all the distinguished delegates a very fruitful outcome of the deliberations and request for your valuable suggestions.

3.2 Address by JICA Resident Representative, Mr. E. Mitoma

I am privileged to say a few words at this seminar. Natural disaster has no bounds and can sometimes be very cruel. Prevention is better than cure as is relevant in practical life. Keeping this motto in mind, His Majesty's Government (HMG) requested the Government of Japan for this kind of Study which is now in the final stage. I hope that the goals set out by the Study will be realized in the near future. I would like to thank Ministry of Home Affairs (MOHA) the Department of Narcotics Control and Disaster Management (DoNC&Disaster Management) and other agencies including many people for their cooperative efforts and inputs. Today is the occasion to disseminate the findings of the excellent Draft Final Report which will prove useful for planners and implementers.

This is just a comprehensive study. I hope HMG will see to the materialization of the recommendations with a sustainable approach. I would like to thank HMG agencies, local governments, and municipalities for extending their support to the Study Team. I am not sure if the National Planning Commission is compiling the next stage of the 10th 5 year plan in which disaster like Earthquake could constitute one of the chapters including wind and water. I hope that this too would materialize.

I offer my sincere thanks to MOHA and the JICA Study Team for organizing this Seminar. I hope that this seminar will contribute significantly in mitigating potential disasters in Kathmandu Valley. I thank you all.

3.3 Address by Dr. Y.Egawa (Leader, JICA Study Team)

I welcome you all. I would like to introduce to you an overview of the Study and holistic aspect of Earthquake Disaster Management. In Nepal there are many plans in draft form that have not been approved and authorized. Without support, plans are unstable. As HMG is preparing the 10th 5 year plan, this is the right time for discussion.

I would like to express my gratitude to the HMG counterparts, many collaborators, Starring Committee Chairman and members. We have submitted our Draft Final Report for discussion. The Final Report will be presented next month.

3.3.1.Overview of the Study

Dr. Y. Egawa then presented the Overview of the Study in the following manner dealing with the topics highlighted below:

- Earthquake Disaster Management Planning entails cooperating with many stakeholders and Monitoring including other planning.

- The holistic aspect of Earthquake Disaster Management is that it should come up with a Functional Earthquake Disaster Management Plan comprising Urban Development Plans, Housing Development Plan, Infrastructure Development Plan, Financial Policy Plan, Poverty Alleviation and other plans.
- Earthquake is enemy of all society. Therefore cooperation and unity with all institutions is essential.
- Goals of the Study in terms of protecting life and property, strengthening Socio-economic systems, protecting the stability of Governance even in case of Earthquake.
- Fruits of the Study in terms of Process/Discussion, Technology Transfer and outputs-Reports/Database/Data Book/Website.
- Contents of the Report (1): Material for Brain storming and Guidelines for Planning.
- Contents of the Report (2): Proposal of Programs to be Implemented by Nepal and the International Society.
- Complementarily with UNDP Program and Existing Plan, like National Action Plan.
- Building, Community and Media Sub-Seminars.
- International Society is in a position to cooperate. Pre-requisite is Nepal side prioritization, as disaster is a matter of international cooperation as was the case in Kobe Earthquake, Japan.
- Counterparts/Steering Committee Members.
- Report on Today's Theme: Part I-Blueprint for Kathmandu Valley Earthquake Disaster Mitigation, Part II - Earthquake Disaster Assessment and Database System, Part III - Conclusions.

4. Study Results (Mainly for Recommendations and Proposals by JICA Study Team)

The Study results session was chaired by Mr. K. Poudel, Director General, DoNC&Disaster Management/MOHA. The following presentations were made during the session:

4.1 Scenario Earthquake, Hazard and Risk Map, Database System

Mr. N.Toyoma of the JICA Study Team made a presentation on the above topic, the highlights of which are described below:

- Purpose of Hazard and Risk Map: Damages and Death Toll in 1934 (Earthquake) and at present in case of such Earthquake comparison of results.
- Four Scenario Earthquakes: 1934 Earthquake - MS = 8.4; Mid-Nepal Earthquake - Ms = 5.7 with Seismic Intensity maps.
- Damages in the Gujarat Earthquake and Kobe Earthquake
- Liquefaction Potential, Fragility curve, Building Damage Ratio, Death Toll and Casualties Intensity for the scenario of Mid-Nepal Earthquake
- Comparison of 1934 Earthquake and Mid Nepal Earthquake
- Damage to Bridges, Water Supply and Electricity - Mid Nepal Earthquake
- Kathmandu Earthquake Risk Mitigation Tool - KERMIT
- Website - <http://www.jica-eqdm-ktm.org.np>
- Proposal for Earthquake Disaster Assessment
- How to Evaluate Priority, Reality in short, middle and long term
- Recommended Projects in terms of Term, Priority, reality

4.2 Proposal for sustainable Development and Maintenance of Governance

Dr. Y. Egawa (Leader, JICA Study Team) made a presentation on the above theme. The highlights are described as follows:

- Establishment of Legal Foundation;

- Current Institutional Framework with heavy reliance on central Government and no clear focal point for risk management besides relief work;
- New and powerful Legal Institution involving municipalities, communities and central Government with clear delineation of responsibilities;
- Establishment of Disaster Management Council at National, Kathmandu Valley and Municipality/Ward Level;
- Proposed Management Organizations under the chairmanship of the Prime Minister;
- Cooperation between Governments and Private Sector;
- Preparation of Disaster Management Plan in terms of :
 - ☞ National Plan;
 - ☞ Central Government Plan;
 - ☞ Kathmandu Valley Plan;
 - ☞ Municipality Plan;
 - ☞ District Plan;
 - ☞ Private Plan.
- Emphasis of Earthquake Management in National 5 year plan;
- Community Resilience and Self-Reliance
- Maintenance of Governance for quick Rescue/Rehabilitation /Reconstruction;
- Establishment of Real Time Earthquake Information system;
- Initial Response;
- Assessment of Damage;
- Empowerment of the Media;
- Establishment of Emergency Communication;
- Preparation for Emergency Response;
- Institutions before, during and after Earthquake;
- Other Issues and Preparation for Recovery.

At the end of the presentation, the chairperson noted that Dr. Egawa had pointed lapses in the existing legal/Institutional Framework. He assured Dr. Egawa that HMG was intent on implementing the suggestions.

4.3 Proposal for Protection of Life and Property of the people and Strengthening of Socio-Economic System

Mr. Naresh Sthapit of the JICA Study Team presented the above topic in relation to a situation of disaster occurrence. The highlights are as follows:

- Proposals to improve Onsite Activities during Earthquake disaster in terms of Logistic Report, Search, Rescue, Shelter and Evacuation, Medical help and other functions.
- Search and Rescue, Acceptance of International Rescue, Access to Valley, Disaster Medicine, Food and Water Supply, Temporary Sheltering, management of Volunteers, Safety inspection of infrastructure and Debris Removal.
- Logistics Support – Transport, Electricity, Staging Area
- Strengthening of Socio-Economic System in terms of :
 - ☞ Building: improvement of construction, National Building Code, Training and inspection of key buildings;
 - ☞ Infrastructure: transportation facilities for improving access to and mobility inside valley, improvement of bridges;
 - ☞ Electricity, Water Supply and Sewerage, Telecommunication.
- Urban Planning: space allocation, intensive development areas, mitigation bypass routes, urban zoning.

4.4 Recommendable Projects Composed of Proposals

Mr. F. Kaneko, JICA Study Team Deputy Team Leader made a presentation on the above there as described below:

- Status of Kathmandu Valley in relation to Earthquake Disaster Management with respect to perspectives in Building code and Building and also Japan.
- Estimated Damage likely to be caused by future Earthquakes.
- Recommendation Categories based on the Study:
 - ☞ Sustainable Mechanism;
 - ☞ Maintenance of Governance;
 - ☞ Protection of Life and Property
 - ☞ Strengthening of Socio-Economic System;
 - ☞ Earthquake Disaster Assessment.
- Evaluation of Recommendation for the Implementation of Proposals in terms of duration A short term (1-5 years), B middle term (5-10 years), long term (710 years); Priority A: high, B: moderate, C: Low; Feasibility (Reality) A: high, B: moderate, C: Low; Cost Estimation
- Implementation Plan for each Recommendation Category.
- Four selected Proposals by the Study Team out of 90 recommendations of which 30 have been considered important:
 - ☞ Early Earthquake Information System
 - ☞ Municipality Disaster Management Institution and Exercise: Emergency Operation Centre Plan, KMC-Disaster Management Plan, etc.
- Building Improvement
- Establishment of Comprehensive Database for Earthquake Disaster Mitigation.

In conclusion, Proposals were selected by the Team, but implementation should be done for the local, of the local, by the local. For that context, project prioritizations should be done from the local point of view by the local.

4.5 Chairperson's Remarks

At the end of the Study Results presentation session, the chairperson Mr. K. Poudel thanked Mr. Kaneko for the comprehensive presentation, where 90 recommendations had been condensed to the 4 most important ones. He expressed his sincere appreciation and thanks to JICA Resident Representative Mr. Mitoma for providing the resources for this excellently chosen Study Project and also sparing the time to witness the presentations. Mr. Poudel thanked Dr. Egawa for his excellent work and presentation that provided a vivid picture of what is to be done in the coming days. He also thanked Mr. Toyoma, who had worked rigorously and collaborated many of the GIS and Hey and maps of disaster scenarios. The Chairperson also thanked Mr. Sthapit who had elaborated the possible consequences of the impacts of Earthquake on basic amenities and how to minimize the impacts. Mr. Poudel appreciated the conclusion drawn by Mr. Kaneko that without the synchronization of the 4 key Areas as recommended, we cannot be effective. He assured that effort would be made to incorporate many of the possible disaster issues by convincing the National Planning Commission (NPC) to integrate them in the coming 10th Plan.

Finally, he thanked all the presenters, donor community, experts and participants for their cooperation.

5. Discussion for next step to Earthquake Disaster Mitigation in Kathmandu Valley

The afternoon session comprising three presentations and floor discussion was chaired by Dr. M.B.P. Chhetri, Director, Department of Narcotics Control and Disaster Management, Ministry of Home Affairs.

5.1 Present Situation on Preparation of Tenth National Plan in relation to Earthquake Disaster Mitigation

Mr. U. B. Malla, Expert Member of the Steering Committee on Housing and Urban Development Committee for the Tenth National Plan, made a presentation on the above theme, the highlights of which are described here under:

Earthquake vulnerability is applicable not only to Kathmandu Valley but the whole country. Nepal's rate of urbanization exceeds 4% per annum, which is high in South Asia. Disaster Management is now a concern that was not given priority in previous plans, apart from the 9th plan that has shown some kind of consideration. The National Action Plan, a consequence of the Yokohama and Habitat II conference in Istanbul (1996) has covered 4 areas. Disaster Management in the 10th plan is in the course of preparation but may not be given Sectoral Priority. It could come under the programs and agenda of different Ministries, so that it would be difficult to obtain a holistic picture. The Steering Committee on Housing and Urban Development has emphasized the implementation of the National Building Code (NBC). Low cost, Earthquake resistant and environmental friendly housing will be emphasized particularly for Kathmandu Valley. Sectoral plans for the Urban, Rural, Building and Housing Sectors are not finalized yet. The recently submitted Nepal National Report in New York has given prominence to disaster. It says that Nepal is a very disaster prone country in the world and also very susceptible to Earthquakes. I am hopeful that Disaster Management will be incorporated in the 10th plan. There is a need to bring all the studies on Disaster Management into one framework and to prepare a National Disaster Management Plan. We are planning to bring in new Building By-Laws and land use regulations.

I would like to highlight Article 12.4 and Article 12.6 of the Nepal National Report for Istanbul. Article 12.6 states: "There is a need for Nepal to tackle such momentous issues though a National Disaster Management Plan which attempts to provide an integrated policy and strategy framework for isolated efforts in the area of disaster management. Disaster prone settlements have to be identified, mitigation measures worked out and remedial works carried out with the participation at all levels – local, national, regional and international level".

If we could achieve some minimal success in the direction pointed out, we could go a long way to improve the present situation.

5.2 Disaster Management System from Central to the Local Bodies

Mr. Lekh Nath Pokharel, Section Officer, Department of Narcotics Control and Disaster Management, Ministry of Home Affairs, made a presentation on the above theme, the highlights of which are summarized below:

- Disaster identified in Nepal in 2001: 478 people dead, 116 injured and 18524 families affected.
- Establishment of the DoNC&Disaster Management: objective, main function.
- Disaster Regulation is yet to be formulated.
- Organizational Structure of Disaster Management in Nepal: different Disaster Relief Committees and their levels, Sub-Committees.
- Regional Offices have just been setup: so, Regional Committees are expected to be in place shortly.
- Function and Duties of Disaster Relief Committees at central, Regional and Local levels.
- Recommendations by MOHA to NPC for inclusion in the 10th National Plan.
- National challenges at Government and people's level: Lack of clearly defined roles and job description.

- Measures to remedy challenges: Regulation must be made soon. Disaster Information Centre must be established.
- Conclusion: Disaster Management is a huge task for a developing country like Nepal but moving ahead gradually.

At the end of the presentation, the chairperson Dr. Chhetri added that there is a committee under the chairmanship of the Vice-Chairman of NPC for Rehabilitation of Infrastructure, of which the Home Secretary is Member Secretary. Last year NRs. 11.5 million was allocated for rehabilitation and work is on going in various districts.

5.3 What should be done for the Earthquake Disaster Management in Local Bodies?

Mr. Surya Regmi, Joint Secretary, Ministry of Local Development presented his case as follows:

Decentralization is a crucial part of democracy and good governance. Nepal has emphasized decentralization through the Local Self-Governance Act and Regulation that empowers and provides opportunities and responsibilities to local bodies. There are 3 levels of local bodies as per the Act: District Development Committee (DDC), Village Development Committee (VDC) and Ward Level to manage natural disaster like Earthquakes and carry out prevention, rescue and relief work and supportive activities in times of calamity. The Local Development Officer (LDO) functions as Member Secretary for Disaster Management at district level. KMC has established a Disaster Management Section. Lastly, the concluding quote by Mr. F.Kaneko is worth remembering: "Implementation of the local by the local". Local bodies are the representative of the locals.

5.4 Discussion Session

5.4.1.Mr. Madhav Raj Pandey, Chief of Seismological Centre, Disaster Management Committee

For Kathmandu Valley, the biggest problem is the evaluation of local geological problems and how different type of houses of different stories will be affected during Earthquake. We don't know enough about spectral Amplification. We need to gather geo-physical and seismological data in a cost effective manner. The Department of Mines and Geology (Disaster Management Committee) needs broad band seismological station for local amplification assessment. Then only the Disaster Management Committee would be able to provide local spectral amplification maps, perhaps in 4 or 5 years time.

I request the donors to assist in the following provisions for Disaster Management Committee:

Seven 3-C Broadland Portable Seismological Stations which will allow to work out Shear wave velocity structure in Kathmandu Valley and also to work out spectral amplification factor using passive (active if possible) sources. These stations can also be used to map aftershocks incase of moderate to big earthquakes in the country. Then a spectral amplification map could be produced which could be mixed with other parameters for micro zoning.

5.4.2.Mr. Man Bahadur Thapa, UNDP Project Coordinator

NBC is a key instrument to safeguard our lives. The code has been pending for the last 7 years. Many have highlighted that awareness raising is an important aspect. UNDP has been conducting training programs to government personnel in Disaster Management.

Last year 50 persons at central level and more than 100 persons were trained at district level. This will continue in collaboration with other actors. UNDP is committed to support Disaster Management efforts.

5.4.3.Ms. Shanti Malla, Dept. of Urban Development and Building Construction (DUDBC)

Why is Kathmandu Valley Town Development Committee allowing houses to be built haphazardly with narrow Lane ? Municipality should also prohibit buildings with no road access. This matter should be taken seriously.

5.4.4.Mr. Rajendra Shrestha, Nepal Geological Society (NGS)

NGS is a professional organization that has been working for over a decade in Disaster Management in collaboration with other actors and is committed to doing so all over Nepal in future as well.

5.4.5.Mr. Ram Bahadur Shrestha, Society of Architecture and Civil Engineering Firms (SCAEF)

Preparation of programs is not difficult, but implementation is. The whole NBC (Building Code) is not useful to the common man and also inaccessible. So Rule of thumb should be printed and made accessible to public at ward and user's level. Strong implementation is needed for buildings as well as the provision of emergency have in roads.

5.4.6.Mr. Eric , WHO, Kathmandu

There are a lot of isolated efforts going on in the country. In the Ministry of Health, the First Track of Health Emergency Plan is on going. Other initiations, like assessment of 15 hospitals in the Valley have been taken. Last Sunday, we had Disaster Management drill supported by NSET-Nepal and Municipalities. A lot is going on in the Health Ministry, which I hope, will find mention in the Final Report. All UN agencies have drafted together a plan to assist HMG in time of disaster.

Other international agencies like USAID and ADPC have been training many people which is a good picture of the current situation in Nepal, which needs to be elaborated a bit more.

5.4.7.Mr. William Berger, Foreign Disaster Assistance of USAID

Disaster Management Committee comes up in every Disaster Management issue. In 1993 response to disasters was effective. It is difficult for Nepal to maintain equipment. In Bhuj, batteries were dead or useless. The hardware side should be looked into, because HMG is resource constrained. Any project should set aside funds for maintenance of equipment. Nepal has constrained budget to maintain database also. It needs equipment for Disaster Management. There have been many trainings provided by the international community. HMG should maintain database by using there trained people. The problem lies with bureaucratic and political changes. Trainer's program would be appropriate for local level training. Any plan for Response cannot be the traditional ones based on bureaucratic titles. Like in Bhuj, the local government itself would be badly effected by disaster. A lot of key personnel may die. So, there needs to be backup at that level as well. The US government is providing training though ADPC like Instructor, canine training course, medical personnel training etc.

5.4.8. Mr. S.B. Pradhanang, NSET-Nepal

I personally know the amount of commitment made here. I request JICA, please let not this excellent report gather dust. Local bodies need support. Here professional societies can help greatly. Government, Officials, please call upon us for whatever assistance we can offer.

5.4.9. Mr. S.B. Sangachhe, Kathmandu Valley Town Development Committee

Public space is being encroached and decreasing. Population is increasing. Inventory of Guthi land and open spaces is essential in disaster. I suggest this inventorization. Let JICA Team recommend this strongly.

5.4.10. Mr. Krishna Manandhar, Nepal Engineers' Association (NEA)

The role of NEA has been identified in the report in various aspects. Implementation of NBC and socio-economic strengthening is high priority. NEA would like to act together and has full support for the program.

5.4.11. Mr. V.L. Shrestha

There are hardly any vacant open spaces to take refuge in Earthquake and save life. When a frame structure collapses from ground, not a single floor would remain. We should look into why Kathmandu City has grown so dense. It is because families cannot afford to go outside. We should provided affordable housing to such families. Many causes can be researched in order to seek a solution to this state of affairs.

5.4.12. Mr. Chet Nath Pandey, Executive Member NEA

I worked on Earthquake Rehabilitation project for 5 years. I support the recommendation made by Mr. KANEKO that implementation should be done by the locals for the locals. There should be programs for the local people living near river banks and buildings higher than 5 storeys. I request JICA Study Team to recommend implementation of programs for the poor and vulnerable people.

5.4.13. Mr. Badan, SCAEF

Damage to buildings is the fundamental cause of deaths. Responsibility of Earthquake safety lies in the local people. SCAEF is of the view that we should look after the safety of life and property. Many Ministries have their programs, but we have no idea. Our mass constructions are death traps. JICA Report should consider these alarming points. Nothing has been done on NBC implementation since UNDP Study recommended it 8 years ago.

Let us make the commitment to work together to ensure the safety of structures, not indulge in plans only. SCAEF is represented have with 5 person strong delegation. National Bureau of Standards (NBS) has listened to our request for a National Forum for Earthquake safety. NSET-Nepal, Department of Housing and IOE are members. We should directly go to where houses are constructed and disseminate to builders/owners that they should not waste in a few seconds the earnings a life time. The NBC is nothing but a golden thumb rule. Just push it with 10% force of gravity. Even in the absence of NBC, we should pursue sound construction.

6. Concluding Remarks

6.1 Prof. Hayashi, Leader of JICA Advisory Committee and Professor of Kyoto University

I am pleased to witness this active audience today. Important people know about the existence of this report by JICA Study Team. I congratulate JICA Study Team for compiling this comprehensive and voluminous report.

I became advisor with one intention to come to Kathmandu a famous city, a kind of MECCA for new ways of Disaster Management. New initiatives were taken by JICA, UNDP in 1993. I became interested in activities here since then.

I asked the Study Team of the Kathmandu Study 1993 completed under IDNDR Frame Work (RADIUS Project). There is now no concrete successor to RADIUS Project. Are there any possibilities of the Study Team to make RADIUS Project more institutionalized to follow as a model?

The Study Team wanted to provide a tool to promote Disaster Management further. Today is 7th anniversary day of the Kobe Earthquake. Since then many activities are going on in reviewing Disaster Management projects in Japan. In 2000 & 2001 Western Japan had minor Earthquakes. No body really learned from the Kobe lesson. It was disappointing. So much effort was put at improving Disaster Management capabilities. They, however, reinvented the wheel from a scratch.

To this world famous city, my advice is "Read the voluminous report". I strongly recommend all to read it in groups and start talking about it. You may probably come up with better ideas. This is the way to learn. Never repeat the same mistake as we did.

6.2 Prof. B.N. Upreti, Head of Department; Tri-Chandra Campus

Congratulations to the JICA Study Team and Dr. Egawa for the excellent work. The seminar also has different sub-seminar. It is nice you have taken up different themes and discussed them separately. A lot of discussion has been held on the Building Code. Experiences were shared yesterday also.

When I go back a few years, I feel that we have come a long way when we talk of Earthquake as Earth Scientists. At that time no body listened to us. Gradually, I give credit to groups like NSET who brought this issue to the government and the public. Now many people listen. After the 1988 Earthquake, UNDP came forward and initiated a study. After the report in 1993, the NBC came out.

The issue still did not attract people seriously enough. Now people accept and show interest. As a result of this study, now the issue will not go unnoticed. Now people are for safer buildings. It is nice that we have come a long way.

In the area of Earthquake, the role of Department of Mines and Geology (DMG) is important. We had only 3 stations sometime back, now we have 24 stations. It has produced a good database. We have over 2000 small Earthquakes every year in Nepal. This painstaking job is being handled by by DMG. We know now where we are at least with respect Earthquake. The importance of this study should be continued.

We should move on with research also continuously. There is a 600 m. thick sediment layer in Kathmandu Valley, somewhere it is only 20m. They do not behave in the same way. Kathmandu sediments - we don't know very well.

In future, if there is any follow-up program by JICA it would be desirable to go side by side.

After Kobe, every part of Japan is being mapped in detail - doing very extensive research. Side by side research is so important. For any Earthquake Study, unless we know the history of faults, how they are moving we cannot move further. This kind of research has barely started in Nepal. Such research and mitigation report should go side by side.

NSET and DMG role is important, Role of SCAEF should be more important in future: Even in the absence of NBC, why not go ahead and make Kathmandu Valley safer.

It is nice to see the role of KMC in having a disaster management section. NSET has made the municipalities aware. Municipalities are not doing sufficient monitoring. Some tilted buildings do not need Earthquake for them to collapse. 10° or 15° tilt buildings existing Kathmandu Valley. Some one has to take concern. They should be demolished.

Similarly, not only Kathmandu but Thimi and Bhaktapur are also very vulnerable with so many cracked buildings. The people can not do anything. Therefore, may be the government should give some soft loans.

Regarding new buildings, what to do if 50% of them are going to collapse? Regarding awareness and role of Engineering Colleges, students must be given proper courses/training. They must have basic knowledge. Institutes should provide the basic knowledge on Earthquake.

The problem of roads in Kathmandu is acute. In Gujarat 350 School Children died on the road due to building collapse. We have poor road planning. This matter should have been thought of before, Most important is the widening and expansion of roads. Access to fire brigade is also crucial, as Earthquake can cause many fires.

The issue of future Earthquake mitigation is also very important.

The government should go ahead with implementing the JICA Study Recommendation as soon as possible.

6.3 Dr. Egawa, JICA Study Team Leaders

We started the study last February. This has been the hardest year for Nepal. I am convinced that mitigation has been progressing even in this hard year. The important thing is how to maintain this progression. Earthquake is the mutual enemy of everybody. Sometimes mutual enemy makes good effect. Mr. Malla said that NPC is making effort to incorporate Disaster Management. I do hope that the 5 year plan will make a good chapter on it which will unite people to cooperate on the issue.

7. Brief Remarks by Chairperson

This Report is not the end, just a beginning. It could also be used as Reference Material. Implementation is more important. We are thinking of implementation. Report is in draft form. You are welcome to make your comments and suggestions to be included in the final report. I feel the outcome of this project with help sensitize the people for Earthquake disaster mitigation.

The seriousness and HMG and MOHA even though not being professional, has made us embark on such a study and research project. We have our limitations.

As Disaster Management is multi disciplinary, it cannot be done by a single agency. Tomorrow we have the Media sub-seminar. I congratulate the Team Leader and other study Team members, all organizations, NGOs etc. who have helped prepare the report.

I also congratulate Dr. Egawa on his excellence performance.

The seminar was then brought to a close by the Moderator.

List of Participants (Main Seminar)
Seminar on Earthquake Disaster Mitigation in Kathmandu Valley
On 16 Jan. 2002 to 18 Jan. 2002

S. No.	Affiliation	Position	Name
1	Dept. N. C. & Disaster Management	Director General	Mr. K. Poudel
2	Dept. N. C. & Disaster Management	Director	Dr. M. B. Chhetri
3	Dept. N. C. & Disaster Management	Section Officer	Mr. L. N. Pokharel
4	Dept. N. C. & Disaster Management	Assistant	Mr. Damodar Dhakal
5	Dept. N. C. & Disaster Management	Assistant	Mr. Bishnu Bhakta Sigdel
6	Dept. N. C. & Disaster Management		Mr. Manjul Maske
7	Dept. N. C. & Disaster Management		Ms. Deepa Neupane
8	Bhaktapur District	Chief District Officer	Mr. P. N. Sharma
9	Dept. of Urban Planning & Building Construction	1st Class (Technical) Officer	Mr. Padama Lal Shrestha
10	Ministry of Education & Sports, Department of Education (Sano Thimi)	Director	Mr. Lal Karna
11	Ministry of Local Development		Mr. Surya Regmi
12	Dept. of Urban Planning & Building Construction	Director	Mr. Shashi Bahadur Thapa
13	Dept. of Urban Planning & Building Construction	Deputy Director General	Ms. Shanit Malla
14	Dept. of Urban Planning & Building Construction	Senior Div. Engineer	Mr. Ram Bahadur Shrestha
15	Dept. of Urban Planning & Building Construction	Senior Div. Engineer	Mr. Mani Ratna Tuladhar
16	Dept. of Urban Planning & Building Construction	Engineer	Mr. Amrit Man Tuladhar
17	Dept. of Urban Planning & Building Construction	Civil Engineer	Mr. Surendra L. Pandey
18	Dept. of Urban Planning & Building Construction	JICA Expert	Mr. Naokazu Miyazaki
19	Kathmandu Valley Town Development Committee	Acting Member Secretary	Mr. Surya Bhakta Sangachhe
20	Department of Hydrology &	Director	Mr. Adarsha P. Pokharel/ Mr Jagat Bhusal
21	Department of Mines & Geology	Seismologist	Mr. Sudhir Rajoure
22	Department of Mines & Geology	Geologist	Mr. Mr. Gyani Raja Chitrakar
23	Department of Mines & Geology	Deputy Director General	Mr. Pranab Lal Shrestha
24	Department of Mines & Geology	Under Secretary	Mr. Ram Sundar Hada
25	Department of Mines & Geology	Senior Geologist	Mr. Madhab Raj Pandey
26	Department of Mines & Geology	Senior Divisional Geologist	Mr. BharatM. Jnawali
27	Department of Mines & Geology	Geologist	Mr. S. N. Sapkota
28	Police Headquarter	D.I.G. (Disaster Section)	Mr. S. Parajuli
29	NTC: Regional Telephone Office	Regional Manager	Mr. Sugat R. Kansakar
30	Radio Nepal	Director	Mr. Sailendra Raj Sharma/ Mr. P. Pyakurel
31	Nepal Electricity Authority	Corporate Planning Dept.	Mr. Prem Kumar Mali
32	Kathmandu Municipality	Social Welfare Dept. Head	Ms. H. D. Ranjitkar Yosha
33	Bhaktapur Municipality	Urban Development/Planning	Mr. Ram Gobinda Shrestha
34	Bhaktapur Hospital	Medical Officer	Dr. Indra Prasad Prajapati
35	Lalitpur Municipality	Urban Development/Planning	Mr. Rudra Gautam
36	Lalitpur Municipality	Community Dev. Section Officer	Ms. Laxmi Rajbhandari
37	Nepal Geological Society	President	Mr. Tatel
38	NSET	President	Mr. Shiva B. Pradhanang

List of Participants (Main Seminar)
Seminar on Earthquake Disaster Mitigation in Kathmandu Valley
On 16 Jan. 2002 to 18 Jan. 2002

S. No.	Affiliation	Position	Name
39	NSET	Project Manager	Mr. Mahesh Nakarmi
40	DWIDP (Dept. of Water Induced Disaster Prevention)	Chief Advisor	Mr. Tyosuke Tsunaki
41	DWIDP (Dept. of Water Induced Disaster Prevention)	Senior Div. Engineer	Mr. Damodar Bhattarai
42	UNDP	National Programme Manager	Mr. Man B. Thapa
43	USAID (United States Agency for International Development)	OFDA Regional Advisor for South Asia	Mr. William S. Berger
44	USAID (United States Agency for International Development)	OFDA	Ms. Linda
45	UNICEF/RPSA	Emergency Planning Officer	Mr. Damodar Adhikari
46	Japan Embassy	Second Secretary	Mr. Yoshiyuki Toyoguchi
47	Japan Embassy	Program Manager	Mr. Kailash M. Pradhan
48	JICA	Res. Rep.	Mr. Eitaro Mitoma
49	JICA		Mr. Katsuji Miyata
50	JICA	Programme Officer	Mr. Sourab Bickram Rana
51	Tribhuvan University	Lecturer, Dept. Architecture	Ms. Sudha Shrestha
52	Society of Consulting Architectural & Engineering Firms, Nepal	General Secretary	Mr. Rajesh Thapa
53	Society of Consulting Architectural & Engineering Firms, Nepal	Member	Mr. Keshav Amatya
54	Society of Consulting Architectural & Engineering Firms, Nepal	Member	Mr. Badan Lal
55	Society of Consulting Architectural & Engineering Firms, Nepal	Member	Mr. S. B. Joshi/Mr. M. B. Khadka
56	Society of Consulting Architectural & Engineering Firms, Nepal	Member	Mr. Samanta S. R. Bajracharya
57	Society of Consulting Architectural & Engineering Firms, Nepal	Member	Mr. Ram B. Shrestha
58	Society of Consulting Architectural & Engineering Firms, Nepal	Member	Mr. Umesh Sakya
59	Society of Consulting Architectural & Engineering Firms, Nepal	Member	Mr. Ajaya Thakur
60	Nepal Engineer's Association		Mr. K. C. Manandhar
61	Nepal Engineer's Association	Deputy D. G. of Dept. of Building	Mr. Chetnath Pandey
62	Nepal Engineer's Association	Member of NEA	Mr. Nahendra Pradhan
63	Nepal Engineer's Association	Member of NEA	Mr. Dilip K. Jha
64	Nag Bahal Ward 16 Representative	Representative	Mr. Dilip Joshi
65	WHO	Technical Officer	Mr. Erik Kjaergaard
66	Department of Drug Administration	Pharmacist Officer	Mr. G. B. Ghaju
67	Department of Water Supply Corporation	Deputy Manager, Mahankal Chaur	Mr. Hari Prasad Dhakal
68	Department of Water Supply Corporation		Mr. B. N. Bhattarai
69	CARE (Cooperation for American Relief Everywhere)	Director	Mr. Robin Needhan
70	LWS (Lutheran World Service)	Disaster Section	Mr. Gopal Dahal
71	Panipokhari	Disaster Related NGO	Mr. S. Sharma
72	Human Resource Develop Center	Executive Director	Mr. Premal Jha
73	KMC Ward No. 20		Mr. Rajesh Baniya
74	SLTD Center		Mr. B. L. Shrestha
75	Kathmandu Post	Reporter	Mr. Rajendra Manandhar

List of Participants (Main Seminar)
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S. No.	Affiliation	Position	Name
76	Kantipur	Reporter	Mr. Manish Gautam
77	Artha Dut	Reporter	Mr. Dewanand Jha
78	Rajdhani Daily	Reporter	Mr. Bimal Gautam
79	The Himalayan Times	Reporter	Ms. Sangrila Joshi
80	Punarjagaran	Reporter	Mr. D. B. Dhanushe
81	Muluk	Reporter	Mr. Madhav Rana
82	Times	Reporter	Mr. Shankar Shah
83	Radio Annapurna	Reporter	Mr. Basanta Thapa
84	Kathmandu Post	Reporter	Mr. Rajeen Newa
85	Himalaya Times	Reporter	Mr. Shankar Dhungana
86	National Habitat C. Nepal	Member (Advisor)	Mr. Umesh B. Malla

III-4 The Second Seminar-2 (Building)

The Study on Earthquake Disaster Mitigation in Kathmandu Valley

Building Sub-Seminar

Building Improvement in Kathmandu Valley

Organized by Ministry of Home Affairs, Department of Narcotics Control & Disaster Management

and

JICA Study Team

1. Purpose

To promote strengthening buildings in Kathmandu Valley against Future earthquakes

2. Date and venue

January 16, (Wednesday) 2002, 9:30-12:00

Conference Hall Himalaya Hotel, Patan

3. Participants

JICA Study Team, MOHA, MPPW, Municipalities, IOE, SCAEF, Nepal Engineers' Association, NGOs etc.

4. Program

Chaired by Mr. S.B.Thapa (Director General of DUPBC/MPPW)

9:30-9:40

Opening Address: Dr. M.B.P.Chhetri (Director of DNCDM/MOHA)

A. Study Result and Proposal

9:40-9:55

Status and Building Damage estimated caused by the future earthquakes

Mr. Kaneko (JICA Study Team)

9:55-10:20

Building Structure and Comments on the Plan of Building Codes

Mr. Kagawa (JICA Study Team)

B. Present Status and Future Plan

10:20-10:30

(Subject related to what the necessity for building improvement is.)

Prof. J. R.Pokhrel (Dean of IOE, Tribhuvan Univ.)

10:30-10:50

Status and Plan for Building Improvement in Kathmandu Valley and building code implementation

Mr. A.M.Tuladhar

(DUPBC/MPPW)

10:50-11:15

Inspections and retrofit of buildings in Kathmandu Valley (10 min.)

Mr. A.M.Dixit (NSET-Nepal)

Effective planning and prudent construction make desired improvement (15 min.)

Mr. R.Guragain (NSET-Nepal)

C. Discussion

11:15-12:00

Several themes on how to manage and implement actions for each level

Panel members: 1) Prof. J.R.Pokhrel (Dean of IOE, Tribhuvan Univ.), 2) Mr. N. G. Halwai (President of Nepal Engineers' Association), 3) Mr. R.Thapa (General Secretary of SCAEF, 4) Mr. D.Dongol (KMC, Dep. of Urban Development), 5) Mr. M.Rajbhandari (Director of M.R.Associtate)

Moderator: Ms. Shanti Malla (Deputy Director of DUPBC/MPPW)

The Study on Earthquake Disaster Mitigation in Kathmandu Valley

**Proceedings of
BUILDING SUB- SEMINAR
- Building Improvement in Kathmandu Valley -**

**Organized by
Department of Narcotics Control and Disaster Management
Ministry of Home Affairs
&
JICA Study Team**

**January 16, 2002
Himalaya Hotel, Lalitpur**

BUILDING SUB-SEMINAR

1. Background

His Majesty's Government of Nepal, having been concerned about earthquake disaster management in Kathmandu Valley, requested the Government of Japan to implement the Study on Earthquake Disaster Mitigation in Kathmandu Valley. As a result, the Government of Japan and Japan International Cooperation Agency (JICA), the official implementing agency for Official Technical Cooperation, dispatched a preliminary survey team to Kathmandu on August 2000 and exchanged Scope of Work with HMG. Nippon Koei Co. Ltd. and OYO Corporation entered into a contract with JICA and conducted this study from January 2001 to February 2002.

Upon completion of the Draft Report of the study, the Building Sub-seminar with the theme "Building Improvement in Kathmandu Valley" was held in the Conference Hall, Himalaya Hotel, Kupondole, Lalitpur in the morning of January 16 (Wednesday) 2002. The purpose of the Seminar was to Promote strengthening of buildings in Kathmandu Valley against future earthquakes. The participants of the Seminar comprised the JICA Study Team, Ministry of Home Affairs (MOHA), Ministry of Physical Planning and Works (MPPW), Department of Water Induced Disaster Prevention, other HMG/N organizations, Municipalities, Institute of Engineering (IOE), Society of Consulting Architectural and Engineering Firms (SCAEF), Nepal Engineers' Association (NEA), academia, NGOs, INGOs and so on. The sub-seminar was organized by the Department of Narcotics Control and Disaster Management, MOHA and the JICA Study Team.

The agenda, list of Participants and the presentations made by the participants, as made available, are annexed. The proceedings of the sub-seminar are briefly described in the following sections.

2. Opening Address

At the very outset, the Opening Address was delivered by Dr. Meen Bahadur Paudel Chhetri, Director, Department of Narcotics Control and Disaster Management as follows:

Mr. Chairman, Distinguished participants, Ladies & Gentlemen,

As you all are aware, HMG/N initiated and implemented this SEDMKV project 1 year ago with the 2 main objectives namely; formulating a plan for the Earthquake Disaster Mitigation and transferring Japanese technology to Nepalese Counterpart personnel. Now I am happy to note that both objectives have been fulfilled and we have the draft final report of the project which will be distributed here tomorrow during the main Seminar. The draft final report is an outcome of the hard work of our Japanese counterparts i.e. JICA Study Team, Nepalese counterparts from various Ministries, Departments and offices including some corporations. Similarly, some NGOs, INGOs and the general public also contributed significantly in course of the preparation of the Draft Report without which it would not have materialized.

As we will observe in the following sessions that the Study Team has prepared hazard maps, identified vulnerable areas of the Kathmandu Valley and analysed the geophysical condition and the lifelines of the valley. This all proves/shows the importance and significance of the project.

While talking about the building and building construction practices in the Kathmandu Valley, I believe that we all are aware of the Vulnerability of the Valley. It is now high time to think and act very seriously towards this end. The status of the buildings of Kathmandu Valley, what should be done in the future and how we can be safe from disasters will be presented later here by the experts. Therefore, I will not go into detail in this aspect.

At this point of time, it is also a very pertinent for us to think about the future of Kathmandu Valley especially with the view of a Capital city. There are some very important elements which are to be taken into consideration like: limited space, geophysical condition of the valley, vulnerable and difficult entry and exit point of the Valley and above all its proximity to earthquake disaster. Keeping in view all this is not it time for us to think towards developing our new future capital city somewhere else and develop Kathmandu Valley as a historical and cultural city? This is just a thought; of course, it will take years and needs enormous resources to do so. However, we have to make up our mind and think towards this inevitable fact.

Needless to say, the concerted efforts of the Government, professional societies, academia and a conscious society are indispensable to improve the present pathetic and chaotic situation of buildings in relation to earthquake resistance in the Valley. If the message of this sub-seminar could penetrate the present wall of opacity that surrounds our society and arouse our authorities, planners and the public from their blissful amnesia to the fact that a devastating Earthquake could strike anytime and that some actions need to be urgently taken to improve our buildings in the Valley, I believe that our gathering here would have made a substantive contribution.

Now that we have the Draft Report and results of the study, our job is not yet finished; rather, it has just begun. We have to implement the findings and recommendations of the study effectively, efficiently and timely. Our effort will be useless if the Report will be limited to paper only.

Taking this opportunity, on behalf of the Department of Narcotics Control and Disaster Management, Ministry of Home Affairs, I would like to thank the JICA Study Team Members, Nepalese Counterparts and all other governmental as well as non governmental agencies and individuals for their kind cooperation and hard work in materializing this project. Above all I would like to express my kind gratitude to the Government of Japan for providing us assistance through JICA for this project.

In the end, I would like to thank you all for being present here to make contribution in this Building Sub-seminar. I hope we will come up with meaningful outcome that will help our government to implement the findings of the Final Report of this project.

I wish for the grand success of this seminar. Thank you all for your kind attention.

3. First Session

The First Session of the Building Sub-seminar was chaired by Mr. S.B. Thapa, Director General, Department of Urban Planning and Building Construction (DUPBC), MPPW. The presentations made by the contributors are described below:

3.1. Building Damage Estimation Caused by Future Earthquakes

The first presentation was made by Mr. Fumio KANEKO, Deputy Team Leader of the JICA Study Team on Building Damage Estimation by the Future Earthquakes. Mr. Kaneko said that 90% of the buildings sampled during the study were non-engineered and that the total number of buildings in the Valley are not known since no inventory of buildings existed. Therefore a building census should be conducted every 5 years. He presented the scenario of a probable future Mid-Nepal Earthquake, similar to the Great Earthquake of 1934, that could affect over 50% of the buildings in the Valley. Mr. Kaneko dealt with the following topics during his presentation:

- Relation between Deaths and Building Collapse in Earthquakes (one victim for one collapsed building).
- How to Improve Buildings and Estimate Building Damage.

- Building Status and Types in Kathmandu Valley and their distribution and vulnerability (fragility).
- Future Earthquakes in Kathmandu Valley, Seismic Intensity caused by Mid Nepal Earthquake Scenario and Estimated Damage likely to be caused by future earthquakes including comparison of building damage.
- Proposals on Inspection of Key Buildings in Kathmandu Valley and relevant training.
- Recommendations on What and How to Act.

Mr. Kaneko recommended that even small actions by each level could save lives and stressed on the need of systematic and institutional improvements with respect to codes, regulations, permit & monitoring, design, land use/urban planning, construction technique and materials, raising awareness, consciousness, registering of licensed engineers/builders, National Building Codes Implementation, improvements in design/plan and construction process through Guidelines including leadership by experts, governments, financiers with action and collaboration at all levels. He concluded by emphasizing that good intentions alone do not suffice to prevent damage by earthquake.

3.2. Building Structure and Comments on the Plan of Building Codes

The second presentation on the above topic was made by Mr. Hideo KAGAWA, JICA Study Team. Mr. KAGAWA dealt with the following topics:

3.2.1. Building Improvement in Kathmandu Valley

- Establishment of Building Construction System for Owners, Builders, Governmental Offices, Engineers, Construction Companies.
- Improvement of Structural Fragility
- Implementation of the Draft of National Building code, NBC: 1994 as soon as possible.
- Retrofitting or Re-construction for Existing Buildings.

3.2.2. Implementation of NBC: 1994

3.2.3. Comments on the Draft of NBC: 1994

- Re-evaluation of the structural performance factor "K" (NBD/05)
- Revision of size for plinth beams, columns and reinforcement (NBC 2018205).
- Seismic Design based on NBC 105:1994

Mr. KAGAWA proposed a re-evaluation of the structural performance factor "K" and bigger size of column (1.3 times) and plinth beam to be bigger than the column. He also recommended that the ground floor wall should be provided with more than 1/3 thickness of wall of upper floor and adjustment of the anchorage length with the covert method based on re-education and training.

3.3 Safety of Building Structure

The third presentation on the above topic was made by Dr. Hideo FUJITANI, JICA Advisory Committee. He began by saying that the owner, engineer and builder of a building create a new building space and, therefore, bear the responsibility. Dr. Fujitani also dealt with the following:

- Roles of Building Structure to protect human life, maintain functions and protect properties.
- Demands on Building Structure in terms of private and social demands.
- Purpose of Earthquake Resistant Design with respect to the safety of inhabitants, mitigation of urban disasters and prevention of trouble to others.

The presentation brought to a close the first session.

4. Second Session

After a break, the second session was chaired by Mr. Kishor Thapa, who welcomed all the participants and requested Prof. J.R. Pokharel, Dean, IOE, T.U. to make a presentation on Earthquake Resistant Building Constructions and Retrofitting.

4.1 Earthquake Resistant Building Construction and Retrofitting

Prof. Pokharel began by saying that the main problem in Nepal was of proper implementation, not technology. There were 3 million houses in 1992 of which 50% were temporary, 42% semi permanent and 8% permanent.

He also dealt with the types of building materials in the Terai, Hills, Mountains and Upper Mountains and recalled a remark made by a house owner of Jumla on why the house was painted red and white, "Like the shadows, man is born in a house and dies in a house". Prof. Pokharel also said that architecture is the mother of all arts. He discussed the historical architectural forms of Nepal from the Gopal Dynasty to the Rana Dynasty, Shelter policy of HMG, Building Code and Guidelines including Rule of Thumb. He emphasized that traditional timber joists used in the hills, if placed properly in a judicious manner, could make the house earthquake resistant.

Prof. Pokharel remarked that the IOE has the potential for training all levels, from engineers to parliamentarians. The mobilization of 5000 engineering students by taking the people into confidence can spread the message of judicious construction to the villages. He also advised the production of a documentary on earthquake awareness for flow of information to the masses with slogans such as "This building is not a house but a grave" including the exhibition of street shows and drama.

4.2 Status and Plan for Building Improvement in Kathmandu Valley and Building Code Implementation

Mr. Amrit Man Tuladhar, DUPBC, MPPW made a presentation on the above topic. He presented the following:

- Status of Building in Kathmandu Valley
 - Structural Type of buildings
 - vulnerability of buildings (after JICA Study)
- Plan for Building Improvement in Kathmandu Valley
 - Enforcement of NBC
 - Building Act 2055
 - Education, Training and Drills
 - Comprehensive short term, medium term, long term management plan
 - Retrofitting of existing buildings
- Building Permit
 - Structural Judging on Building Permit
 - Structural Check-Points

Mr. Tuladhar concluded with the assurance that the suggestions and recommendations given by the JICA Study Team would be fully implemented.

4.3 Inspections and Retrofit of Buildings in Kathmandu Valley

Mr. Amod Mani Dixit, Sanitary General, NSET-Nepal delivered his presentation on the above topic. The highlights of Mr. Dixit's presentation are described below:

The main sources of Earthquake risk are poorly constructed buildings. The remedy is to decrease the risk for old buildings by retrofitting and new buildings by imposing NBC. No building inventory exists in Kathmandu Valley, only partial database exists. About 1/3 – ¼ of buildings need immediate retrofitting; 15% are so hopeless, nothing can be done. There is a great vibrancy of building construction in Kathmandu Valley; therefore seismic intervention is justified. Fundamental exploration needs to be done for Reconstruction and cement mortal buildings. The main problem is how NBC can be taken to ward level. The municipalities do not have the organizational capability like trained building inspectors and mechanism of inspection after issuance of permit. Retrofitting can be done through Splint, Bandages and Stitch to improve the overall integrity of the building to act as a single unit and ensure safety from sudden collapse during Earthquake Retrofitting is

- Technically feasible
- socially acceptable
- Economically friable
- Practically easier.

The little work done by NSET-Nepal has demonstrated the viability of retrofitting more at people's level than HMG/N. Some private homes have done it, but government buildings haven't applied it yet. So far, assessing vulnerability has been based on qualitative judgment in the absence of quantitative criteria for assessing performance.

Therefore, the limitation is that – Quantitative reduction of vulnerability is still to be found! Finally, working with Japanese friends has been so educative that it enhanced our knowledge level.

4.4 Effective Planning and Prudent Construction to Make Desired Improvements

Mr. R. Guragain, Structural Engineer, NSET-Nepal made his presentation on the above topic by discussing the following:

Symmetrical buildings in plan and elevation perform then asymmetrical ones. For stability $h < 3b$. Inappropriate openings lead to more Earthquake damage. So do weak corner joints. Stitch at L-junctions and T-junctions and bands in out of plane buildings and simple improvement in construction practice can give satisfactory results. Vertical bars at corners, T-joints and openings can stand tensile stresses. For new buildings 16 media, re-bar is sufficient upto 3 stores, but retrofitting requires more reinforcement inside and outside. Separation of buildings in old densely built-up areas such as Nagabahal would be difficult; but attachment could minimize vibration. For RC buildings, code should be modified if necessary to provide larger elements and better foundation thickness. Change in our construction method is even more important. Proper anchorage lengths, splices, ties and hooks should be designed.

5 Panel Discussion

At the end of the presentation session, the chairperson invited the following panel Members to participate in the Panel Discussion.

- Prof. J.R. Pokharel (Dean, IOE, TU)
- Mr. N.G. Halwai (President, Nepal Engineers' Association)
- Mr. R. Thapa (General Secretary, SCAEF)
- Mr. Manohar Rajbhandari (Director, M.R. Association)

The Chairman invited Ms. Madan Shanti Malla (Deputy DG, DUDBC) to moderate the Discussion. The contributions made by the panelists are highlighted hereunder:

5.1 Prof. J.R. Pokharel

There are two strands to the theme of Earthquakes: Management and Implementation. Management requires Money Material and Manpower. Creativity should not be at the cost of damage and yet should not be stifled. We are overusing material in rural areas but not properly. Timber members, if used properly, can provide Earthquake resistance. Joists should not be placed flat but on-edge for more strength. Contractors practices and formwork must be changed for bigger concrete members and facilitating the bending of larger diameter re-bars. As manpower and sensitization of people are very crucial, IOE students should be mobilized and training provided at the many Engineering Institutes including production of documentary to get the message across to the common people.

5.2 Mr. N.G. Halwai

When we talk of buildings, there are 4 levels of stakeholders:

- Owners, who are mostly ignorant
- Engineers, Designers, Architects
- Masous, Labourers, Contractors, Builders
- Law Enforcement Agencies.

Wrong working practices like casting of columns from a drop of more than 2.5m should be discouraged. Municipalities lack experienced and capable manpower to scrutinize drawings and quality of workmanship. For less than 1000 sq. ft. thumb-rule design can be done, but for more than 1000 sq.ft. of building area, more checking should be done.

5.3 Mr. R. Thapa, SCAEF

Among vulnerable cities of the world, Kathmandu has the highest per capita risk from Earthquake. We are very aware of the problems, but who is accountable? We need to be more committed. We need committed inspectors. Various checklists should be followed. Municipalities should go to ward level. Awareness through social organizations like Rotary Club is important. Professional societies could work with a horizontal approach and work seriously in training people in disaster management. The recent fire due to storage of combustible material in such a narrow built up area like Bhotebahal is a deplorable situation. Authorities should look into this.

Need of the day is strengthening of buildings through retrofitting. Guidelines/checklist should be made for new buildings and also preparedness for disaster management. We need a unified approach with cross-sectoral and shared responsibilities.

5.4 Mr. M. Rajbhandari

My job is to design safe structures to protect life. We have sophisticated computer programs for new buildings and also guidelines. We need safe passage for people to escape in case of Earthquake. For existing structures, retrofitting can be done, but cost can go up to 30% depending on sophistication of the building. Technology is not new, even old temples have been retrofitted using both and anchoring steel plates.

5.5 Ms. M.S. Malla, Moderator

Education, simple technologies can bring important changes. People are not easily convinced. It is difficult to control builders. We should implement building code. Engineers should guide people and builders for quality control. Soaking of bricks and cursing concrete is largely ignored, Vertical reinforcement, tying in at corners and quality control can effect

improvement. New settlements should have access to fire fighting. Municipalities should look into these matters.

After the Panel Discussion, Mr. Bibhuti Man Singh's query on why N-Set does not take the services of SCAEF was answered by Mr. S.B. Pradhanang saying that we are in the learning process in activities like retrofitting so that self-conviction about the practicality of such a step is at first required to ensure feasibility. He said we should go together with professional societies through horizontal networking as the task and the learning process is long and no matter how well buildings are designed intervention at municipal and village level is most essential.

Another speaker Mr. Kadaria said that the Action Plan should be implemented and that in Kathmandu there is more Earthquake risk even outside of municipality in the VDCs with mud houses and flat roofs and that the message should also go there. Mr. Badar Lal Nyancho of Multi-Disciplinary Consultants remarked that NSet-Nepal has already prepared an Action Plan; so, why should it be repeated by DUDBC? He said that the responsibility for safety and looking after Earthquake must be clearly delineated to avoid confusion.

6 Conclusion

The Chairperson thanked the Moderator and the Panelists. He emphasized the role of DUDBC as the lead agency in terms of regulating the building sector in matters of policy. He stressed the need to inform, enable and empower the common people and the private sector in designing, constructing and retrofitting of buildings for mitigation of Earthquake disasters. He concluded by remarking that the big problem is to translate awareness into action with stakeholders. Finally, he thanked the organizers and JICA Study Team for their excellent work.

List of Participants (Building Seminar)
Seminar on Earthquake Disaster Mitigation in Kathmandu Valley
On 16 Jan. 2002 to 18 Jan. 2002

S. No.	Affiliation	Position	Name
1	Dept. N. C. & Disaster Management	Director	Dr. M. B. Chhetri
2	Dept. N. C. & Disaster Management	Section Officer	Mr. L. N. Pokharel
3	Dept. of Urban Planning & Building Construction	Director General	Mr. Shashi Bahadur Thapa
4	Dept. of Urban Planning & Building Construction	Deputy Director General	Mr. Purna P. Kadariya
5	Dept. of Urban Planning & Building Construction	Deputy Director General	Ms. Shanti Malla
6	Dept. of Urban Planning & Building Construction	Superintendent Engineer	Mr. Kishor Thapa
7	Dept. of Urban Planning & Building Construction	Civil Engineer	Mr. Surendra L. Pandey
8	Dept. of Urban Planning & Building Construction	Engineer	Mr. Amrit Man Tuladhar
9	Dept. of Urban Planning & Building Construction	Senior Architect	Mr. Pursotam L. Pandey
10	Dept. of Urban Planning & Building Construction	JICA Expert	Mr. Naokazu Miyazaki
11	Dept. of Urban Planning & Building Construction	1st Class (Technical) Officer	Mr. Padam Lal Shrestha
12	M. R. Associate	Director	Mr. M. Rajbhandari
13	Bhaktapur Municipality	Urban Development/Planning	Mr. Ram G. Shrestha
14	Lalitpur Municipality	Urban Development/Planning	Mr. Rudra Gautam
15	Kathmandu Metropolitan City		Mr. Surendra
16	Kritipur Municipality	Urban Development/Planning	Ms. Nicde Gerfen
17	Bhaktapur Hospital	Medical Officer	Dr. Indra Prasad Prajapati
18	NSET	President	Mr. Shiva B. Pradhanang
19	NSET	General Secretary	Mr. Amod Mani Dixit
20	NSET	Project Manager	Mr. Mahesh Nakarmi
21	NSET	Technical Officer	Mr. Ramesh Guragain
22	GHI	Int'l Guest for ESD	Ms. Bridgit Jorgensen
23	UNDP	National Programme Manager	Mr. Man B. Thapa
24	JICA		Mr. Katsuji Miyata
25	JICA		Dr. Hayashi
26	JICA		Mr. Fujitani
27	JICA		Mr. Kageta
28	JICA	Program Officer	Mr. Sourab Bickram Rana
29	Tribhuvan University	Dean of IOE	Prof. Jiba Raj Pokharel
30	Tribhuvan University	Lecturer, Dept. Architecture	Ms. Sudha Shrestha
31	Tribhuvan University	4th year Student	Mr. Surya Ram Twari
32	Tribhuvan University	Geologist	Prof. Bisal Nath Uprety
33	Society of Consulting Architectural & Engineering Firms, Nepal	General Secretary	Mr. Rajesh Thapa
34	Society of Consulting Architectural & Engineering Firms, Nepal	President	Mr. R. B. Shrestha
35	Society of Consulting Architectural & Engineering Firms, Nepal	Vice President	Mr. Subarna Bd. Joshi
36	Society of Consulting Architectural & Engineering Firms, Nepal		Mr. Manjul Khadka

List of Participants (Building Seminar)
Seminar on Earthquake Disaster Mitigation in Kathmandu Valley
On 16 Jan. 2002 to 18 Jan. 2002

S. No.	Affiliation	Position	Name
37	Society of Consulting Architectural & Engineering Firms, Nepal		Mr. Soraj Basnet
38	Society of Consulting Architectural & Engineering Firms, Nepal		Mr. Keshav Amatya
39	Society of Consulting Architectural & Engineering Firms, Nepal		Mr. Samanta S.R. Bajracharya
40	Society of Consulting Architectural & Engineering Firms, Nepal		Mr. Badan
41	Society of Consulting Architectural & Engineering Firms, Nepal		Mr. Umesh Shakya
42	Society of Consulting Architectural & Engineering Firms, Nepal		Mr. B. Singh
43	UMN (United Mission to Nepal)	Disaster Section	Mr. Murari Binod Pokharel
44	Nepal Engineer's Association (NEA)	President	Mr. G. N. Halwai
45	Nepal Engineer's Association	Treasurer	Mr. K. C. Manandhar
46	Nepal Engineer's Association (NEA)	Member of NEA	Mr. Nahendra Pradhan
47	Nepal Engineer's Association (NEA)	Member of NEA	Mr. D. K. Jha
48	Dept. of Water Induced Disaster Prevention	Senior Div. Engineer	Mr. Damodar Bhattarai
49	Asian Disaster Preparedness Center		Ms. Christine Apikul
50	Asian Disaster Preparedness Center		Mr. Anuj Tiwari
51	Disaster Related NGO		Mr. R. Sharma
52	School of Shelter & Environment		Mr. Bijaya Upadhyay
53	GHI	Int'l Guest for ESD	Mr. Ayse Inan
54	Radio Nepal	Reporter	Mr. P. Pyakurel
55	Rising Nepal	Reporter	Mr. Lok Deep Thapa
56	Kathmandu Post	Reporter	Mr. Rajeen Newa
57	Khabar	Reporter	Mr. Basanta Pathak
58	Raido Annapurna	Reporter	Mr. Basanta Thapa
59	Himalaya Times	Reporter	Mr. Dolendra Dahal
60	Punarjagaran	Reporter	Mr. D. B. Dhanushe
61	Dillibazar	Reporter	Mr. Prakash Ghimire
62	Muluk Weekly	Reporter	Mr. Madhave Rana
63	Free Journalist	Reporter	Mr. A. R. Sapkota
64	Kathmandu Meida	Reporter	Mr. Jagdish Kharel
65	Uttaranchal, India		Mr. Sohan Lal
66	Uttaranchal, India		Mr. Vijay Dhaundiyal
67	Uttaranchal, India		Dr. Pradeep Goswami
68	CARE-Bangladesh		Mr. Md. Shafid Rahman

III-5 The Second Seminar-3 (Community)

The Study on Earthquake Disaster Mitigation in Kathmandu Valley

Community Sub-Seminar

Organized by Ministry of Home Affairs, Department of Narcotics Control & Disaster Management
and JICA Study Team

1. Purpose

To present study results and proposals on increasing resilience and self reliance at municipality, ward, and community level

To promote municipality and community level earthquake disaster management Activities

To encourage multi disciplinary approach for earthquake disaster mitigation activities

2. Date and Venue

January 16, (Wednesday) 2002, 13:30-16:40

Conference Hall, Himalaya Hotel, Patan

3. Participants

JICA Study Team, MOHA, MOLD, MOSE, MOST, KtmDDC, Municipalities, Wards, NGOs, Community

4. Workshop Program

A. Opening Session

13:30-13:35 Opening Remarks
Ministry of Home Affairs, DNCDM Director Dr. M.B.P.Chhetri

B. Presentation

13:35-14:00 Study Results and Proposals
JICA Study Team Fumio Kaneko / Tomoko Shaw
14:00-14:10 Roles of Local Government for Disaster Management
Ministry of Local Development Joint Secretary Mr. Surya Regmi

C. Panel Discussion: Effectiveness of local government in the disaster management

14:10-15:10

Moderator: Amod Dixit, NSET

Panel members: Mayor of Kathmandu, Mayor of Lalitpur, Mayor of Baktapur, CDO of Kathmandu District

Coffee Break (20mins) 15:10-15:30

D. Community Activities

Presentation

15:30-15:35 Objectives and targets of local level disaster mitigation
JICA Study Team T.Shaw
15:35-15:45 Video Show of JICA pilot community activities
15:45-15:55 Municipality experience and Future Initiatives
KMC Social Welfare Dep. head Mrs. Hari Devi Ranjitkar
15:55-16:05 Ward level experience
KMC Ward 20 Chairman Mr. Bijaya Krishna Shrestha

Discussion: Roles of Communities in Earthquake Disaster Mitigation (Language: Nepali)

16:05-16:45

Moderator: Mr. Parimal Jha

The Study on Earthquake Disaster Mitigation in Kathmandu Valley

**Proceedings of
COMMUNITY SUB- SEMINAR**

**Organized by
Department of Narcotics Control and Disaster Management
Ministry of Home Affairs
&
JICA Study Team**

**January 16, 2002
Himalaya Hotel, Lalitpur**

COMMUNITY SUB-SEMINAR

1. Background

His Majesty's Government of Nepal, having been concerned about earthquake disaster management in Kathmandu Valley, requested the Government of Japan to implement the Study on Earthquake Disaster Mitigation in Kathmandu Valley. As a result, the Government of Japan and Japan International Cooperation Agency (JICA), the official implementing agency for Official Technical Cooperation, dispatched a preliminary survey team to Kathmandu on August 2000 and exchanged Scope of Work with HMG. Nippon Koei Co. Ltd. and OYO Corporation entered into a contract with JICA and conducted this study from January 2001 to February 2002.

Upon completion of the Draft Report of the study, the Community Sub-seminar was held in the Conference Hall, Himalaya Hotel, Kupondole, Lalitpur in the morning of January 16 (Wednesday) 2002. The participants of the Seminar comprised the JICA Study Team, Ministry of Home Affairs (MOHA), Ministry of Local Development (MOLD), Kathmandu Valley Town Development Committee (Kathmandu Valley TDC), NSET-Nepal, Tribhuvan University (TU), Municipalities, Wards, NGOs, Community Members, etc. The sub-seminar was organized by the Department of Narcotics Control and Disaster Management, MOHA and the JICA Study Team.

1.1 Purpose :

The purpose of the Sub-seminar was:

- To present study results and proposals on increasing resilience and self reliance at municipality, ward, and community level.
- To promote municipality and community level Earthquake disaster management activities.
- To encourage multi disciplinary approach for Earthquake disaster mitigation activities.

The agenda, list of participants and presentations made by the participants, where available, are annexed. The Community Sub-seminar was moderated by Mr. Parimal Jha, Executive Director, Human Resource Development Center. The proceedings of the Seminar are briefly described hereunder in the following sections:

2. Opening Address

The Opening Address was delivered by Dr. Meen Bahadur Poudyal Chhetri, Director, DoNC&Disaster Management. Dr. Chhetri's Opening Remarks were as follows:

It is a great privilege and honor for me to address again this august gathering of eminent experts from the donor agencies, government, academia, professional societies, Mayors, and JICA Study Team Members. We are assembled here to deliberate on a very significant theme Role of the Community in disaster mitigation in the country. This community sub-seminar is being held here at a most opportune moment in time which dovetails very well with the observation of Earthquake Safety Day 2002.

As we all know, this beautiful Kathmandu Valley, one of the outstanding cradles of ancient civilization of the Orient, has borne the vicissitudes of many Earthquakes in the past and is likely to do so in the future as well. It is this very characteristic of vulnerability to Earthquake that provides a profound relevance to the study carried out by the JICA in cooperation with HMG/N and a sense of urgency to this sub-seminar. This morning we learnt how to promote the fortification of buildings in Kathmandu Valley against possible future Earthquakes.

Experts of the JICA Study Team and the Nepalese experts presented very beautifully and professionally their findings and proposals which are quite useful to reduce the loss of lives and physical property from the future Earthquake. They are also the guidelines for HMG/N for future planning and policy making. The main objective of this sub-seminar is to highlight the role of the community, role of the local government during, before and after the natural disasters.

Here I would like to emphasize that the role of local community and the local government is very important and crucial, especially in the time of natural disasters. In the event of disaster local people are the main responders, there after the local government. Regional and Central governments come into the picture afterwards, sometimes even too late. In view of this situation it is highly desirable to strengthen our local government in order to make the local people aware of the natural disasters, ultimately to reduce the loss of lives and physical properties.

The panel of eminent experts and high dignitaries will deliberate on several themes on how to manage and implement the findings at each level.

I believe that there are many levels at which our deliberations need to be focused. Some of these relate to damage estimation and Building codes, others relate to Earthquake resistant building construction. Retrofitting of existing buildings, effective planning, prudent construction of future buildings and so on. The most crucial outcome of our discussion this morning and this afternoon will be the plan for management and implementation of the findings of study at each level including strengthening and empowering the role of communities for preparedness in disaster situations.

I would again like to repeat here that now this is very high time for us to think over constructing a new capital outside of the already saturated Kathmandu Valley which should be safe, well planned, easily accessible and spacious. This can be a subject matter of discussion.

Finally, on behalf of myself and the government I would like to express our gratitude to the government of Japan and JICA for conducting the study on Earthquake Disaster Mitigation in Kathmandu Valley in cooperation with the government Ministries, Departments, corporations, NGOs, INGOs, Municipalities and general public. I should also like to thank you all distinguished participants to be here with us for the whole day despite your very busy schedule. In the end, I wish for the great success and fruitful outcome of this community sub-seminar.

Thank you for all.

3. First Session: Presentation of Study Results and Proposals

3.1 Seminar Objectives and Structure

JICA Study Team Member Ms. Tomoko SHAW presented the objectives of the Community Seminar as described in the purpose before and the seminar structure in terms 3 components viz., Study Results and Proposals, Panel Discussion and Community Activities. She also dealt with the Decentralizing Process, Kobe Earthquake (1995) Lessons, Mayor Responsibilities at 3 levels, viz., National Government, Local Government, Community (Ward, Citizen) levels with in-front respondents.

3.2 Study Results and Proposals regarding Local Government

Mr. Fumio Kaneko, JICA Study Team Deputy Team Leader, presented the Study Results and Proposals regarding Local Government for Earthquake Disaster Management. He presented

the Status of Disaster Management in Local Governments of Kathmandu Valley, Intentions of Disaster Management in Local Governments of Kathmandu Valley and Current Institutions in Kathmandu Metropolitan City (KMC) for Disaster Management. Mr. KANEKO also highlighted the study Team's work for Local Governments as:

- Social Structure Survey
- Discussions with Local Governments
- Pilot Community Meetings including Disaster Imagination Game (DIG), Drill and Participatory Rural Appraisal (PRA) at Municipality, Ward and Community Level with Recommendations and Discussions.

He concluded by saying that Good intentions alone do not prevent damage and that strong partnerships among all stakeholders at all levels with effective leadership.

4. **Roles of Local Government for Disaster Management (Disaster Management)**

Mr. Surya Regmi, Joint Secretary, MOLD delivered his presentation on the above theme. Mr. Regmi highlighted the following topics:

- Status of Local Governance and Disaster Management
 - ☞ Principles of Local Self-Governance Act
 - ☞ Decentralizing Process
- Roles and Responsibilities of MOLD in relation to Disasters
- Future Actions
 - ☞ Strengthening participatory planning
 - ☞ Enhancing Local Bodies' functional capabilities
 - ☞ Developing Human Resource at all levels
 - ☞ Encouraging NGO and private sector participation
 - ☞ Encouraging Public Private partnership (PPP) approach
 - ☞ Own and Internalize donor funded programmes
 - ☞ Establish and network data base and local governance information system at all levels including GIS and resource mapping, etc.

5. **Future Strategy: Panel Discussion "Earthquake Disaster Management in Local Government"**

The Panel Discussion was moderated by Mr. Amod Mani Dixit, Secretary General, NSET-Nepal. Mr. Dixit invited the Mayor of Lalitpur Sub-Metropolitan City, Mr. Buddhi Raj Bajracharya, the Chief District Officer of Lalitpur District, Mr. Dhruva Prasad Sharma; Member Secretary, Kathmandu Valley Town Development Committee, Mr. Surya Bhakta Sankanchhe; and Ms. H.D. Ranjitkar, Head, Social Welfare Department, KMC. to participate in the discussion and present their respective strategies.

5.1 **Ms. H.D. Ranjitkar, KMC**

Ms. H.D. Ranjitkar discussed the present status and future strategy of KMC in relation to Disaster Management. The highlights of her discussion are described below:

The Mayor of Kathmandu, Mr. Keshab Sthapit was engaged in functions with the former Prime Minister and present Member of Parliament, Excellency Ryutaro Hashimoto and was, therefore, unable to attend the community sub-seminar.

KMC has 13 departments and 33 sections including a Disaster Management Section, that has been active over the last four years. A Disaster Management Committee (Disaster Management) comprising the Mayor and 35 ward chairpersons has also been put in place at

KMC. At ward level, however, Disaster Management has been put in place in Ward No.34 and a plan is underway for a Disaster Management Committee in Ward No.20. The Ward Level Disaster Management Committee comprises of Ward Chairperson, Ward Member, CBOs and Local persons.

The future strategy of KMC is to expand the Disaster Management Section into a full fledged Department with 4 Technical Working Groups, viz., Awareness Group, Rescue Group, Information Group, and Building Group. There is a plan to establish Disaster Management Committees in all the wards. Effort will be made to implement the JICA Study Recommendations for KMC.

5.2 Mr. Buddhi Raj Bajracharya, Mayor, Lalitpur Sub-Metropolitan City

Mr. Bajracharya made his remarks. The highlights are described below: Lalitpur City is implementing two community based programs on Earthquake preparedness with cooperation of UNCRD, Kobe, Japan and Chester City U.K. in near future. Lalitpur City has been providing supporting literature to applicants of new building permits with the support of NSET-Nepal. It is planning to use the already functioning strong network of community level self-help groups, with basic training, and Earthquake mitigation Centers. Numerous youth clubs and libraries within the city will be mobilized for generating awareness and preparedness programs in all 22 wards of the city. The City is also making necessary preparations to establish an Earthquake preparedness and mitigation main coordinating centre to ensure basic services.

The Moderator, Mr. A.M. Dixit commented that the Mayor is an ardent supporter of Disaster Management issues in Lalitpur City. There is awareness, the City is planning several activities. Therefore, an Action Plan is needed. The Mayor has expressed the necessity of strong legal commitment. However, there should be vertical linkage with the centre for support.

5.3 Mr. Dhruba Prasad Sharma, CDO, Lalitpur

Disaster Management is concerned with multi-disciplinary activities. Therefore, it requires a high degree of coordination amongst all stakeholders including NGOs, CBOs etc. Focus should be on proactive activities like preparedness, pro-active activities (as Earthquake cannot be forecasted) and post disaster activities. The high concentration of buildings in big cities increases the risk to lives. Therefore the following points need to be considered:

- Create awareness and develop mitigation technology;
- Have sufficient funds to address disasters;
- Keep stock of materials like plastics;
- Store food and medicine, maintain technical staff;
- Generate alternate sources of resources;
- Retrofitting technology for houses, schools, etc.;
- Written commitment with NGOs for diverting their resources at the time of disasters.

5.4 Mr. S.B. Sankanchhe, Member Secretary, Kathmandu Valley Town Development Committee

There is a Plan for Kathmandu Valley upto year 2020 awaiting the final approval of HMG/N. In the next 20 years, 1 million people are expected to be added in Kathmandu Valley. Hence, Disaster Management is a major part of the development plan 2020. Features of the Plan 2020 are:

- Develop Kathmandu Valley as capital and administrative centre, and cultural and Tourist Centre, NOT as manufacturing and industrial centre;
- Planning permit prior to Building Permit;

- Enforce Building Codes in all Municipalities;
- Promote urban Development Plan with land pooling
- Prohibit construction in environmentally sensitive areas and greater than 15° slope;
- Widen roads and highways and inner ring road;
- Promote low rise compact settlements;
- Integrate transport facilities and Land use.

The Kathmandu Valley Plan Act is expected to be approved in the coming session of parliament.

5.5 Comments and Suggestions

The Moderator asked for comments and suggestions on the Panel Discussion from the Floor. The responses were made as follows:

5.5.1.Mr. S.B. Pradhanang, President, NSET-Nepal

The Local Self-Governance Act 1999 empowers local bodies with great responsibilities including Disaster Management. I request the JICA Team to recommend the inclusion of MOLD in the Central Natural Disaster Relief Committee (CNDRC) on a permanent basis.

5.5.2.Prof. Kailash Pyakurel, Tribhuvan University

There has been a recent hike in the Building Permit fees charged by Municipalities from NRs. 10 to NRs. 25 per sq.ft. In order to encourage new house building owners to undertake Earthquake mitigation measures as per National Building Code (NBC), the fee should be subsidized, may be with compensation to the Municipalities by the Government. The Moderator hopefully remarked that the JICA Team would make this recommendation.

The Moderator, Mr. Dixit remarked that together with legal provisions come responsibilities. Do we think that Clarity in terms of responsibilities is already there? Mr. Sankachhe responded by saying that the proposed Bill in parliament has defined the roles of government, local authorities and the coordinating mechanism. The Mayor of Lalitpur expressed that he did not know about the Bill and it was not discussed with him.

5.5.3.Moderator's Comments

I think we have a future vision of roles now. The contributions from the Panelists and the floor have been valuable. We are happy to learn about the positive steps taken by KMC in terms of institutional linkages and other activities like NBC implementation. Mr. Sankachhe provided insights on what is being done to empower Kathmandu Valley local bodies. Good contributions have been made by the Mayor and CDO of Lalitpur as well as Joint Secretary of MOLD. I hope the discussions have been helpful for MOHA and the JICA Study Team to make their propositions for the future.

6. Second Session: Lessons from Community Activities and Sustainable Mechanism for Implementation

After a break, the Second Session commenced. It were moderated by Mr. Parimal Jha.

6.1 Objectives and Targets of Local Level Disaster Mitigation (Disaster Management)

Ms. Tomoko Shaw, JICA Study Team Member, made her presentation on the above topic with particular reference to Community Resilience and Self-Reliance. She highlighted the Study Structure in relation to Pilot Activities in Ward Nos.20 and 34 of KMC and Nagbahal of Lalitpur City.

Presentation was made on:

- Social structure survey;
- Pilot Area Selection: Characteristics and Challenges;
- Goals of Pilot Activities, as being NOT paperwork but Process and Motivation for Actions;
- Tools for Community Activities - DIG, Community Watching, PRA mapping, Drill;
- Development of Linkage;
- Model for Community Activities - 3 steps: learn, think and plan, Action;
- Need for Continuous Effort at real consensus, task assignments, CBO mobilization, guideline of Emergency Action.

6.2 Video Show of JICA Pilot Community Activities

The video was presented to the audience.

6.3 Municipality Experience and Future Activities

Ms. H.D. Ranjitkar (Head, Social Welfare Dept., KMC)

As the people of Kathmandu have not experienced any major Earthquake or disaster since 1934, there is no culture of disaster planning. People at first showed an apathy to the topic of DM, but now perceptions are changing slowly. The Disaster Imagination Game in Ward Nos. 20 and 34 was very effective in this regard. Ultimately, people will demand Disaster Management as a development program in itself, so the KMC will have to allocate more resources. Future Action and Vision of KMC relates to:

- Establishment of Disaster Management Department;
- Formulation of Disaster Management Committee;
- Multi-Sectoral Interdisciplinary dynamics in Disaster Management;
- Creation of open spaces in city cored areas;
- Programs for capacity Building.

6.4 Ward Level Experience - Mr. B.K. Shrestha (Chairman, Ward No.20, KMC)

Ward No.20 lies in old part of Kathmandu City by the Bagmati River and is characterized by mud and brick houses along narrow streets/passages with chowks (court yards). Open spaces are rare. The loss in case of an Earthquake would be horrifying. People regard Earthquake as a result of Divine Fury. However, thanks to the publicity made by various agencies, people are now willing to learn about preparedness and post Earthquake activities. As shown in the video program, there were many participants at the Paropakar High School, who enquired about the JICA program, identified escape routes, open spaces and listed community food and shelter requirements. Sensitivity and awareness were exhibited.

6.5 Discussion: Roles of Communities in Earthquake Disaster Mitigation

After the presentation, the Moderator proposed the discussion to focus on actions to be taken at community, ward and municipal levels. The responses are highlighted below:

6.5.1. Murari Binod Pokharel, Ward No.34, Disaster Management Committee Member

The Disaster Management Committee was evolved through the initiative of Jana Shakti Yuva Club. United Mission to Nepal (UMN) was requested to sponsor a training with the assistance of NSET-Nepal. Ward Officials participated in the training. Even doctors and Engineers were invited to the 3 Disaster Management training sessions lasting for 4-6 days, A 22 member Advisory Committee has been setup and a partnership has developed with other clubs and groups, HMG and other stakeholders. With the JICA team 2 DIGs, Community Watching Exercises were conducted. We are updating hazard maps. We would like to transfer our learning to other wards of Kathmandu Valley. The summary findings of Vulnerability Assessment/Hazard Map were:

- Factories have no Emergency Plan;
- Narrow lanes;
- School buildings are seismically vulnerable;
- Maximum extraction of ground water may cause disaster;
- Plenty of non-structural vulnerabilities.

The difficulty faced is that with local support, a small amount of money has been allocated this year. We would like to have donor support for Disaster Management. Any one is welcome to join friends of the River club.

6.5.2.Mr. Thapa, Nagbahal

We formed Disaster Management Committee without support under the Chairmanship of Ward Chairman. We had volunteers to look after particular areas of interest at least for one hour before authorities reach disaster site. As it is not possible to restructure the area with narrow lanes and some open space historical sites, we need to cope with whatever we have. Ms. Ranjitkar responded by saying that KMC wished to cooperate with Lalitpur City.

6.5.3.Mr. Goswami, Uttaranchal, India

Uttaranchal has cultural and geographical similarities with Nepal with vulnerable areas, scattered villages with houses in clusters. The road is first disturbed in a disaster. We have Disaster Management Action Plans with government and NGO support. We have followed structural mitigation measures like Earthquake resistant housing and non-structural preparedness measures also. In every village, there is a Disaster Intervention Team trained for rescue and relief. There is a Sub-Committee for First Aid. Two members are being trained for veterinary case and two others for liaising on hazard assessment, vulnerability assessment. We are trying to incorporate the Disaster Intervention Team under the Panchayat Raj System to provide it legal status.

During heavy rains in 1999, there was a phone call from Naini Tal warning that a whole village was going to slide down. The Commissioner of Kumaon District passed the information to the district so that the whole village was evacuated without a single casualty. Such a measure could be applied to Nepal also.

Moderator Mr. Jha summed up by saying that developing relationships among stakeholders and sharing of experiences with other wards is a wonderful step. Mr. Goswami's experience is very enriching.

7. Comments and Observation: Dr. Hayashi, Chief JICA Advisory Committee and Professor, Kyoto University

The DIG game tool can be very effective for Nepal. After the Kobe Earthquake, we try use these techniques at community level in Japan to improve Disaster Management. People become rational and realistic in assessing what is going to happen in future. It is a good

propaganda tool to promote voluntary activities. People are responsive to DIG game. It is therefore an effective tool for establishing relationship amongst stakeholders.

The first step is identification of the problem. As for solutions, it is awfully difficult, but we have to face the realities. Within the next 30-40 years, Nepal could go through a great Earthquake disaster. Disaster Management is not just a tiny thing. It is a function to be added to all social studies in the interest of safety and society. I am glad to know what the JICA Study Team is trying to promote. We should not be discouraged about problems. If you have rational solutions, Japan would like to help not only financially but also with study inputs to improve the Disaster Management capability of the people of Nepal.

The Sub-seminar was then brought to a close by the Moderator who thanked all the speakers and Panel Members.

List of Participants (Community Seminar)
Seminar on Earthquake Disaster Mitigation in Kathmandu Valley
On 16 Jan. 2002 to 18 Jan. 2002

S. No.	Affiliation	Position	Name
1	Dept. N. C. & Disaster Management	Director	Dr. M. B. Chhetri
2	Dept. N. C. & Disaster Management	Section Officer	Mr. L. N. Pokharel
3	Dept. of Urban Planning & Building Construction	Director General	Mr. Shashi Bahadur Thapa
4	Dept. of Urban Planning & Building Construction	Deputy Director General	Mr. Purna P. Kadariya
5	Dept. of Urban Planning & Building Construction	Deputy Director General	Ms. Shanti Malla
6	Dept. of Urban Planning & Building Construction	Superintendent Engineer	Mr. Kishor Thapa
7	Dept. of Urban Planning & Building Construction	Civil Engineer	Mr. Surendra L. Pandey
8	Dept. of Urban Planning & Building Construction	Engineer	Mr. Amrit Man Tuladhar
9	Dept. of Urban Planning & Building Construction	Senior Architect	Mr. Pursotam L. Pandey
10	Dept. of Urban Planning & Building Construction	JICA Expert	Mr. Naokazu Miyazaki
11	Dept. of Urban Planning & Building Construction	1st Class (Technical) Officer	Mr. Padam Lal Shrestha
12	M. R. Associate	Director	Mr. M. Rajbhandari
13	Bhaktapur Municipality	Urban Development/Planning	Mr. Ram G. Shrestha
14	Lalitpur Municipality	Urban Development/Planning	Mr. Rudra Gautam
15	Lalitpur Municipality	Community Dev. Section Officer	Ms. Laxmi Rajbhandari
16	Kathmandu Metropolitan City	Social Welfare Dept. Head	Ms. H. D. Ranjitakar Yosha
17	Kathmandu Metropolitan City	Section Chief Disaster	Mr. Raju Shrestha
18	Kathmandu Metropolitan City	Section Chief Disaster	Ms. Kumari Rai
19	Kathmandu Metropolitan City	Urban Development/Planning	Mr. Devendra Dongol
20	Kathmandu Metropolitan City		Mr. Surendra
21	KMC Ward 20	Chairman	Mr. Bijaya Krishna Shrestha
22	KMC Ward 20	Ward member	Mr. Nabin Bahadur Shakya
23	KMC Ward 20	Ward member	Ms. Sarita Manandhar
24	KMC Ward 34	Member	Mr. Tanka
25	KMC Ward 34	Member	Ms. Devi Lama
26	Nag Bahal Ward 16 Representative	Representative	Mr. Dillip Joshi
27	Adasha Saral School Headmaster	Headmaster	Mr. Prem Bahadur Shakya
28	Tole Committee Executive		Miss. Santi Bajracharya
29	Tole Committee Executive		Mr. B. Dhakhula
30	Kathmandu Disaster Management		Mr. Anjan
31	Kritipur Municipality	Urban Development/Planning	Ms. Nicde Gerfen
32	Bhaktapur Hospital	Medical Officer	Dr. Indra Prasad Prajapati
33	NSET	President	Mr. Shiva B. Pradhanang
34	NSET	General Secretary	Mr. Amod Mani Dixit
35	NSET	Project Manager	Mr. Mahesh Nakarmi
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38	UNDP	National Programme Manager	Mr. Man B. Thapa
39	JICA		Mr. Katsuji Miyata
40	JICA		Dr. Hayashi

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S. No.	Affiliation	Position	Name
41	JICA		Mr. Fujitani
42	JICA		Mr. Kageta
43	JICA	Program Officer	Mr. Sourab Bickram Rana
44	Tribhuvan University	Dean of IOE	Prof. Jiba Raj Pokharel
45	Tribhuvan University	Lecturer, Dept. Architecture	Ms. Sudha Shrestha
46	Tribhuvan University	4th year Student	Mr. Surya Ram Twari
47	Tribhuvan University	Geologist	Prof. Bisal Nath Uprety
48	Society of Consulting Architectural & Engineering Firms, Nepal	General Secretary	Mr. Rajesh Thapa
49	Society of Consulting Architectural & Engineering Firms, Nepal	President	Mr. R. B. Shrestha
50	Society of Consulting Architectural & Engineering Firms, Nepal	Vice President	Mr. Subarna Bd. Joshi
51	Society of Consulting Architectural & Engineering Firms, Nepal		Mr. Manjul Khadka
52	Society of Consulting Architectural & Engineering Firms, Nepal		Mr. Soraj Basnet
53	Society of Consulting Architectural & Engineering Firms, Nepal		Mr. Keshav Amatya
54	Society of Consulting Architectural & Engineering Firms, Nepal		Mr. Samanta S.R. Bajracharya
55	Society of Consulting Architectural & Engineering Firms, Nepal		Mr. Badan
56	Society of Consulting Architectural & Engineering Firms, Nepal		Mr. Umesh Shakya
57	Society of Consulting Architectural & Engineering Firms, Nepal		Mr. B. Singh
58	Nepal Geological Society		Mr. Rajendra Kharel
59	UMN (United Mission to Nepal)	Disaster Section	Mr. Murari Binod Pokharel
60	Nepal Engineer's Association (NEA)	President	Mr. G. N. Halwai
61	Nepal Engineer's Association	Treasurer	Mr. K. C. Manandhar
62	Nepal Engineer's Association (NEA)	Member of NEA	Mr. Nahendra Pradhan
63	Nepal Engineer's Association (NEA)	Member of NEA	Mr. D. K. Jha
64	Dept. of Water Induced Disaster Prevention	Senior Div. Engineer	Mr. Damodar Bhattarai
65	Asian Disaster Preparedness Center		Ms. Christine Apikul
66	Asian Disaster Preparedness Center		Mr. Anuj Tiwari
67	Disaster Related NGO		Mr. R. Sharma
68	USAID (United State Agency for International Development)	OFDA	Ms. Linda
69	GTZ-UDLE (Urban Nations Disaster Prevention)	Programme Coordinator	Mr. Rajendra Pradhanang
70	UNICEF/ROSA	Emergency Planning Officer	Mr. Damodar Adhikari
71	School of Shelter & Environment		Mr. Bijaya Upadhyay
72	GHI	Int'l Guest for ESD	Mr. Ayse Inan
73	SEEDS	Int'l Guest for ESD	Ms. Kamy Ramchandran
74	SEEPOR		Ms. Sulochana Shrestha
75	Radio Nepal	Reporter	Mr. P. Pyakurel
76	Rising Nepal	Reporter	Mr. Lok Deep Thapa
77	Kathmandu Post	Reporter	Mr. Rajeen Newa

List of Participants (Community Seminar)
Seminar on Earthquake Disaster Mitigation in Kathmandu Valley
On 16 Jan. 2002 to 18 Jan. 2002

S. No.	Affiliation	Position	Name
78	Khabar	Reporter	Mr. Basanta Pathak
79	Raido Annapurna	Reporter	Mr. Basanta Thapa
80	Himalaya Times	Reporter	Mr. Dolendra Dahal
81	Nepal News	Reporter	Mr. Ram Prasad Humagai
82	Punarjagaran	Reporter	Mr. D. B. Dhanushe
83	Dilibazar	Reporter	Mr. Prakash Ghimire
84	Muluk Weekly	Reporter	Mr. Madhave Rana
85	Free Journalist	Reporter	Mr. A. R. Sapkota
86	Kathmandu Meida	Reporter	Mr. Jagdish Kharel
87	Metro FM	Reporter	Mr. Dihesh P. Sharma Luentel
88	Uttaranchal, India		Mr. Sohan Lal
89	Uttaranchal, India		Mr. Vijay Dhaundiyal
90	Uttaranchal, India		Dr. Pradeep Goswami
91	CARE-Bangladesh		Mr. Md. Shafid Rahman

III-6 The Second Seminar-4 (Media)

The Study on Earthquake Disaster Mitigation in Kathmandu Valley

Media Sub-Seminar

Organized by Department of Narcotics Control & Disaster Management, Ministry of Home Affairs,
and JICA Study Team

1. Date and Venue

January 18, (Friday) 2002, 13:00-15:30

A Conference Room of NEFEJ (Nepal Forum of Environmental Journalists)

2. Purpose

To promote earthquake disaster management activities of Media

3. Participants

JICA Study Team, Ministry of Home Affairs, Ministry of Communication, Media People, etc.

4. Program

- 13:00-13:10 Expectable Activity of Media in Earthquake Disaster
Dr. M.B.P. Chhetri (Director, Dept. of N.C. & D.M. Ministry of Home Affairs)
- 13:10-13:20 Present Status of Media in Disaster Mitigation and Issues to be Improved
Ministry of Communication
- 13:20-13:40 Role of Media at the Time of Disasters
Dr. Y. Egawa (Leader, JICA Study Team)
- 13:40-13:55 Video Show on Activities of NHK at the Time of Great Kobe Earthquake
- 14:00-14:15 Activities during and after the Gorkha Earthquake on 16 July 2001
Radio Sagarmatha
- 14:15-14:30 Raising Awareness on Earthquake Disaster Mitigation through Media
Mr. A.M Dixit (Secretary General, NSET-Nepal)

Coffee Break 14:30- 14:50

- 14:50-15:30 Discussion on Activity of Media in Earthquake Disaster Mitigation
- | | |
|-----------------|--------------------|
| - Gorkhapatra | - Radio Sagarmatha |
| - Kantipur | - Matro |
| - Samacharpatra | - HBC |
| - Rajdhani | - Kantipur FM |
| - Space Time | - Classic FM |
| - Channel Nepal | - Kathmandu Post |
| - RSS | - Himal |
| - NTV | - Nepali |
| - Radio Nepal | - Naya Shadak |

Facilitator: Mr. D.Thapa

The Study on Earthquake Disaster Mitigation in Kathmandu Valley

**Proceedings of
MEDIA SUB-SEMINAR**

**Organized by
Department of Narcotics Control and Disaster Management
Ministry of Home Affairs
&
JICA Study Team**

**January 18, 2002
Nepal Forum of Environmental Journalists (NEFEJ),
Thapathali, Kathmandu**

Media Sub-Seminar

1. Background

Upon completion of the Draft Report of the study, the Media Sub-seminar was held in the Conference Room of Nepal Forum of Environmental Journalists (NEFEJ) on January 18 2002 afternoon. The participants of the Seminar comprised the JICA Study Team, Ministry of Home Affairs (MOHA), Ministry of Communication, Media People and many others. It was organized by the Department of Narcotics Control and Disaster Management, MOHA and the JICA Study Team.

2. Purpose

The purpose of the sub-seminar was :

To promote earthquake disaster management activities of the Media.

The agenda, list of participant and presentations made by the participants, where available, are annexed. The Media sub-seminar was facilitated by Mr. D. Thapa.

The proceedings for the Seminar are described in the following sections:

3. Program

3.1 Expected Activity of Media in Earthquake Disaster

Dr. M.B.P. Chhetri, Director, DoND&DM

The two main objectives of JICA Study Projects are :

- ☞ To formulate a plan for Earthquake Disaster Mitigation in the Kathmandu Valley
- ☞ To carry out technology transfer to Nepalese counter part personnel and formulation of a plan encouraging them to undertake emergency actions

The Japanese experts have worked hard to materialize the objectives of the project within the specified time frame.

The draft final report has been submitted. The Final Report will incorporate the suggestions received from the series of seminars such as this. There is information on the web-site as well. The purpose of the project is to provide information and hazard maps as well. The role of the media is crucial in reconciling the affected people and to reduce their suffering in a disaster situation. The Media being the fourth organ of the state is the brain of society and can play the role of an effective watchdog in providing rescue and relief to EQ victims.

Kathmandu valley is surrounded by hills and has been saturated in terms of population and its ecological carrying capacity. It is also vulnerable to EQ's. Its cultural monuments are being threatened. The Media can be an effective instrument in mobilizing opinion for developing a new capital out side of the valley along the lines of, say, Switzerland, Australia or New Zealand. Kathmandu Valley could then be maintained as a historical and cultural city.

On behalf of DONC&DM, Ministry of Home Affairs, I request the help of the Media and their valuable input for the dissemination of information in mitigating disasters.

I thank Dr. Egawa, the JICA Study Team Leader and colleagues for their unremitting efforts and the cooperation extended by various ministries, departments, NSET-NEPAL, NGOs, INGOs and the general public and Media people for their contribution to the study. The completion of the study is not the end but just a begging. We should now move ahead to implement the findings of the project as a guideline to reduce loss of lives and property. I thank the government of Japan for the generous assistance and support provided to this study and look forward towards support in the future as well. Japan is our No. 1 donor that has extended assistance for the development of Nepal in many ways.

3.2 Present status of Media in Disaster Mitigation and Issues to be Improved

Mr. Napanath Sukla, former General Manager, Nepal Television and presently, Special Officer at the Ministry of Communications made his contribution to the above topic to the following effect:

The role of Media during EQ disaster mitigation is two-fold, before and after. Before EQ, we must prepare the people for disaster on how to seek refuge and protect property. The Media has a great advocacy role to improve people's knowledge. This can also be done through documentary shows, talk programs and public service announcements (PSA). As Kathmandu highly EQ prone, we must not encourage new settlements in Kathmandu Valley. We can not force the people not to settle here, unless the government decides to shift the capital. As long as Kathmandu Valley is the capital, migration of people to the valley is bound to increase. If one has to build a house in Kathmandu, one should do it rightly before the problem of EQ arises.

I have seen documentaries on EQ in Japan, that showed amenities like, telephone lines being disrupted so that the source of information was only radio or news print. If such a situation were to arise in Nepal, mouth to mouth communication could enlarge the problem. The Media can supply the two facts and also help provide relief. The Media can also highlight the shortcomings if relief and rescue works are not managed properly. During my tenure with Nepal Television, we mobilized the media during the 1993 flood disaster. Most of the time, the role of the Media is supportive. We have a great role to play before, during and after an earthquake disaster. The Media and inform the general public about the geo-physical structure of Kathmandu Valley to sensitize people, government and relief organizations. The Media can also encourage and promote organizations who do good work before, during and after a disaster like Earthquake.

3.3 Role of Media at the time of Disasters and Video Presentation

Dr. Y. Egawa, Leader, JICA study Team, said that 3 sub-seminars, viz., Building Improvement, Community and Media have been held in a series.

The objective of the Media Sub-seminar is to promote media activity before and after disaster. As the Media is the fourth part of Society, it has great responsibility in times of disaster. Dr. Egawa proposed that he would like to exhibit the Video show on activities of NHK at the time of the Great Kobe Earthquake. It was held then on the Great Hanshin Earthquake, that depicted very well on how the media in Japan reacted to the disaster through 273 hours of TV coverage and many other activities.

Following the Video show, Mr. Toyoma of the JICA Study Team presented the results of the Earthquake hazard map of Kathmandu Valley in terms of the Western Nepal Earthquake, North Bagmati Earthquake and Kathmandu Valley Earthquake scenarios.

Dr. Egawa then made his presentation on the Role of Media. He highlighted the following topics.

- ☞ Role of Electric Media-Radio/TV as being fast and dependent on popularity of receiver but subject to availability of electricity and vulnerability of transmitting/broadcasting station.
- ☞ Tragedy due to no existence of radio as in the Great Kanto Earthquake of 1923.
- ☞ Media's roles in terms of stages as educator before earthquake, light house in initial response, and facilitator for restoration/reconstruction.
- ☞ Legal ground in Japan in terms of Meteorological Agency law, Disaster Management Basic law and Broadcasting law.
- ☞ Electronic Media and Earthquake in Japan. Where TV/Radio immediately stop s regular program in favour of special program on EQ in middle scale EQ.
- ☞ Information sequence to be broadcast within 1-2 days and after 2-3 days.
- ☞ Maintenance of Media function like equipment and building, Role of Newspaper as tough, popular, objective, analytical, influential and lasting.

3.4 Activities during and after the Gorkha EQ on 16 July 2001

Mr. Kiran Pokharel of Radio Sagarmatha FM made his presentation on the above topic to the following effect;

Radio Sagarmatha has been airing regular programs on EQ since 1 and half years, broadcasting time now being increased to 30 minutes from the 15 minutes during the first 6 months with the support of NSET-Nepal. In relation to EQ, Radio Sagarmatha has virtually become a center of Information.

The Gorkha, Bhatte Dada EQ occurred while music was being aired. Many phone calls from all Kathmandu Hospitals and the public came to Radio Sagarmatha (RS). People inquired about the scale of the EQ and whether it would return. We searched for knowledgeable people like Dr. Uprety and later interviewed Mr. A. M. Dixit after which many people felt relieved. In this sense FM Radio has been most effective. After the Gorkha EQ and article by Prof. Rosenberg and then Mr. Basanta Lohani in the Kantipur created popular discussions. Initially, people who tended to panic were told: "Earthquake does not kill but the house can".

After the Bhuj EQ scene, it was reported from Radio Sagarmatha. In Bhuj, I witnessed the place where 20 doctors were crushed. Much research has been done on vulnerability of Bir Hospital. Apart from research level, not much has been done in Nepal. Even the prime Minister's Office has not been made EQ resistant, let alone Bir Hospital. What about the overhead bridges of Kathmandu, already existing and the other proposed 46 bridges? Our telephone systems and cell phone tower are housed in weak structures. How do we protect on satellite tower in case of EQ?

After the advocacy role of FMs like Sagarmatha and NSET-Nepal, more people are wanted to build EQ resistant homes. We are advocating FM radio sets for all people, keeping emergency stock of food and medicine, etc. after the Gorkha EQ.

3.5 Raising Awareness on Earthquake Disaster Mitigation through Media

Mr. A. M. Dixit (Secretary General NSET-Nepal) made his presentation on the above topic highlighted as below;

Lack of information and communication is itself a disaster. The impact that the Media will create will result in suffering enhanced or greatly reduced depending on how effectively it is used. The roles of the media are to:

- ☞ Bring and transfer information and knowledge
- ☞ Internalize the information and knowledge by changing mind-set
- ☞ Ownership of knowledge and information
- ☞ Sustainable use of knowledge
- ☞ Different role and objectives at different times-post and ante-disaster
- ☞ Post disaster objective, help reduce pain and further losses, facilitated efficient distribution of relief material, ensure mitigation in recovery/rehabilitation.
- ☞ Ante-disaster objective-educate, warn, prepare society for resilience, form public opinion. A Presidential debate was held in the USA about disaster preparation.
- ☞ Pre-disaster Education-saves much more resources, will drastically reduce media coverage during post-disaster. Airing dos and don'ts after EQ event will not help much.

Regarding print media coverage EQ in Nepal from 1997 to 2001, number of reporting has been significantly larger but needs to be improved for pre-disaster mitigation. The contribution of the Media in Nepal has been to;

- ☞ Increase awareness significantly
- ☞ Help in policy intervention, e.g. National Building Code
- ☞ Increase the quality of training program on Disaster Journalism (e.g. organized by NSET-Nepal on IDNDR, 1999)

- ☞ Encourage NTV to devote at least one program annually, also channel Nepal, Young Asia TV, regular weekly program with Radio Sagarmatha, on line panel discussion and interviews on Metro and other FMs
- ☞ Our understanding of Media Power
 - Media can do several times more than others
 - Power of Media to define, motivate policy support
 - News value reports of mitigation efforts could be increased by working together
- ☞ Some lapses in the Media
 - Regarding the Chaomoli EQ of 1988, international media did not report damage in Nepal
 - Lessons learnt were not propagated
 - In the Gujarat EQ, the lessons learned are extremely valuable but have not been propagated enough
- ☞ Available Opportunities
 - Don't echo international media on Nepal
 - Seek opinion nationally
 - Make your own stories in Nepal
- ☞ Some Requests
 - Designate one person for professional development on Disaster Journalism
 - Look forward: Data on past EQ are only for guidance
 - Let us organize training: can Press Council Convene a Seminar?
 - Suggestion of MOHA and JICA Studies Team to organize a training on Disaster Journalism
 - Better late than never!
 - Make your own stories in Nepal

4. Discussion on Activity of Media in Earthquake Disaster Mitigation

4.1 Mr. Madhave Raj Pandey, the Department of Mines and Geology (DMG)

After the Moderator Mr. Thapa requested the participants to participate in the Discussion, Mr. Madhave Raj Pandey of the seismic Measurement center of the Department of Mines and Geology (DMG) asked permission to clarify a few points to following effect:

Regarding the proposition about shifting the capital from Kathamdu Valley no place in Nepal is completely safe from Earthquake. Even within Kathmandu Valley, not all places are equally vulnerable. Therefore, may be, we should move selectively.

As e-science developed, seismology has become multi-disciplinary. DMG is constrained by just 4 to 5 people working on Earthquake. Therefore, we are not in favor of being disturbed by telephone calls in the immediate aftermath of an Earthquake, analysis takes time to locate the epicenter, etc. We try to inform Radio Nepal as soon as possible. Within our seismological network, despite the limited number of stations, we can analyze data with accuracy relatively quickly. Outside the network, more time is needed. We also have a web site set up some months ago, which provides the relevant data – SEISMONEPAL. The magnitude of Earthquake is of 4 types. Each has its own scale, which is not linear. Recently, within the past decade has come the moment magnitude. We have a continuous record since 1994. Earthquakes of magnitude 2 and one are recorded. Earthquake of magnitude 4 can be felt by persons.

About after-shocks, forecasting is not possible. Experience shows that first degree alert must be maintained for 2-3 hours. California has 3 days alert.

Mr. A. M. Dixit added that "alert" means ensure emergency stock and go to a safe place.

4.2 Question to Dr. M. B. P. Chhetri (DONCDM/MOHA) by Mr. Laxman Adhikari, Sadhana Family Digest

Question:

Kathmandu Metropolitan City (KMC) does not monitor quality control of building construction. In Bhuj, Gujarat, buildings having more than 5 storeys were totally destroyed, particularly department stores, which are proliferating here as well. In the media also, fear and panic-creating news is being floated. In this content, what are we doing to minimize damage?

Answer:

This JICA Study Project was initiated because of the dangers of Earthquake disaster we realized from the DMG and the media the study has described the hazard prone zones of Kathmandu Valley. In apparently plain areas near river banks like Kalimati, the hazard is greater than raised up areas like swayambhu and Changu Narayan on account of liquefaction problems according to Prof. B. N. Uprety. Our message is that of awareness. The findings & recommendations of the Study Report will play a greater role in propagating the message. We have conducted the study of hospitals, etc. with the involvement of NSET-Nepal regarding Disaster Management. A disaster preparedness plan is being prepared. A curriculum for schools is also being designed. We are also conducting various training courses like treatment of the injured, collapsed structure search and rescue training for police, army and medical personnel. We are also contemplating a canine Training Course for rescue teams.

4.3 Madhav Rana Bhat: Contemporary occasional writer

That Earthquake is inevitable is known to many Government agencies, but right-of-way of road for building construction enforced by MNG is not uniform. People are living in a high-risk environment in dilapidated and half-destroyed buildings on two pillars. Nothing is being done about it. The responses to this problem were several ranging from lack of HMG resources to mitigate the problem to negligence, ignorance and compulsion of the residents.

5. Concluding remarks by Chairman, Nepal Forum of Environmental Journalists (NEFEJ), Mr. L. Upreti

The Media is the concern of everyone. Lapses in information can be a serious matter as happened during the 1993 flood disaster. Everyone focussed on Chitwan, while in the most affected Bagmati area, a helicopter reached after 3 days to the angst of the people who nearly pelted the helicopter with stones. Irrespective of proprietary rights to the source of information, all types of media must cooperate in a situation of crisis. FM radios have now marched ahead of Government media in information. In a crisis situation, things like FM transmitter availability with a compact apparatus and satellite phones as stand by back ups must be contemplated. Police and administration should be trained on stand by satellite phone. Disaster page should also be kept in a broad-sheet. While FM will rescue the community, broad-sheet can define jobs and responsibilities.

Holding a Media Training Workshop is important. Let MOHA, NSET-Nepal and Tribhuvan University (TU) look into the matter. Journalists require training, as it is a matter of being a medium of conveying professional matters to non-professional people.

Finally, I would like to thank the organizers, the JICA Study Team and all participants of this Sub-seminar.

List of Participants (Media Seminar)
Seminar on Earthquake Disaster Mitigation in Kathmandu Valley
On 16 Jan. 2002 to 18 Jan. 2002

S. No.	Affiliation	Position	Name
1	Dept. N. C. & Disaster Management	Director	Dr. M. B. Chhetri
2	Dept. N. C. & Disaster Management	Section Officer	Mr. L. N. Pokharel
3	Dept. of Mines & Geology	Senior Geologist	Mr. Madhab Raj Pandey
4	Dept. of Mines & Geology	Geologist	Mr. S. N. Sapkota
5	Dept. of Urban Planning & Building Construction	JICA Expert	Mr. Naokazu Miyazaki
6	Dept. of Urban Planning & Building Construction	Deputy Director General	Ms. Shanti Malla
7	Dept. of Water Induced Disaster Prevention	Senior Div. Engineer	Mr. Damodar Bhattarai
8	Ministry of Information &	Specialist Officer (Technical)	Mr. Tap Nath Sukala
9	JICA	Program Officer	Mr. Sourab Bickram Rana
10	UNICEF/ROSA	Emergency	Mr. Damodar Adhikari
11	UNICEF	Consultant	Mr. Sudhamshu Dahal
12	Tribhuvan University	Geologist	Mr. Bisal Nath Upreti
13	NSET	General Secretary	Mr. Amod Mani Dixit
14	Rising Nepal	Acting Editor	Mr. Promod Joshi
15	RSS	Reporter	Mr. Uttam Silwal
16	Radio Sagarmath	Reporter	Mr. Kiran Pokharel
17	Kathmandu Post	Reporter	Mr. Rajendra Rijal
18	Nepal News	Correspondance	Mr. Ram Prasad Humagai
19	Gorkhapatra Daily	Assistant Editor	Mr. Ram Kamat
20	Gorkhapatra Daily	Reporter	Mr. Dhatri Subedi
21	The Himalayan Times	Reporter	Ms. Shangrila Joshi
22	Naya Sadak	Reporter	Mr. Nabharam
23	Channel Nepal	Correspondance	Mr. Bijaya Paudel
24	Channel Nepal	Reporter	Mr. Manish Pandey
25	Kamana Publications	Editor	Mr. Laxman Adhikari
26	Space Time Daily	Reporter	Mr. Bhoj Raj Bhatta
27	NEFEJ		Mr. Laxman Upreti
28	NEFEJ	General Secretary	Mr. Mr. Rajesh Ghimire
29	NEFEJ	Member	Mr. B. Rijal
30	NEFEJ	Member	Mr. Promod Paudel
31	NEFEJ	Member	Mr. Bickram
32	NEFEJ	Member	Mr. Dilip Kafle
33	Space Time Today	Reporter	Mr. Neela Chaudhary
34	Kantipur	Reporter	Mr. Manish Gautam
35	Asian Disaster Preparedness Center		Ms. Chrishire Apikul
36	Janakpur C.D.C.	Reporter	Mr. Rajindra Saha
37	JSSN		Mr. Tanka Rai
38	Muluk	Reporter	Mr. Madhav Rana
39	Nepal	Reporter	Mr. Krishna Murai Bhandary