

# **Participatory Workshop on Urbanisation & Community Based Disaster Management**

**19-21 July 2006,  
Yalamaya Kendra, Patan Dhoka, Lalitpur, Nepal**



United Nations



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Yalamaya Kendra, Patan Dhoka, Lalitpur, Nepal

## **Proceedings of the Workshop**

*Convened by :*

Community Learning Centres (CLCs)

Bungmati CLC

Ichangu Narayan CLC

Khokana CLC

Khwopa Adarsha CLC

Tamsipakha CLC

UNESCO Office in Kathmandu &  
UNCRD Disaster Management Planning Hyogo Office

With Support from UN/DESA and the Great Hanshin-Awaji  
Earthquake Memorial Research Institute

**Hyogo Trust Fund VII: 2005-2006**

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Koto Kanno: UNESCO Representative to Nepal

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# Abbreviations

CBDM	Community Based Disaster Management
CLC	Community Learning Centre
DDC	District Development Committee
GIS	Geographical Information System
HFA	Hyogo Framework for Action
HTF	Hyogo Trust Fund
JICA	Japan International Cooperation Agency
PTSD	Post Trauma Stress Disorder
VDC	Village Development Committee
ToT	Training of Trainers
UNCRD	United Nations Centre for Regional Development
UNESCO	United Nations Educational, Scientific and Cultural Organisation
UNFPA	United Nations Population Fund
UNDESA	United Nations Department of Economic and Social Affairs
UNDP	United Nations Development Programme
WCDR	World Conference on Disaster Reduction

# Acknowledgements

This proceeding arose from dialogues, meetings, and workshops with people from diverse communities of Nepal. Sincere thanks go to the colleagues and friends in Nepal who supported the activities, in particular, Community Learning Centre (CLC) members, who kindly provided their precious time and knowledge to make this action research possible.

Special thanks go to Ms. Koto Kanno (UNESCO Representative to Nepal) for her unfailing inspiration, continuous encouragement and moral support. Substantial contributions were made by Nipuna Shrestha (Facilitator, UNCRD/UNESCO Office in Kathmandu), Anuradha Tulachan (Editor, UNCRD/UNESCO Office in Kathmandu), Aliza Shrestha Dhungana (UNESCO Office in Kathmandu, Education Unit) and Elke Selter (UNESCO Office in Kathmandu, Culture Unit). Sincere thanks go to Bhim Prasad Subedi (Professor and Head, Tribhuvan University, Central Department of Geography) for meticulously going through the Nepali manuscript and invaluable suggestions. The series of consultation meetings and Participatory Workshop came true with the warm support extended by the Non-Formal Education Centre (Ministry of Education and Sports), the Nepal Red Cross Society, UNFPA Nepal, UNDP Nepal and JICA Nepal.

It is noteworthy that the Great Hanshin-Awaji Earthquake Memorial Research Institute sponsored the research and publication through the Hyogo Trust Fund VII. Kind support was also made available by UNDESA and UNCRD to publish the workshop proceedings.

## "Disaster Management Starts from Our Communities"



*Community members working with the Facilitator (right):  
Pre-community assessment in Bhaktapur, July 2006*



# Introduction



*Patan Durbar Square, Nepal*

## Background

Nepal, comprising two thirds of the Himalayas, is a multi-lingual, multi-ethnic and multi-cultural country with ancient history. Fascinating towns and villages exist in the mountains, hills and the Terai, and people live with the nature, developing their tradition and cultural heritage in the Himalayan environment. Kathmandu Valley was accorded the status of a World Heritage Site by United Nations Educational, Scientific and Cultural Organisation (hereafter UNESCO) in 1979. The valley thrives with different cultures and historic artefacts, such as temples, palaces and houses with traditional architecture. They carry with them the history of the country and are now an indispensable part of Nepal's identity. In such cultural, historical and geographical setting of Kathmandu Valley, the people's livelihood strategies and "*Samudaya*" (community in Nepali) have been developed uniquely.

## Theme: Urbanisation and Community Based Disaster Management (CBDM)

In a concerted follow-up to the Hyogo Declaration adopted at the United Nations World Conference on Disaster Reduction (UNWCDR) in January 2005, the United Nations Centre for Regional Development Disaster Management Planning Hyogo Office (hereafter UNCRD Hyogo Office) has initiated a programme, titled *Urbanisation and Community-Based Disaster Management (CBDM)* since 2005. The Hyogo Trust Fund (HTF) VII project is funded by the Great Hanshin-Awaji Earthquake Memorial Research Institute (an affiliation of Hyogo Prefectural Government).

With its primary focus on "Community Based" Disaster Management in urban settings, UNCRD Hyogo Office along with UNESCO Office in Kathmandu promoted CBDM activities in partnership with 5 Community Learning Centres (hereafter CLCs) in the Kathmandu Valley: (1) Bungmati CLC; (2) Khokana CLC; (3); Khwopa Adarsha CLC; (4) Ichangu Narayan CLC; and (5) Tamsipakha CLC. CLCs have been established in various parts of Nepal with the concept jointly promoted by the World *Terakoya* Movement of National Federation of UNESCO Association in Japan (NFUAJ) and UNESCO.

In consultation with UNESCO Representative to Nepal (Ms. Kanno), UNESCO colleagues working for Education and Culture Units, and the researcher from UNCRD Hyogo jointly visited the above five CLC sites in March 2006. Thereafter, the sites were determined feasible to conduct an action research and were made the case study sites. The criteria for site selection were as follows:

- ▶ Rapidly urbanised and urbanising areas.
- ▶ UNESCO World Heritage Sites in Danger.
- ▶ Sites situated within Kathmandu Valley (in consideration of the political situation of Nepal in that period, i.e., March/April 2006).
- ▶ Accessibility to project site, taking account of time, means of transportation, and travel cost, as frequent visit to the pilot sites/communities was considered essential.
- ▶ Communities where activities are initiated voluntarily.

### **Participatory Workshop**

Within the framework of this project (HTF VII), UNESCO Office in Kathmandu and UNCRD Disaster Management Planning Hyogo Office convened the first Participatory Workshop on “Urbanisation and CBDM” from 19-21 July 2006 at *Yala Maya Kendra*, Patan Dhoka, Lalitpur, Nepal. More than fifty participants from the above CLCs as well as representatives from other organisations such as Non-Formal Education Centre (Ministry of Education and Sports), Nepal Red Cross Society, UNFPA Nepal, UNDP Nepal and JICA Nepal warmly supported the workshop<sup>1</sup>. Moreover, within the framework of the national development plans (Nepal) and Hyogo Framework for Action (HFA), the goals and objectives were pursued as follows:

1. To explain and demonstrate in practice the concept of “living safely in the urban community and sustainable livelihoods” through Community Learning Centres’ networks.
2. To enhance community based cooperation in the field of disaster management through exchange of findings, ideas and information.
3. To incorporate disaster management into development planning through community empowerment and good governance: Exercises for assessment of community risk, vulnerability, and assets in the three field visit sites (Kathmandu, Patan and Bhaktapur) were conducted during the workshop.

Thus, the overall objectives of the workshop were discussed and strategies were explored:

- ▶ To incorporate disaster management into ongoing community development planning
- ▶ To further strengthen CLCs as an effective delivery mechanism for community development, shedding light on literacy and lifelong education programmes of UNESCO

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<sup>1</sup> A list of participants appears in Annex III.



## **A new initiative from Nepal: Integrating Disaster Management into Community Learning Centre (CLC) activities**

Community Learning Centre (CLC) is known as a platform for Non-Formal Education (NFE) and has been involved in organising community activities such as literacy and livelihood programmes in the local community. On that basis, a new initiative, “Integrating Disaster Management Planning into Community Learning Centre (CLC) activities”, has been initiated with communities as an added value. The unique initiative arose from Kathmandu Valley in March 2006.

In Nepal, Non-Formal Education Centre (Ministry of Education and Sports) and UNESCO Office in Kathmandu launched the first pilot CLC in a rural setting in Srikot, Baitadi. The second CLC was established in an urban setting in Tamsipakha (Ward 18) of Kathmandu, and the third one was founded in a semi urban setting in Budol, Kavre. These indicated that CLC establishment was feasible in both rural and urban settings (according to UNESCO’s evaluation).

Moreover, as a consequence of continuous policy recommendations to the government<sup>2</sup>, the promotion of CLCs in Nepal was reflected in the Tenth Five-Year Development Plan of Nepal, which states that at least one CLC would be formed per electoral constituency and that a total of 205 CLCs would be formed in the 75 districts of Nepal by 2007. To date, a total of 190 CLCs have already been established. A recent policy review has suggested that CLCs are also needed in every ward and Village Development Committee (VDC). If implemented, more than 4,000 CLCs would be set up across the country and the CLC networks thus created would be invaluable.

While the government annually allocates minimal fund to support the CLCs, the community members are mainly responsible for resource mobilisation. For example, at Tamsipakha CLC, a group of young boys and girls, who play traditional Newari instruments called the *Dhime Baaja* during special events, share a part of their income for the operational cost of CLC. Moreover, women’s groups contribute a part of their income from selling home made pickles to promote CLC activities.

From the viewpoint of disaster management, CLCs have been conducting first aid trainings and awareness raising activities. Considering the existing CLC practices and interests, the 5 CLCs will explore how to integrate disaster management into CLC activities: for example, risk, vulnerability and asset assessments and action plan formulation will be carried out as pilot activities with support from the Hyogo Trust Fund VII. Moreover, if the obtained disaster information is further utilised in the learning materials that are used for the literacy

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<sup>2</sup> Before CLCs were established, the District Education Office delivered a series of educational activities. However, there was a lack of coordination between different training activities: for example, literacy classes and income generation courses were often separately organised. Instead, it would have been more effective for people to attend income generation trainings after completing literacy classes.

classes at CLCs, the community members may also learn a series of disaster topics and basic disaster management skills while they learn a letter.

*Information was gathered from Ms. Aliza Shrestha Dhungana, National Project Co-ordination Officer, UNESCO Office in Kathmandu, who has been supporting various CLC activities in Nepal since 2003.*



Self-sustained activity at Tamsipakha Community Learning Centre, March 2006

# 1

## Workshop Day 1



# 1. Reviewing Existing Knowledge and Practice on Disaster Management



*The Editor (left) reviewing community knowledge*



## 1.1 Opening and Introductory Session

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- 1.1.1 **Welcome Speech by Ms. Koto Kanno**  
UNESCO Representative to Nepal
- 1.1.2 **Keynote Speech by Mr. Haribol Khanal**  
Director, Non-Formal Education Centre, Ministry of Education and Sports
- 1.1.3 **Urbanisation and CBDM in Nepal (HTF VII) by Ms. Mayumi Yamada**  
Researcher, UNCRD Disaster Management Planning Hyogo Office

## **1.1.1 Welcome Speech**

*Ms. Koto Kanno,  
UNESCO Representative to Nepal*

Mr. Haribol Khanal, Director, Non-Formal Education Centre, Ministry of Education and Sports, Ms. Mayumi Yamada, Researcher, UN Centre for Regional Development, distinguished guests, participants, colleagues, ladies and gentlemen;

I am delighted to be at the opening of the workshop on Urbanisation and Community Based Disaster Management. Let me first thank you for taking out your time to participate in this program. This workshop is part of joint project of UNCRD and UNESCO to share our ideas to enhance community based cooperation in the field of disaster management. As you know, UNCRD Disaster Management Planning Hyogo Office in Kobe was established after the Great Hanshin-Awaji Earthquake of 1995. The objective of this office was to share the lesson learnt from the Kobe earthquake so that people around the world particularly in Asia will be better prepared in the event of similar natural disaster. Ms. Yamada, UNCRD Disaster Management Planning, Hyogo Office, initiated the regional project on community based disaster management. Nepal was invited amongst several other Asian countries to participate in this project as one of the countries facing greater risks from earthquakes, as well as rapid uncontrolled urbanisation. I would like to take this opportunity to express my profound gratitude for the generous support of the Hyogo prefecture government and the people in Hyogo. I will ensure that those thousands who lost their lives and others who were severely affected by the disaster will not be forgotten, and the loss will be devoted to the future disaster prevention and management.

I am also grateful to Mr. Haribol Khanal, the Director of Non-Formal Education Centre, and Mr. Umesh Prasad Dhakal from the Nepal Red Cross Society for their presence this morning. Their experiences and knowledge in community based educational and humanitarian activities will constitute an important contribution to this workshop. Participation and contribution from the partner community based organisations namely CLCs of Tamsipakha, Khokana, Bungmati, Khwopa Adarsha and Ichangu Narayan are also greatly appreciated.



As you know disaster prevention and management activities should start from the community level and without their valuable cooperation, the present project would not have been possible. The selected communities are either highly urbanised areas or rapidly urbanising settlements. The presence of the experts and the participation of a large number of community people here today are testimony of your interest and dedication to the protection of the lives of the people. Let me also thank Ms. Nipuna Shrestha, UNCRD Facilitator based in UNESCO Office in Kathmandu, who has made every effort in organising this workshop and carried out various activities for risk awareness/preparedness and disaster management activities in the Kathmandu Valley, in close collaboration with UNESCO colleagues such as Ms. Aliza Shrestha Dhungana and Ms. Elke Selter.

At the time of natural disasters, urban areas particularly those which were developed without proper planning are most vulnerable. In such areas, in order to minimise the risks involved, we have to prepare to address various issues such as outbreak of fire in congested urban centres, criminal activities such as looting, communication and traffic breakdown. It is vital to examine how the local people can be mobilised at the time of disasters in urban areas and the success stories and experiences from other countries can be practically replicated in Nepal. The cohesion among the people and communities in the Newar society is still very solid and, therefore, they can play a key role in achieving the proposed goal of Community Based Disaster Management.

Within your communities, there are numbers of culturally and historically important sites and properties. These are the sources for national pride and cultural identity of the people, and thus, they are to be retained and protected from such disasters. The project sites in fact include parts of Kathmandu Valley World Heritage Site in Danger. And they are at the risk of losing its outstanding universal value as the World Heritage Sites due to uncontrollable urbanisation. If we do not prepare for the protection of these cultural heritage sites from the natural disasters, we will not only lose the evidence of Kathmandu Valley's history but also the treasures to be passed on to the future generations. So, it is essential that you as local partners have vital roles to play to safeguard these cultural properties from damage. Particularly, for UNESCO, this program has provided an excellent opportunity to better preserve and protect our valuable heritage areas. We, in UNESCO, are therefore happy to cooperate with the UNCRD Hyogo Office in disaster preparedness activities which include protection of people through community participation in urban areas with the element of safeguarding the cultural entities in Nepal.

I would like to heartily congratulate all of you in advance for jointly moving forward in the next days and for the successful continuation of the disaster preparedness activities in the respective communities for the sake of saving lives as well as the valuable cultural heritage.

Thank you.

## 1.1.2 Keynote Speech

*Mr. Haribol Khanal,*

*Director, Non-Formal Education Centre, Ministry of Education and Sports*

Ms. Koto Kanno, UNESCO Representative to Nepal, Ms. Mayumi Yamada, Researcher, UN Centre for Regional Development, Colleague Umesh Prasad Dhakal from the Nepal Red Cross Society, chairpersons from the various Community Learning Centres (CLCs), distinguished guests, participants, colleagues, ladies and gentlemen;

This morning, UNESCO Office in Kathmandu has once again prompted us to consider a very important issue on human lives. It must have taken considerable amount of time to prepare for the programme today. I would like to extend my sincere gratitude to Ms. Mayumi Yamada, who came all the way from Japan to join us here on the disaster management programme. In our context [Nepal], major disasters are earthquake, flood and erosion. Very recently, as many of us might know, the entire village of Nepane in Kaski District was swept away, taking the lives of at least 17-19 people.

It is important to raise awareness on earthquake risks and to transfer technical skills on how to build earthquake resilient houses in our settlements. Living in highly urbanised and urbanising areas, we need to know how to strengthen the existing houses. We also need to promote various ways of constructing houses and buildings to protect us from earthquakes. In this sense, selecting CLCs as the facilitators was an extremely good decision: I believe that CLCs can reach out to the community members to raise awareness and impart required skills effectively.

I discussed the roles of CLC with Ms. Nipuna and Ms. Mayumi yesterday at my office. Some people might not be familiar with “disaster management education”. But, since education aims for better human life, I think that both the aims of education and disaster management are inseparable. Some of the CLCs such as Tamsipakha CLC, Bungmati CLC and Khwopa Adarsha CLC in Bhaktapur are located in densely populated areas. Population increase has boosted housing construction without proper disaster management planning and people’s

risk awareness. We need to investigate such a situation in a scientific manner, and CLCs can be pertinent facilitators/educators to disseminate the required information to their respective communities.

We have all gathered here today for the three day workshop. I have found the programme sensible. As the agenda indicates, you have a field visit tomorrow to Kathmandu, Patan and Bhaktapur, and participants will be working in groups to assess the respective sites. I expect that we generate substantive outcomes through the workshop, and that the publication further serves as a valuable resource to other sectors and stakeholders.

It has been four years working with UNESCO Office in Kathmandu. Before Ms. Koto Kanno's arrival, I worked with the previous representative for a year. Ms. Kanno has been actively involved in community development, illiteracy alleviation and public-awareness raising activities. I would like to express my admiration for her tireless effort and vision and would like to sincerely thank her for engaging us. I would like to wish every success of this workshop and hope that it provides us with concrete outcomes.

I would like to acknowledge that CLCs have been established for community development in the field of education, health, livelihoods, economy etc. CLCs are an integrated body of various development actors/actresses that serve as a source of positive change. Therefore, I believe that community based disaster management activities, through CLCs, will effectively reach and benefit our various communities.

I wish you all a very successful workshop. Thank you.

### **1.1.3 Urbanisation and Community Based Disaster Management in Nepal (HTF VII)**

*Ms. Mayumi Yamada,  
Researcher, UNCRD Disaster Management Planning Hyogo Office*

Dear Friends,

Hyogo Trust Fund (VII) project has been generously funded by my hometown Hyogo prefecture based on the agreement between the Great Hanshin-Awaji Earthquake Memorial Research Institute and United Nations Department of Economic and Social Affairs (UNDESA), New York. A new theme, *Urbanisation and Community Based Disaster Management* (CBDM), was adopted in 2005, and UNCRD Disaster Management Planning Hyogo Office started to implement the activities based on the agreement above. The partner countries of Hyogo Trust Fund are Nepal, Bangladesh, Sri Lanka and Thailand. In addition, I would like to acknowledge that this programme is the follow up to the UN World Conference on Disaster Reduction (WCDR) convened in Kobe City, Hyogo Prefecture in January 2005. Therefore, our friends and partners in many countries around the world have observed this initiative.

In January 1995, Kobe/Hyogo was devastated by the great earthquake which directly hit a number of urban centres. It was a rare case. In one moment, we lost more than 6,000 lives. As you are already aware from the video shows conducted earlier in schools, CLCs and community meetings, Kobe City in Hyogo, my hometown, had instantly collapsed in front of our eyes. I believe that it was not only a natural disaster, but also a human-made disaster.

I know that a large number of people from Hyogo are unwilling to articulate what they had experienced during and after the earthquake of 1995. Rather, they remain quiet and express that those who do not have disaster experience are unlikely to understand the sadness and pain that they had gone through. This indicates that memories last in people's minds for a long period of time, and that we tend to keep our memories, regardless of whether we like it or not, somewhere in our mind. In this regard, I would like to request you to be sensitive and serious when you deal with the subject. I truly wish we could have known what kinds of

urban vulnerabilities existed in the place where we used to live, and the things we could have done for disaster preparedness before the earthquake devastated our communities. Had we been prepared, a number of our families, friends and neighbours could have been alive here.

It is a dilemma, but conversely, it is true that those who were kept alive, including me, have regained some happiness after 11 years. We do appreciate that our lives go on: we somehow continue our lives with our families, friends and neighbours. Keeping all these in my mind, I believe that the survivors carry an important mission through our lives: we need to ensure that the loss of 6,434 people's lives and the living memories of others who were severely affected by the disaster will be devoted to reduce future disasters. It is important to disseminate lessons learnt from our past disaster experiences to the world and also to pass them on to the coming generations. I believe that the Hyogo Trust Fund sheds light on such wishes of the people of Hyogo, and I do hope that my interpretation of the Hyogo Trust Fund is right as it should be. I would like people of Nepal to notice such wishes, which motivated me to organise today's workshop here in Nepal. I would like to reflect the support from us, the people of Hyogo, as our pure desire to share the valuable lessons learnt from the disasters that took away thousands of precious lives from our place.

Many people often ask why disaster management should start from communities. I often answer the question, disseminating our practical experiences from the Great Hanshin-Awaji Earthquake. First, it is a fact that about 80% of people, including those who had been under the debris, were rescued and helped by family members and people in the neighbourhood after the earthquake. Second, in the aftermath of the earthquake, the government bodies of Kobe city as well as Hyogo Prefecture were dysfunctional for a certain period of time as the civil servants themselves and their families turned victims. Therefore, I feel it would be unrealistic to depend heavily on public services, civil servants and disaster management specialists etc. Rather, I suggest that we prepare ourselves for disasters from our end. As our evidences indicate, I believe that having local residents as disaster management planners leave us and our communities much safer. Considering all these, I believe that disaster management should start from our communities.

We often realise the value of our lives and solidarity with others after sharing disaster experiences. My wish, however, is that the people of Nepal realise the value of life, and prepare themselves and their cities before losing thousands of lives. I hope that Nepal will not follow Kobe's negative examples. Let us bear in mind that disaster management planning means protecting/saving our lives (*Inochiwo Mamoru* in Japanese). Each individual protects herself/himself, and further, s/he protects her/his families. Communities play a critical role in supporting those who do not have families and those who need special assistance. All human life is equally precious regardless of social or economic status. While carrying out rescue operation in the city of Kobe after the earthquake, victims were rescued from the debris regardless of who they were. I believe that such sentiment of humanity is universal: let us disseminate it via schools, Community Learning Centres and through the people of Nepal.

Through the Hyogo Trust Fund VII, we wish to work with the people of Nepal to save/protect lives in our everyday life. To achieve the goal, first, the community members present here must take care of their lives in any situation. Second, let us learn and enhance disaster preparedness measures and disaster management skills through exchanging ideas and information at this workshop, so that we are empowered to protect/save our families and communities. The residents of Bhaktapur, Bungmati, Ichangu, Kathmandu, Khokana and Patan have been living alongside the World Heritage Sites. Every resident, including each one of you, should find and develop your own disaster reduction strategies to protect people living with local tradition, culture and history. I believe that you can demonstrate and disseminate such initiatives and ideas from Nepal to the rest of the World. I also believe that a ring of people, *Samudaya*, is the greatest asset to go through any difficult time.

This year commemorates the 50<sup>th</sup> anniversary of the friendly relations between Nepal and Japan. Hyogo prefecture and Kobe city are places where the mountains and the sea meet, and through this workshop, I wish that the friendship between the people of Nepal and Japan will continue to grow.

In opening the Hyogo Trust Fund VII workshop, once again, I would like to commemorate all the people who lost their lives during the Great Hanshin Awaji Earthquake of 1995 and the goodwill of those who have survived during the past eleven years.

I would also like to express my deepest thanks to Ms. Koto Kanno, UNESCO Representative to Nepal for her cooperation, Ms. Nipuna Shrestha, Ms. Elke Selter, Ms. Aliza Shrestha Dhungana, CLC members, prominent Nepalese musician Mr. Mohan Prasad Joshi and all others who have gathered here today. Today's opening ceremony had a meaning. The tiny vessels used for playing music represented the diverse and colourful communities living side by side in Nepal: the respective vessels sound different, but their echoes are harmonised to play the sounds of an orchestra. As drops of water reverberate in our hearts, we wish the orchestra, *Samudaya*, will have the peace to make a positive change in the world around us.

Thank you.

## 1.2 Learning Session I

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### 1.2.1 Disaster Situations in Nepal

Umesh Dhakal, Executive Director, Nepal Red Cross Society

### 1.2.2 Discussion with Nepal Red Cross Society

### 1.2.3 Opening Dialogue: Community Disaster Management

Aliza Shrestha Dhungana, National Project Coordination Officer,  
UNESCO Office in Kathmandu

Nipuna Shrestha UNCRD/UNESCO Facilitator (Kathmandu)

Mayumi Yamada, Researcher, UNCRD Disaster Management Planning  
Hyogo Office

### 1.2.4 Community Perspectives on Disaster Management: Group Work Presentation by CLCs

Facilitated by Prem Bhakta Maharjan, Bungmati CLC

Case Study 1: Tamsipakha

Case Study 2: Ichangu Narayan

Case Study 3: Khwopa Adarsha

Case Study 4: Bungmati

Case Study 5: Khokana

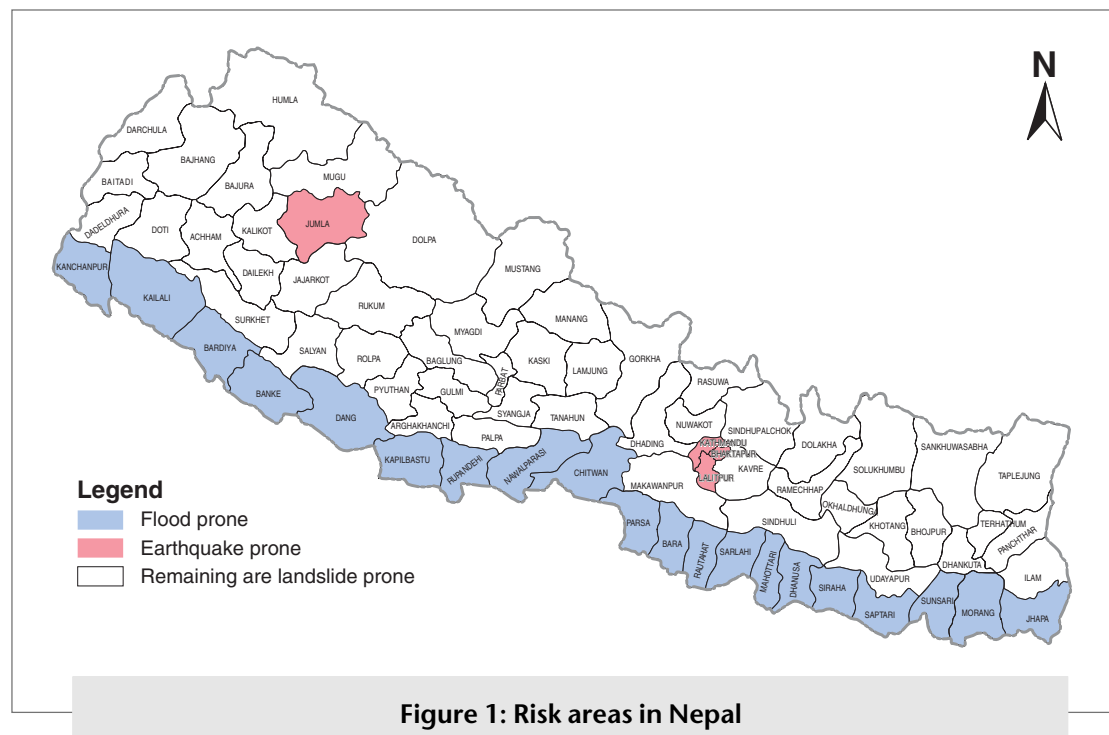
## 1.2.1 Disaster Situations in Nepal

*Umesh Dhakal,*

*Executive Director, Nepal Red Cross Society (NRCS)*

### Introduction

Nepal faces various disaster risks. In general, Terai region, the southern border, is considered a flood prone and a high risk area while Kathmandu Valley and Jumla are known to be vulnerable to earthquakes (Figure 1). The rest of the country is considered as being landslide-prone (Table 1 and 2).







Search and Rescue during flood and landslide in 2002

### Loss of lives due to disasters in Nepal (Table 1):

Table 1: Loss of lives (1983-2001) in Nepal

Year/Types	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	00	01	Total
Earthquake	0	0	0	0	0	721	0	0	0	2	0	0	0	3	0	0	0	0	0	726
Flood and Landslide	293	363	420	315	391	328	680	307	93	71	1336	49	203	258	83	273	193	173	196	6025
Fire	69	57	52	96	62	23	109	46	90	97	43	43	73	61	65	54	39	38	12	1129
Epidemics	217	521	915	1101	426	427	879	503	725	1128	100	626	520	494	951	840	1207	141	228	11949
Windstorms, Hailstorm and Thunder bolts	0	0	0	0	2	0	28	57	63	20	45	47	34	75	49	23	22	26	31	522
Avalanche	0	0	0	0	0	14	20	0	0	0	0	0	43	4	12	0	5	0	0	98
Stampede	0	0	0	0	0	71	0	0	0	0	0	0	0	0	0	0	0	0	0	71
<b>Total</b>	<b>579</b>	<b>941</b>	<b>1387</b>	<b>1512</b>	<b>881</b>	<b>1584</b>	<b>1716</b>	<b>913</b>	<b>971</b>	<b>1318</b>	<b>1524</b>	<b>765</b>	<b>873</b>	<b>895</b>	<b>1160</b>	<b>1190</b>	<b>1466</b>	<b>378</b>	<b>467</b>	<b>20520</b>

(Source: NRCS, 2006)

**Table 2: Additional data on flood and landslides (2002-2005) in Nepal**

Flood and Landslides	2002	2003	2004	2005
No. of districts affected	49	62	25	35
No. of people died	443	300	185	160
No. of people injured	324	353	153	79
No. of people missing	113	59	35	58
No. of families affected	49,259	10,484	64,962	6,890
No. of families displaced	12,872	2,198	14,949	568
No. of houses destroyed	6,353	4,705	22,289 (entirely destroyed) 39,240 (partially destroyed)	1,399
No of the families who received relief materials (distributed)	10,419	4,328	16,972 (Family Kit) 4,169 (Food for family) 2,919 (persons) (medicine)	703 (Families)
No. of families resettled	225	-	1,800 Families (8 Districts)	-
No. of schools destroyed	-	-	66	-
Length of roads destroyed (km)	-	-	255 kilometres	-
No. of bridges destroyed	-	-	77	-
No. of health post destroyed	-	-	3	-

(Source: NRCS, 2006)

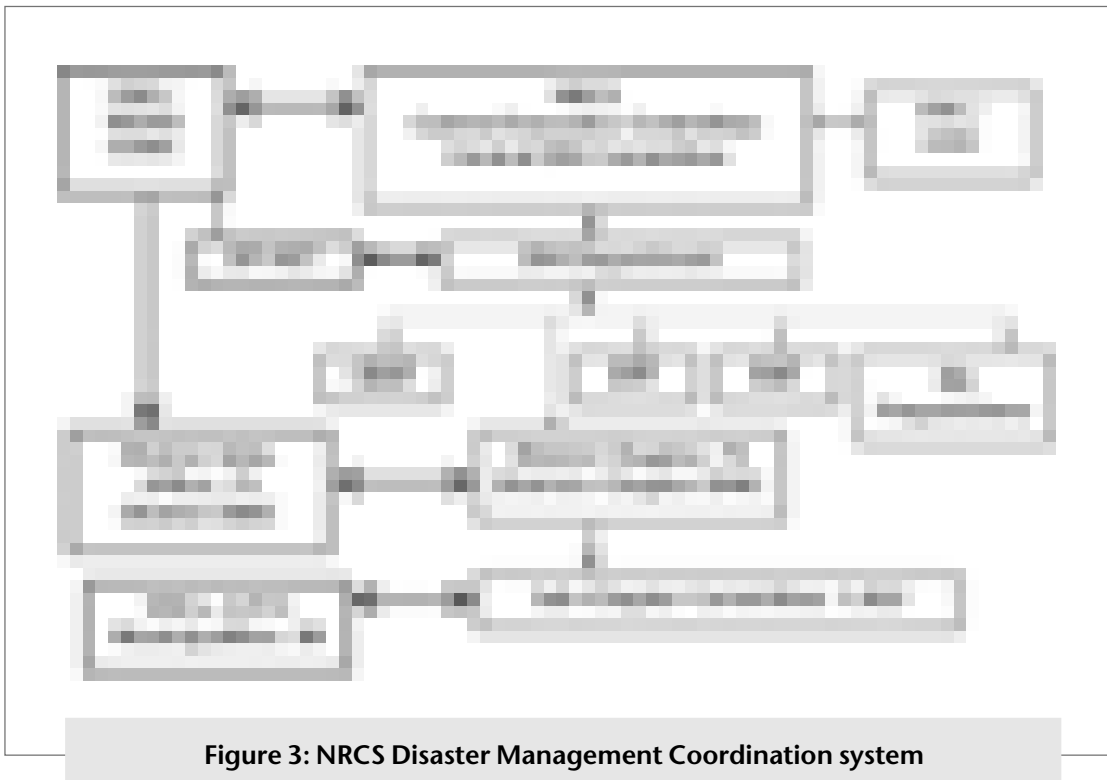
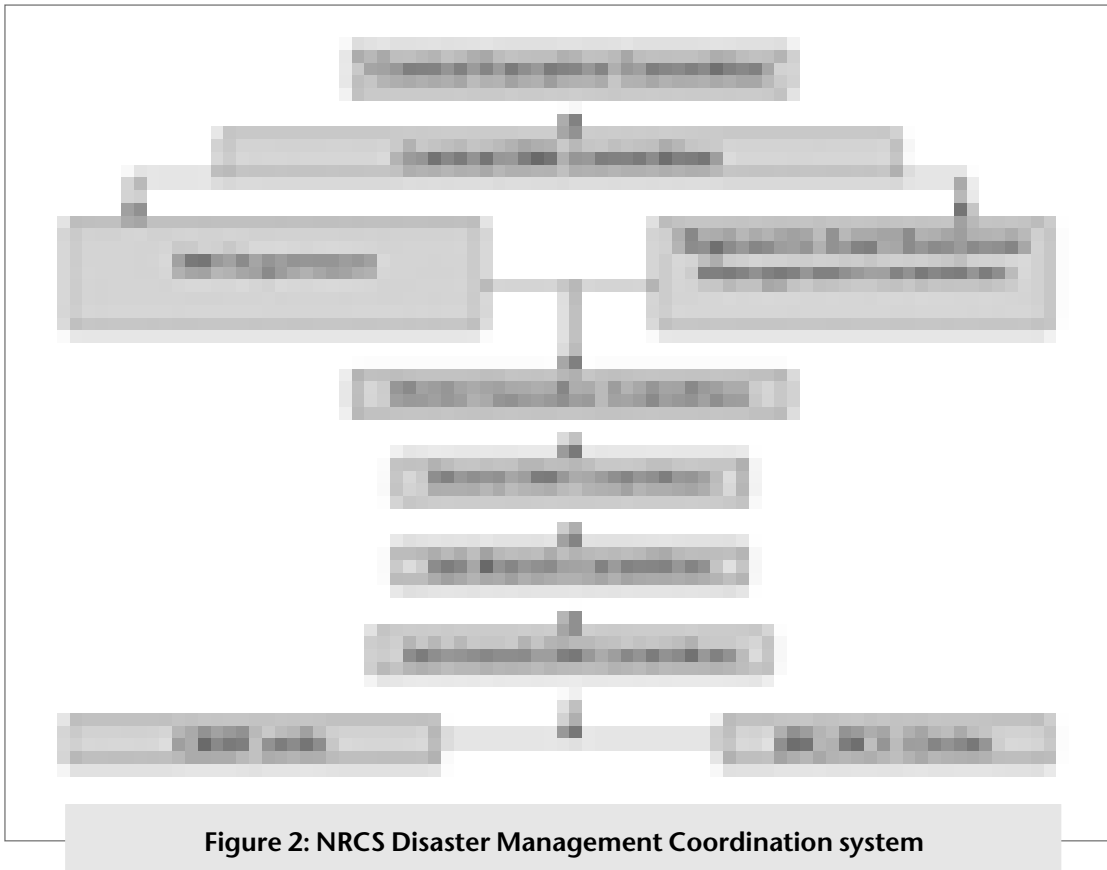
## Nepal Red Cross Society's capacities

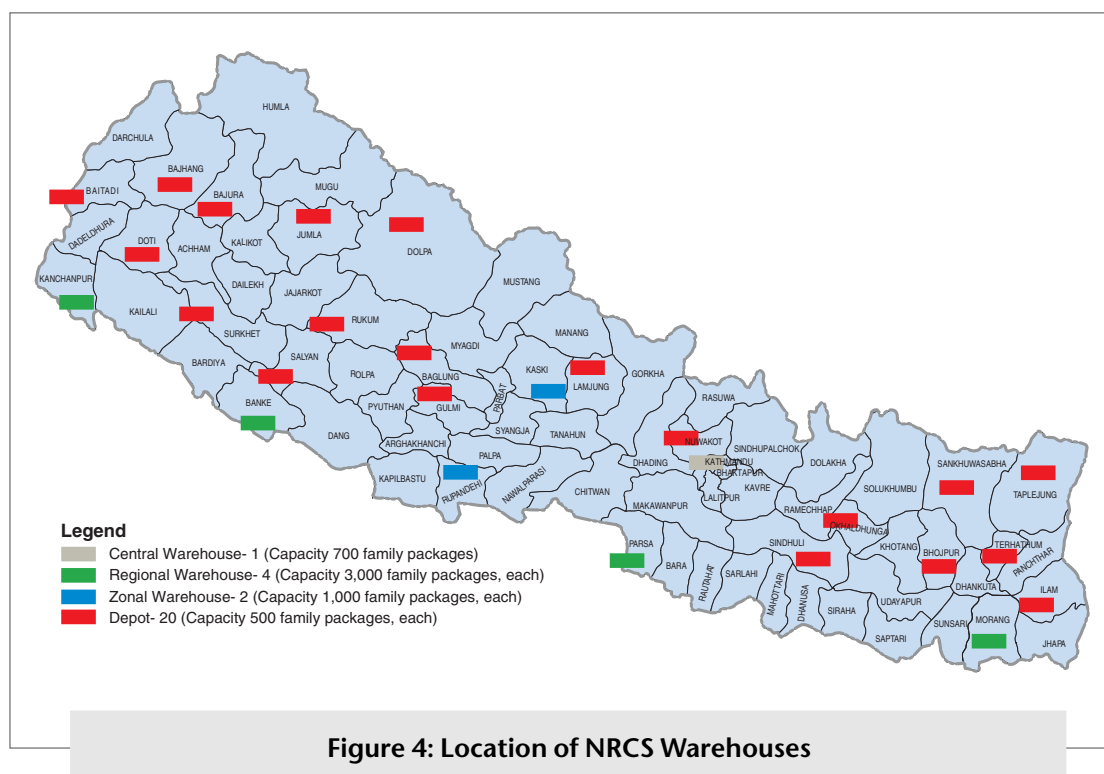
In order to respond to disasters, the NRCS has built institutional capacities by mobilising human and financial resources including logistics and materials.

### Institutional capacities (Figure 2, 3 and 4):

- 75 District Chapters
- 1,022 Sub chapters
- 316 Cooperation Committees
- 3,515 Junior Red Cross (JRC) Circles
- 54 Blood Transfusion centres
- 8 Eye Hospitals and Eye care centres
- 27 Warehouses and Depots
- Ambulance Service from 62 stations

The coordination system in NRCS is presented as follows (Figure 2 and 3):





**Figure 4: Location of NRCS Warehouses**

#### Human Resources:

- Regional Disaster Response Team (RDRT) members: 19
- National Disaster Response Team (NDRT) members: 56
- Disaster Reduction (DR) trained persons at 37 districts: 740
- Disaster Management (DM) trained persons: approximately 4,000
- Persons trained on First Aid: 8,000
- NRCS volunteer members: 827,452

#### Financial resources:

- Princep Disaster Relief fund: over 20 Million Nepalese Rupees (NRs.)

#### Logistics/Materials (Figure 4):

- Relief materials (approx 30,000 family packages) pre-positioned at various strategic locations.

### NRCS Kathmandu Valley Earthquake Preparedness Initiatives (KVEPI)

The NRCS launched the KVEPI programme in 2003 and implemented the community based earthquake preparedness programme for 18 months. The NRCS covered 10 wards and partnered with 250,000 people through the initiative.

The major activities are:

- Disaster Management Committee formation in the wards by the NRCS;
- Capacity building;
- Warehouse networking and stockpiling of relief items;
- Pre-positioning of SAR (Search And Rescue) items;
- Well construction in Tundikhel;
- Training on Search And Rescue (SAR), First Aid (FA), Disaster Management (DM) and community walk tours;
- IEC development and dissemination; and
- Simulation exercises.

Major achievements are:

- Stockpiling of family kits (for 3,000 families);
- Capacity building; recruitment of 262 Search and Rescue volunteers; 212 DM volunteers; and 221 FA volunteers;
- Training of Trainer (ToT) organized at ward level;
- Disaster/EQ Preparedness Plan developed;
- SAR team and kits preparation;
- Simulation Exercises conducted in each ward;
- Safe havens/evacuation points;
- Community resources identified; and
- Awareness raising campaigns organised and resources identified.

The second phase of the KVEPI programme is now being expanded into 10 new wards with financial support from DIPECHO (Disaster Preparedness European Commission's Humanitarian Aid Office).

### **Lessons learned**

- Simulation exercise is effective in helping manage real disaster situations;
- Community based approach is the key to programme's sustainability;
- Participation of different stakeholders is very productive;
- Plan development and testing help save lives during disaster;
- Pre-positioning of relief items is effective;
- Local level contribution is significant; and
- Advocacy and community walk tours contribute to save people's lives.

## Recommendations for Disaster Management in Kathmandu Valley

The NRCS's evaluation reports and field studies recommended the following points:

- To develop National Disaster Management Plan, Policy and Strategy; to define roles at different levels;
- To establish Network/mechanism for the coordination of different level/organisational planning and preparedness;
- To develop National preparedness plan;
- To develop Joint assessment mechanism: consistency in formats/assessments;
- To train enough number of Search & Rescue and FA service providers;
- To develop Valley Contingency Plan (Multi-agency);
- To Map evacuation sites, and enhance more simulation exercises with involvement of relevant stakeholders;
- To mobilise resource for mapping;
- To organise massive awareness generation campaigns;
- To intervene in Community based and school based programmes;
- To identify safe havens/evacuation routes;
- To exercise building code strictly;
- To widely apply Vulnerability and Capacity Assessment (VCA) as an effective tool for analysing disaster situation and capacity;
- To emphasize household level preparedness;
- To promote consistency/standardization of the messages;
- To organise simulation and drills;
- Timeline of KVEPI too short, 2 years more appropriate: activities need more time and must be followed up with lessons learned immediately following exercise, with full participation; and
- To offer refresher training events annually.

## 1.2.2 Discussion with the Nepal Red Cross Society

### Summary of the Discussion with Nepal Red Cross Society (NRCS)

- ▶ The Nepal Red Cross Society established Disaster Management Committees (DMCs) at the community level earlier under the KVEPI, and currently, under the ongoing CBDM project. There are 35 wards in Kathmandu, 19 wards in Bhaktapur and 22 wards in Lalitpur. All wards need to be included in disaster management activities. The Nepal Red Cross Society has an extensive human resource (approximately 900,000 members) and could play a major role in disaster preparedness and management at the community level.
- ▶ Some of the DMCs are currently inactive. The Nepal Red Cross Society Kathmandu District Committee and others could help to keep the established committee active. Enhancing the existing committee may be more important than creating a new one. Some CLC members are willing to continue the activities initiated by the Nepal Red Cross Society, seeking further guidance, e.g., what to do, how to do, and when to organise the activities in sustainable ways. Community members (workshop participants) consider first aid knowledge to be useful and essential, and are willing to learn the required skills. For those who have already gained the first aid knowledge and skills, refreshment training opportunities are considered necessary.
- ▶ The Nepal Red Cross Society facilitates Training of Trainers (ToT) on First Aid. But, the current way of organising ToT has limitations: (i) the master trainers selected from the communities are very busy and cannot regularly participate in the training courses; (ii) the trainers have difficulty in transferring knowledge to community members because both trainers and trainees are too busy to follow-up on the activities; (iii) there is lack of resources for organising *first aid*, *search and rescue* and *refresher trainings* regularly; and (iv) trainers do not have enough opportunities to utilise and transfer their knowledge and skills to the rest of community members.
- ▶ Simulation exercises need a more proper, sensitive consideration such as (i) busy schedules of community members in urban settings, and; (ii) informing residents and relevant

organisations/authorities (e.g., hospital staff) of the schedules and contents of simulation exercise well in advance. In the past, the exercise itself caused chaos because local residents were not informed of the plans and they were confused by the sudden events. Moreover, a number of hospital staffs had to be engaged in the exercises, which could leave real patients behind at hospital.

- ▶ The Bhaktapur Municipality Office, Lalitpur Sub Metropolitan City Office, and Kathmandu Metropolitan City Office, Ministry of Home Affairs and the international communities have important roles in disaster reduction. Their roles and activities need to be identified, clarified and better coordinated, so that the requests from communities are properly supported.



## Discussion with the Nepal Red Cross Society (NRCS)

### ***Prem Bhakta Maharjan:***

Although the simulation exercise was conducted effectively, I felt that there was a lack of coordination between various agencies. As already recommended by [the Nepal Red Cross Society representative], inter agency coordination should be improved.

### ***Dhan Bahadur Maharjan:***

The disaster management committee in Ward 18 is currently inactive. Therefore, the Nepal Red Cross Society Kathmandu District Committee and others should follow up with the established committee and keep it active.

### ***Bijay Bahadur Mali:***

Kathmandu consists of 35 wards, Bhaktapur has 19 wards, and Lalitpur has 22 wards. Why have not all wards been included in disaster management activities? In case of Kathmandu, a disaster may fall upon any of the areas. If disaster management is a serious issue, we should cover all of the communities inside the Kathmandu valley. The Nepal Red Cross Society has an extensive human resource (around 900,000 members<sup>3</sup>). Therefore, they have a major role to play. Similarly, the Bhaktapur Municipality Office, Lalitpur Sub Metropolitan City Office, and Kathmandu Metropolitan City Office, Ministry of Home Affairs and the international communities have important roles in disaster reduction<sup>4</sup>. We are a mere hundred people in this room working together to do so much. It is said that a big earthquake is likely to hit Nepal (e.g., Kathmandu Valley) within five years, but our preparedness in the community is still inadequate. We definitely need action<sup>5</sup>.

### ***Aliza Shrestha Dhungana:***

I now request representatives from the Nepal Red Cross Society to address the issues.

### ***Ram Kumar Shrestha:***

The Nepal Red Cross Society has been doing a good job [in Ichangu] with the various activities. There was a series of disaster management activities in our village with support from World Vision. There is a committee and I am aware that a Nepal Red Cross Society representative is also involved. Although the committee exists, it has not been active. The Nepal Red Cross Society should pay more attention towards how to sustain the various activities. We need to continue our activities even after this workshop. We, the CLC, are ready to make our disaster management activities sustainable. Therefore, we would like to have suggestions from the Nepal Red Cross Society as to how and how often activities should be organised.

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<sup>3</sup> The 900,000 members should be trained and mobilised according to the principles of the Red Cross Society. Membership should be dedicated to serving the humanity. (Bijay Bahadur Mali)

<sup>4</sup> Both the Government of Nepal and the local authorities need to pay more attention to disaster management. Nepal has been considered vulnerable to earthquakes. Therefore, disaster management should be incorporated into planning at the national and the local level. We should move away from the mentality of *Bhagwan bharosa* (leaving things up to God in Nepali) (Bijay Bahadur Mali)

<sup>5</sup> Disaster related information should be incorporated into school education. (Bijay Bahadur Mali)

***Aliza Shrestha Dhungana:***

Thank you Mr. Ram Kumar for your comments.

***Kedar Babu Dhungana:***

We call our secretaries “minister”, and we fortunately have among us today the Minister of Nepal Red Cross Society Kathmandu District Committee, Mr. Sangha Ratna Shakya. I would like to pass on the opportunity to answer the queries.

***Sangha Ratna Shakya:***

Regarding the disaster management activities of the Nepal Red Cross Society, I would like to start answering the question on Ichangu, clarifying a few points. Two years ago, we formed a community based disaster management (CBDM) committee in Ichangu VDC with the support from World Vision. We formed three groups in the community for disaster preparedness and provided them with disaster management training, first aid training and search and rescue training. After the trainings, we also conducted a simulation exercise to utilise their skills as we did in Khokana. But, since we had conducted the simulation exercise without notice, many old people came down from the village upon hearing the ambulance siren and noise. When senior people came to know that a simulation exercise was in progress, some showed anger that we were doing a useless thing. Conversely, others were happy with our good job, and even suggested that we extend such disaster preparedness activities to other places, beyond Ichangu.

Responding to [Mr. Ram Kumar Shrestha’s] claim, it is correct that the committee that was formed has been inactive. Therefore, we have been prompting them on a weekly or monthly basis, suggesting they should take initiatives and conduct activities. During the project period, the local communities had showed much enthusiasm in being involved with the various activities and although people are still eager to participate in activities after the project period, we feel that there is lack of those who can follow up i.e., there is lack of people who can *Haupa* in Newari. We are thinking of following up on the disaster management committee and providing refreshment training to the community members.

Two years ago, we had conducted earthquake preparedness activities in Ward 18 [Kathmandu] for eighteen months. Similar to the case of Ichangu, we had formed three groups, and they have been active even after the project period. Although we did not follow up on their activities, they came to us during Jana Aandolan (People’s Movement) and expressed their desire to utilise the skills learnt from the trainings. We suggested that they could use their skills for treating the injured people during in the Jana Aandolan. Mr. Dhan Bahadur Maharjan and Ms. Nani Hira Maharjan had attended the training organised by the Nepal Red Cross Society. As per the request of Mr. Chandra Nanda Newa, the coordinator of the Disaster Management Committee, I would like to inform you that we are organising refresher trainings. We, Nepal Red Cross Society Kathmandu District Committee, have been in the process of formally acknowledging your committee’s efforts, and you will be receiving a letter within a few days.

We welcome Mr. Bijay Bahadur Mali's suggestions to extend the coverage area of [disaster management] activities for more than a hundred or two hundred people. We intend to gradually extend our disaster preparedness activities to various sectors of the communities. Last year, we had involved four wards, and this year four other wards have been involved. Currently, in addition to the total of eleven wards, we have involved a couple of [VDCs] including Ramkot and Ichangu. Along with the refresher trainings, we further aim to conduct earthquake related trainings in additional wards. Hopefully, we will manage to conduct earthquake preparedness activities in all of the 35 wards of Kathmandu and 19 wards of Kirtipur. At the VDC level, we will be conducting CBDT (Community Based Disaster Training). We have been preparing a plan, and once the plan is ready, we would like to coordinate with the concerned bodies to gradually expand our working area to include all the municipalities and VDCs.

Simulation exercises are effective in raising public awareness. Disaster Management Committees (hereafter DMCs) already have a wide range of experience. I would like to share with you an incident during the simulation exercise in Ward 18. We had gathered around 70-80 people to act as injured people with different kinds of injuries such as head, face, arm, and leg injuries. We had gathered them all in a *chowk* (a courtyard). A 14 year old school girl, who had been trained two days prior to the simulation exercise date at the *Sabha griha* (a hall), had a fake injury on her leg with a glass piece made to look pierced into her leg. Upon seeing the fake injury and listening to the sounds of cries around, she rolled her eyes and actually fainted. But, people around her thought she was acting. At first, even I was not sure whether she had actually fainted, but her friend insisted that she had really fainted. People around her still believed that she was acting and they carried her into an ambulance. I followed after them. With my skills gained from the Nepal Red Cross Society trainings, I realised that she had really fainted. I carried her to the *Ayurvedic* Hospital in a rush. Since all nurses from the hospital were in the simulation exercise, I had to treat her by myself. Being a first aid trainer, I knew how to treat a fainted person. As Mr. Bijay Bahadur and Mr. Bibhuti Man are aware, there was also a similar incident in Bhaktapur. Ward 17 DMC had [organised a simulation exercise] and 20-25 people had been made to act injured. We had sent fake patients on an ambulance to Bhaktapur Hospital. The nurses were not aware that the patients were in a simulation exercise; therefore, they gave injections to them and patted their cheeks to wake them up. Thus, learning by doing, we have come to know how simulation exercises could be done in a better way.

Mr. Bibhuti Man and Mr. Bijay Bahadur Mali from the DMC are committed to extend various activities to more communities. Similarly, the Nepal Red Cross Society considers conducting disaster management planning activities not only in Kathmandu Valley, but also extending to all districts (75) of Nepal through DMCs. We have been expanding our activities with increased human resources. I spoke only about Kathmandu, but Mr. Kedar Babu Dhungana will further explain about the activities of the Nepal Red Cross Society.

***Kedar Babu Dhungana, Nepal Red Cross Society:***

It is better for people not to suffer from a disaster. Community members seem to be happy with us. But, we would rather like to hear from you, "We can do certain activities on our own, we have identified the resources, and we will coordinate our work among us." Starting from nothing, we reached this point. It might have been inconceivable for many of us to meet together in this workshop. Granted that there is still more to be done, we should keep it in our minds that we reached the place where we are now. As our awareness increases, we realise more need for additional support. Instead of saying that things are insufficient, let us try to reach a satisfactory situation.

### **1.2.3 Opening Dialogue: Community Disaster Management in Nepal**

*Aliza Shrestha Dhungana, National Project Coordination Officer, UNESCO Office in Kathmandu*

*Nipuna Shrestha, Facilitator, UNCRD/UNESCO Office in Kathmandu*

*Mayumi Yamada, Researcher, UNCRD Disaster Management Planning Hyogo Office*

***Aliza Shrestha Dhungana:***

A few critical questions were raised. How did we conduct the first aid trainings in our communities, and who could participate in such learning opportunities? Who in the community decides when and how the first aid trainings should be conducted? Living in urban/urbanising settings, community members may not have sufficient time to participate in the trainings, having very busy schedules. Considering these, an additional question was raised. How do we manage such a situation? These questions are for the community members, Nepal Red Cross Society members and all others. As female participants are very quiet (as Mayumi says), you are encouraged to express your opinions.

***Nani Hira Maharjan:***

First aid trainings are being conducted by CLCs with support from the Nepal Red Cross Society. The Nepal Red Cross Society arranges for a trainer and CLC arranges for participants. One training has already been held and we plan to hold another one for another group this coming Sunday.

***Sangha Ratna Shakya:***

Training of Trainers (hereafter ToT) was conducted in Ward 18 DMC (Disaster Management Committee). Two female participants were chosen for the ToT, but they could not be successfully trained because they could not attend the first aid training classes regularly. Consequently, they could not be mobilised as trainers, instead, the Nepal Red Cross Society experts had to conduct the trainings.

***Bijay Bahadur Mali:***

We believe that nobody will come to help us at the community level in times of emergencies. We need to prepare ourselves. Bearing this in our mind, we sent two participants to the ToT

organised by the Nepal Red Cross Society, convincing the people/youth involved in the local organisations and clubs. The two participants were trained by the Nepal Red Cross Society to train our volunteers. The organiser(s)' commitment is important to make trainings successful. Moreover, we need financial resources to offer meals. We sought help from the Rotary Club of Thamel for financial support, schools in Chhetrapati area for venue and volunteers, and other organisations such as NSET for human resources. When the trainers are ready, they can become capable of training others. Trainings are usually held every Saturday and Sunday. Since we believe that our knowledge would be lost without practice, we have been sending our trainers to train the school children. I would like to emphasise again that if we are not committed to take care of ourselves in times of emergency, we cannot be fully involved [in what we are doing]. We should not be afraid to face those who say "Why do we need disaster management trainings when we do not even know when there would be an earthquake". Our commitment is very important to continue our initiatives.

***Sita Ram Bhandari:***

After the first aid trainings, whether the trained persons are capable [of giving first aid] should be tested. The training/educational institution should not take pride in the number of trained volunteers. Rather, they should consider how capable the trained person is.

***Nur Bahadur Thapa, Nepal Red Cross Society:***

Completing first aid training once is not enough; one needs to continue the practice. First aid is a skill, and therefore, as the saying goes "*Practice makes perfect*". It would be unwise to think: "I know how to do first aid perfectly since I have gone through first aid training". One needs continuous practice from time to time.

***Sita Ram Bhandari:***

It is important to re-examine whether a trainer is capable of treating others and to participate regularly in a mock exercise, monthly, half yearly or yearly. Revisions might be effective to a certain extent. Another point is that first aid kits are not available even after the training. If the trainer at least had a first aid box, s/he will be familiar with what items are used in a particular situation.

***Kedar Babu Dhungana:***

Mayumi's question was whether we actually need first aid skills.

***Sita Ram Bhandari:*** It is a must.

***Kedar Babu Dhungana:***

If we were to say no, there is no point investing in first aid trainings. If we need it, we need to train ourselves. Retesting, providing materials etc. are management issues. I agree that one should be tested at times, providing a passing mark or a failing mark. But, I would like to bring to notice an incident. In one of our regional trainings in Nepalgunj, one of the

first aid trainees committed suicide as the person failed the test. We were sad with the incident. I do not mean that examinations are not needed, but we need to be sensitive to various conditions. Let us say that 4 are failed out of 20 participants, and if someone may commit a suicide because of our examination mark, we do not want to fail anyone. Instead, we advise the organiser not to put the candidate on the forefront. These are issues also related to management. Mayumi asked us how important and how useful first aid is to us. For example, if my child has a cut on his finger now, what would I do? Would I be able to put a bandage on it regardless of whether I have received a first aid training or not, or would I run carrying my child with his blood dripping to seek help from a health worker, or would I run to a health post regardless of the amount of bleeding. I think Mayumi was trying to know our context, practice and situation.

***Sita Ram Bhandari:***

In such a situation, we would first need to control bleeding.

***Ram Kumar Shrestha:***

Each one of us in the community requires first aid training. After an accident has occurred, there is no point in thinking about whose responsibility [disaster management] is because it would ultimately be the responsibility of the entire community. There is no guarantee that after an incident has occurred at one's home, s/he will be able to find a doctor [in time]. Therefore, we should not try to get away by saying "this is someone's responsibility" and "that is somebody else's." The first priority should be providing first aid trainings and it should be provided to every single villager/community member. Trainings should include information on how to put a bandage. At times, lack of first aid skills may even result in deaths. Each member of all the communities having first aid knowledge can play a very important role in minimising possible loss.

***Aliza Shrestha Dhungana:***

Thank you, Mr. Ram Kumar. We know that various organisations such as the Nepal Red Cross Society and the World Vision have been involved in conducting disaster management activities such as trainings and simulation activities in our communities. While some of the communities have been able to actively continue the various activities, others have not, despite having trained personnel and the willingness to continue. There could be many reasons behind discontinuation of activities: (i) Despite plenty of resources and interest, the activities are not the community's actual needs; (ii) the current strategy is ineffective for a particular community; (iii) the community weaknesses; (iv) organisers' weaknesses; and (v) lack of coordination. We should look into these factors. I wish that we will find answers to how best we can mobilise and utilise the existing resources in our community towards disaster management through this three-day workshop. Indeed, as pre-workshop activities, we had carried out community assessments using different methods, such as interaction programs, video shows, orientation programs, awareness programs etc. We have found that many communities possess both human resources and ideas: what is required is the coordination among the two.

Let us divide the participants into five groups: (1) Tamsipakha CLC (2) Khwopa Adarsha CLC (Bhaktapur) (3) Bungmati CLC (4) Khokana CLC and (5) Ichangu Narayan CLC. Participants from organisations other than the CLCs such as the Nepal Red Cross Society, World Vision and other organisations will join one of the five groups. In groups, you will discuss: (i) the various issues and problems identified during the course of interaction programmes in the communities; and (ii) how to proceed with individual activities, for example, in Khwopa Adarsha CLC, Bhaktapur, new group formation might not be needed specifically for conducting disaster management awareness activities because there already exists many community groups such as instrument playing groups and youth groups. Khwopa Adarsha CLC therefore considers conducting activities through the already existing groups as a more effective strategy. In case of Tamsipakha CLC, gathering people in urban area has been a difficult task as people tend to have a very busy schedule. To date, gathering people for various project activities has not been successful. Therefore, Tamsipakha CLC is considering conducting activities at schools as a more effective strategy, so that parents can be reached through the students. Ichangu Narayan CLC, conversely, has many women's groups. Therefore, they are thinking of working with both the existing women's groups and school children so that elders can be reached. Thus, individual communities have different modalities to effectively operate various activities. As part of group work, please discuss and finalise: (i) the various problems identified in your community; (ii) ways to solve the problems; and (iii) how to implement the various suggested activities (e.g., through schools, community groups etc.). We have many experts among us today, so let us share our ideas and identify our strengths and weaknesses.

Group 1: Tamsipakha CLC (*group work inside the hall*)

Group 2: Khwopa Aadarsha CLC (*group work inside the hall*)

Group 3: Bungmati CLC (*group work outside*)

Group 4: Khokana CLC (*group work outside*)

Group 5: Ichangu Narayan CLC (*group work outside*)

*Facilitator: Prem Bhakta Maharjan*



## **1.2.4 Community Perspectives on Disaster Management: Group work Presentation by Community Learning Centres**

*Facilitated by Prem Bhakta Maharjan, Bungmati CLC*

### **Case Study 1: Tamsipakha CLC Presentation Summary**

*Presenter: Mr. Niranjana B. Basnet (Group 1)*

Problems related to earthquakes were identified as follows (Poster 1-1):

- (1) Old houses which are about to collapse
- (2) Highly populated areas without sufficient open spaces
- (3) Disorganised electric wires
- (4) Tall buildings and houses (constructed objects)
- (5) Practice of placing water tanks and decorating flower pots on the roof top
- (6) Possibility of famine and epidemics as a consequence of an earthquake

The following solutions were also identified:

- The house owners should be persuaded to demolish old, fragile houses. The local authorities (e.g., Kathmandu Metropolitan City Office) should be persuaded to take care of old houses and also to provide compensation for demolishing the houses.
- The local authorities (Kathmandu Metropolitan City Office) should take steps to create open spaces because there is lack of open space in dense settlements: one solution could be demolishing existing houses and providing compensation to the house owners in return.
- The Nepal Electricity Authority should arrange wires properly and insulate naked wires.
- Constructors should apply the building codes, in particular, to tall buildings.
- The house owners should be made aware of the risks involved in the common practice of keeping water tanks and flower pots on roof tops as items falling upon someone can even cause death.

- ▶ A group should be formed for establishing a fund for food storage and clothing as famine and epidemics are possible consequences of disaster. Furthermore, first aid providers/volunteers should be available.

Water may become scarce after an earthquake. In our case, we may access water from deep and shallow wells that have been constructed in a number of *toles*<sup>6</sup>. Community Based Organisations (CBOs), e.g., CLCs, should urge responsible agencies to take appropriate actions. CLCs should try to visit each house for risk awareness raising, involving people from all houses of the community. We also sketched a map of Ward 18 (Poster 1-2). Chhetrapati is located towards the north. Moving southwards from Chhetrapati *chowk*, we identified some open spaces as we explored the area. We think that open spaces can be used after an earthquake to set up tents and to provide first aid. The circles represent wells, and the rectangular shapes denote open spaces. Hotel Harati has a big space, which can be used for rescue operation. Both Itum Bahal and Kanya Mandir have big open spaces. There is also a small space beside Raktakali which is a private property. The river banks towards the west also have open spaces.

#### Poster 1-1: Tamsipakha CLC Presentation (Group 1)

		Main Problems	Solutions
1	Earthquake	1 Old houses are about to collapse	Encourage people to destroy [old, fragile] houses by arranging the required compensation <sup>7</sup> .
		2 Highly populated areas/lack of open spaces	Create open spaces
		3 Disorganised electric wires	Arrange electric wires for safety
		4 Tall houses	Develop and implement appropriate building codes for earthquake preparedness
		5 Custom of placing water tanks and flower pots (as decorative items) on the top floor	Raise awareness on earthquake risks among household members
		6 Possibility of famine and epidemic <sup>8</sup>	Form a group and establish a fund for storage of food and clothing. Prepare first aid volunteers
2	Fire <sup>9</sup>		
3	Epidemic <sup>10</sup>		
4	Flood <sup>11</sup>		

(Source: Group Work, Tamsipakha CLC, Participatory Workshop (HTF VII), Day 1, July 19, 2006)

<sup>6</sup> A quarter of a town

<sup>7</sup> Through mobilising the government at the local and the national level (Bhagawan Ratna Tuladhar)

<sup>8</sup> Famine and epidemic as a result of earthquake (Bhagawan Ratna Tuladhar)

<sup>9</sup> Arranging for hosepipes, encouraging people to keep fire fighting goods ready (Dhan Bahadur Maharjan)

<sup>10</sup> Raising awareness on diseases and hygiene (Dhan Bahadur Maharjan)

<sup>11</sup> Flooding is unlikely since the settlements are located at a much higher place than the Bishnumati River. Also, the river is usually dry except for the rainy season (Bhagawan Ratna Tuladhar)

Poster 1-2: Tamsipakha CLC (Group 1) Map Presentation



(Source: Group Work, Tamsipakha CLC, Participatory Workshop (HTF VIII), Day 1, July 19, 2006)

## Questions (Q), Responses (R) and Comments (C) Tamsipakha CLC

**Facilitator (Prem Bhakta Maharjan):** I would like to request other groups to add any missing points, or provide any questions, comments or suggestions.

(C) **Nur B. Thapa:** Earthquakes sometimes even destroy lakes. We may not be able to rely on water wells because huge cracks may appear during an earthquake. In fact, it is said that huge cracks were formed in Tundikhel during the earthquake of 1934, and that their sizes were large enough to accommodate even buildings. Therefore, old wells and other sources of water may become unreliable as earthquakes can destroy them easily. Rather, water stored in big water tanks may be a more reliable option for us.

(R) **Dhan Bahadur Maharjan:** As an alternative option, water from the large underground water tank at Harati Hotel may be used. Moreover, many houses have water tanks and if they remain safe, the stored water can be utilised. Although there is a pond beside Kanya Mandir, the water is not drinkable. Therefore, we consider that the water tank in Harati Hotel, the underground tank in Nepal Bank, and the tank in Shambala Hotel are alternative water sources during a disaster.

There are *gallis* (a locally used term for narrow alleys) measuring up to 600 metres. Hose pipes should be arranged in order to extinguish fires [in areas inaccessible to fire engines<sup>12</sup>]. The other option is for the inhabitants to work together (community mobilisation) to extinguish fires. One and a half years ago, there was a fire outbreak in Ward 17 at Dhobichaur which was put out by community members themselves. Similarly, a fire was extinguished through community mobilisation in Ward 18.

(C) **Niranjan B. Basnet:** If there is a fire breakout without an earthquake, water from wells can be used to put it out. If the Nepal Electricity Authority arranges the wires properly, occurrences of short circuit will decrease and hence chances of fire will be reduced. Moreover, if people are aware of how to use gas stoves properly, fire incidences are likely to be reduced.

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<sup>12</sup> Of the four fire engines belonging to the Judhha Baarun Yantra Office, only two are in operation and even those two are in need of repair work. At times, people have had to push the fire engines when they go out of order while on their way to fight fire. The fire department is currently understaffed and when staffs go on leave there is a serious problem. Therefore, in order to make the fire department services more capable and reliable, there is an urgent need for a better management. The government should pay attention to this matter. (Dhan Bahadur Maharjan)

## **Case Study 2: Ichangu Narayan CLC Presentation Summary**

*Presenter: Ms. Kalpana Sharma (Group 5)*

Sudden catastrophes include vehicle accidents, falling from [roof, balcony etc.] of a house, injuries due to falling, shocks etc. (Poster 1-3). As a solution, we will form a disaster management committee and sub committees (rescue sub committee, first aid sub committee, information dissemination sub committee, relief aid collection sub committee) (Poster 1-4) to take the following actions: data collection, awareness raising, first aid training, encouraging the adoption of [appropriate techniques] to build houses, regular road maintenance, establishment of relief fund, tree plantation on open lands, awareness raising on forest and jungle conservation, disaster preparedness planning, developing early warning system for *Daivi Prakop* (a term used to refer to natural disasters)".

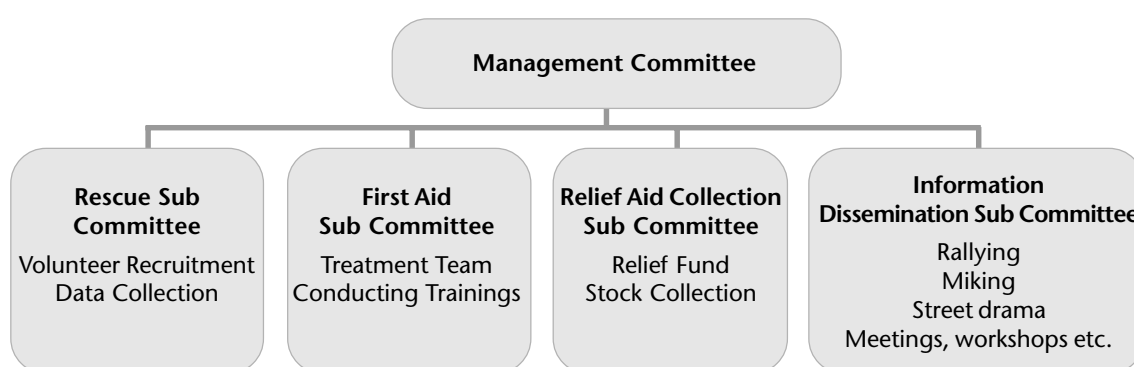
In times of disaster, the following steps will be taken: First, a preliminary survey to assess loss will be conducted. The next step would consist of looking for missing people, conducting search and rescue operation and relief aid distribution. The management committee would consist of active community members and would operate rescue, first aid, information dissemination, and relief aid collection. It would also be responsible for taking care of the victims and requesting assistance from concerned authorities (Poster 1-4).

### Poster 1-3: Ichangu Narayan CLC presentation (Group 5)

Problem Identification	Possible Solutions	Steps to be taken after a disaster
<ul style="list-style-type: none"> <li>• Flood, Erosion, Land Slides</li> <li>• Earthquake</li> <li>• Fire</li> <li>• Accidents</li> </ul>	<ul style="list-style-type: none"> <li>• Disaster Preparedness</li> <li>A. Forming a Natural Disaster Management Committee and Sub Committees with a clear working area in the community:               <ul style="list-style-type: none"> <li>- Rescue Sub Committee</li> <li>- First Aid Sub Committee</li> <li>- Information Dissemination Sub Committee</li> <li>- Relief Aid Collection Sub Committee</li> </ul> </li> <li>B. Collecting data<sup>13</sup></li> <li>C. Conducting awareness raising activities</li> <li>D. Conducting first aid training</li> <li>E. Encouraging the adoption of [proper techniques] while building houses</li> <li>F. Maintaining roads regularly</li> <li>G. Establishing relief fund</li> <li>H. Planting trees on open lands</li> <li>I. Making people aware of ways to protect the existing forests</li> <li>J. Developing a disaster preparedness plan</li> <li>K. Developing an early warning system for natural disasters</li> </ul>	<ol style="list-style-type: none"> <li>1. Conduct preliminary survey and assess possible loss</li> <li>2. Search for the missing</li> <li>3. First Aid</li> <li>4. Rescue operation and distribution of relief aid</li> <li>5. Taking care of the injured and the affected</li> <li>6. Calling upon concerned organisations for other arrangements</li> </ol>

(Source: Group Work, Ichangu Narayan CLC, Participatory Workshop (HTF VII) Day 1, July 19, 2006)

### Poster 1-4: Ichangu Narayan CLC (Group 5) presentation



#### Disaster Management Committee, Ichangu Narayan CLC

(Source: Group Work, Ichangu Narayan CLC, Participatory Workshop (HTF VII), Day 1, July 19, 2006)

<sup>13</sup> Data collection on population, schools, public space, government agencies etc. (Ram Kumar Shrestha, September 2, 2006)



Presentation made by Ichangu Narayan CLC

## **Questions (Q), Responses (R) and Comments (C): Ichangu Narayan CLC**

*Facilitator (Prem Bhakta Maharjan):* Please express your questions if you have any.

**(Q) Niranjan B. Basnet:** If trees were planted all over, space would not be left for [evacuation] purposes.

**(R):** There is plenty of open space in Ichangu Narayan VDC. Therefore, lack of open space would not be a problem for people to gather in case of an earthquake. Tree plantation on slopes could be effective in reducing the occurrences of erosion.

**(C) Bhagawan Ratna Tuladhar:** My comment is about some language being used. Instead of using the word *Daivi Prakop*, one should use the term *Prakritik Prakop* (natural disaster). These days, the term *Daivi* (related to the deities) is no longer in common use. *Prakritik Prakop* or *Prakop* are more commonly used terms than *Daivi Prakop*.

**(R):** Thank you for your suggestion.

**(C):** As plenty of water is available [in Ichangu], fighting a fire would not be a problem.

*Facilitator:* Are there any more questions from other groups?

**(Q):** Your group considered “preliminary survey to assess loss”<sup>14</sup> would be the first step after a disaster. Would not it be more practical to conduct search and provide first aid than to carry out the survey first?

**(R):** Survey would be done before a disaster but assessment of loss would be done afterwards.

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<sup>14</sup> Chhyati in Nepali



(R): Survey (of a total number of households in the area) would be done by the concerned committee before a disaster.

(Q): I do not disagree with the importance of survey. But, should not first aid and search be the first priority rather than the survey [assessing the extent of loss after disaster]?

(R): It is only after a disaster that we can know how many people have been affected.

(C): I meant that providing first aid should be the first action after a disaster rather than loss assessment.

(R): Each sub committee under the Disaster Management Committee will perform its own required functions.

(Q): Facilitator: Does “search” [in your presentation] mean “looking for buried people after a disaster”?

(R): Yes, it does refer to looking for buried or missing people.

(C) (*Sita Ram Bhandari*): Let’s assume that we have collected population data from a community. If a house has collapsed after an earthquake, the rescue team may know who is missing and who is not. However, they may come to know through the neighbours that a certain person they are looking for is away from the house. Gathering additional information will help save time to look for other missing people rather than to spend time looking for someone who is not buried. Therefore, we have considered doing loss assessment first, and thereafter, first aid.

(Q) *Kedar Babu Dhungana*: The topic needs further discussion. Let us assume that preliminary survey/loss assessment will be done. For how long will it be done i.e., for how many days or how many hours? If the search takes, for example, 2 days, many people will have died by the time the survey/assessment is over.

(R) *Sita Ram Bhandari*: As we have mentioned in our presentation, we will seek assistance from professionals and the higher authorities for surveying and other purposes.

(C) *Kedar Babu Dhungana*: Let us clarify a few points. Let us assume there is a flood, and houses and people are being washed away. Let us say, my wife or any other family member is being washed away. What will I do? Will I try to save my wife? Last year, there was a large-scale flood in the Terai region, but we had limited resources. You must have seen at times on TV channels (e.g., the CNN) that if a similar situation were to happen in the US, a helicopter would be deployed to rescue even one person. But, in our context (Nepal), it is hard even to assess how many houses have been affected or how many people are waiting for rescue. If we were to sit and calculate the number, the extent of loss in human lives would increase by the minute. It is difficult to prioritise tasks. One would have to save oneself first, and then, one

can save others. Whatever we say, we tend to think of ourselves first during hard times. Only few people would attempt risking their lives to save others. I have understood the term “searching for the missing” as being equivalent to “Search and Rescue” in English. I think that the first action [after a disaster] would be search and rescue. If we are organised, we can conduct survey/loss assessment simultaneously and know the extent of the disaster and also whether available resources will be sufficient to address the needs. Specifically, we can know whether available resources in Nepal are sufficient, and instead of taking three days to seek help from [neighbouring] countries like India or China, we could do so much within 24 hours to reduce loss. We may conclude that we will look for people first which will aid survey or loss assessment.

(C) **Nur B. Thapa:** After a disaster, various working groups would be active, and therefore, there will be not one but various groups in operation. For instance, “Search” and “Rescue” groups will work simultaneously. In addition, groups responsible for first aid and distribution (relief aid) will be in action.

## **Case Study 3: Khwopa Adarsha CLC Presentation Summary**

*Presenter: Mr. Laxmi Narayan Duwal (Group 2)*

On behalf of Khwopa Adarsha CLC, I will present various issues related to *Daivi Prakop* or natural disasters. We have identified various problems and their possible solutions. The problems have been divided into two parts: (i) existing problems/situation in Bhaktapur and (ii) possible problems after a disaster like earthquake.

The existing problems include the following (Poster 1-5 and 1-6): Bhaktapur has populated settlements without enough open space. Many houses have not been constructed properly, and traditional houses that are very old may collapse [in the near future]. Unorganised electric and communication wires, and superstitious and traditional beliefs held by residents are other existing problems. There is a lack of [skilled] human resource to construct houses properly. Lack of coordination between organisations and communities has led to insufficient information sharing. Another problem is the lack of information [among people] on basic health care. We have listed the solutions to the various problems collectively.

Building earthquake resilient houses could decrease the chances of a house being destroyed (Poster 1-7). A planned settlement provides wider roads and has open spaces where people can evacuate when there is an earthquake. Electric wires and wires for communication purposes should be put underground. We have listed separately the different ways of conducting educational activities. [Disaster management education and trainings] could be conducted through coordination with various social organisations.

Construction of buildings and houses should be done by trained workers (Poster 1-8). Educating the local community members [on disaster management] could be done through adult literacy programmes, *Ghar dailo* programmes and street dramas. In addition, health related trainings, first aid trainings and technical trainings should be provided to local residents. The various trainings could be arranged by liaising with the Nepal Red Cross Society, UNESCO, NSET and other organisations (Poster 1-9).

We focused on our own area so we might not have covered all problems in the valley. Thank you.

### Poster 1-5: Khwopa Adarsha CLC presentation (Group 2)

Existing Problems Related to Disaster	
1	Dense settlements
2	Fragile old houses
3	Disorganised electricity wires and wires for communication purposes
4	Superstitious <sup>15</sup> and traditional beliefs <sup>16</sup>
5	Lack of human resources
6	Lack of coordination with various organisations
7	Lack of knowledge regarding basic health care

(Source: Group Work, Khwopa Adarsha CLC, Participatory Workshop (HTF VII), Day 1, July 19, 2006)

### Poster 1-6: Khwopa Adarsha CLC presentation (Group 2)

Possible Problems	
1	Destruction of houses
2	Strong possibility of people being injured
3	Lack of transportation
4	Lack of health treatment
5	Lack of drinking water
6	Spread of diseases and illnesses
7	Lack of communication media
8	Fires
9	Lack of electricity

(Source: Group Work, Khwopa Adarsha CLC, Participatory Workshop (HTF VII), Day 1, July 19, 2006)

### Poster 1-7: Khwopa Adarsha CLC presentation (Group 2)

Possible Solutions	
1	Develop earthquake resilient houses and planned settlements
2	Bringing electricity and communication wires underground
3	Providing education
4	Providing Disaster Management related training
5	Coordinating with various social organisations

(Source: Group Work, Khwopa Adarsha CLC, Participatory Workshop (HTF VII), Day 1, July 19, 2006)

<sup>15</sup> Many people still connect the occurrence of earthquakes to the power of the deities. There is also a belief among the elder people that if one presses the ground with his/her thumb during an earthquake, the shaking of the ground would stop. (Laxmi Narayan Duwal, Chairperson, Khwopa Adarsha CLC, September 9, 2006)

<sup>16</sup> As many people are traditional, the tendency to think towards changes such as making their house earthquake resilient is low. People share the ancestral house among many families. (Laxmi Narayan Duwal, Chairperson, Khwopa Adarsha CLC, September 9, 2006)

<sup>17</sup> Taking into consideration constructing wide roads and leaving adequate open space.

### Poster 1-8: Khwopa Adarsha CLC Presentation (Group 2)

Ways of approaching the above solutions	
1	Construction of houses by trained personnel
2	Education through schools, adult literacy programs, <i>Ghar-dailo Programs</i> <sup>18</sup> and street dramas
3	Providing health related training and technical training to local people
4	Planning and implementation of various activities in coordination with the Red Cross, UNESCO, NSET etc.

(Source: Group Work, Khwopa Adarsha CLC, Participatory Workshop (HTF VII), Day 1, July 19, 2006)

### Poster 1-9: Khwopa Adarsha CLC Presentation (Group 2)

Ways of approaching the above solutions	
1	Earthquake technology organisation <sup>19</sup> , local authority <sup>20</sup> , engineers, masons and house owners
2	Department of Road, Electricity and Communication Offices
3	Ministry of Education, Education Office <sup>21</sup> , schools and local organisations <sup>22</sup>
4	Technical, government and local authorities
5	Local authority and active local residents
6	Ministry of Health, Public Health Office, hospitals, health workers, local organisations

(Source: Group Work, Khwopa Adarsha CLC, Participatory Workshop (HTF VII), Day 1, July 19, 2006)

<sup>18</sup> Dissemination of messages by going from house to house

<sup>19</sup> Organisations related to earthquake technology

<sup>20</sup> Bhaktapur Municipality Office

<sup>21</sup> District Education Office

<sup>22</sup> CLCs, Local clubs, teams, libraries etc.

## **Case Study 4: Bungmati CLC Presentation summary**

*Presenter: Ms. Sangita Shakya (Group 3)*

Namaste everyone. We have divided the information as follows (Posters 1-10 and 1-11): (i) Problems; (ii) Effects; (iii) Preparatory activities for loss minimisation; (iv) Responsible organisations; and (v) Required materials and support.

Earthquake: The people of Bungmati live in dense settlements, particularly in ward 1 through 6 where there are narrow lanes and houses are congested. Earthquakes may not only destruct houses, but also cause death, injury, loss of property, shortage of food and clothing, and lack of medicines and medical care services. For loss minimisation [disaster reduction], new houses should be built in an earthquake resilient manner. Old houses should be demolished or restored into an earthquake resilient structure. Trained volunteers should be active at the community level: they should be trained in first aid to treat injured people. Community members need to establish a relief fund and store food and clothing in advance. The community, various organisations, and the Village Development Committee (VDC) are responsible for these activities. We need to collect necessary materials for information dissemination and public awareness raising, and we need to seek technical support on earthquake resilient technology from relevant organisations. We will also seek help from the Nepal Red Cross Society and health posts [for times of disasters].

Fire: In Bungmati, people use fuels such as firewood and other kinds of fuels available in villages for cooking. There maybe a fire outbreak [from the kitchen] which could lead to loss of human lives and assets. To minimise such loss, public awareness on fire safety should be raised: keeping lighters and match sticks away from children; keeping inflammable objects away from fire; and not wearing nylon saris while in the kitchen etc.; organising wires properly; and installing lightning rods to prevent fires resulting from lightning. Ponds should also be made near dense settlements so that water stored in them is available to extinguish fire. The community members, the Nepal Red Cross Society, Forestry Office, Land Conservation Office, and the District Development Committee (DDC) are responsible for taking the

preparedness measures. Support for the above activities could be gathered from the local community members, fire [deparment] and the Nepal Red Cross Society.

Flood and Erosion: They may cause loss of lives and assets, wash away agricultural products and farm lands, and sometimes, even entire villages. Some of the preparedness/preventive measures are tree plantation, [proper] water drainage, forest and jungle conservation, and erosion control. We need to collect required materials from the Soil Conservation Office, District Forestry Office, DDC, and the Nepal Red Cross Society for information dissemination.

### Poster 1-10: Bungmati CLC presentation (Group 3)

Problem	Effect	Preparations for loss minimization	Responsibility		
1	Earthquake	1. Destruction of houses	Community, various organisations, VDC		
				Encourage people to build earthquake resilient houses	
				Encourage people to do earthquake resilient work in old houses	
		2. Death of people		Produce trained volunteers at the community level to minimise loss of lives	
		3. Injury		Produce volunteers with first aid training in order to treat the injured	
		4. Loss of lives and property/asset		Arrange for a safe storage space	
		5. Shortage of food and clothing			
				Collect and store food and clothing items in a safe storage space keeping in mind the possible shortage	
				Establish a relief fund	
2	Fire	Loss of human lives and property/assets  People becoming homeless	Community and various organisations  VDC  Red Cross		
					Raise awareness
					Keep matches and lighters away from the reach of children
					Put out fire safely after use
					Keep flammable items away from fire
					Avoid wearing nylon saris while working in the kitchen
					Organise electric wires
					Place a lightning rod in order to prevent fires due to lightning
3	Flood Erosion	Loss of human lives and assets  Washing away of agricultural products, destruction of agricultural fields  Possibility of an entire village being swept away	Forestry Office <sup>23</sup>  Land Conservation <sup>24</sup>  DDC		
					Forestation
					Make a proper drainage system
					Protect forests and jungles
		Take preventive measures to stop soil from being washed away			

(Source: Group Work, Bungmati CLC, Participatory Workshop (HTF VII), Day 1, July 19, 2006)

<sup>23</sup> Forestry Office: Changlakhel Nursery under the District Forest Office (Prem Bhakta Maharjan, Chairperson, Bungmati CLC, September 6, 2006)

<sup>24</sup> District Land Conservation Office, Satdobato (Prem Bhakta Maharjan, Chairperson, Bungmati CLC, September 6, 2006)



### Poster 1-11: Bungmati CLC presentation (Group 3)

Problem		Required materials and support	
1	Earthquake	i.	Materials required for public awareness activities
		ii.	Constructors for building earthquake resilient homes
			Red Cross
			Health Post
2	Fire	i.	Red Cross
		ii.	Fire Engine ( <i>Baarun Yantra</i> )
		iii.	Community
3	Flood, Erosion		Materials for public awareness activities
			Land conservation
			Forestry Office
			DDC
			Red Cross

(Source: Group Work, Bungmati CLC, Participatory Workshop (HTF VII), Day 1, July 19, 2006)

## **Questions (Q) and Responses (R): Bungmati CLC**

**(Q) *Dhan Bahadur Maharjan*:** You have mentioned “Arrange for safe storage space” as a way of minimising “Loss of lives and property/asset”. How is storage related to minimising the loss of life and asset?

**(R) *Presenter (Sangita Shakya)*:** Thank you for the question. An earthquake may result in the loss of both human lives and assets. We need to store essential items to provide relief to the victims of earthquake. For example, food items for survivors can be kept stored in advance.

## **Case Study 5: Khokana CLC Presentation Summary**

*Presenter: Mr. Krishna Bhagat Maharjan (Group 4)*

I am going to present the existing problems in Khokana, ways to solve the problems, and the actions taken by Khokana CLC, community members and responsible organisations (Poster 1-12).

The first problem is the old houses that may collapse and cause accidents in the near future, with or without earthquakes. Almost 80% of the houses had withstood the earthquake of 1934, but they have now become very old and may collapse in the near future. Therefore, one solution is building earthquake resilient houses although this may be expensive. If it costs around 2-3 Lakh<sup>25</sup> Rupees to build a customary house (non-earthquake resilient), constructing an earthquake resilient house would require double this amount. VDC and donor organisations could support those who are in need. By raising awareness on [disaster] preparedness, we may take preventive measures in order to save old houses before they collapse. People cannot build new houses because they cannot afford it. Therefore, people's financial capability should be built through employment and skill training. Masons should be provided with the required training (e.g., of 8-10 days), so that they gain the basic requirements to build a strong [disaster resilient] house. Our houses should be maintained regularly. Without maintenance work, even a leaking roof gradually destructs the entire house.

Disasters occur suddenly. Therefore, a Disaster Management Committee should be formed in order to prepare for possible disasters. In Khokana, old houses are being destructed and new ones are being built. Two model buildings have been built in Khokana. One is the new VDC building which was built with UN's support, and the other is the school building built using cement and rod. According to experts, it is said that the school building can withstand an earthquake of up to 8 Richter scale. The Nepal Red Cross Society and World Vision have conducted training on disaster management in Khokana. Individuals, community, local

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<sup>25</sup> 1 Lakh is equivalent to 100,000

authorities and various organisations are all responsible for undertaking disaster management activities.

Erosion is another problem for Khokana. The settlement area and the agricultural fields are located separately: the settlements are located higher up than the fields, and the two are joined by sloping, erosive land. We should build embankments and use “karet nets [gabion wires]” to address potential erosion. Farmers are accustomed to using the sloping land for paddy fields. Instead, they should be encouraged to cultivate fruits. The cause of erosion may be lack of drainpipes on the slope. An inaccurate drainage system may lead to erosion as water is scattered all over. Therefore, a proper drainage system should be built along the slopes to prevent erosion. A drainage construction project in Khokana, jointly undertaken by the VDC and another international organisation, has been successful. Current activities in Khokana include use of gabion wires and installation of drainage pipes. Both community members and the local authority are responsible for addressing the diverse problems.

Houses in Khokana are old, often made of wood, and prone to catching fire. As a preparatory measure [for fire], water should be stored in ponds and wells. There are ponds in many of the *toles* and there are wells serving 2 to 4 houses respectively. They should be kept in a good condition. Matches and lighters should be kept away from children. We should deal with electric appliances carefully to prevent fires caused by short circuits. Currently, wells and ponds are being restored in Khokana. Individuals and local authorities should take responsibility for necessary preparations.

### Poster 1-12: Khokana CLC presentation (Group 4)

	Problem	Possible Solutions	Ongoing Activities	Responsible Organisations
1	Houses have become old and therefore might collapse and cause accidents in the future	<ul style="list-style-type: none"> <li>• Build earthquake resilient houses/provide support for building such houses</li> <li>• Raise awareness on disaster preparedness</li> <li>• Build financial capability</li> <li>• Provide training to masons</li> <li>• Restore houses</li> <li>• Establish Disaster Management Committee</li> </ul>	<ul style="list-style-type: none"> <li>• Old houses are being destroyed and new ones are being built in their place.</li> <li>• Model house construction</li> <li>• Disaster preparedness related training</li> </ul>	<ul style="list-style-type: none"> <li>• Individuals</li> <li>• Community</li> <li>• Local authorities</li> <li>• Organisations</li> </ul>
2	Soil Erosion	<ul style="list-style-type: none"> <li>• Building embankments at possible sites of erosion</li> <li>• Cultivating fruits and planting trees on sloping lands</li> <li>• Arranging for drainpipes (<i>dhal</i>) on sloping lands</li> </ul>	<ul style="list-style-type: none"> <li>• <i>Gabion wires</i>, installation of sewage pipes</li> </ul>	<ul style="list-style-type: none"> <li>• Local authorities</li> <li>• Individuals</li> </ul>
3	Fire	<ul style="list-style-type: none"> <li>• Storing enough water in ponds and wells.</li> <li>• Keeping lighters, gas etc. away from the reach of children</li> <li>• Taking care while installing electric lines<sup>26</sup></li> </ul>	<ul style="list-style-type: none"> <li>• Restoration of ponds and wells</li> </ul>	<ul style="list-style-type: none"> <li>• Individuals</li> <li>• Local authorities</li> </ul>

(Source: Group Work, Khokana CLC, Participatory Workshop (HTF VII), Day 1, July 19, 2006)

<sup>26</sup> Electric wires should not be tangled (Madan Krishna Dangol, Chairperson Khokana CLC, September 2, 2006)

## **Questions (Q), Responses (R) and Comments (C): Khokana CLC**

(Q): “Build earthquake resilient houses or provide support for building such houses” (Poster 1-12) has been presented as a solution for “Houses have become old, and therefore, might collapse and cause accidents in the future”. Does it mean that compensation will be provided to the owners of houses that are demolished, or does it mean that a relief aid will be provided to the victims of the collapsed house?

(R) **Presenter (Krishna Bhagat Maharjan)**: People are building new houses these days. Some leave the old house as it is and build a new one, and some demolish the old one before building a new one. However, a number of new houses have been built without thinking about potential earthquakes. Therefore, I mean that incentives should be provided for people to build earthquake resilient houses.

(C) **Ram Kumar Shrestha**: We think that an earthquake causes loss and damage because our houses are destroyed. However, even if our houses are not destroyed by an earthquake, there is possibility of accidents that occur inside the house. We can do a lot to minimise possible loss from earthquakes, but I found that awareness-raising [on disaster preparedness] was missing in your presentation.

(C) **Nur Bahadur Thapa**: When building new houses, the constructors or owners should apply the building codes and make them earthquake resilient. A special kind of maintenance work is required for old and traditional houses. “Retrofitting” is done as a part of work to minimise the possible loss from an earthquake.

(C) **Ram Kumar Shrestha**: Accidents can occur when things kept above the closets fall down upon someone. Awareness raising should also include such issues.

(C): Also, raising awareness on possible places to keep our beds (to stay) is necessary.

**Presenter (Krishna Bhagat Maharjan):** All comments are related to raising public awareness. We have included “Raising awareness on disaster preparedness” in our presentation.

**(C):** Simply telling people what to do would not be effective. Practical demonstrations are important.

**(R):** Thank you.

**(Q):** In your presentation, you mentioned building an earthquake resilient house would take twice the cost of building a customary house. Is it true? At an NSET workshop, I heard that it would cost only 5-10 % more. If the information that building an earthquake resilient house would cost double the regular amount is untrue then we would disseminate false information.

**(C):** It should be around 10-12% more.

**(R):** People in the villages make their houses using sand and cement or wood, and some construct a shed. Concerning the cost of building earthquake resilient houses, I was referring to the kind of houses being built in the villages, which are different from the ones in the cities i.e., concrete houses. The cost would depend on the type of house.

**Facilitator (Prem Bhakta Maharjan):** Thank you everyone for your presentations. Many issues were discussed. If UNESCO could provide us with a summarised copy of the presentations, we could benefit from it. After break, we will have a presentation from Mr. Bhagawan Ratna Tuladhar.





## 1.3 Learning Session II

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- 1.3.1 Question of Minimising Earthquake Hazards: Problems of the Inner City of Kathmandu**  
Prof. Bhagawan Ratna Tuladhar, Education and Public Awareness Sub Committee, Coordinator, Tamsipakha CLC
- 1.3.2 Traditional Settlements & Buildings from the Perspective of Disaster Preparedness: What Can be Done for Disaster Preparedness in Our Communities?**  
Nipuna Shrestha, Facilitator, UNCRD/UNESCO Office in Kathmandu
- 1.3.3 Urban Vulnerability and Dynamics: Personal Note in Conducting Participatory Community Assessments in Kathmandu Valley, Nepal**  
Mayumi Yamada, Researcher, UNCRD Disaster Management Planning Hyogo Office

### **1.3.1 Question of Minimising Earthquake Hazards: Problems of the Inner Cities of Kathmandu**

*Prof. Bhagawan Ratna Tuladhar, Coordinator, Education and  
Public Awareness Sub Committee,  
Tamsipakha Community Learning Centre, Kathmandu, Nepal*

#### **Natives of Kathmandu and Earthquake Hazards**

The natives of Kathmandu Valley are well aware of the fact that they are living in one of the most earthquake prone areas of the Himalayan region. According to National Society for Earthquake Technology (NSET) Nepal, the history of earthquakes in Nepal shows an occurrence of 2 to 3 earthquakes measuring 5 to 6 Richter scales every two years in addition to several other earthquakes smaller in scale. Among the bigger devastating earthquakes, one was the earthquake of 8 July 1834, which occurred twice in the evening at 6 p.m. and 11 p.m. followed by 23 tremors (Rana, 1935)<sup>27</sup>. According to Rana (1935), the earthquake had seriously damaged Bhadgaon and Thimi. He also points at another devastating earthquake on 15<sup>th</sup> January 1934 at 2 p.m. when Nepal suffered a loss of 479 people in Kathmandu alone<sup>28</sup>. Fifty five years later, Nepalese people had to bear yet again a great loss of human life and property in the morning of 21<sup>st</sup> August 1988 (Thapa, 1988:20)<sup>29</sup>. All of these events indicate that Kathmandu has been an earthquake prone area. The inhabitants of Kathmandu have time and again had to experience the loss of precious human life and property, and the sufferings of the physically challenged. However, the newer generation of Kathmandu valley and the migrants are not aware that they are living with risks in an earthquake zone. Considering the fast growing trend of haphazard urbanisation, the problem is that the people living with seismic risks do not have adequate knowledge of earthquake and the preparedness. Both the house owners and the government need to pay more attention to risks associated with earthquakes.

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<sup>27</sup> Rana, J.B. *The Great Earthquake of Nepal (Nepali)*, Kathmandu, 1935

<sup>28</sup> *Ibid*, pp 94-95

<sup>29</sup> Thapa, Niranjana. *The Earthquake of August 21st 1988*, Kathmandu:1988

## Disaster Management

Earthquake is one of the many unfortunate events that scientists cannot forecast. However, most people would not deny that earthquakes could occur any time in Kathmandu. Many destructive earthquakes have occurred in the past and their recurrence had an interval of 50 to 100 years (Rana, 1935: 184-185). It has been estimated that in case of an earthquake, "at least 60 or 70 % of the human made structures and facilities in Kathmandu valley will be destroyed; airports will be out of order; access roads to the valley will be out of order; water supply, electricity and telephone lines will be cut; there will be risk of fire out break; pillaging and violence will have to be feared"<sup>30</sup>. Unfortunately, both the government and the community are not taking measures seriously to reduce the risks of earthquake. For example, the government authorities have not made sufficient effort in enforcing the *building code*. Moreover, individuals have rarely applied seismic considerations in their buildings. We need to consider seriously disaster management if we are willing to reduce the possible effects of earthquake. We also need to awaken our community members and the municipality authorities to mobilise resources. Finally, the government should take responsibility of safeguarding people's lives and properties.

## Human Induced Risk Factors

Let us consider the risks that we have created for ourselves. There are several risk factors based on the weaknesses of individuals, community and the government/administration as described below.

- (a) Risks associated with irresponsible act/ignorance of an individual:
- ▶ Construction of multi-storey houses with extending tops
  - ▶ Tendency of the owners to neither demolish old ragged houses by themselves nor allow public authorities to demolish them
  - ▶ Practice of keeping flower pots on the walls of balcony or porch (Photo 1)
  - ▶ Installation of water tanks on the top floor without protection (Photo 2)
- (b) Weakness on part of the community:
- ▶ Inability to keep courtyards and public places clean and safe for emergency
  - ▶ Inability to either demolish or renovate old ruined houses for public safety
  - ▶ Lack of awareness programmes on risk management
  - ▶ Lack of disaster preparedness plan and mitigation strategy
- (c) Risk factors on account of weakness/carelessness of the administration:
- ▶ Hanging electricity, telephone and TV cables haphazardly on a single post, which

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<sup>30</sup> National Seismological Centre, Department of Mines and Geology, Kathmandu, Nepal

- pose great risk during times of disaster
- ▶ Hanging electric wires and telephone cables together on the walls of private houses increases the possibility of short circuit at times of disaster
  - ▶ Uncontrolled construction of tall houses on both sides of a narrow lane has increased the degree of risks
  - ▶ Lack of legal provision for demolishing old ragged houses which pose great risk to public safety
  - ▶ Lack of sufficient fire-engines and hose-pipes to reach many of the narrow lanes of the city
  - ▶ Lack of stored food items, medicine, water etc. in the city
  - ▶ Non earthquake-resistant hospitals and lack of enough space for emergency operation in hospital buildings
  - ▶ School buildings, office buildings, shopping complexes, etc. where huge numbers of people gather during working hours lack safety measures including seismic consideration
  - ▶ Lack of a concrete government plan for disaster management/preparedness

The government needs to address the risk factors in order to safeguard the life and property of the people in Kathmandu. The government and community leaders should consider the following:

- i. Planning for minimization of loss/damage to life and property in the event of a disaster
- ii. Earthquake preparedness planning: preparing evacuation plans; making arrangements for emergency shelter; conducting training on first aid; and stocking required supplies, etc.
- iii. Mobilisation of emergency service providers such as fire fighters, security, first aid, search and rescue team etc.

Our decision makers do need to consider the above urgently.

### **Settlement Pattern of Kathmandu and the Earthquake Risks**

Studying the settlement pattern in the inner cities of Kathmandu reveals that the city was planned considering earthquake safety and open spaces for evacuation/emergency shelter in case of a disaster. It should be noted that *Mahayana/Vajrayana* traditions of the Buddhist community in ancient Kathmandu is associated with *baha-bahi*<sup>31</sup> model of settlement pattern with traditional architecture consisting of an open paved courtyard (some of them are as large as half the size of a football ground) where houses are built in all four corners, popularly known as the “box system”. The houses are interlocked with each other through overlapping walls. Experts are of the opinion that the box system and the use of wooden wedges in the buildings increase their seismic resistance. The *baha-bahi* model had the virtue of providing

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<sup>31</sup> A typical pattern of Buddhist monastery architecture

open spaces to the modern congested city at times of disaster. However, the *baha-bahi* model of settlement and the practice of constructing houses using traditional methods are disappearing rapidly and are being replaced by tall frame structured buildings.

Although the *baha-bahi* model has been regarded as one of the best earthquake safety models in Kathmandu, the city is not free from high casualty risks in case of disasters. For example, narrow lanes with tall buildings (Photo 4), brick houses with mud mortar, old houses with cracks, electric wires hanging like cobweb in the city (Photo 3) etc. all pose great challenges to the safety of the city dwellers. Drastic change in the viewpoint of decision makers is essential for demolishing the risky houses, rearranging the wires/cables and making community people prepared for any contingencies.



Photo 1: Practice of keeping flower pots on the walls of balcony or porch



Photo 2: Installation of water tanks on the top floor without protection



Photo 3: Old houses with cracks and electric wires



Photo 4: A narrow lane

## Conclusions

The community, local administration and the national government should jointly address the challenges of disaster management. Community Based Organisations (CBOs) could be of much help in disaster management. Therefore, local administration could support the CBOs. Although each has their own limitations, all parties need to take responsibility of disaster management and complement each other.

- ▶ Mapping the localities for classification of houses, determining hazardous areas, and finding out evacuation places, etc.
- ▶ Raising awareness through mobilising school children, who could be one of the best partners to awaken their elders
- ▶ Enactment of laws relating to the removal of hazards, implementation of building codes, and compulsory emergency services, etc.
- ▶ Fostering humanitarian approach and cooperation at times of need: enhance harmony and understanding between the natives and the migrants as the migrant population has become higher than the native population at many places
- ▶ Planning and preparing disaster management at the local and the national government level
- ▶ Reaching the community: international organisations working in the field of disaster management should reach out more to the community in addition to developing central level partnerships so that an effective output can be achieved
- ▶ Safeguarding the life and property of its citizens by prioritising disaster management, e.g., inclusion of disaster management in the national government's priority list

## **1.3.2 Traditional Settlements and Buildings from the Perspective of Disaster Preparedness**

*Ms. Nipuna Shrestha, Facilitator, UNCRD/UNESCO Office in Kathmandu*

### **Introduction**

Extensive construction work has been carried out in Kathmandu Valley. However, it should be noted that our forefathers had much wiser planning in their traditional dwellings. The effort put in building and designing techniques are referred to the following statement: “the buildings are empirically designed and because they are largely composed of masonry, they cannot be easily analysed mathematically, but they can be analysed rationally by looking for weaknesses and gaps in the integrity of their structural systems” (Langenbach<sup>32</sup>, per. comm.).

This presentation explores the structural features of traditional settlements and buildings from disaster preparedness perspective and their planning concept. Information is available on traditional building structures that withstood the great 1934 earthquake. Many studies have also shown how earthquake affects different types of buildings, in particular, those that have earthquake resistant structures. The findings may shed light on the positive aspects of our heritage and cultural values that are currently in danger (Photo-1).

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<sup>32</sup> Randolph Langenbach, F.A.A.R., Conservatiotech Consulting



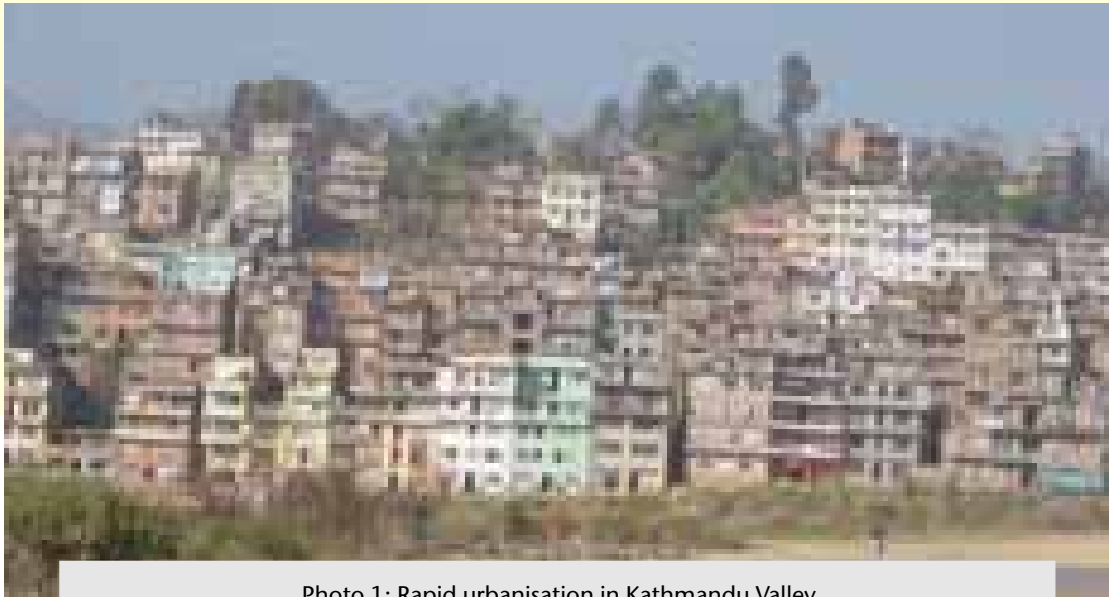


Photo 1: Rapid urbanisation in Kathmandu Valley

### Features of Traditional Settlement

The overall settlement is rationally planned by grouping building blocks into manageable sizes and by using alleys whereby good accessibility is generally maintained through interconnected courtyard systems. From a disaster preparedness perspective, the feature seems to be also effective to designate alternative evacuation routes for emergency. For instance, the formation of pocket open spaces (local nodes) at street crossings and a large open space towards the central part (major activity node) for public gathering, can be turned into places for relief operations at times of disasters. However, it should be noted that outdoor locations are not always safe: during the earthquake of 1934, some people became victims of the earthquake because bricks or walls fell on them while they ran outside. In fact, many of those who stayed inside homes/buildings survived.

These traditional settlements have established service area networks. For instance, rest places and water sources (e.g., wells, stone water spouts, water tanks *Jaladroni* and ponds) are strategically located at open squares, street junctions and entrances to the settlements that serve as places for settlers and visitors to carry out various daily activities. From disaster preparedness perspective, such networks within the settlement are also beneficial to provide emergency services: for example, resting places can be used as a shelter for injured people in times of disasters; and the water sources, besides being used for drinking purposes, can be utilised as a local fire hydrant in case of fire outbreak.

The municipal fire brigade service is unreliable in these settlements as many lanes are too narrow to allow the fire engines to pass through or reach many houses along them. On the other hand, these narrow lanes do accommodate compactly arranged row houses, attached blocks with courtyards (semi public) and squares that serve as communal open spaces (public).

They also have public open sheds (*pati/sattal*) that allow space to hold communal gatherings, chatting and other social activities such as playing traditional music thereby contributing to maintain good rapport among the locals. The existing features of traditional settlements enhance cooperation among residents during times of disasters, which should be developed further for disaster preparedness.

## Features of Traditional Buildings

Most of the traditional buildings are designed in a rectangular shape without any irregular wings for stability. The structural height is only three to three and a half storeys, which limits the reception of destructive forces during an earthquake: the building would be shaken strongly by an earthquake in relation to the total building mass that is multiplied by its height. Further, these buildings are usually erected with a very thick wall base, which ensures uniform load distribution. The good examples are the temples, which generally have wide bases and large steps which give them superstructure stability. Besides, the load-bearing thick wall system is responsive to climate changes and it is less inflammable in comparison to today's common structures that are erected with four or nine inches wide brick walls bound with cement mortar.

Since most of the traditional buildings are compactly built in rows with a common wall system, the buildings need to be analysed as a group rather than a single housing unit since the behaviour and reaction to earthquakes will be technically different. For example, fire risk in a row of house is greater and poses a bigger risk because a single fire threatens multiple housing units if not put out promptly. Similarly, if a building falls during an earthquake, it may also pull the adjoining walls of the adjacent buildings of the row in common wall system. Thus, a structural analysis is necessary in a row system.

Traditional buildings are constructed with a small room bay and narrower ceiling surface, which is firmly supported by structural parts, such as wooden floor joist (*dhali*), beam (*nidal*) and wooden posts (Photo 2) or brick walls. The wooden wedges (Photo 3) used in our traditional structures ensure connections of wall with roof rafters and that of wooden floor joist (*dhali*) with wall component. This locking system is flexible enough to absorb forces from earthquake shock and helps to prevent the buildings from collapsing all at once unlike concrete ceilings. The wooden joints are also interlocked with each other and serve to keep the whole structure stable and intact even when experiencing strong shocks. Flexible joints in the traditional construction, structural elements, such as wooden floor joist (*dhali*) and wall or roof rafters and wooden floor joist (*dhali*) or wall with wedges, are very good.



Photo 2: Wooden tie holding posts on either sides of a wall



Photo 3: Wooden wedge locking the wooden beam with wall tie

Compared to the traditional structures, modern concrete structures (Photo 4) seem to be more rigid, but it may easily develop cracks and collapses suddenly. Further, there is no deep bonding virtually between the infill wall and the structural pillar in these contemporary structures. Conversely, traditional construction has horizontal ties in the form of wall plates that are present around the wall width, both inside and outside, at the ceiling level in each floor. This system is further strengthened by locking system that makes the whole structure one block and intact.

Wall openings also have horizontal ties to secure bonding between inner and outer wall parts. Ground floor walls bear greater structural load with lesser windows or openings. In case the structure has an open ground floor with seating around the main entrance leading to a courtyard house (*dhalan* spaces), wooden posts are present in pair on the parallel wall plates to provide structural stability.



Photo 4: Modern concrete structure

The second floor usually contains wider windows in the form of *sha jhya*, *ga jhya* to let more light in the living area, which is conventionally located on the second floor, while allowing view towards the road which encompasses a wide variety of ceremonial or festive processions (*jatras*) during the year. Larger openings (such as wider windows) in load-bearing walls may not be of great concern because the upper the floors, the lesser the building load it has to bear. Therefore, the reduction of walls by bigger windows does not affect stability.

Despite having these strong features, traditional buildings also have vulnerable features. For example, the heavy mud tile sloping roof is so fragile that it slides off with sensitive movement. Many old buildings show damages at corners because they lack proper strengthening system at wall junctions. But, in case of temples and buildings of special significance, midlevel band (wooden, made of stone or brick) is usually provided outside walls which aesthetically serves as decorative band (*nagbeli*). At the same time, it also functions as structural tie by holding all the corner parts in one grasp.

### **Why are traditional settlements vulnerable?**

The lack of town planning, especially, zoning controls and their enforcement, is one of the primary factors contributing to degrading culture and quality of life in the city. Safety issues are also critical. For instance, the lanes are too narrow even for ordinary vehicles to pass through. People do not always respect the regulations, and continue to carry out house construction and expand housing areas in the agricultural land and even on flood plains. Besides, our settlements become more vulnerable due to the reasons summarised below:

#### **1. Inclination towards individual life from communal life**

Most of the interconnected courtyards are now being blocked or divided, which have created dead end zones and cut off the access routes for escaping. Only few have been operated in traditional farmer community areas in Bhaktapur and eastern part of Patan.

#### **2. Rapid increase in population**

Large open spaces inherited from ancient times are no longer sufficient to hold traditional *Jatras*. Due to high demand of housing and supplementary service facilities, the centre of Kathmandu is becoming congested with very little space available. The local nodes, such as *Ashon Chowk*, are full of vehicles, pedestrians and vendors. The situation will be further chaotic and unmanageable when disasters strike the cities.

#### **3. Modern service: public water supply and surface drainage**

Local inhabitants do not always take care of traditional water sources as modern piping systems have become the major source of water supply. In many places, there is a tendency to leave the water sources unclean and the route of the traditional sources remains unprotected. The water sources often dry out because of deforestation or construction in the vicinity areas. Most water routes were vulnerable to destruction when infrastructure

developers layout drainage and pipe systems. The water supply from traditional sources has become insufficient while the municipal supply remains intermittent.

#### **4. New intervention in building industry**

It is commonly believed that the modern concrete technology is utilised in the current building industry. But, the builders and the indigenous people have not adopted the system in practice. Knowledge, e.g., on simple structural strengthening, often remains in the text books and is not applied in practice. Although some organisations, such as National Society for Earthquake Technology (NSET) Nepal and Lalitpur Sub-metropolitan City, make efforts in raising awareness at various levels, the illegal construction is not being sufficiently controlled. It is painful that our traditional settlements have been replaced to a large extent by modern, but unsafe structures.

### **Why are traditional buildings vulnerable?**

The following are some of the reasons that make our traditional buildings vulnerable:

#### **1. Space required for increasing family size and rent**

The house owners tend to add extra floors on top of existing floors. The additions are generally unsafe due to extra load imposed on the old structure. This also turns the rigid shape into slender form (height to size ratio increases) with less stability to withstand even a small force. We have also seen examples of adding pillar structure on top of old load-bearing walls which is a very extreme case of lacking technical knowledge.

#### **2. Vertical division**

Traditional houses or buildings are often vertically divided for individual families. Vertical division usually involves the physical division of structure walls that cuts off windows and staircases from joists (*dhali*) which weakens the strength of the structure.

#### **3. Lack of damp-proof course and lifespan of old buildings**

Unlike the modern buildings, water proof materials are rarely used in our traditional buildings. Therefore, water seepage is a problem. The lower portion of the old structures usually has bricks which decay and weaken in the long span of their life due to moisture. There is a tendency to plaster the lower area to avoid seepage, but this is not a proper solution as this may cause adverse effects: covering up the inside wall restricts the movement of fresh air to the inner side, and; the seepage moves even further upwards by capillary action. It is dangerous if moisture reaches the structural wooden joists (*dhali*) because it is weakened due to decay.

Due to decaying materials, old buildings that withstood many earthquakes in the past, including the one of 1934, are too fragile to withstand even a small force.

## Conclusion

This paper explored how disaster preparedness could be incorporated into settlement planning, and assessed if the existing traditional settlements and building structures would help mitigate the various disaster risks.

The following points were also considered:

- ▶ Living in modern times
- ▶ Being responsible for preserving heritage
- ▶ Saving people's lives from disasters

In case of Kathmandu valley, however, policy discussions have been made with less opportunities to consult the local residents. A top down approach is insufficient to address the diverse issues of disaster risk reduction at community level. There are a large number of indigenous populations living in Kathmandu, therefore, it is essential for diverse local residents to address various, complex issues, and incorporate innovative ideas and activities in order to protect their traditional settlements and buildings from natural and human made disasters. The essence of original town planning lies in communities and their traditional settlements, and whether or not such a task can be successfully accomplished rests on the hands of the community members.

### **1.3.3 Urban Vulnerabilities and Dynamics: Personal Note in Conducting Participatory Community Assessment Exercises in Kathmandu Valley, Nepal**

*Mayumi Yamada,  
Researcher, UNCRD Disaster Management Planning Hyogo Office*

The growth of urban population in Asian countries has been dramatic, and more people tend to live in urban than in rural environments. For instance, urban growth rate in Kathmandu (Nepal) exceeds 5.2 per cent (UNFPA 2005)<sup>33</sup>. Although urbanisation critiques vary according to country's political and economic situations, urbanising areas commonly face a greater risk and are impacted from natural disasters on an intensified scale, affecting millions of people each year through loss of life, serious injury and loss of livelihood assets.

Disaster damage to urban/urbanising areas encompasses a wide range of issues: the loss of hundreds of thousands of lives and millions of displaced and homeless people; collapse of buildings and houses; secondary disasters such as epidemics, fires, violence, and; damage of cultural landscape and heritage. There must be focus on the impact on the socially vulnerable and the disadvantaged such as women, children and the people who living with AIDS. In particular, disasters trigger secondary disasters, which deeply affect people's dignity, mental health and psychology (i.e. Post Trauma Stress Disorder; hereafter PTSD). Our experiences with such urban vulnerabilities through the South Hyogo Prefecture Earthquake on 17 January 1995 were recalled as follows:

1. Highly populated settlements or quickly urbanising areas were located in disaster-prone areas (i.e., on active faults; near the sea etc.).
2. Those who lost families, friends and neighbours suffered from prolonged psychological impact.
3. A large number of buildings and houses instantly collapsed (i.e., within 10 seconds in case of Kobe); the youth and the elderly, who had to live in low-rent houses, were vulnerable.

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<sup>33</sup> UNFPA (2005), "State of World Population 2005".

4. In the aftermath of a disaster, gas, water, electricity, telephones, roads and rails, so called lifelines, were devastated. Consequently, even though some hospital buildings were operational, doctors, nurses and health providers faced difficulties to treat patients without access to lifelines.
5. People living with AIDS were in emergency settings: a number of cases are reported during International Congress on Aids in Asia and the Pacific (ICAAP) from July 1 to 5, 2005 in Kobe, Japan.
6. A number of places experienced simultaneous, frequent occurrence of fires caused by gas leaks etc. Moreover, there was lack of water to deal with the fire.
7. A number of people were trapped alive under debris, and neighbours, friends or relatives struggled to pull them out by whatever means available. However, because of the fires, many had to evacuate themselves, leaving behind their families and friends who were still alive under the debris. Later, this led to many survivors exhibiting symptoms of PTSD.
8. People, including rescue teams, rushed into the devastated areas from outside the disaster areas in order to find their families, relatives and friends, which caused further traffic jam and obstacles and brought the situation out of control.
9. Urban congestion had led to the lack of open space for evacuation and relief points.
10. Solid waste, such as rubble and debris, surrounded the cities: no image of home landscape was left. Historical and cultural heritages were lost or abandoned.
11. Those who lost their houses had to move into transitional shelters: many survivors became homeless and displaced.
12. Women needed counselling services (i.e., to deal with violence towards them).
13. Pregnant women and mothers with new born babies needed counselling, support and medical check-ups in transitional shelters and at homes without access to lifelines.
14. Foreign residents and internally displaced people needed disaster information and assistance in different languages.
15. Women and the elderly, especially those without a spouse or with small children, had much trouble, for instance, collecting supplies and water on the onset of the recovery due to both the great physical labour and lack of transportation.

In reality, the survivors' realities, memories and voices cover much more than those described. But, the people of Nepal, i.e., the residents of Kathmandu Valley, living with "urbanisation", should understand that these kinds of vulnerabilities and/or potential urban disaster narratives are applicable to them. Urban disasters are often too uncertain and complex to be predicted, thereby, people may not always consider disaster management as their first priority. But, at least, one should know how to protect her/his life without becoming victims at the time of disasters.

In these contexts, participatory community assessment is considered appropriate (see Workshop Day 2). There are some reasons for this. First, the approach enhances local residents themselves to undertake community assessments, so that they express, share and learn their own risks, vulnerabilities and assets based on their knowledge of life and existing conditions rather than the outsiders, who may do things based on their expertise for their own sake.



Second, through the processes, the inhabitants themselves may have “informed” choices, and thereby adopt feasible actions to protect his/her life. Finally, they may learn and change their behaviour and attitudes, which increase a sense of human security in their own places.

As a consequence of the exercises, the residents may realise that urban disasters are not always categorised into a simplistic realm such as “natural” disasters because natural and human-made disasters are strongly interlinked in urbanisation processes for which human-beings are responsible. While many positive transformations are brought about by urbanisation, it should be noted that humans also make themselves vulnerable in the process, for example, by constructing or bringing a number of artificial and complicated objects without disaster management planning.

In these contexts, the following achievements are anticipated through the initial community assessments:

- ▶ Existing community members are empowered: e.g., mothers’ groups, fathers’ groups, youth groups, school teachers’ groups, saving groups, social mobilisers, community health volunteers, reproductive health service groups, peer educators, forest user groups.
- ▶ Community risk, vulnerability and assets assessments are visualised and articulated in several communities in urban/sub-urban locations.

Furthermore, the following critiques may be discussed through community assessment exercises.

1. Disasters repeatedly result in not only the loss of many lives, but also a number of displaced and homeless people.
2. The socially vulnerable and the disadvantaged, such as children, women, adolescent, the elderly, people living alone and people with disabilities, are the vast majority of those adversely affected by natural disasters and their aftermath (i.e., secondary, human-made disasters).
3. The socially vulnerable and disadvantaged have limited access to necessary supplies, goods and services in the aftermath of disasters.
4. Women and girls are considered vulnerable to violence, including sexual abuse and other forms of sexual and gender-based harassment during emergency situations and exploitation in the aftermath of disasters (Funabashi<sup>34</sup>, 2005; Inter-Agency Standing Committee<sup>35</sup>, 1999; 2002; 2006).
5. Those who live in poverty and vulnerability are affected by disasters, including those in urban slum and squatter communities.
6. Tourists and foreign residents are also vulnerable and become victims.
7. Home landscape and cultural heritage should be protected from disasters.

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<sup>34</sup> Women's ASIA 21: Voice from Japan No. 15, Summer 2005.

<sup>35</sup> Inter-Agency Standing Committee: (1) Mainstreaming Gender in the Humanitarian Response to Emergencies (1999); (2) Report of the Task Force on Protection from Sexual Exploitation and Abuse in Humanitarian Crises (2002); and (3) Women and Girls, Boys and Men, Different needs, Equal opportunities: A Handbook for Gender Equality in Humanitarian Action (2006).

8. Community members have multiple and varied roles in time of disaster: for example, intensified roles may include caring for survivors and maintaining family and community in disaster situations.

Moreover, the following issues need to be scrutinised:

- ▶ Mainstreaming gender, including women's reproductive health perspectives, falls through existing disaster management planning.
- ▶ Women, children and adolescents are insufficiently represented in formal meetings or training activities in general. Rather, they may be more available and accessible in informal occasions. Therefore, peer education approaches are more feasible at community level.
- ▶ The vulnerable population including women and children still remain in slums and/or transitional shelters, for instance, in the aftermath of disasters. Gender-specific needs could be incorporated into disaster management planning before the occurrence of disasters, which might help recovery and reconstruction processes after disasters.

In fact, disaster data (e.g., a total number of death) are available, but they are not always stratified by gender perspectives and indicators: for instance, these statistical data do not always elucidate the gender-specific narratives i.e., the different disaster impacts (e.g., what happened and why it happened) on different gender groups. Therefore, the existing disaster management planning (paradigm) may be reconciled, and Gender-Sensitive Community Based Disaster Management (CBDM) needs to be enhanced considering the following:

1. Gender perspectives and analyses, including public health and reproductive health, are mainstreamed into or paralleled with disaster management training and peer education activities.
2. Women's and men's empowerment and capabilities in disaster management planning are equally enhanced.
3. Disaster management information is made accessible at community level, considering gender dimension such as women's and men's literacy rate.

Shedding light on these urban vulnerabilities and dynamics in the contexts of Kathmandu valley, community assessments are explored by local residents in a participatory manner<sup>36</sup>. The gradual outcomes are expected as follows:

1. Empowered individual who knows how to protect her/his life in time of disasters
2. Capable peer educators at community level
3. Enhanced people who know how to protect families, friends, neighbours and others in time of disaster
4. Gender-Sensitive Community Disaster Management Plans
5. Policy dialogue and recommendation

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<sup>36</sup> See the results from Workshop Day 2 and Day 3

# 2

Workshop  
Day 2



## 2. Learning by Doing: Community Assessments in Kathmandu Valley



*Knowing that we live in vulnerable urban environments,  
what can we do to protect ourselves, families, friends and neighbours?*



## **2.1 Fieldwork: Community Assessments for Risk Awareness and Disaster Management**

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**2.1.1 Fieldwork Briefing Session**

**2.1.2 Community Assessment Indicators Suggested Prior to Visiting the Sites**

## 2.1.1 Fieldwork Briefing Session

Before travelling to the three assessment sites<sup>37</sup>, UNCRD Hyogo Researcher, who was not familiar with Kathmandu Valley, facilitated one of the sessions to familiarise the workshop participants with the key concepts and methods of community assessments (Do-It-Yourself session). The exercises were expected to raise awareness on risks, vulnerabilities and assets through fieldwork (Day 2). The actual process involved the following:

### Task 1: Fieldwork Briefing

1. Identifying community risks, vulnerabilities and assets in local contexts
2. Evacuation maps (expected outcome)
3. Community Action Plans (expected outcome)

### Task 2: Group formulation (A mixed team)

The workshop participants were divided into three groups to undertake community assessments. Each group had a team leader and a sub-leader. The team members comprised of experts/leaders, local residents and volunteers (e.g., health workers and social mobilisers).

### Task 3: Team Dialogue on "what to see": Assessment Indicators

Before travelling to the sites, the teams carried out dialogue for about an hour: (a) to explore the assessment criteria or indicators (e.g., what to see) for the place of visit; (b) to clarify team assignments such as team members' roles and responsibilities; and (c) to prepare or develop a checklist (e.g., a list of indicators) in order to conduct the assessments effectively.

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<sup>37</sup> (1) Tamsipakha, Ward 18 of Kathmandu Metropolitan City; (2) Bhaktapur, Ward 1, 2, 3 and 6; and (3) Patan.



**Task 4: Travel to the field site(s)<sup>38</sup>**

- (1) Tamsipakha, Ward 18 of Kathmandu Metropolitan City;
- (2) Ward 1, 2, 3 and 6 of Bhaktapur Municipality; and
- (3) Patan Dhoka, Lalitpur Sub Metropolitan City.

Prior to departure, the workshop organisers and CLC leaders arranged for logistical and administrative requirements in particular for Tamsipakha and Bhaktapur sites (Figures 2-1 and 2-2).

**Task 5: Community Assessment Fieldwork**

In each of the sites, the fieldwork began under the guidance of CLC leaders and the local resident facilitators. It took roughly 2-3 hours for the workshop participants to complete the assessments.

**Task 6: End of the Day (Wrapping up the Fieldwork)**

After being done with preparations for the next day, CLC leaders and workshop organisers ensured that the field team members returned safely.

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<sup>38</sup> Nipuna Shrestha (Facilitator, UNCRD/UNESCO Office in Kathmandu) was assigned to assessment in Bhaktapur; Mayumi Yamada (Researcher, UNCRD Hyogo Office) to Patan; and Aliza Shrestha Dhungana (UNESCO Office in Kathmandu) to Tamsipakha (Kathmandu) in order to back up the assessment exercise with CLC leaders/facilitators

## 2.1.2 Community Assessment Indicators Suggested Prior to Visiting the Sites

During the briefing session, participants were also asked to write "what to see" onto card, using their own criteria and knowledge. They were free to express their own views and choose their own indicators, independent of any given criteria. S/he could write<sup>39</sup> as many indicators or criteria as s/he wished. The objective was to generate ideas, bring up issues and questions about community risks, vulnerabilities and assets (community assessments). As a result, the workshop participants identified "what to see" based on their knowledge and information as follows (Photo 2-1: Card Listing<sup>40</sup>).



Photo 2-1: Card Listing, July 20, 2006

<sup>39</sup> It was observed that a few female participants were illiterate. Other team members assisted them in writing their views onto card.

<sup>40</sup> The researcher put number onto card after collecting them from the informants.

### Card Listing 1: Community Assessment Indicators for Bhaktapur ward 1, 2, 3 and 6

Card No.	Sex	Indicators or issues from the Community Assessments
1-1-1	Male	Are there alternate sources of water? (Jitendra)
1-1-2	Male	I would like to see what steps the local authorities have taken in order to address problems related to natural disasters. (Shyam, Ichangu)
1-1-3	Male	At the place of visit, we will first look into how informed the local residents are regarding natural disasters. (Surendra, Ichangu)
1-1-4	Male	1. Collect information on how safe the houses are with respect to earthquakes. 2. Collect information on the structure of traditional temples. 3. Identify safe spaces. (Prem Bhakta Maharjan, Bungmati CLC)
1-2-1	Female	Narrow alleys and their condition. (Nani Hira Maharjan, Tamsipakha)
1-2-2	Female	1. Safe spaces 2. Sources of water 3. Places at risk. (Shrilaxmi Duwal, Khwopa CLC)
1-2-3	Female	1. Visit CLC office. 2. Check whether the water tanks on the roof tops are being held by protective walls. (Anjana)
1-2-4	Female	At the site of visit check for spaces at risk, highly populated areas, community members and sources of water. (Kalpana)
1-2-5	Female	What are the various possible immediate risks associated with an earthquake? I would like to know which places have higher risks. (Punam Lama, Ichangu VDC)

(Source: Participatory Workshop (HTF VII), Day 2, July 20, 2006)

### Card Listing 2: Community Assessment Indicators for Patan, Lalitpur

Card No.	Sex	Indicators or issues from the Community Assessments
2-1-1	Male	What to see? 1) Alleys, 2) The condition of houses, 3) Ponds, 4) condition of wires, 5) Width of roads, 6) Temples. (Ritish Maharjan, Tamsipakha CLC)
2-2-1	Female	People in Patan are aware about health care, living space and natural disasters.

(Source: Participatory Workshop (HTF VII), Day 2, July 20, 2006)

### Card Listing 3: Community Assessment Indicators for Tamsipakha, Kathmandu

Card No.	Sex	Indicators or issues from the Community Assessments
3-1-1	Male	We will look into how aware people are at the place we visit. (Pandav, Ichangu CLC)
3-1-2	Male	I will look into whether a rescue group exists in a particular community that could work when a disaster strikes suddenly. (Sita Ram Bhandari)
3-1-3	Male	All structures related to the topic. (Ramkumar Shrestha)
3-1-4	Male	Open spaces (Madan Krishna)
3-2-1	Female	1. I will go and find out what people think of earthquake. 2. The structures of traditional and modern houses. (Mila)

(Source: Participatory Workshop (HTF VII), Day 2, July 20, 2006)

#### Card Listing 4: Community Assessment Indicators (not specific to any site)

Card No.	Sex	Indicators or issues from the Community Assessments
4-1-1	Male	Electricity wires etc.
4-1-2	Male	Available sources of water, and whether those sources would be available at times of natural disaster. (Bungmati CLC)
4-1-3	Male	Houses at risk
4-2-1	Female	Looking into open spaces
4-2-2	Female	See old houses
4-2-3	Female	Condition of roads
4-2-4	Female	Water tanks and flower pots on the roof tops of houses

(Source: Participatory Workshop (HTF VII), Day 2, July 20, 2006)

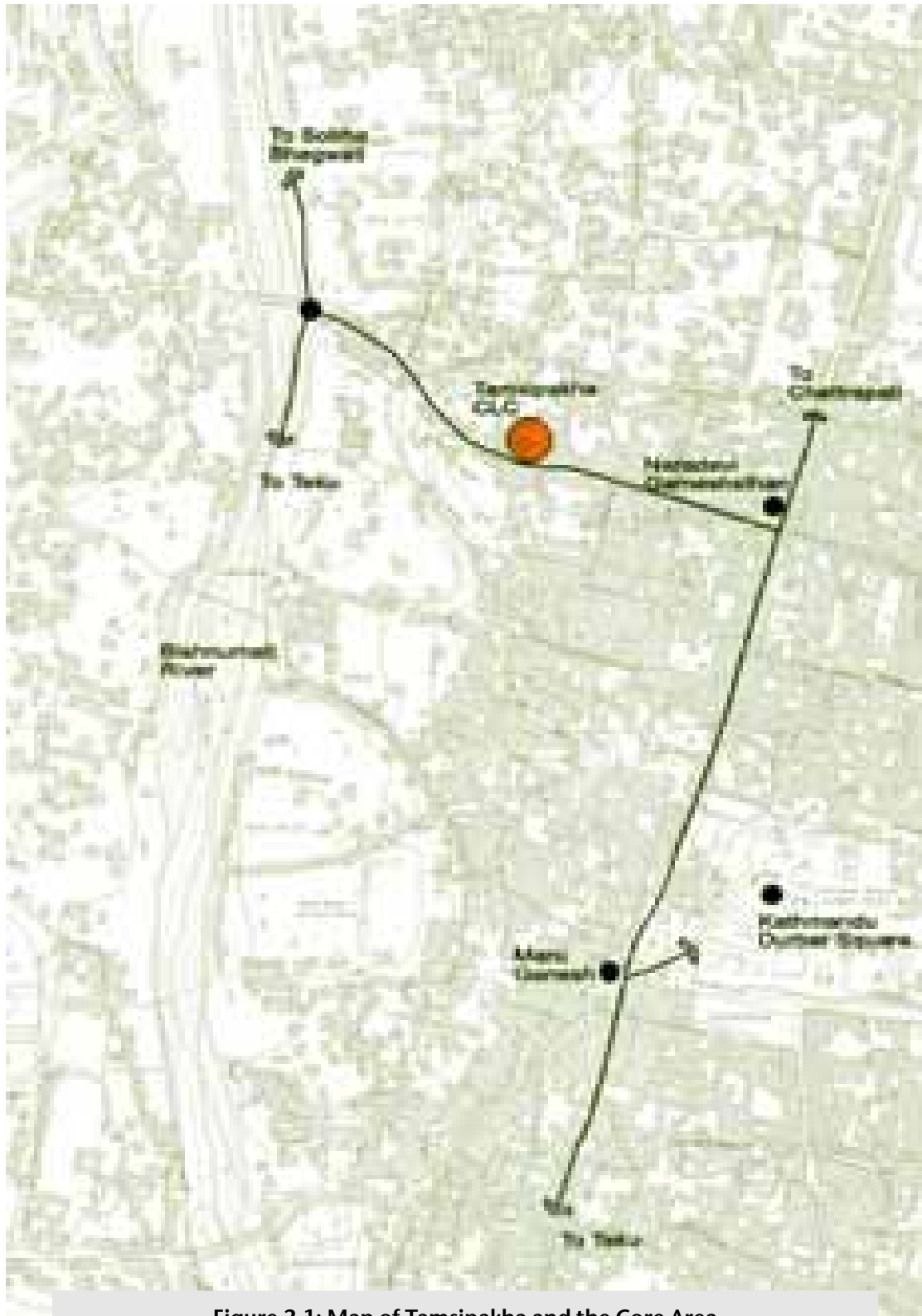


Figure 2-1: Map of Tamsipakha and the Core Area

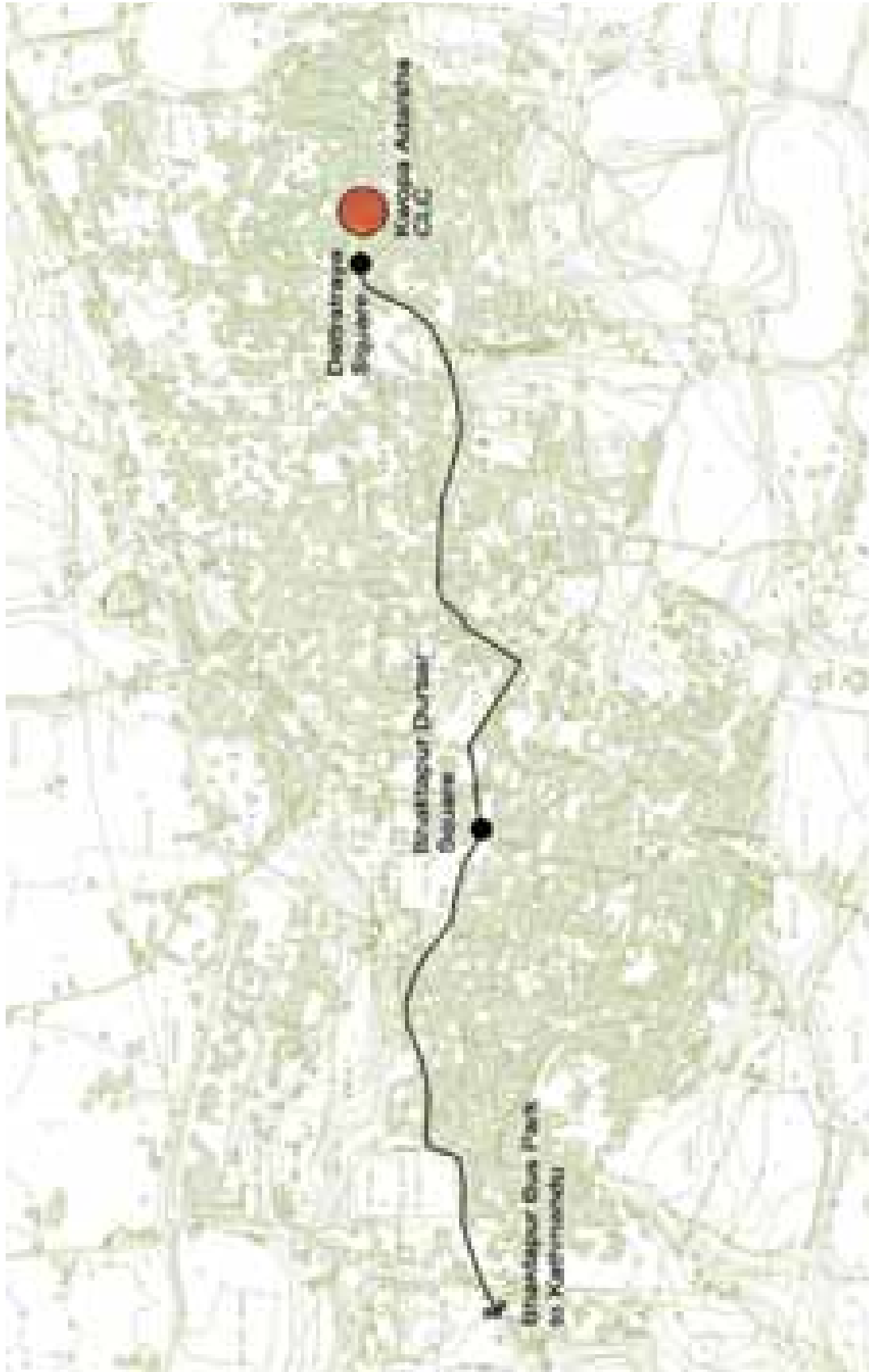
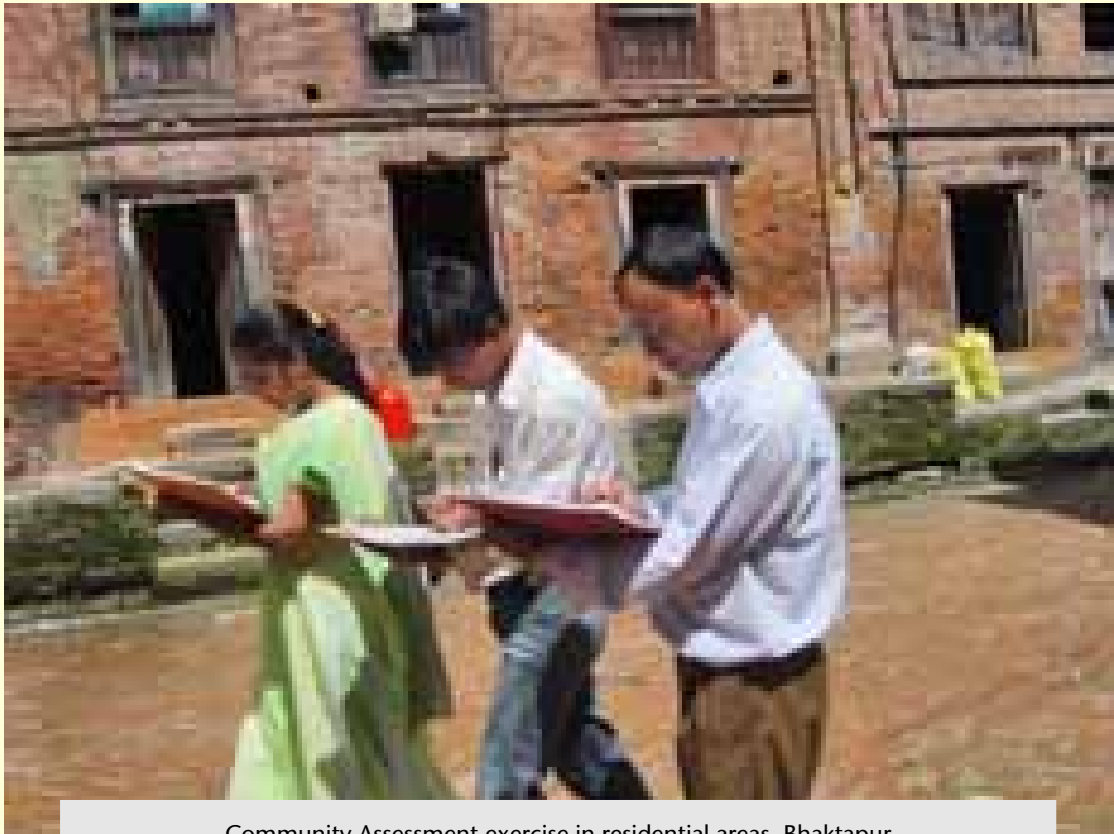


Figure 2-2: Map of Bhaktapur and the Core Area



Community Assessments: "I am going to do it", July 20, 2006



Community Assessment exercise in residential areas, Bhaktapur



Interviewing the local residents sitting in a *Pati* (resting place)



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# Workshop Day 3



### 3. Participatory Analyses: Community risk, vulnerability and asset assessments



*CLC Presentation and Discussion*



## 3.1 Community Development and Disaster Management: Civil Society Perspective

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3.1.1 Introduction

3.1.2 Key Indicators or Recurrent Issues from the Community Assessments

### **3.1.1 Introduction**

Although there are many studies looking at the vulnerabilities of Kathmandu Valley, little is known about how local inhabitants themselves perceive their own living environments. The views of local people might or might not be the same as those described by the national governments or project staffs. Apparently, how risk and vulnerability are defined, and by whom, is crucial. Following the preceding fieldwork, this section (Day 3) highlights urban risk and vulnerability, particularly, potential disasters occurring in people's surroundings, which residents themselves have perceived and assessed through fieldwork. Moreover, peoples' perceptions of urban risk and vulnerability have been further explored through their assessments, together with their behaviour and attitudes towards their living environments.

The CLC leaders and/or local facilitators shared their knowledge and information with the workshop participants while guiding them around the residential areas. Although they had already identified "what to see" theoretically based on their knowledge and information before departure (Day 2), they further investigated the specific attributes of risks, vulnerabilities and assets in the residential areas by interacting with local residents through interviews or dialogue during the fieldwork. Therefore, on the third day, they were once again requested to write "what they actually looked for in the respective assessment sites" (hereafter Community Assessment indicators) onto a card, which was further developed into: (i) Key indicators, recurrent issues or topics from the Community Assessments and (ii) Visualisation of their group work (results of the fieldwork) followed by presentation as joint participatory analyses. The details are presented in the following sections.

### 3.1.2 Key Indicators or Recurrent Issues from the Community Assessments

As the series of information cards indicated, recurring indicators or community issues emerged through the fieldwork (Day 2). Card listings 1, 2, 3 and 4 highlighted the insights into the respective assessment sites.

#### Card Listing 1: Community Assessment Indicators, Bhaktapur, Ward 1, 2, 3 and 6

Card No.	Sex	Indicators or issues from the Community Assessments (written after fieldwork)
1-1-5	Male	<ol style="list-style-type: none"> <li>1. Most of the houses in Bhaktapur are old and unsafe.</li> <li>2. Deep and shallow wells<sup>41</sup> remain unprotected and need repair and maintenance.</li> <li>3. There are many narrow alleys whose conditions are not good.</li> <li>4. Narrow roads and alleys are an inconvenience for fire engines and ambulances to pass through.</li> </ol>
1-1-6	Male (Khokana CLC)	Things to look for in Bhaktapur: <ol style="list-style-type: none"> <li>1. Alleys</li> <li>2. Houses that have collapsed or are about to collapse</li> <li>3. Earthquake resilient houses</li> <li>4. Ponds</li> <li>5. Forestation and erosion control</li> <li>6. Flood mitigation</li> </ol>
1-1-7	Male (Dhan Bahadur Maharjan, Tamsipakha CLC)	<ol style="list-style-type: none"> <li>1. Electric wires</li> <li>2. Water source management</li> <li>3. Condition of houses</li> </ol>
1-1-8	Male (Jitendra)	Lack of maintenance in houses that are about to collapse.
1-2-6	Female (Poonam Lama)	I saw a house that was about to collapse. It had been supported by 3 to 4 large wooden poles propped against the walls. It was surprising to see people living in a house that was slanted and was about to collapse. People travel through narrow streets and [entrances] with low ceiling in order to reach their house. Most surprisingly, even though the house inhabitants fear that the house would collapse, they continue to live in the upper floors for their protection.

(Source: Participatory Workshop (HTF VII), Day 3, July 21, 2006)

<sup>41</sup> *Kuwas* are shallow wells (naturally occurring) whereas *Inar* refers to human made deep well.

## Card Listing 2: Community Assessment Indicators, Patan, Lalitpur

Card No.	Sex	Indicators or issues from the Community Assessments (written after fieldwork)
2-1-2	Male	The <i>chowk</i> in Naag Bahal is good.
2-2-2	Female (Sulochana Shakya)	<i>Dhunge Dharas</i> do not have running water. It was scary to see many different dangerous narrow alleys. It was sad to think that if an earthquake occurs, there are not enough places to evacuate ourselves.
2-2-3	Female	Patan has many big <i>chowks</i> , and each of them has at least one dug well. It seems that our ancestors had proper planning to build houses. In some of the places, old houses were in a bad condition.
2-2-4	Female	There are <i>gallis</i> , <i>chowks</i> and collapsed houses in Patan.
2-2-5	Female	There are many open spaces in Patan, but there are comparatively fewer health posts. It is highly populated and wires have not been arranged properly. I learnt from local residents that the <i>Tole Sudhar Samiti</i> (a committee for <i>tole</i> development) has been active. The old people I met were happy to hear that we were visiting to conduct a survey after receiving a training on how to save ourselves at times of <i>Daivi Prakop</i> (disasters).
2-2-6	Female	Open spaces have been utilised properly, temples have been built and trees have been planted around them. Houses have been constructed with planning. There are very old houses which withstood the earthquake of 1934. There are many <i>chowks</i> . Most of the <i>chowks</i> have a well.
2-2-7	Female	Many <i>gallis</i> (narrow alleys) and <i>chowks</i> exist in Kathmandu and Patan, but the ones in Patan are better maintained. Each <i>chowk</i> has a source of water such as a well or a tap.
2-2-8	Female	On the second day, we went for a field visit to Patan which was more educational than we had expected. Patan area has many interesting places worth visiting. We were able to see traditional handicrafts on doors and windows and many other art forms. There are many <i>chowks</i> with open spaces and small temples in Patan. We learnt that the local people use those spaces for feasts during festivities.
2-2-9	Female	A wall in Pim Bahal stands [in a good condition] as before. The condition of houses located in the alleys of Kathmandu and Bhaktapur are worse than those in Patan.
2-2-10	Female	The <i>chowks</i> in Patan have sources of water such as a tap or a well, but they have been kept unclean. They should be kept clean.
2-2-11	Female (Bhawana)	Check for water supply.
2-2-12	Female (Sabitri and Sulochana)	1. Check for supply of water for emergency situations. 2. Find out the condition of temples and monasteries.
2-2-13	Female (Aarati Nagarkoti, Ichangu VDC)	I will look into water supply and the environment there.
2-2-14	Female (Patan)	1. There are cracks on houses. 2. Wires 3. Flower pots 4. Lack of public awareness 5. Sources of water exist but are not well kept. 6. The school at <i>Nyakha Chowk</i> does not have a roof. 7. There are open spaces. 8. Tree plantation has not been done in places where possible.

(Source: Participatory Workshop (HTF VII) in Nepal, Day 3, July 21, 2006)



### Card Listing 3: Community Assessment Indicators, Tamsipakha

Card No.	Sex	Indicators or issues from the Community Assessments (written after fieldwork)
3-1-5	Male (Thum Raj)	There is a house made from mud with a weak foundation. But the three storeys above it were constructed using the pillar system and there were many children and old people living in the rooms.
3-1-6	Male	What I liked was that [I could see] the only earthquake resilient house in Kathmandu located in Sangal Tahi of Ward 18, Kathmandu.
3-1-7	Male (Pandup Shrestha)	<i>Pati-Pauwas</i> are in a bad condition as they have not been conserved. The ones in good condition have been taken over by organisations or individuals.
3-1-8	Male (Pandup Shrestha)	There are plenty of <i>Dhunge Dharas</i> in Ward 18 of Kathmandu but not even one percent of them have running water.
3-1-9	Male	<ol style="list-style-type: none"> <li>1. There is a five storey house in an alley which has many curves and has a height of 3 feet, a width of 2.5 feet and a length of 15 feet.</li> <li>2. A fragile ground floor made of bricks, and above it, sturdy [floors] made of pillar system.</li> </ol>
3-1-10	Male (Harisundar Potamaha)	<p>Drinking water:</p> <ol style="list-style-type: none"> <li>1. A well the size of a <i>bhakari</i> (a big basket for storing grains).</li> <li>2. At the most, 10 percent of the <i>Dhunge Dharas</i> are operational and with running water.</li> </ol>
3-1-11	Male (Harisundar Potamaha, Khwopa Adarsha CLC)	<p>Surprising facts:</p> <ul style="list-style-type: none"> <li>▶ A 3 feet alley at Kilagal.</li> <li>▶ The floor of a house located 1.5 feet higher than the <i>chowk</i> (a courtyard)</li> <li>▶ [Old and new] building of Aasha Safu Kuthi</li> <li>▶ Keita Hiti (<i>Dhunge Dhara</i>, a mark of dedication)</li> </ul>
3-1-12	Male (Thum Raj K.C.)	Dilapidated temples and houses
3-2-2	Female	I did not find anything surprising probably because I live in this ward (Tamsipakha, Ward 18). However, I would like to bring to notice that an earthquake resilient house has already been built in Ward 18.
3-2-3	Female	While passing through a 3 feet alley under a house, I felt suffocated and thought that if there is an earthquake the chance of saving me and others is less. We were all very surprised to find a 7 storey house after passing through the <i>galli</i> .

(Source: Participatory Workshop (HTF VII), Day 3, July 21, 2006)

#### Card Listing 4: Community Assessment Indicators (site not specified)

Card No.	Sex	Indicators or issues from the Community Assessments (written after fieldwork)
4-1-4	Male	Exposed wires, telephone cables and other wires cover the entire <i>tole</i> like a spider web.
4-1-5	Male	The local people may be relatively less prone to epidemics after disasters as most of the places I visited were clean.
4-1-6	Male	There were houses at high risk but some of them were strong despite being built using very old technology.
4-1-7	Male	Some of the houses along the alleys are in a bad condition requiring immediate maintenance to make them earthquake resilient.
4-1-8	Male	1. Saw much during our visit to <i>chowks</i> and <i>bahals</i> 2. Many open spaces
4-1-9	Male	Lack of attention towards narrow and covered alleys
4-2-5	Female	1. Narrow alleys: fire engines may have trouble reaching [its destination] 2. Houses with cracks on the walls 3. Wires 4. Wells serving as a source of water 5. Tall houses with water tanks
4-2-6	Female	Houses in Kwalkho have withstood the effects of the earthquake of 1934, but have remained in a good condition to date.
4-2-7	Female	Highly populated area without large open space for emergencies
4-2-8	Female	1. Lack of health centres 2. Lack of pharmacies
4-2-9	Female	1. People live in houses that are in poor condition 2. People have to travel through extremely narrow, dark alleys with low ceiling
4-2-10	Female	Currently, even houses with cracks cannot be destroyed. The government should pay attention to this matter.
4-2-11	Female	I needed to pass through narrow roads to reach a <i>chowk</i> . The [road] space was too narrow to erect an electricity pole and therefore they had been erected [near] houses.
4-2-12	Female	1. There are many alleys and houses that are about to collapse. The chance of houses being destroyed due to an earthquake is higher. 2. It is difficult to control fire because there are no access roads for fire engines.

(Source: Participatory Workshop (HTF VII), Day 3, July 21, 2006)

The UNESCO facilitator, *Aliza Shrestha Dhungana*, and the researcher from UNCRD, *Mayumi Yamada*, sorted and displayed the original cards written by the participants in order to explore if there were any gender differences in the perception of the participants. However, it should be noted that gender analysis and participatory methodologies such as ranking, scoring and matrices etc., were not included in the workshop. Therefore, it is recommended that participatory analysis including gender perspectives be conducted in the next steps.

## 3.2 Presentation I: Patan

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3.2.1 **Field Site: Patan**

3.2.2 **Presentation Summary**

3.2.3 **Map & Legend**

3.2.4 **Existing Problems and Solutions/Suggestions**

3.2.5 **Discussion: Questions and Answers**

### 3.2.1 Field Site: Patan

#### Patan Site Visit

Date: July 20, 2006, Day 2

Fieldwork contributors: (Annex III)

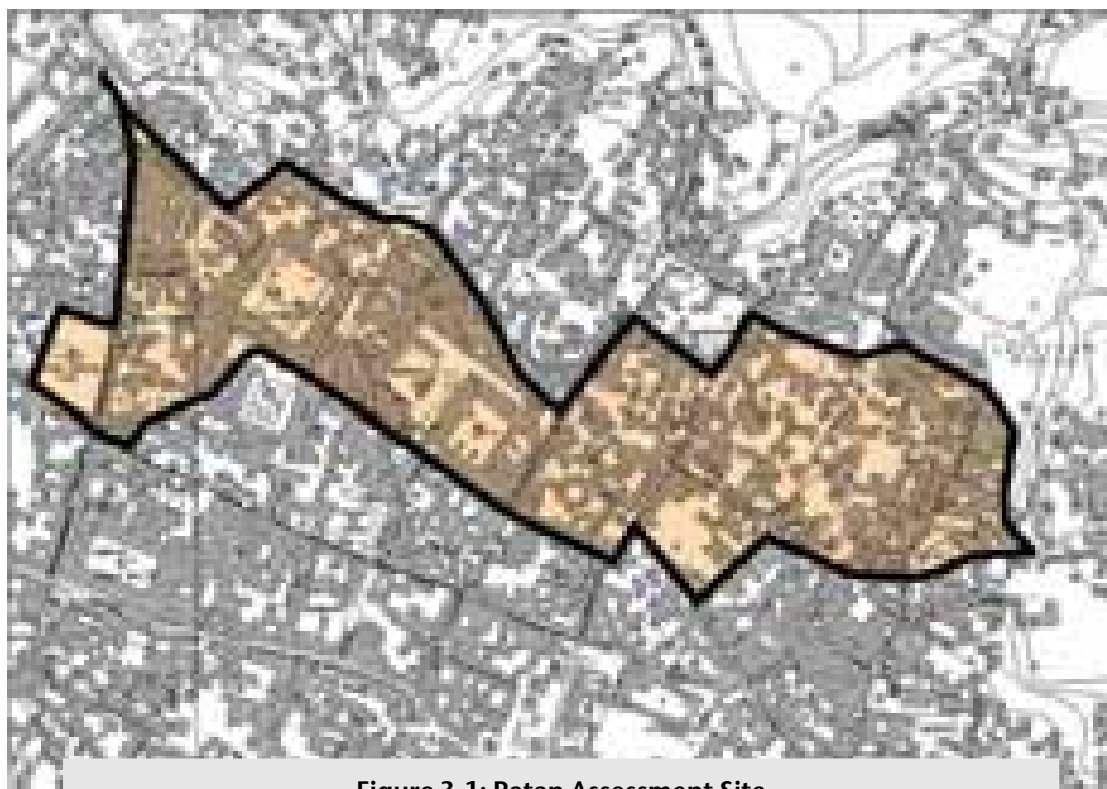
Team leader: Mr. Dilli Bahadur Maharjan

Facilitator (Special acknowledgement): Mr. Jitendra Shrestha

Data verification, documentation and translation: Anuradha Tulachan

Route followed:

*Patan Dhoka - Naag Bahal - Ilanani - Bhelachhen - Chyasal - Kumbheshwar*



**Figure 3-1: Patan Assessment Site**

*(Source: Based Map on Kathmandu Urban Development Project (KUDP), 1998 & KMC/KVMP, LAP Survey)*

### 3.2.2 Presentation Summary: Patan

*Presenter: Mr. Madhukar Tuladhar*

July 21, 2006

A team of 18 members with the leadership of Dilli Bahadur Maharjan visited some prominent sites in Lalitpur Sub Metropolitan City to study how risks can be minimised. With our group leader's consent, I am going to make a presentation on our visit yesterday (Figure 3-1, Figure 3-2 and Poster 3-1). I would like to thank Mayumi who accompanied us on our visit and whose presence helped us a lot. We would also like to thank Jitendra Shrestha, who guided us and helped us find our route. Once again, I would like to thank them for their assistance.

We started out from Patan Dhoka and moved on to Naag Bahal, Ilanani, Bhelachhen (where we took a rest), Chyasal, and Kumbheshwar. We had wanted to go further, but due to weather conditions, our tour ended at Kumbheshwar.

We looked at possible sources of water at times of disasters. We have marked them in purple on the map (Figure 3-2). The water sources were found as follows:

- ▶ *Dhunge Dhara* at Chhaya Bahal
- ▶ Pond at Pim Bahal (Water can be pumped out to put out fire)
- ▶ *Dhunge Dharas* at Naag Bahal, Taapahiti, Kwayalachhi Chyasal and Kumbeshshwar. There is a pond at Kumbeshshwar and wells at Chhayabahal and Nyakhachok. There are many *chowks* with wells and other sources of water. On our map, we have marked [the sources of water] in purple.

Looking into Chhaya Bahal, Pim Bahal, Nakabahil, Naag Bahal, Nyakhachok, Chyasal and Bhelachhen, we found that the settlements in Nakabahil, Nyakhachok and Ilanani were relatively better organised. We talked to some local residents there and found out that many artisans lived in those places, which might be the reason why those areas looked better in planning than others. Many of the artisans are also involved in construction work. There are many open spaces (*chowks*) that can be used for emergencies. There are also many *Dhunge Dharas*.

Moving eastwards towards Kubheshwar via Mangal Bazar, there are highly populated settlements with houses at high risk. The residents are at higher risk because they are likely to be buried by houses falling over them even before reaching the open spaces. That is why we have marked Pim Bahal in Chhaya Bahal area as a highly risky area and Nyakhachok as a relatively risky area.

Naag Bahal area is well organised, but Aadarsha Saral School building, where more than 300 students study, is in a terrible condition requiring repair and maintenance.

Settlements are not well organised in Chyusal and Kumbeshwar area. Some houses are about to collapse. We saw that one half of a house had been repaired, but the other half which was about to collapse had been supported by wooden poles.

Health treatment facilities for times of disasters:

Patan Hospital and B&B Hospital are located in Lalitpur, but they are located beyond our mapping area (outside our assessment site). We found a number of health clinics and community health centres: Chhaya Bahal Health Centre (operated by Lalitpur Sub Metropolitan City), Jana Swastha Clinic (Pim Bahal) in Nyakhachok, Community Health Centre in Naag Bahal, a free health clinic in Kwayalachhi of Chyusal, Saptapur Swastha Clinic and Chyusal Health Centre in Chyusal. Many private clinics also exist.

There are public spaces to be used at times of disasters. As one of the options [for evacuation purposes], we have marked public schools that we visited yesterday. We went towards Patan High School and Patan Campus. Later, we went south towards Pulchowk via Chhaya Bahal. Madan Smarak Secondary School is located nearby. Shree Chandi High School, which is located in Chandi Bidyashram, a public Bihar in Nakabahil, can be used as a storage place or gathering place at times of disaster. Naag Bahal is located near Chandi High School and has open spaces and Chapas. Aadarsha Saral Secondary School could be used at times of disasters, but as I mentioned earlier, the school building is not in a good condition.

After Naag Bahal, we went to the Mangal Bazar area where the Patan Durbar Square is located. Aadarsha Kanya Niketan Higher Secondary School located nearby has a big, useful compound.

Schools in densely populated areas are:

- Sramik Shanti Higher Secondary School in Chyusal
- Shree Shanti Higher Secondary School located towards north of Chyusal
- Kumbeshwar Lower Secondary School in Kumbeshwar

Possible storage sites for grains and other essential items for emergencies are:

Guthi House/Chapa in Chhaya Bahal and Chyasal look stronger than the others as they have been constructed in an earthquake resilient way and have been restored recently. Chapa in Kumbheshwar and Ashok Hall are private properties. They have open spaces that could be utilised during emergencies. The owner [of Ashok Hall] may allow the public to use the space if needed. There is another open space in Saptapur Bihar of Chyasal. Additional open spaces could be found in other Bihars which we did not visit.

As mentioned earlier, schools can be gathering places. If there is an earthquake, people living in Patan Dhoka zone, such as Mikha Bahal and Chhaya Bahal areas, could gather at Patan High School and Patan Campus. People from Naa Tole and parts of Chhaya Bahal could gather at Madan Smarak School, where there is a big open space. Other open spaces that can be potentially utilised are located in Pim Bahal, Nakabahil, Nyakhachok, Naag Bahal, Ilanani, Bhelachhen, Kwayalachhi in Chyasal, Kumbheshwar and Patan Durbar Square (Poster 3-1).

### 3.2.3 Map and Legend



- Water
- Old risky houses
- Health Centres
- School
- Storage
- Open Space

Figure 3-2: A sketch map of Patan

(Source: Fieldwork, Participatory Workshop in Nepal (HTF VII), Day 2 & 3, July 20 & 21, 2006)



### Poster 3-1: Map Legend, Patan, Lalitpur

Sources of Water	<ol style="list-style-type: none"> <li>1 Dhunge Dhara at Chhaya Bahal</li> <li>2 Pond at Pim Bahal</li> <li>3 Dhunge Dhara at Naag Bahal</li> <li>4 Dhunge Dhara at Taapahiti</li> <li>5 Dhunge Dhara at Chyasal Kwayalachhi</li> <li>6 Pond at Kumbheshwar</li> <li>7 Well at Chhaya Bahal</li> <li>8 Well at Nyakhachok</li> </ol>
Old houses at risk	<ol style="list-style-type: none"> <li>1 Chhaya Bahal and Pim Bahal area</li> <li>2 Nyakhachok area</li> <li>3 Adarsha Saral Secondary School Building in Naag Bahal</li> <li>4 Chyasal area</li> <li>5 Kumbheshwar</li> </ol>
Health Centres	<ol style="list-style-type: none"> <li>1 Health centre at Chhaya Bahal operated by Lalitpur Sub Metropolitan City</li> <li>2 Janaswastha Shakha Clinic at Pim Bahal</li> <li>3 Chilin Clinic at Nyakhachok</li> <li>4 Community Health Centre at Naag Bahal</li> <li>5 Kwayalachhi Free Health Clinic at Chyasal and Saptapur Health Centre</li> <li>6 Kumbheshwar Health Centre</li> </ol>
Schools	<ol style="list-style-type: none"> <li>1 Madan Smarak Secondary School</li> <li>2 Patan High School</li> <li>3 Shreechandi Secondary School</li> <li>4 Shree Adarsha Saral Secondary School</li> <li>5 Shramik Shanti Secondary School</li> <li>6 Kumbheshwar Lower Secondary School</li> <li>7 Shree Shanti Higher Secondary School</li> <li>8 Aadarsha Kanya Higher Secondary School</li> <li>9 Patan Campus</li> </ol>
Possible Storage Sites	<ol style="list-style-type: none"> <li>1 Chapa at Chhaya Bahal</li> <li>2 Chapa at Chyasal</li> <li>3 Chapa at Kumbheshwar</li> <li>4 Ashok Hall</li> <li>5 All of the above schools</li> <li>6 Saptapur Bihar</li> </ol>
Open Spaces	<ol style="list-style-type: none"> <li>1 Patan Campus</li> <li>2 Patan High School</li> <li>3 Madan Smarak Secondary School</li> <li>4 Pim Bahal</li> <li>5 Nakabahil</li> <li>6 Nyakhachok</li> <li>7 Naag Bahal</li> <li>8 Ilanani</li> <li>9 Bhelachhen</li> <li>10 Kwayalachhi at Chyasal</li> <li>11 Kumbheshwar</li> <li>12 Patan Durbar Square</li> </ol>

(Source: Fieldwork, Participatory Workshop (HTF VII), Day 2 & 3; July 20 & 21, 2006)

### **3.2.4 Existing Problems and Solutions/Suggestions (Patan)**

*Presenter: Mr. Madhukar Tuladhar*

Our group members wrote the various problems that we saw yesterday (Poster 3-2):

#### **Problems:**

- Water source areas need to be cleaned, and contaminants should not be allowed into drinking water.
- Electric wires should be arranged properly.
- Many houses are about to collapse and require repair and maintenance work. It is the owners' responsibility to repair houses. However, if they cannot, they should ask assistance from municipality or other concerned organisations because otherwise, the house may fall over neighbouring houses. Therefore, appropriate measures should be taken.
- Bhelachhen and Chyasal have densely populated settlements. People have constructed tall buildings on small pieces of land to economise the cost. In some houses, they have constructed the lower portion of the house with mud and the upper storeys with cement. People should become aware of the risks involved in doing so.
- Evacuation from tiny *chowks* is difficult. Therefore, whether one can remain safe inside the house needs to be considered.

#### **Suggestions:**

- Considering the various problems, raise awareness on natural disasters and prepare safety measures.
- When a single house is divided among brothers [into many parts], doing repair and maintenance becomes difficult. Dividing inherited property into very small units obstructs building houses in a planned manner. Therefore, the Government should formulate clear laws regarding the extent of divisions allowed per house or land, minimum area of land required for building a house, and the number of families allowed to live in a house etc.

- The government should build roads and install drain pipes in new settlement areas.
- Sirens should be placed in public places to notify disasters.

### Poster 3-2: Problems and suggestions (Patan)

Problems	Suggestions
Problems related to water 1. Sources of water are unclean: <ul style="list-style-type: none"> <li>➤ The water source areas should be cleaned.</li> <li>➤ Sewage should not be allowed into drinking water pipes.</li> </ul>	Conduct awareness programmes related to natural disasters.
2. Take initiative to make the concerned authority arrange the electric wires.	Division of ancestral assets/wealth often hinders building of well planned houses <sup>42</sup> . Therefore, the government should make appropriate policies.
<ul style="list-style-type: none"> <li>➤ Disorganised wires</li> <li>➤ Lack of maintenance work in houses that are about to collapse.</li> </ul>	Government should construct road(s) and proper drainage system in new settlements.
<ul style="list-style-type: none"> <li>➤ There are houses with ground floor made using mud and the upper floors made using cement.</li> </ul>	Public <i>chowks</i> should be equipped with sirens for emergency.
People living in small <i>chowks</i> will find it very difficult to evacuate themselves.	

(Source: Fieldwork, Participatory Workshop (HTF VII), Day 2 & 3; July 20 & 21, 2006)

**Presenter:** Some of the *chowks* built before the earthquake of 1934 have remained in a good condition even now whereas many are in a bad condition. The new houses should be built properly, and concerned authorities should monitor the situation; e.g., promote repair and maintenance work in houses that are about to collapse.

**Presenter:** I would like to end our group's presentation here. Please ask any questions.

**Aliza Shrestha Dhungana:** Any questions and suggestions are welcome from other group members.

<sup>42</sup> Wealth division often results in small pieces of land.

### **3.2.5 Discussion: Questions and Answers on Community Assessment (Patan)**

*Q (Krishna Bhagat Maharjan):* One of the major sources of water in Patan is the *Dhunge Dhara*. Many *Dhunge Dharas* were identified earlier in the presentation but are they currently in use? If they are not, the government and non government agencies should take initiative to make them operational. Since many residents cannot be dependent on the water supply from the Water Corporation, 70-80 % residents in Patan rely on *Dhunge Dharas*. Many of the *Dhunge Dharas* may not be functional. Therefore, I suggest addressing the issue of managing the traditional *Dhunge Dharas*.

*A (Madhukar Tuladhar):* As mentioned earlier, we visited *Dhunge Dharas* at Chhaya Bahal, Naag Bahal, Chyasal, Kwayalachhi, Taapahiti etc. During our site visit, the various *Dhunge Dharas* had running water. However, as you may know from news that *Dhunge Dharas* tend to dry up during the dry season. Government should formulate a clear policy on whether one is allowed to dig wells near sources of water and, how deep they should be. Local authorities advise people on how to make use of the wells only when there are complaints from the local residents [of water scarcity] during the dry season. It is important for the local authorities to take a clear stand on the issue. Regarding your suggestion, we have suggested "cleaning of water sources". Thank you for your suggestion.

*Q (Prem Bhakta Maharjan):* People are tense and nervous at times of disaster. It is a good idea to inform people of open spaces, but regarding placing sirens, we need to consider that a siren may cause more chaos during an earthquake which may cause more loss. Upon hearing a siren, people might start running around in panic. Local authorities could play an important role in promoting the construction of earthquake resilient houses. Are the local authorities monitoring whether houses are built according to the building code?

**A:** Our objective was to include siren as a tool of information. If there is a disaster, we would like people to be informed of the news as early as possible, so that they act accordingly for their safety. However, as you say, it is possible to think two ways: gaining information may lead to a person's safety or lead to more chaos.

Regarding local authority's role, we have included in our list of suggestions that they need to have a clear policy [e.g., building code] for houses to be built in the future. Government should also formulate a clear national policy to promote building earthquake resilient houses. Our group believes that we need to urge our local authorities to consider this issue seriously.



## **3.3 Presentation II: Bhaktapur (Ward 1, 2, 3 and 6)**

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- 3.3.1 Field Site: Bhaktapur**
- 3.3.2 Presentation Summary**
- 3.3.3 Map & Legend**
- 3.3.4 Existing Problems and Solutions/Suggestions**

### **3.3.1 Field Site: Bhaktapur**

#### **Bhaktapur Site Visit**

Date: July 20, 2006, Day 2

Fieldwork contributors: (Annex III)

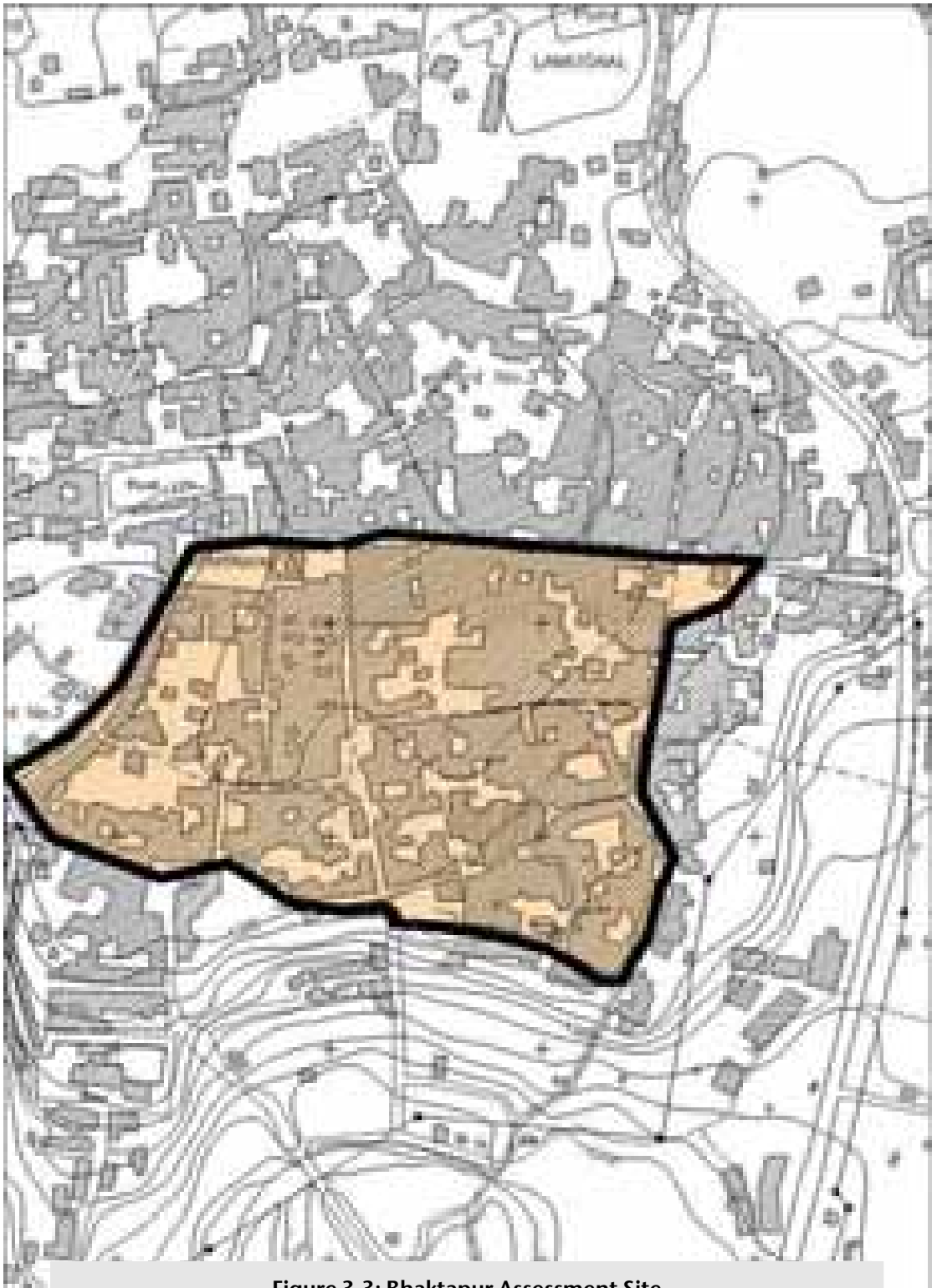
Team leaders: Mr. Laxmi Narayan Duwal

Facilitator: Nipuna Shrestha

Data verification, documentation and translation: Anuradha Tulachan

Route followed: *Khwopa Adarsha CLC - Bhailagaha - Wachuchuka - Mako - Dattatraya - Sakulaan - Navadurga Temple - Gachhen - Dabucha - Pangracha Galli - Khwopa Adarsha CLC*





**Figure 3-3: Bhaktapur Assessment Site**

*(Source: Based Map on Kathmandu Urban Development Project (KUDP), 1998 & KMC/KVMP, LAP Survey)*

### 3.3.2 Presentation Summary: Bhaktapur

Presenter: Mr. Dhan Bahadur Maharjan

July 21, 2006

A total of 17 members participated in the site visit. The members were divided into 6 groups upon arriving at the CLC and each group was assigned their responsibilities. Nipuna Shrestha (UNCRD/UNESCO Office in Kathmandu) was the facilitator. We marked our assessment results as follows (e.g., Figure 3-4 and Table 3-1).

**Table 3-1: Summary of the important points/locations in Bhaktapur Ward 1, 2, 3 and parts of 6**

Point	Total number of places/points	Brief description
1	(25)	Safe <i>gallis</i> : green discontinuous line Bhaktapur has old settlements and there are more <i>gallis</i> than roads. Some <i>gallis</i> are wide and others are narrow. We divided them into "safe" and "unsafe" <i>gallis</i> .
2	(18)	Open space: blue square There are open spaces in Suryamadi, Dattatraya, Wachuchuka, Jelaan <i>tole</i> etc.
3	(16)	Unsafe <i>gallis</i> : red Some <i>gallis</i> are located below houses (Photo 3-1). While passing through such a <i>galli</i> , we were scared that the <i>dalin</i> (roof rafters) would fall. There were a number of such unsafe <i>gallis</i> .
4	(22)	Area in danger: Pink
5	(2)	Government offices: Black Square We found relatively few government offices (Ward 2 and Ward 3 Offices) compared to Kathmandu Metropolitan City.
6	(5)	Schools: Blue star 1. Dattatraya Lower Secondary School, 2. Brahmayani Primary School 3. Shree Samaj Sudhar Secondary School 4. Mahendra Primary School 5. Municipality operated child care centre <sup>43</sup>

<sup>43</sup> Laxmi Narayan Duwal and Jeetendra Khayamali

Point	Total number of places/points	Brief description
7	(4)	Social organisations: Green circular mark Clubs, Jelaan Youth Team, Reading Rooms - Star, Jhigu, Janasewa, Libraries - Yugbijaya, Manandhar, Pragati, Saving and Credit Cooperative <sup>44</sup>
8	(17)	<i>Pati-Pauwas</i> : Blue triangle
9	(1)	Police station
10	(4)	Clinic: [The city of Bhaktapur] is so clean that chances of disease are low. Maybe it is due to fewer sick people that there are very few clinics.
11	(11)	Food store 90% workers are farmers, no big stores, but each house has a <i>bhakari</i> (granary). "While we have heaps of garbage, Bhaktapur has plenty of grains"
12	(2)	Food dealers
13	(3)	Hotel, guest house, lodge
14	(2)	Pond: There is a small pond near a <i>Dhunge Dhara</i> that has no water. Another one (Tachapa Pond) is bigger and cleaner and has water that can be used to put out fire.
15	(8)	Wells: 2 wells are located in open spaces. The rest (6 wells) are in dense settlements and therefore they are considered unreliable [sources of water] in case of an earthquakes.
16	(6)	Public tap <sup>45</sup>
17	(2)	<i>Dhunge Dhara</i> (one with water and one without) <sup>46</sup>
18	(16)	Oil Mills, curd factories, furniture and craft workshop

(Source: Fieldwork, Participatory Workshop (HTF VII), Day 2 & 3, July 20-21, 2006)

<sup>44</sup> Laxmi Narayan Duwal and Jeetendra Khayamali

<sup>45</sup> Another public water tap exists in the area (Laxmi Narayan Duwal and Jeetendra Khayamali)

<sup>46</sup> Two more *Dhunge Dharas* exist in the area

### 3.3.3 Map and Legend



**Figure 3-4: A sketch map of Bhaktapur, Ward 1, 2, 3 and parts of 6**

(Source: Fieldwork, Participatory Workshop (HTF VII), Day 2 & 3, July 20-21, 2006)



Photo 3-1: Unsafe *Galli* in Bhaktapur

### **3.3.4 Existing Problems and Solutions/Suggestions (Bhaktapur)**

*Presenter: Mr. Dhan Bahadur Maharjan*

#### **1. Lack of open spaces and dense settlements:**

Buildings in Bhaktapur are not as tall as those in Kathmandu: in Bhaktapur, the buildings are only about 4 storeys tall and are mostly along narrow alleys, but in Kathmandu, they are as tall as 9 or 10 storeys. Even though our ancestors had built the houses skillfully, [people are now living] in a risky environment as the buildings have become very old and the population density has increased.

- ▶ Suggestion: Town Planning: arranging for open spaces, and building wide roads at newly developing areas.

#### **2. Fragile old houses:**

Many houses have already collapsed and have no roofs, but they have been left unattended. Neither the community nor the municipality pays attention.

- ▶ Suggestion: Encouraging people to make their houses earthquake resilient, [disseminating information] on applicable seismic resilient technologies, conducting awareness raising activities.

#### **3. Unorganised electric and communication wires:**

We saw naked wires at a few places. They should be insulated; otherwise, they would throw sparks at high voltage.

- ▶ Suggestion: We should ask the concerned authorities to take care of the issues.

#### **4. Lack of skilled human resource:**

- ▶ Suggestion: Providing trainings on first aid, rescue and management. Providing information on where to stay inside the house to be safe, as many people would have to stay inside the house for lack of open space outside.

## 5. Covered alleys and narrow roads:

In Tamsipakha, where I come from, some of the houses can only be reached after going through 3 or 4 *chowks*. We did not find such a case in Bhaktapur but we had to pass through many alleyways located beneath the houses (Photo 3-1), and it was uncomfortable. Those places seem to be at high risk.

- ▶ Suggestion: I have placed a question mark (Poster 3-3). I would like to ask if anyone has any solution for this problem.

## 6. Dilapidated houses

The two houses that have already fallen down have been left unattended. We do not know the reason why they have been neglected.

- ▶ Suggestion: While the municipality is responsible for taking care of dilapidated houses, the reason for leaving the houses as it is might be because the houses are involved in a legal case. The municipality could either help to solve legal problems or offer to clear the old houses asking people to bear the costs incurred. Strict rules can put pressure on people to follow. Therefore, it is necessary to formulate strict rules and to enforce them [on house owners].

## 7. Sewage mixed with the river water

Besides the ponds and the wells, there is also a big river. According to the local community members, the river water used to be drinkable until a couple of years ago. With increasing settlements, sewage was mixed in the river. Therefore, we cannot count on river water for drinking purposes at times of disasters.

- ▶ Suggestion: A proper plan for sewage disposal should be formulated before disposing it outside the settlement. If it has to be disposed into the river, it should be done at the lower end of the river and far from the settlement so that contamination of water flowing through the settlement can be avoided.

### Poster 3-3: Problems and Suggestions, Bhaktapur, Khwopa Adarsha (Ward 1, 2, 3 and 6)

No.	Existing Problems	Possible Solutions
1	Congested settlements/Lack of open spaces	Housing/town planning
2	Fragile and old houses	Promote earthquake resilient features
3	Disorganised electric wires and wires for communication purposes	Ask relevant authorities to organise them
4	Lack of skilled human resources	Provide trainings and exposure to awareness raising programmes
5	Covered alleys and many narrow roads	?
6	Houses in a bad condition requiring maintenance	Ask local government agencies to conduct repair and maintenance work.
7	Sewage drained into the river	Release sewage outside settlements after developing a proper drainage system

(Source: Fieldwork, Participatory Workshop (HTF VII), Day 3, July 21, 2006)





## **3.4 Presentation III: Tamsipakha (Ward 18)**

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- 3.4.1 Field Site: Kathmandu**
- 3.4.2 Presentation Summary**
- 3.4.3 Map & Legend**
- 3.4.4 Existing Problems and Solutions/Suggestions**

### **3.4.1 Field Site: Kathmandu**

#### **Kathmandu (Tamsipakha) Site Visit**

Date: 20th July, 2006, Day 2

Fieldwork contributors: (Annex III)

Team leaders: Mr. Bhagawan Ratna Tuladhar

Presenter: Mr. Ram Kumar Shrestha

Data verification, documentation and translation: Anuradha Tulachan

Route taken: Tamsipakha CLC - Tamsipakha road - Gaa Hiti - Bhwati chapa - Open House School - Keita Hiti - Messah Galli - Bhurungkhel (a relatively bigger open space) - A house with an open space<sup>47</sup> - Raktakali School - Bhakta Bidyashram - Aasha Safu Kuthi - eighth or ninth wonder of this world - Itum Bahal - Rajamati's house - Ayurvedic hospital - Tamsipakha CLC.

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<sup>47</sup> A leader's residence



**Figure 3-5: Tamsipakha Assessment Site**

*(Source: Based Map on Kathmandu Urban Development Project (KUDP), 1998 & KMC/KVMP, LAP Survey)*

### 3.4.2 Presentation Summary: Tamsipakha

*Presenter: Mr. Ram Kumar Shrestha*

July 21, 2006

In Tamsipakha, Mr. Bhagawan presented to us a brief introduction to the area. After having snacks, we started our tour of the place. Please correct the names of the places if I say them incorrectly. We started from the CLC building in Ward 18, and followed the Tamsipakha road towards the south. There is a small open space, a private land which is being used as a mechanical workshop. Downwards, there is a water tap, called Gaa Hiti, which was made before the establishment of CLC. Thereafter, the CLC in Tamsipakha was established by UNESCO.

There is a *Dhunge Dhara* but without running water, and nearby, there is Bhwati chapa. Towards the south, there is Open House High School in Ward 19. This school has some open space. By the school, there is a *Dhunge Dhara*, called Keita Hiti, but without water. We went further up passing through Mya Chhon Galli, where another *Dhunge Dhara* is located which has a small amount of drinkable water. Further up, there is a Bhurungkhel Park, which has a relatively large open space in this area. The place may be used as evacuation space after an earthquake. We have marked this park as a relatively safe area.

Moving on towards the east, there is a small open space. We arrived at Raktakali High School and Bhakta Vidyashram High School (public school).

Near by those schools, *Aasha Safu Kuthi* (Newari language archives with a large collection of old Newari language texts, Photo 3-2) is located by the road. There are two buildings. One is a very old white house. While trying to push open the closed door to enter the building, we saw cracks on the walls and we were scared because they appeared to move. The other is a new, earthquake resilient building at the back of the old white house. We went up the new house, and a representative from the archives kindly showed us around the place. We found out that the library building had been made earthquake resilient in order to protect the valuable Newari texts from earthquakes and to protect them from potential damage due to

water. The library has been called *Aasha Safu Kuthi*, named after its founder Aasha. The building has a type of architecture which is similar to temples that have a bigger base with smaller structures above. It is believed that the building would withstand earthquakes up to 8 or 9 Richter scale.

Moving eastwards, we came upon a narrow alley and we thought that we had come upon the *eighth wonder*<sup>48</sup> of this world (Photo 3-3, 3-4, 3-5, 3-6). The alley walls were approximately 3.5 feet tall and only one person could pass through it at a time. Not only was the path narrow, but it was also curvy and dark: a person has to bend and carry a light to pass through there. Passing through the alley, we found a big house having 5 to 6 storeys. We wondered how a bride would be brought there. We were also scared to think what would happen to someone travelling through the alley when an earthquake hits the place.



Photo 3-2: Aasha Safu Kuthi

<sup>48</sup> "Eighth Wonder" in Tamsipakha, Ward 18, refers to a place with an extremely narrow entrance leading to a multi storey house. Participants expressed surprise that the residents living in the house had no other way than to pass through the narrow alley to come out to the street.



Photo 3-3: "Eighth Wonder" Entrance in Ward 18, Kathmandu



Photo 3-4: Passing through a narrow passage



Photo 3-5: Multi storey house (right) after the narrow passage



Photo 3-6: Ms. Nani Hira Maharjan (Tamsipakha CLC) after passing through the narrow passage

Another interesting finding was a house that was probably owned by two brothers. The ground floor had walls made of brick and mud whereas the upper floors had pillar structures (cement). We wondered what would happen if the brother living on the ground floor decided to break his part of the house (Photo 3-7).



Photo 3-7: Ground floor made from brick and mud; upper floors having pillar structures



Later, we came across a farmer's house. The farmer had a big family. They were bundling up vegetables when we reached there. We asked them what they would do if there was an earthquake. The farmer replied, "We would not go out because we would be buried. Rather, we would come downstairs shouting. By the time we reached the ground floor, shaking would probably stop". I found that people had different perception in urban and village settings: the villagers first think about running outside their houses. [For example,] the interviewee preferred running down and hiding under the stairs, believing that he would be buried if he ran outside. Near their house, there was a well and its water was used for bathing.

We went towards Itum Bahal located to the east of Kilagal. There is a big space. We looked for Rajamati's house in Taanani in Itum Bahal (*nani* denotes big space). After finding the house, we went towards the temple, passed by the Ward 18 Office and the Ayurvedic hospital. Finally, we returned to Tamsipakha CLC.

Open spaces in Ward 18 are available at:

- Schools
- Bhurungkhel
- A leader's residence
- Ayurvedic Hospital
- Itum Bahal

We divided Ward 18 into two parts considering potential earthquake: (1) relatively safe area or open space where people may gather (evacuate) if there is an earthquake and; (2) area at risk (where people may stay inside their house if there is an earthquake). The CLC has been actively involved in the activities of Ward 18. The Nepal Red Cross Society also conducted [disaster management] trainings in the past. We found two first aid boxes stored at the Ward Office and some materials at the clinic in Tengal [Chattrapati Free Clinic in Ward 17]. We marked out one area where there are wholesale shops that store a large amount of food. People should be made aware of their location for emergencies.

Many schools, clinics, *Dhunge Dharas*, wells, reserved water tank (one at Harati Hotel and the other one at Bhurungkhel), government offices, and open spaces exist in Ward 18. We also marked some *chowks* and alleys that were at high risk (Figure 3-6).


















### 3.4.3 Map and Legend



**Figure 3-6: A sketch map of Tamsipakha, Ward 18, Kathmandu Metropolitan City**

*(Source: Fieldwork, Participatory Workshop (HTF VII), Day 2 & 3, July 20 & 21, 2006)*

**Map Legend, Tamsipakha, Ward 18, Kathmandu Metropolitan City (Figure 3-6)**

	1	Jaljala School
	2	Open House High School
	3	Swarnim Shiksha Sadan Primary School
	4	Swarnim Shiksha Higher Secondary School
	5	Chamunda Lower Secondary School
	6	New Star Primary School
	7	Swarnim Secondary School
	8	Raktakali Secondary School
	9	Bhakta Vidyashram (Public)
	10	Ekata Primary School
	11	Green Valley Primary School
	12	New Zenith Secondary School
		Ayurvedic Hospital
		Office Building of Kathmandu Metropolitan City Ward 18
	1	Public Health Clinic run by Kathmandu Metropolitan City
	2	Family Welfare Centre
	3	Chhatrapati Clinic
	4	Bal Kashta Binayak Clinic (community operated)
	5	Annapurna Prakritik Chikitsalaya (Natural Clinic)
	1	Gaa Hiti
	2	Nyasi Hiti
	3	Keita Hiti
	4	Mya chhon Hiti
	5	Two stone water spouts without name
		Wells (19) (8 currently in use)
		Reserve Tank (Harati Hotel and Bhurungkhel)
		Nabil Bank Limited, Water Corporation Branch Office
		Temple
		Open Spaces
		Unsafe areas (with respect to earthquakes)
		Safe area (with respect to earthquakes)
		Dangerous <i>Chowk</i>
		Aasha Safu Kuthi (Earthquake resilient house- Newari Archive)
		Dangerous <i>Galli</i> (lane)
		Food Store
		Storage for items related to search and rescue

(Source: Fieldwork, Participatory Workshop (HTF VII), Day 2 & 3, July 20 & 21, 2006)

### **3.4.4 Existing Problems and Possible Solutions/Suggestions (Tamsipakha)**

*Presenter: Mr. Ram Kumar Shrestha*

Earthquake is one of the major [potential] problems (Poster 3-3). Problems and risks related to earthquakes are: highly populated settlements, lack of open spaces, old fragile houses, sturdy houses with bigger upper storeys than the lower ones (house shape looks a flower pot), practice of keeping flower pots on the balcony/terrace, which may fall on people walking on the streets, and disorganised wires (electricity, telephone, cable etc.) along the old houses, which may catch fire and burn the entire house. Fighting fire would be a problem as the two fire engines are not in use. Other problems are: small, narrow and dark alleys, and scarce water supply. Water is available once in few days and only for about two hours. Although there are *Dhunge Dharas*, they do not have running water.

The first priority should be raising public awareness (Poster 3-4), which would solve half the problem. People need to be encouraged to adopt earthquake resilient technologies in the existing old houses or building structures. It might be irrational to ask people to demolish their old house and build a new one, but through public awareness and information dissemination on potential risks, people may be convinced to build new houses. In order to address the problem of water scarcity, the concerned authority should ensure regular supply of water.

People should be made aware of what to do if there is an earthquake. If there is an earthquake, it is recommended for people of Bhurungkhel area to come out of their houses, but residents of other areas such as Kilagal should stay inside. Therefore, information dissemination on where to stay safely inside house, for instance, the space under stairs or beds, is necessary.

Television programmes are an effective means of disseminating information on earthquake risk minimisation. In case of Tamsipakha, information dissemination through school based

activities should also be a priority because students can pass information to their parents effectively.

Community members, preferably all members of a family, should have first aid skills. In emergency situations, outsiders might not be able to reach the people within a community on time. At such times, those who have first aid skills can be life savers.

Government authorities should establish fire stations at additional places. We have the Judhha Fire Station but neither the government nor the local authorities have taken steps in expanding fire department services in a planned manner.

Concerned authorities should formulate clear rules and regulations to deal with old houses that are in danger. At present, nothing may be done to those houses because they may become the subjects of legal cases. We saw the house that Bhagawan was referring to earlier, which was demolished after complaints were filed. Concerned local authorities should be made aware of [the risks related to] earthquakes and other natural disasters, and existing laws should be strictly followed: for example, municipality should not authorise the construction of buildings or houses that are more than 3 storeys. But, in reality, houses as tall as 7 or 8 storeys are built.

To implement these suggestions, a Natural Disaster Reduction and Management Committee should be formed at the ward level by including representatives from the local community, local authorities and health related organisations. We hope that our suggestions will help address various problems. Thank you.

### Poster 3-3: Problems (Tamsipakha)

Existing Problems	
1	Earthquake
a	Structure
-	Populated settlements and lack of open space
-	Old, dilapidated homes
-	Houses with firm structures that have a flower-pot-like shape <sup>49</sup>
-	Water tanks and flower pots placed on the roof top walls.
-	Disorganised electric wires
-	Narrow roads
-	Low, narrow and dark alleys
-	Drinking water pipes that are blocked
-	<i>Dhunge Dharas</i> that have no water
-	Lack of fire engines and fire fighting services

(Source: Fieldwork, Participatory Workshop (HTF VII), Day 3, July 21, 2006)

<sup>49</sup> Pakki houses (houses made from bricks and cement) having a flower pot like shape.

### Poster 3-4: Suggestions (Tamsipakha)

Solutions/Suggestions	
1	Conduct public awareness raising activities.
2	Encourage to build earthquake resilient structures to replace the dilapidated ones.
3	Concerned authority should ensure regular water supply.
4	Provide trainings to community members to minimise loss from earthquake.
5	Conduct a programme on earthquake disaster reduction using electronic media.
6	Conduct trainings for school children on earthquakes and safety measures.
7	Provide first aid skills to each member of the community.
8	Government authorities should expand fire department services.
9	Relevant authorities should formulate clear policies so that dilapidated houses can be dealt with. Currently, there are legal complications that hinder the clearance of such houses.
10	Concerned local bodies should be made aware of earthquake and other natural disasters. Laws should be strictly implemented.
11	To implement the above suggestions, a Natural Disaster Reduction and Management Committee should be formed at the ward level with representatives from the local community, local bodies and health related organisations.

*(Source: Fieldwork, Participatory Workshop (HTF VII), Day 2 & 3, July 20 & 21, 2006)*

## 3.5 Dialogue and Demonstration

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### 3.5.1 **Comments from Nepal Red Cross Society on the Presentations**

Facilitator: Nipuna Shrestha,  
UNCRD/UNESCO Office in Kathmandu

### 3.5.2 **Mason training and retrofitting work: Bhaktapur District**

Prem Lal Kasula, Professional mason  
Tulsi Das Kasula, Professional mason

### 3.5.3 **First Aid Demonstration: treating a Broken Arm**

Facilitator: Nipuna Shrestha,  
UNCRD/UNESCO Office in Kathmandu

### **3.5.1 Comments from Nepal Red Cross Society on the presentations**

*Nur Bahadur Thapa:* What you worked out is termed as VCA (Vulnerability and Capacity Assessment) in our terms. It seems that the conceptual part is clear to you. We, in the Nepal Red Cross Society, also conduct VCA when working in the field of community based disaster management or school based risk reduction programmes. We are very happy that local community members understand the local situation. Your presentation reflects a good understanding of the risks, capacities and resources available in your respective areas.

The issue of putting sirens in place was one of the many interesting topics today. A participant's response was that sirens might amplify possible loss at times of disasters. I thought that this was a genuine concern, and that the issue needs to be further clarified. If we were to put sirens in place in order to minimise risk or evacuate people, we may need to first prepare an Evacuation Map for the local area. The mapping involves a plan to evacuate people by studying in advance the various possible routes, safe places etc. In addition, it is a good idea to perform evacuation drill/simulation in the community with the community members' participation, so that people are able to respond properly to a siren at times of disaster (follow an appropriate route, find a safe place etc.).

In my opinion, it would be much effective to provide first aid trainings side by side with disaster management trainings. At schools where we conduct school based risk minimisation activities, we do training on disaster management and 5-day training on first aid. First, a representative teacher is chosen for a ToT training and trained for 11 to 14 days as a "master trainer", who then conducts a 5-day disaster management training and a 5-day first aid training for school children. We have been implementing other activities in a similar way. In addition to forming groups responsible for search and rescue and providing relief aid, I would recommend forming a first aid group in each of the communities so that the [various groups] can work effectively at times of disasters. I would also like to recommend that all of the five CLCs provide basic disaster management and first aid trainings in their respective communities.



Overall, the information presented was both relevant and meaningful. We can make [our understanding better] by incorporating any missing aspects. We have been receiving questions from you regarding the eligibility criteria for receiving ToT trainings, disaster management trainings and first aid trainings that we conduct. We are happy to respond to your requests made from your organisations and assist with disaster management trainings or first aid trainings.

### **3.5.2 Mason Training and Retrofitting Work: Bhaktapur District**

Mr. Prem Lal Kasula and Mr. Tulsi Das Kasula are from Bhaktapur District (Nankhel VDC, Ward 2). Both of them are professional masons. They kindly agreed to share their experiences and knowledge with the workshop participants.

***Prem Lal Kasula:*** There has been a lot of dialogue on earthquakes. I recall that we had a meeting with the management committee of Nankhel VDC in 1998/1999. During the meeting, two people arrived and offered to help us. We did not recognise who they were, but they said that our school building was weak, and that they would like to help us rebuild it. We also offered whatever help the village could provide. Upon asking where the two people were from, they said that they were from the National Society for Earthquake Technology (NSET) Nepal, and that they wanted to strengthen the existing school building. It took approximately six months to complete the retrofitting work. A committee was established. Trainings were conducted in the mornings and construction work was done during the day. The retrofitting work at school was completed within a few months. Our school had been made from mud and bricks. It was decided later that a similar kind of the retrofitting work would be replicated in another school. They helped us bring stones and bricks from various places. After its completion, we worked in schools in Kirtipur, Nagarkot, Bhaktapur etc., and so far, we have worked for about five schools to make them earthquake resilient. In 2000/2001, we had a chance to visit Gujrat in India. On January 26th 2001, there was a big earthquake in Patanka village in Gujarat which had caused great loss. A group of five trained masons and carpenters visited a number of places. We were trained along with the masons in Gujarat and the work was completed successfully. We now work as contractors in various places. Some of us work in Jagati Home Extension in Bhaktapur. Some have visited countries like Japan, Afghanistan and Iran. I have brought a picture to show the house that we had worked on. You may see model houses in the NSET Office in Kathmandu and Khwopa College in Bhaktapur. Models can be helpful in explaining but I wish we could have shown you techniques on how to make a building earthquake resilient. Thank you.

**Tulsi Das Kasula:** Namaskar everyone. People are frightened to even hear the word "earthquake", but many of us do not know what earthquakes are and how and when they occur. We need to think about earthquake preparedness while constructing our houses. We often observe the practice of building big houses on small pieces of land, and encroaching on streets trying to build a bigger house in order to accommodate a big family. It is not the earthquake that kills people, but it is the harmful structures that humans make. However, ignoring such possibilities, we tend to decorate rooftops with colourful flower pots, hang pictures on the walls, and/or put risky items above the closets, which may fall and harm us. We need to think about preventive measures. Are the flower pots that we keep on the rooftops for decorative purposes i.e., for showing them to the people walking down on the streets? We need to realise that it is not only because of earthquakes that those pots fall: even strong winds could make them fall and hurt people walking on the streets. Who will be responsible for such accidents?

Mr. Prem Lal Kasula has already mentioned to you about our school projects and our visit to Gujarat. I was one of the three members who visited Gujarat and I observed that the houses there were not the same as the big ones here [Nepal]. [In Gujarat], one storey houses resembled sheds. We were surprised that even those types of houses had been damaged by the earthquake and were curious about how a one storey house could collapse. The houses there were made with mud and stones. The house walls resembled the type of walls that are usually built on farmlands and had little resemblance to the walls of the houses in Nepal. In several trips, we managed to rebuild around two hundred houses there. It was challenging to train people and work at the same time. There was also a language problem: Gujarati is very different from Hindi and therefore, we had to communicate using gestures. But, we were successful in training them. Thank you.

**Facilitator (Nipuna Shrestha):** Mr. Prem Lal Kasula and Mr. Tulsi Das Kasula, thank you for sharing your experience with us. Before we move to group work, please ask any questions.

**Dhan Bahadur Maharjan:** Although we conducted trainings twice in Ward 18, both were conducted in rush. We were suddenly informed that the rescue training would be organised, and we had to bring participants from other wards. The NRCS District Branch also asked us to conduct the trainings despite the short notice because they were not sure whether the trainings would be done later if this chance was missed. Therefore, we had to gather participants from Kalimati, Chabel and from other places in the middle of the night. My concern is that if a disaster does occur, the trained people from other wards will not be able to contribute [to Ward 18]. Therefore, I would like to request the NRCS to conduct refresher training in Ward 18, in addition to the first aid training which has already been scheduled.

I would like to thank Mr. Prem Lal Kasula and Mr. Tulsi Das Kasula for their presentation. All masons should attend the trainings as Mr. Prem and Mr. Tulsi did. I have raised this issue at NSET. I think that if all masons were trained, we would not have to rely entirely on building contractors and our houses would be constructed in an [earthquake resilient] way. It is my request that the concerned organisations including the NRCS consider this matter seriously. Thank you.

**Nur Bahadur Thapa:** The training that Mr. Dhan Bahadur was referring to was conducted in three districts and for selected wards only. Several wards faced some difficulties as mentioned. In my view, while putting your question forward, you have also provided an answer. The situation arose mainly because appropriate arrangements could not be made timely. The three NRCS District Branches were supposed to coordinate and conduct the trainings promptly. Initially, I had been appointed to coordinate the trainings in Kathmandu, but since I am from Lalitpur, I requested that I be in charge of the trainings in the three wards of Lalitpur. I was present during all three trainings conducted [in Lalitpur]. Another person was appointed as the coordinator for trainings in Kathmandu, but the NRCS Kathmandu District Branch could neither make prompt arrangements nor disseminate information, which resulted in some difficulties as you mentioned earlier. I am aware of the difficulties. In the future, disaster management including earthquake related trainings should be coordinated with all three district branches for effective implementation. The NRCS is working towards improving the coordination [mechanism]. However, NRCS cannot solve everything alone. We need to cooperate with district branches and the colleagues working there. I agree that it would have been more effective to involve ward residents [e.g. in disaster management training], so that they are available to offer their service in case of an emergency. During emergencies, it would be difficult to rely on the contribution of participants who are from other wards. It seems that the training was conducted for the sake of training rather than for providing the necessary emergency service for the residents. I would like to add that the presumption of trainings not being available later on is true.

The NRCS-Central is preparing a contingency plan that extensively covers all three cities in Kathmandu Valley. We have an ambitious plan for conducting earthquake preparedness activities in the three cities. Planning and coordination are my responsibilities and we are in the process of finalising the plan through sharing [ideas] at meetings, trainings and workshops. As you studied the communities and prepared the maps, we have also prepared a Geographical Information System (GIS) map of all three cities. On a GIS map, one can see where open spaces, roads, fire engines and hospitals are located. The map also shows the number of doctors and nurses in a hospital, capacity of a hospital during emergencies including number of beds etc. The government of Nepal needs to coordinate the overall national plan. We will provide required support to the government and assist local communities by conducting awareness raising activities and trainings for capacity development. Therefore, we need a national coordination mechanism: it is not possible for the local community members alone to do everything. Similarly, the Nepal Red Cross Society, the government, UNDP or JICA cannot do everything alone. Therefore, we need to jointly coordinate and develop an effective strategy. We, Nepal Red Cross Society, will always be ready to assist you in any means. Namaskar.

### 3.5.3 First Aid Demonstration: Treating a Broken Arm

*Facilitator (Nipuna Shrestha):* How would you react if someone broke his or her arm now? Would anyone like to be a volunteer for demonstration?



Comment from Nepal Red Cross Society on the first aid procedure demonstrated:

*Nur Bahadur Thapa:* We just saw that a piece of cloth was used as a sling in order to keep a broken arm from moving. While doing first aid, we need to utilise locally available materials. In addition to using [a piece of cloth], we could also use pieces of wood as a splint. If wood pieces are unavailable, we could use hard papers or a file. Layers of thin paper tied together could also be used as a splint. The rationale is to keep the broken arm from moving while transferring the patient to a hospital or a health post. It is important for all of us to understand what first aid is. First aid during disasters or accidents involves taking care of the casualty on the spot by utilising locally available resources so as to prevent the person's condition from worsening, before he or she can be safely transported to hospitals or health posts. As mentioned earlier, first aid also involves making the best use of local resources. We should, however, keep in mind the way we provide first aid. For example, a broken arm

might lead bones to be exposed and may cause heavy bleeding. We need to ensure that the first aid materials we use are clean. If we use an unclean piece of cloth on a bleeding wound, it may cause infection in the wound. It is therefore important to use clean and disinfected items.

***Kedar Babu Dhungana:*** [The main objective of first aid in this case] is to make sure that the condition of the injured person does not get worse: our job is not providing medical treatment for the broken bone. If the injured person is found in a field, he or she can be asked to kneel down. If the person is inside a house, he or she could stay in a comfortable position. We place the splint and tie it near the elbow first because this portion is more stable as it is nearer to our body. If we first tie the splint near the wrist, it will cause more pain to the injured person. A triangular bandage can be made by cutting a square cloth diagonally into half. The reason behind tying the part near the elbow first and then the part near the wrist is to avoid pressure on the wound. If you are alone, ask the injured person to hold the wrist to provide extra support to the injured arm. Bring the elbow down and bring one point of the sling up and over the shoulder of the uninjured side and the other point straight up over the shoulder of the injured side. Tie the two points together behind the neck. In first aid, this is called a sling. What we have done so far is to prevent the injured part from moving while the person is being taken to the doctor either on foot, on an ambulance or on a stretcher. Since the arm is now being supported by the sling, the weight of the arm is now being supported by the shoulder. However, while walking, the supported arm might sway and therefore, in order to prevent that, another piece of cloth is used to attach both the arms to the body by tying a knot behind the back. While tying the knot at the back, we should ask the injured person to take a long breath so that the upper body expands. In the expanded position, we can figure out how tight the knot should be made at the back so as to ensure comfortable breathing. In the language of first aid, we refer to this as sling and swath. Further treatment does not come under first aid. Sometimes, the fracture leads to bones being exposed which can cause much bleeding. In that case, the purpose of first aid should be to control bleeding. After the bleeding stops, we take measures to stabilise the injured arm before taking the person to a doctor. Heavy bleeding may even cause death.

## 3.6 Recommendations: the Ways Forward (HTF VIII)

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### **Recommendation 1:**

#### **Empower individuals to know how to protect their life in times of disaster**

*Activities: Gender-Sensitive IEC (Information, Education and Communication) material production at community level*

1. Reviewing existing IEC materials with regard to disaster management at community level
2. Identifying the learning needs in case of disasters, particularly, the gender-specific needs of the communities through community meetings and workshops: literacy rate, diverse ethnic languages in Nepal etc., should be considered.
3. Drafting and designing IEC materials with community members.
4. Testing the IEC materials with community members.
5. Utilising the IEC materials, drafting a feasible, sustainable training programme (local need-based, Gender-Sensitive activities) with community members, including participatory, Gender-Sensitive monitoring and evaluation methods.
6. Making the Gender-sensitive IEC materials available to diverse community members.

### **Recommendation 2:**

#### **Support peer educators at community level**

*Activities: Gender-Sensitive Training of Trainers at Community Level*

1. Supporting peer education through Gender-Sensitive community meetings and workshops: while training events and community meetings may aim to engage females in the activities, their workload and schedules should be sensitively considered (e.g., they should not be overloaded by the project activities).
2. Producing Community Hazard Maps and preparing for different disasters: PLA methods including town watching methods and GIS/Remote Sensing technology may be utilised.
3. Facilitating family contingency planning (preparing life saving items including first aid kits, explaining risks to children, family communication plans such as out-of-town contact in the time of disasters) and gender-sensitive analyses through peer education.
4. Supporting activities initiated by those who received the training (hereafter peer educators). Community simulation exercises, saving for disaster preparedness, disseminating Gender-Sensitive CBDM information through local films and/or radio programmes and volunteering for red cross society's activities (e.g., first aid) etc.



### **Recommendation 3:**

#### **Empower community members to know how to protect families, friends, neighbours and others in times of disaster**

*Activities: Enhancing community learning activities through peer educators*

1. Supporting family and community contingency planning (i.e., identifying where the safe places are at home and outside for each type of disasters) through enhancing existing and new networks of community member groups such as mothers' groups, fathers' groups, youth groups, school teachers' groups, saving groups, social mobilisers, community health volunteers, reproductive health service groups, peer educators and forest user groups etc.
2. Planning for those with disabilities and other special needs (for instance, pregnant women and people living with AIDS).
3. Strengthening rescue and relief capable groups (e.g., through first aid and health education).
4. Organising community simulation exercises.
5. Delivering a pilot training programme to other districts/regions (replicating positive outputs) through Community Learning Centres' (CLCs), peer-educators and youth networks.

### **Recommendation 4:**

#### **Support Gender-Sensitive Community Disaster Management Planning**

1. Supporting community disaster management planning (i.e., preparedness, rescue and response plan) through community meetings and peer education activities.
2. Facilitating the incorporation of disaster management perspective into community development planning through ongoing community activities (e.g., health education, micro-finance, watershed management, cultural conservation, volunteer activities etc.).
3. Enhancing community cooperation and exchange of findings, ideas and information through peer education activities, workshops and seminars.
4. Evaluating and replicating positive training output.

### **Recommendation 5:**

#### **Policy dialogue**

*Activities: Gender-Sensitive feedback analyses*

1. Analysing and disseminating gender-sensitive case studies (e.g., a special evacuation plan is required for women who deliver babies just before or after a disaster) and feed back the results to develop Gender-Sensitive disaster management strategies.
2. Organising a series of workshops and seminars; assisting Round Table Meetings with joint effort of local and central governments to facilitate the incorporation of gender and reproductive health perspective into national disaster management planning.
3. Contributing to draft and develop gender-sensitive disaster management policies and programme activities through disseminating Gender-Sensitive feedback analyses.



## 3.7 Closing Session

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- 3.7.1 **Closing Remarks by Mr. Chandra Nanda Newa**  
CLC Representative
- 3.7.2 **Closing Remarks by Ms. Shree Laxmi Duwal**  
CLC Representative
- 3.7.3 **Closing Speech by Ms. Koto Kanno**  
UNESCO Representative to Nepal
- 3.7.4 **Closing Remarks by Ms. Mayumi Yamada**  
Kobe/Hyogo

### **3.7.1 Closing Remarks by Mr. Chandra Nanda Newa**

*Tamsipakha CLC*

Attending this workshop has enabled us to share our experience and problems existing in the five CLCs, ways of addressing those problems and especially disaster related problems and how to solve them. We have come to the closing of the workshop and I think the experiences gained during the workshop have been very fruitful. The cities of Kathmandu, Patan and Bhaktapur have been termed never beautiful, because they have been developed into cities without vision. Along with the problem of dense settlements, these cities face a plethora of other problems. Our cities are very vulnerable to disasters: it is said that if there is an earthquake like the one of 1934, death toll can rise to more than 45,000 because our cities have grown without planning. I feel that we have all been able to reach a consensus on what kind of action plan we need to make. As we discussed, I believe that we agree to focus on how to remain safe and also the dos and don'ts after a disaster, such as first aid and how to save others. We have suggested from our side that we need relevant trainings and awareness raising activities. We hope that assistance from UNCRD will continue and that the [comments and suggestions in the] report will help us immensely. This three-day workshop has benefited us. I hope that we will all continuously make our efforts.

Thank you.

### **3.7.2 Closing Remarks by Ms. Shree Laxmi Duwal**

*Khwopa Adarsha CLC*

I would like to thank the representative from Hyogo Trust Fund [VII] and the five CLCs for being present today at the closing ceremony of Urbanisation and Community Based Disaster Management Workshop. Thank you also for giving me an opportunity to share my experience. Attending this workshop was a different experience from attending other workshops because I could meet members from other CLCs. In addition, the discussion topic for this workshop was unlike others. Yesterday's site visit made us realise for the first time that problems and risks existed in our own neighbourhoods. Facing the existing problems has made us think about how to address them. During the workshop, we had a chance to discuss how we can solve the various problems and to make action plans in detail. We hope that we will implement the action plans, and that this project [Urbanisation and CBDM] will continue to follow up on our activities providing necessary guidance and support. Khwopa Adarsha CLC learnt that other CLCs had been receiving the support of community members and local authorities. We, especially, Khwopa Adarsha CLC, have benefited a lot from this workshop. We learnt that launching various activities would be easier in cooperation with different communities and local authorities. For these three days, we had a very good learning experience. We hope that the Hyogo Trust Fund project will continue in collaboration with the five CLCs and support [further] activities and discussions on existing and possible problems in the future. I, along with Khwopa Adarsha CLC, wish that such kinds of programmes, where CLCs can come together, be conducted more often in the future. Natural disaster is one of the problems we face. Such kinds of workshops allow us to discuss many other problems and implement various planned activities. I hope that the networks among the CLCs and the personal relationships we developed will continue to grow in the future. I also hope that we will follow up on activities and have similar kinds of networking opportunities in the future.

Thank you.

### **3.7.3 Closing Speech by Ms. Koto Kanno**

*UNESCO Representative to Nepal*

Let me congratulate all of you on the successful conclusion of this workshop. Seeing your happy faces, I have come to believe that this workshop has been very successful. I see your faces being self confident and it reflects your readiness for any eventual incident, which I hope would not come, but in case it comes, I think you can all cope very well. What you have learnt here should not remain as two or three days' experience. When you go back to your respective communities, I hope you will share what you have learnt here widely with the other people in the community. Also, I think you have to constantly remind yourself and other community people of what you have learnt and also perhaps improve certain things that you have learnt here with your innovative ideas to conceptualize better. I would like to take this opportunity, of course, to say thank you to the resource persons, the kind cooperation of the Nepal Red Cross Society, and would also like to acknowledge the leaders and the CLC management committees' cooperation and help. We are very grateful to the UNCRD Hyogo Office and Ms. Yamada's involvement, not just for her professional work but for putting her heart and mind for this activity. I would like to request Ms. Yamada to convey our grateful thanks to not only the UNCRD Director but also to the Hyogo Prefectural Government, as well as the people of Hyogo. Do please tell them that the Hyogo spirit is being shared by the people of Kathmandu Valley in Nepal and that the loss due to the earthquake will never be forgotten. With this short remark, I would like to thank you all again for your kind cooperation. CLC activities will continue, of course, and UNESCO always stands ready to extend support for further development of the Community Learning Centres.

Thank you very much.

### **3.7.4 Closing Remarks by Ms. Mayumi Yamada**

*Kobe/Hyogo, Japan*

Thank you very much for your active participation in our workshop for three days.

I remember that I met you in March 2006: I visited the following 5 CLCs, Bungmati, Ichangu Narayan, Khokana, Khwopa Adarsha and Tamsipakha with Aliza, Elke and Melissa (UNESCO colleagues, and Nipuna who joined later) for the first time. It was a very hard time for the people of Nepal as you had been going through political changes. Under such situations, honestly, it was not an easy job for me to suddenly appear from Japan and start talking about "Urbanisation and Community Based Disaster Management". The theme is memorable and essential in my life, but I was not confident if such a paradigm could be applied for you. I did wonder what to start and where to start, moving from the concept to practice.

That is why I tried to find a common feeling or language between you and me. Finally, I found out that the core of Community Based Disaster Management lies in people's life saving/protection, for instance, taking care of ourselves, our family members, friends and neighbours. There must be more rigorous definitions, but I feel that it was the most accepted concept among the diverse people whom I had met, not only in Nepal but also in Sri Lanka, Thailand and Bangladesh: we agreed upon the simplest concept despite our diversities and differences. Similarly, in case of Nepal, observing our workshop for three days, I was impressed to see your hazard mapping and dialogue on disaster risks, vulnerabilities and assets in your own words and in your own languages. Sometimes, our discussion became passionate based on our ideas and true feelings. Moreover, your outcomes, e.g., town mappings that encompass fruitful information, are so marvellous that outsider experts may become interested to work with you. Thus, I believe that the residents, those who are based on their own places/grounds, are the first experts, and you should be the one to draw your vision, take action to empower yourself, and to enrich your life. In this regard, I believe that more than the project itself, the community based disaster management should be a part of our life: we do it ourselves, not necessarily because we are told by somebody to do so.

Many people asked me what would happen to all the materials produced during the workshop such as posters and maps. I promise that original data and maps will be returned to your communities, and I will have the photocopies for our recording and publication. In addition, I would like to publish all information as your work and contribution. Your materials comprise precious knowledge and information, which should be utilised for your follow-up actions and future planning. For instance, the map can be used not only for disaster management, but also for community development and town planning to further improve your living environments and quality of life. For a while, Nipuna is based in Kathmandu, and we may see follow up activities on the workshop outcomes. That is all from me now. Once again, thank you very much for your active participation and let's keep our friendship.





**Post-Workshop**

# **Community Disaster Management Workshop**

September 2 and 18, 2006

Community Meetings and Assessments  
in Khokana, Bungmati and Ichangu  
(Follow up activities in September 2006)

*Community Learning Centres (CLC):*

Bungmati CLC

Ichangu Narayan CLC

Khokana CLC

Khwopa Adarsha CLC

Tamsipakha CLC

**Facilitated by Nipuna Shrestha (Nepal)**

With Support from UNESCO Office in Kathmandu  
2006



## 4. Substantive Outcomes of the Workshop



*For our better future*



## 4.1 Community Disaster Management Workshops in Nepal

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4.1.1 Introduction

4.1.2 Khokana and Bungmati Community Workshop: September 2, 2006

4.1.3 Ichangu Community Workshop: September 18, 2006

4.1.4 Recommendations: Evaluation Notes on Community Assessments

### 4.1.1 Introduction: Community Disaster Management Workshop in Nepal

After the first Participatory Workshop on "Urbanisation and CBDM" (19-21 July, 2006), a series of community workshops were conducted by the participants themselves (e.g., CLC members) in Kathmandu Valley in urbanising areas such as *Khokana*, *Bungmati* and *Ichangu* villages. With support from UNESCO, more than thirty CLC members, residents and representatives from the Nepal Red Cross Society were mobilised to organise the community workshops<sup>50</sup>. Consequently, the following workshops were convened at the community level: (1) Khokana Community Workshop on September 2, 2006; (2) Bungmati Community Workshop on September 2, 2006; and (3) Ichangu Community Workshop on September 18, 2006.

Moreover, the goals and objectives of the *Community Disaster Management Workshops* were pursued as follows:

- ▶ To incorporate disaster management concept into development planning through *community mobilisation and empowerment*: exercises for assessment of community risk, vulnerability, and assets in the three remaining pilot sites, Khokana, Bungmati and Ichangu<sup>51</sup> and which were not covered during the workshop.
- ▶ To supplement community assessment (visualisation and mapping) exercises through community mobilisation, in particular, through the CLC networks enhanced during the workshop (5 CLC network among Bhaktapur, Bungmati, Ichangu, Khokana and Tamsipakha).
- ▶ To draft, edit and test the simple *Guidance Notes on Community Assessments*, which may be utilised for other CLCs in the future to integrate risk awareness and disaster management concepts into community development practices or activities.

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<sup>50</sup> A list of participants appears in Annex IV.

<sup>51</sup> The assessment of the three villages in this chapter was not intended to produce a statistical comparison, but to assess risk, vulnerability and assets through people's diverse perceptions.

The activities are a follow up to the first Participatory Workshop on Urbanisation and Community Based Disaster Management convened in Patan (Lalitpur), Nepal in July 2006. In addition, this report is a part of the participatory methodological notes (e.g., Guidance Notes on Community Assessments). In this regard, the local community initiative and community mobilisation gives their insight into the three study villages, which may indicate what they now do differently as a result of the first workshop.



Bungmati, Kathmandu Valley, Nepal



## 4.1.2 Khokana and Bungmati Community Workshop: September 2, 2006

### Field sites: Khokana and Bungmati Villages

The two study villages, Khokana and Bungmati, are located in urbanising areas of Kathmandu Valley. The human settlements in the valley are located at an altitude range of approximately 1,260 to 1,320 meters above the mean sea level. Khokana CLC and the core area are located approximately 10 km from Kathmandu: it takes about 45 minutes to reach Khokana from Kathmandu by public bus (Figure 4-1) and about 30 minutes to reach Bungmati CLC from Khokana on foot (Figure 4-2).

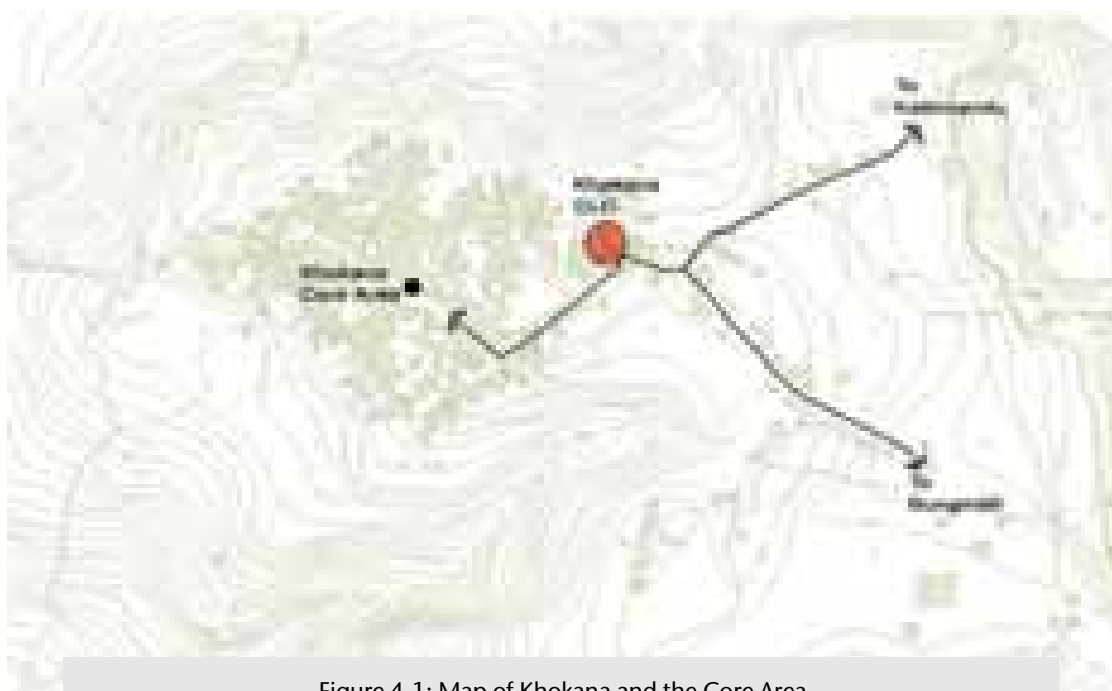


Figure 4-1: Map of Khokana and the Core Area



Figure 4-2: Map of Bungmati and the Core Area

### Community Assessment procedures

Participants were invited from the 5 CLCs in order to conduct community assessments, to assess risks, vulnerabilities and assets *through community mobilisation and empowerment*. They represented various social groups (e.g., school teachers, village/community leaders, social workers) and the criteria for participation were: (1) the residents of assessment areas; (2) willing to participate in community assessment exercises; and/or (3) having a good knowledge of economic conditions and social relationships of their Village Development Committee (VDC) and/or CLC.

In the three study sites, a facilitator<sup>52</sup> organised a session to familiarise the participants with the draft Guidance Notes on community assessments, which had been developed based on (1) the outcomes of the Participatory Workshop conducted in July 2006; and (2) continuous dialogue with diverse partners, including 5 CLC representatives or members. Moreover, an editor<sup>53</sup> closely observed the field exercises and concisely documented the processes, exploring how community members had tested and modified the Guidance Notes (Table 4-1) in different community settings (Field Testing of Guidance Notes). After completing community assessment in Khokana VDC, the participants moved to Bungmati VDC on foot, which took approximately 30 minutes.

**Table 4-1: Draft Guidance Notes tested in Khokana and Bungmati Villages**

<b>Cartography</b>	<b>Community Assessment Indicators (What to see?)</b>
Basic Mapping: risk, vulnerability and asset assessments	<ol style="list-style-type: none"> <li>1. Focusing on what the places/people have rather than what the places/people do not have</li> <li>2. Noting the time required or distance travelled while going from one place to another</li> <li>3. Marking areas where old people, children and physically incapacitated people live</li> <li>4. Farms, open land, areas prone to erosion, jungles, community forests, dangerous areas</li> <li>5. Open spaces and evacuation routes</li> <li>6. Presence or absence of earthquake resilient houses</li> <li>7. Interviewing the local people and adding new information or findings</li> <li>8. Noting places where sick people can come and stay</li> <li>9. Noting shops that sell items that can be used for rescue</li> <li>10. Checking whether there is water in the sources of water</li> <li>11. Social Mapping, considering oil mills, caste wise mapping, tailors</li> <li>12. Schools, hospitals, clinics, pharmacies etc.</li> <li>13. Social organisations (youth clubs, CLCs, temples)</li> <li>14. Categorising open spaces into large and small</li> <li>15. Access routes and their alternatives</li> </ol>
Environmental Mapping (land use mapping):	<ol style="list-style-type: none"> <li>1. Water source</li> <li>2. Soil Quality</li> <li>3. Vegetation type</li> <li>4. Risky items</li> <li>5. Populated areas</li> </ol>
Special Features	<ol style="list-style-type: none"> <li>1. Disaster related units working in the area</li> <li>2. Houses that withstood the earthquake of 1934</li> <li>3. Cultural Heritage</li> </ol>
Comment <sup>54</sup>	Old people live in almost every house. Therefore, specifically marking places where old people stay would not be relevant our context.

(Source: Fieldwork in Khokana and Bungmati, September 2, 2006)

<sup>52</sup> Nipuna Shrestha

<sup>53</sup> Anuradha Tulachan

<sup>54</sup> The comment was made by Mr. Ram Kumar Shrestha of Ichangu

## Group division

The facilitator explained the processes of community assessments (Table 4-1) and divided the participants into four groups. The participants suggested the following:

- ▶ CLC wise group division<sup>55</sup>
- ▶ All groups move together, observing specific objects<sup>56</sup>
- ▶ Dividing work among the CLCs, i.e., assigning a set of indicators and/or topics (what to see) to each of the groups<sup>57</sup>

## Work division

### Khokana

1. Bungmati CLC: to identify and record features producing risk to the surrounding (flower pots, wires, populated areas etc.)
2. Ichangu Narayan CLC: to identify and record open spaces
3. Tamsipakha CLC: to identify and record Physical infrastructure
4. Khwopa Adarsha CLC: to identify and record sources of water
5. Khokana CLC: to guide participants and to add additional details to the prepared map

### Bungmati

1. Bungmati CLC: to identify and record features producing risk to the surrounding (flower pots, wires, populated areas etc.), to guide participants and to add additional information to the prepared map
2. Ichangu Narayan CLC members: to identify and record open spaces
3. Tamsipakha CLC members: to identify and record physical infrastructure

## For Mapping

*Materials:* papers, pens, pencils, information card, a tracing sheet, a copy of the area map of Khokana and Bungmati, and a topography map (scale 25,000: HMGN Survey Department).

The facilitator suggested following points:

- ▶ Each CLC group member could mark his or her findings onto a single map sheet.
- ▶ Each CLC group member could put together information gathered from its members on a single map and submit to Khokana CLC and Bungmati CLC respectively.
- ▶ After completing the map, Bungmati CLC could collect community feedback before presenting the map to VDC and receiving comments from the Nepal Red Cross Society and other organisations. A participant suggested gathering all CLCs at one place while receiving expert opinions on the community assessment maps.

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<sup>55</sup> Suggestion from Nepal Red Cross Society Sub Committee Representative

<sup>56</sup> Suggestion from Dhan Bahadur Maharjan, Tamsipakha CLC

<sup>57</sup> Suggestion from Facilitator and Dhan Bahadur Maharjan

### **Route taken in Khokana**

*Kha Pukhu (CLC): Thatala - Nayala Nanicha Tole - Kutuphukhu - Dhokasi - Kwayalachhi - Nhyobu Tole - Taa Jhya Tole - Gaabu, Panpa - Chochhen - CLC (Time: 2 hours; 10:30-12:30pm)*

### **Route taken in Bungmati**

*Kota Tole - Chwayelanani - Padmapur Bihar - Rato Machhendranath - Machhendrabahal - Sata Tole - CLC - Tri Ratna Cooperative School (Time : 3 hours; 1:30pm - 4:30pm)*

## **The results of the Community Assessments**

The results of the Community Assessments are documented as follows (Figure 4-3 and Figure 4-4)



Figure 4-3: A sketch map of Khokana (Source: Group Fieldwork, September 2, 2006)

## Community Assessment indicators

The teams conducted the assessment, applying/testing the Guidance Notes and selected indicators, items and/or topics respectively in Khokana and Bungmati (Tables 4-2 and Table 4-3 respectively).

**Table 4-2: Key indicators or topics selected by the teams in Khokana**

1. Temple	11. Public water tap	20. Jungle
2. Social organisation	12. Public <i>Pati</i>	21. Oil Mill
3. Food shop	13. Public Building	22. Earthquake Drill
4. Clinic	14. Open Space	23. Safe house
5. Earthquake resilient house	15. Dangerous	24. Unsafe house
6. Shop selling construction tools	16. Erosion	25. Country Yard
7. Government Office	17. <i>Chaitya, Bihar</i> (monastery)	26. Small <i>chowks</i>
8. Health Post	18. Safe wires	27. Open space
9. School	19. Unsafe wires	28. Protected Place
10. Pond		

(Source: Fieldwork in Khokana, September 2, 2006)

**Table 4-3: Key indicators or topics selected by the teams in Bungmati**

1. School	10. Police	19. Tanks that pose risk
2. Hospital	11. Government Office	20. Unsafe lane
3. Health Post	12. Government Health Service	21. Area prone to landslides
4. Clinic	13. Temple	22. Earthquake drill area
5. Social Organisation	14. Earthquake resilient house	23. Pond
6. Food Shop	15. Electricity Pole	24. Open area (I) small
7. Shop selling construction items	16. Unsafe route	25. Open area (II) medium
8. Hall	17. Safe route	26. Open area (III) large
9. Fire engine	18. Flower pots that pose risk	27. Protected house

(Source: Fieldwork in Bungmati, September 2, 2006)



Figure 4-4: A sketch map of Bungmati (Source: Fieldwork, September 2, 2006)



Ichangu, Kathmandu, Nepal



### **4.1.3 Ichangu Community Workshop: September 18, 2006**

#### **Field site: Ichangu**

The study village, Ichangu is located in an urbanising area of Kathmandu Valley (Figure 4-5). Ichangu Narayan CLC and the core area are located approximately 20 km from Kathmandu: it takes about 30 minutes to reach Ichangu Narayan CLC from the Ring Road-Ichangu Narayan VDC junction (west side of Swoyambhunath).



Figure 4-5: Map of Ichangu and the Core Area

## Community Assessment procedures

### Work Division:

1. Dhan Bahadur Maharjan (Tamsipakha) suggested dividing work among each of the participants since there were few participants.
2. The facilitator handed out cards to write down indicators, i.e., what to see or find out in Ichangu.
3. Dhan Bahadur Maharjan suggested that participants take note of what they wrote in their own cards and mark accordingly on the individual maps.
4. The facilitator suggested symbolising the various things to see (items and/or indicators).
5. Ram Kumar Shrestha (Ichangu) suggested that a single map (the one traced) be used as a group map.
6. Mila Maharjan (Tamsipakha) suggested one person carry the map and mark.
7. The facilitator handed out the list of indicators as a sample, explaining that only one person filling the map could leave things out. Therefore, the participants were asked to choose relevant items and/or indicators from the list in the context of Ichangu. After participants chose them, they divided work among themselves. Consequently, the six themes were assigned as follows:
  - a) Social Mapping: Tamsipakha CLC
  - b) Physical Infrastructure Mapping: Tamsipakha CLC
  - c) Spatial Mapping: Bungmati CLC
  - d) Environmental Mapping: Mr. Pandav, Ichangu Narayan CLC
  - e) Any other features producing risk to the surroundings: Ichangu Narayan CLC
  - f) Any other special features in the area: Ichangu Narayan CLC

### For Mapping:

1. Facilitator and Dhan Bahadur Maharjan traced a large map available in the VDC Office (Figure 4-6), as it was on a bigger scale.
2. The topography map was also used for marking individually. The facilitator marked out the route to be followed with colour sign pens on the topography map in order to make it easier for participants to comprehend.
3. The facilitator suggested the participants to freely use their own signs on the maps.



Figure 4-6: Map of Ichangu at theVDC Office

### Community Assessment indicators written prior to starting the tour

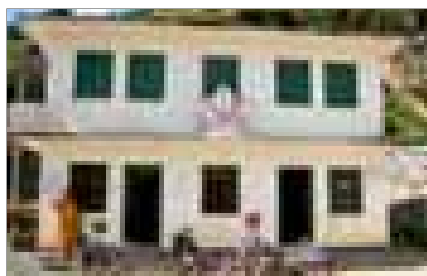
Table 4-4: "What to see" written before starting the tour

Dhan Bahadur Maharjan	<ol style="list-style-type: none"> <li>1. Retaining walls</li> <li>2. Agricultural areas</li> <li>3. Possibility of landslides</li> </ol>
Mila Maharjan	<ol style="list-style-type: none"> <li>1. What is the settlement like?</li> <li>2. What kinds of services do people receive?</li> <li>3. Is there is a possibility of landslide?</li> <li>4. How aware are people about landslides and earthquakes?</li> </ol>
Sangita Shakya	<ol style="list-style-type: none"> <li>1. Areas prone to landslides</li> <li>2. Ditches</li> <li>3. Sources of water</li> <li>4. Old houses</li> </ol>
Diwakar K.C.	<ol style="list-style-type: none"> <li>1. Safe routes</li> <li>2. Soil erosion on steep slope lands</li> <li>3. Environment conservation activities</li> <li>4. Agricultural methods</li> <li>5. Source of water</li> <li>6. Conservation or lack of conservation</li> </ol>

(Source: Fieldwork in Ichangu, September 18, 2006)

## Processes: Tour of the VDC

Route Followed: *Ichangu Narayan VDC Office - Halchowk - Satal Chaur - Ichangu Narayan Thaan (Temple) - Badrinarayan Thaan - CLC* (Time: approximately 4 hours; 1:15pm- 5pm)



Start Point: Ichangu Narayan VDC  
The VDC building has a Health Post on the second floor which will be shifted to a new building currently being built on the left side



Participants inside the VDC office on the second floor



The map at the VDC Office which was traced for Community Assessment



Participants discussing work division

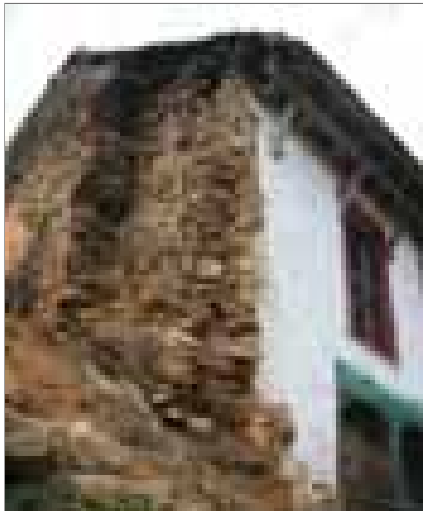


Towards the settlement area in Ward 3 which is located about five minutes from the VDC Office. Participants were happy to have a great view of Kathmandu City.

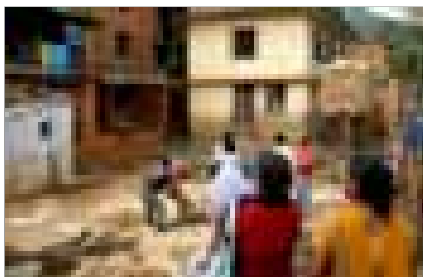
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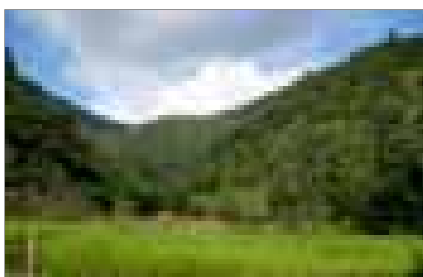
Passing through the settlement area



A house along the way



A small open space which is being used to conduct daily activities such as cutting wood and drying food items

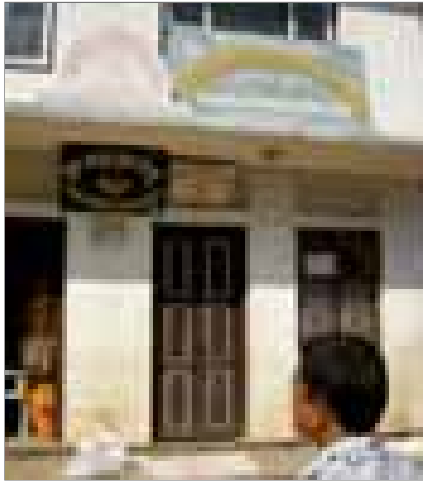


Community Forest in Ichangu



The site of rock extraction activities fall in other VDCs such as Sitapaila and Ramkot VDC. According to Mr. Ram Kumar Shrestha, Ichangu Narayan VDC has been trying to stop the rock extraction activities. He also informed us that occurrences of landslides are rare these days, but were common 10-12 years ago.

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Ichangu Narayan CLC

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At Ichangu Narayan CLC:  
Participants from Ichangu working on the map that was traced at the VDC. All participants handed their individual maps to Ichangu Narayan CLC.

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### **The results of the Community Assessments**

The results of the Community Assessments are documented as follows (Figure 4-7 and Table 4-5).



**Map Legend**

- Ichangu's border with neighbouring VDCs
- Ward boundary in Ichangu Narayan VDC
- Earlier ward boundary
- Wall boundary
- Road
- River
- Bridge

Figure 4-7: A sketch map of Ichangu (Source: Fieldwork, September 18, 2006)

## Community Assessment indicators

**Table 4-5: Key indicators or topic selected by the teams in Ichangu**

1. School	10. Unsafe route	19. Grassland
2. Health Post	11. Wall	20. Farmland
3. Club/CLC/Patis/Sattal	12. Tap	21. Jungle area/Forest
4. Food Shops/Dealer	13. Dhunge Dhara	22. Flood path on the slope
5. Government Office	14. Waterfall	23. Unsafe electricity wiring
6. Temple	15. Landslide area	24. Highly dense area
7. Buildings in good condition	16. Hard surface	25. Stone extraction
8. Old houses	17. Steep slope	26. Gabion wall construction
9. Safe route	18. Moderate slope	27. Survey Route

*(Source: Fieldwork in Ichangu, September 18, 2006)*



#### **4.1.4 Recommendations: Evaluation Notes on Community Assessments**

- ▶ Considering the unstable political situation in Kathmandu Valley (2006) and transportation availability to and from the study sites for participants.
- ▶ Sharing the prepared map with a wider group of people in the residential areas and encouraging open discussion on community hazards and disaster management. Reaching community members and sharing information on community hazard may raise risk awareness and make them realise the importance of disaster management in their day to day life: such interactions help to bring up the issues that were not sufficiently addressed or discussed during the mapping exercise. Most importantly, brainstorming helps to identify future courses of action.
- ▶ Discussing the prepared maps among individual CLCs and between CLCs after the assessment in order to enhance participants' understanding of the recorded information and mapping exercise.
- ▶ Addressing special needs of the diverse community members such as by providing assistance with reading and writing to those who are illiterate and helping those who are physically incapacitated to articulate their special needs.
- ▶ Comparing and discussing the maps prepared so that participants and experts may highlight strengths and weaknesses of the mapping exercise and its outcomes.
- ▶ Extending community mapping exercise to school children by incorporating such exercises into school activities and/or curriculum as a way of raising awareness among local residents. Discussing and identifying such learning interests or needs together with the school children, teachers and parents is recommended.

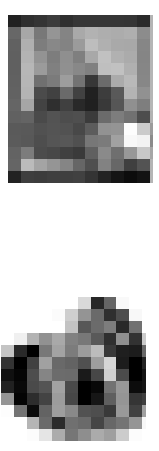
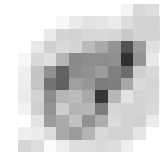


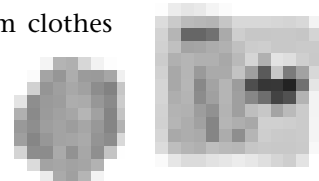


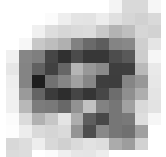
# Annex I

## Informed Choices



## Life Saving Items

	Items	Notes
<p>Life Saving Tools</p> 	<p>Whistle/Noise Maker</p> 	<p>Whistle/Noise Maker is useful to let other people know where you are in emergency settings: e.g. in case, you are trapped in buildings or under the debris after an earthquake</p>
	<p>Flashlights (and extra batteries)</p>	<p>Helps find the way in darkness and locate escape routes or survivors</p>
	<p>Crowbar, car jack, saw, scissors, and knives</p> 	<p>To search and rescue survivors e.g. those who are trapped under debris</p>
	<p>Ropes</p>	<p>For search and rescue, and as a temporary first aid tool</p>
<p>Day-to-day Necessities &amp; Useful items</p> 	<p>Footwear</p>	<p>Having at least a pair of slippers by the bedside can make escape much safer and easier</p>
	<p>Portable radio</p>	<p>Vital information source:</p>
	<p>Mobile phone (and charger)</p>	<p>-</p>
	<p>Multipurpose knife</p>	<p>-</p>
	<p>Lighter, matches</p>	<p>Do not use immediately after disasters in case of gas leak</p>
	<p>Warm clothes</p> 	<p>Disasters may occur in winter</p>
	<p>Sanitary goods (toilet paper, napkins, sanitizer etc.)</p>	<p>-</p>
<p>Protective gear (e.g. helmet, gloves)</p>	<p>-</p>	

	Items	Notes
Day-to-day necessities & useful items            	Vinyl/Plastic bags Food items (recommended): <ul style="list-style-type: none"> <li>- Ready to eat meals</li> <li>- Chocolates</li> <li>- Water (Stock around three days worth, 3 liters per person per day)</li> </ul>	Waterproofing
	Items for children: <ul style="list-style-type: none"> <li>- Powder milk</li> <li>- Diapers and change of clothes</li> </ul>	-
	<ul style="list-style-type: none"> <li>- Clothing</li> <li>- Innerwear</li> <li>- Towels</li> <li>- Umbrella, raincoat, rain shoes etc.</li> </ul>	-
	First Aid Kit (sample items): <ul style="list-style-type: none"> <li>- Bandages</li> <li>- Prescription drugs</li> <li>- Cold medicine, pain killers</li> <li>- Sterilizer/alcohol</li> <li>- Clean cloth (for bandage substitute)</li> </ul>	-
	Necessary Documents <ul style="list-style-type: none"> <li>- IDs (Drivers license, foreign registration, student card, etc.)</li> <li>- Insurance card</li> <li>- Bank statement</li> <li>- Proof of residence, land ownership etc.</li> </ul>	-
	Cash	-

	Items	Notes
	Elderly should keep close at hand: <ul style="list-style-type: none"> <li>- Prescription drugs</li> <li>- Walking/moving aid</li> <li>- Extra supplies of health care products</li> <li>- Own address and next of kin contact, other contact addresses</li> </ul>	-
Other useful goods	Large plastic sheets/mats	Waterproofing and shelter
	Plastic and aluminium wraps	Dishware substitute, waterproofing, radio antenna, etc.
	Tape	-
	Stationery goods (e.g. pens and note pads etc.)	Messages can be left even if the other end is unavailable
	Extra bedding, blankets	-
	Some clean cloth, newspapers	Emergency substitutes for a variety of applications including bandages, insulation, warmth
	Portable grills and fuel	-
	Car batteries	-

(Source: Japan Bousaishi Association)

## Guidance Note: Flood and Disaster Management

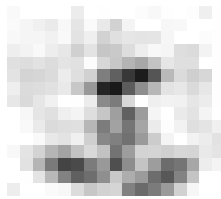


A quick guide to keep you prepared in case of emergency

**Protect yourself and family from rain and storm induced disasters!**

Brought to you by the Disaster Reduction Institute (DRI) and UNCRD DMP Hyogo Office

### I. What to do when it rains heavily for days raising the water level in the rivers during monsoon and/or a cyclone is approaching.



#### A. Outside your home:

- i. Watch out for objects that are not tied down and might fly away or be swept in your direction. Tie them down if you can!
- ii. If possible, shutter or board up your windows.

#### B. Inside your home:

- i. Move your valuables and food and water supply away from/ higher than areas vulnerable to rising waters, wind and rain.
- ii. Keep in a handy, dry place (preferably in a sealed plastic bag) some emergency items such as flashlights, matches, extra lamp, first aid goods (bandages and prescription medicine), radio, documents and valuables.
- iii. See the "Life Saving Items" for tips on what kind of items might be useful to have in times of disaster.

### II. Precautions to take when evacuation becomes necessary



#### A. Basic disaster prevention

- i. Evacuate **as soon as possible** to higher solid ground (e.g. away from the bottom of the hill or waterfront). On foot is preferable as cars can be swept away and may sink, trapping all passengers.
- ii. See if the radio or local authorities can provide information.

#### B. Precautions when the wind or water is too high

- i. The "critical water level" when walking becomes potentially fatal or when one cannot see clearly enough to prevent accidents is considered to be 70cm for men and 50cm for women, but any level of flooding may be dangerous for children.
- ii. When possible, use ropes for evacuation if it can be tied down to a solid base.
- iii. Watch out for gutters and open manholes!





**DO NOT ATTEMPT TO:**

- iv. Move by car
  - v. Use elevators
  - vi. Go into subway stations or underground passages
- Flooding and/or blackouts may occur and trap victims.

**III. After the storm/flood/winds...**



**A. Don't let down your guard:**

- i. Water may not have receded, slopes may have become weak, dams may have burst and sewage covers may have been swept away.
- ii. Lifeline infrastructure may be down: electricity, water, telephone.
- iii. Your house might be damaged. Evacuation to a shelter might be necessary.

**B. Help each other after disasters:**

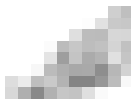
- i. Watch out for fallen power lines on the ground and in water!
- ii. Wear protective gear such as long sleeve pants and shirts and gloves when handling debris. You may catch contagious diseases and suffer fatal infection from cuts while handling debris or by coming in contact with bodies and other decomposing organic matter such as food and garbage.

**IV. Be prepared before the disasters**

**A. Having a sturdy water proof emergency bag ready:**

- i. In the emergency bag, keep first aid items, prescription drugs, drinking water, preserved foods, change of clothes, flashlight/lamp, matches, radio, and gloves and ropes. Don't overload – you have to be able to run with it!

**B. List essential items (e.g., cane, diapers, milk, etc.)**



**V. Find out information in advance**

Different types of information:

- TV, radio, and web-based weather reports
- Your regional/district government's warning system, evacuation plans and directives
- Your local hazard map including layout of your neighbourhood
- Know what risks you face and what precaution to take!

**Types of weather warnings (In Japan)\*:**

**Alarm (Critical/imminent large scale disaster)**

- ▶ Severe winds, snow, rain, blizzard, high tide, flood, very high waves, tsunami

**Warning (High possibility of disaster prone conditions)**

- ▶ Heavy rainfall, snow, high winds, extreme dryness (fire warning), fog, lightning, avalanche, high tide, flood, high waves

**Information (Upcoming possibilities of disasters)**

- ▶ Approaching typhoon/cyclone, low pressure (storm gathering), heavy or light rain and snow, long-term rain/snow, low humidity, low sunlight, etc.

\*The standards for issuing warnings differ depending on the region, type of geography, and typical weather conditions. In Hyogo Prefecture, for example, a severe rain/flood alarm is issued when the amount of rain exceeds 50mm in one hour or 100mm in 3 hours.

**What is your local standard for heavy rain and flood alarm?**

(Local government should be equipped to warn its citizens about severe weather and disaster risks.)

## **My disaster management memo: (Talk it over with your family!)**

- **The nearest safe place (in case of earthquake, tsunami, flood etc.)**

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- **In case of separation, we will meet up at:**

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- **In times of disaster, my responsibility is to:**

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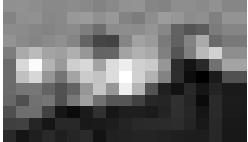

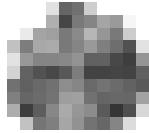

- **Emergency contact number (self, relative, rescue, etc.):**

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- **In case of separation, I will leave a message at:**

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## Guidance Note on Community Assessments Nepal

Cartography	Community Assessment Indicators
<p>Basic Mapping: risk, vulnerability and asset assessments</p>  	<ol style="list-style-type: none"> <li>1. Risky items</li> <li>2. Populated areas</li> <li>3. Dangerous areas (e.g., areas prone to erosion, floods)</li> <li>4. Schools, hospitals, clinics, pharmacies etc.</li> <li>5. Open lands, including agricultural lands, jungles, community forests etc.</li> <li>6. Large and small open spaces</li> <li>7. Earthquake resilient houses if there is any</li> <li>8. Evacuation routes: access routes and their alternatives</li> <li>9. Shops that sell items that can be used for rescue</li> <li>10. Sources of water</li> <li>11. Social mapping, e.g., locating oil mills, places where there are predominant caste groups</li> <li>12. Social organisations (e.g., youth clubs, CLCs, temples)</li> <li>13. Places where old people, children and physically incapacitated live</li> <li>14. Places where sick people can be taken</li> </ol>
<p>Environmental Mapping (land use mapping):</p>	<ol style="list-style-type: none"> <li>15. Water source</li> <li>16. Soil quality</li> <li>17. Vegetation type</li> </ol> 
<p>Special Features</p> 	<ol style="list-style-type: none"> <li>18. Cultural Heritage</li> <li>19. Disaster related units working in the area</li> <li>20. Houses that withstood the earthquake of 1934</li> </ol>
<p>Others</p>	<ul style="list-style-type: none"> <li>➤ Marking direction (e.g., North), indicating scale, altitude, direction of the flow of water etc.</li> <li>➤ Indicating time required to go from one place to another, distance</li> <li>➤ Interviewing local people to gather additional information on the findings</li> <li>➤ Identifying what the places/people have (assets) rather than what they do not have.</li> </ul>

# Annex II

## Community Perspectives on Disasters (Translation from Nepali)



## **Landslides: A Natural Disaster in the context of Ichangu Narayan Village Development Committee (VDC)**

*Ram Kumar Shrestha  
Chairperson, Ichangu Narayan CLC*

Some of the major causes behind landslides are delicate topography, torrent monsoon rains, rapid population growth, unrestricted use of natural resources, destruction of nature, and unsystematic land use patterns. In Nepal, disasters related to landslides are increasing each year. These disasters cause not only extensive loss of human life and property, but also unimaginable loss to the social, economic and cultural aspects of our society.

Ward 1, 2, 3, 4 and 5 of Ichangu Narayan VDC have a hilly geography and are prone to land slides and erosion. This region includes all of the above mentioned possible causes of landslides. With population growth, the practice of farming on sloped lands and construction of houses have increased rapidly. Furthermore, rock extraction is being carried out without authorisation in the forest areas and people have been cutting down trees growing on their lands indiscriminately. In case of Ichangu Narayan VDC, lack of awareness, poverty and unemployment have also been associated with occurrence of natural disasters.

Activities that have been carried out locally for controlling landslides:

- Conducting awareness raising activities through the initiative of local youth.
- Planting trees on hill slopes.
- Encouraging farmers to cultivate fruits on private lands.
- Developing a national forest in Ward 1 and 2 into a community forest and handing it over to community.

Although the above activities have been conducted, they have not sufficiently raised awareness on how important trees and plants are [in preventing landslides]. Therefore, the desired results have not been produced yet. In order to assist community development, a Community Learning Centre (CLC) has been recently established in Ichangu Narayan VDC. The CLC has planned to take an integrative approach in carrying out disaster management and awareness raising activities on landslides and other kinds of natural disasters.

## **Erosion and Landslides**

*Madan Krishna Dangol*  
*Chairperson, Khokana CLC*

Nepal, although a small country, is divided into the three geographical regions: (i) the mountainous region, (ii) the hilly region and (iii) the Terai region. Depending on the different geographical features, each region experiences various kinds of disasters. The mountainous region is covered with snow whereas the hilly region, comprising high and low hills, is prone to frequent erosion. The Terai region, comprising flat land, is often susceptible to floods. Various kinds of natural disasters occur in Nepal each year and we often hear of loss of human life and property. This article focuses on soil erosion.

Erosion is a process by which pieces of land is broken and washed away. This process occurs in the hilly regions mainly during the rainy season. Soil erosion moves pieces of land from one place to another, having such erosive power that even alters the regional landscape. Moreover, it causes destruction to houses, animal sheds and farmland etc., and even kills humans and animals. People lose their houses, livestock and entire property. Therefore, soil erosion, has become one of the major problems in the community. If erosion issues are not addressed timely, it will become unmanageable in the future. The Government of Nepal should formulate a clear policy and allocate necessary budget for erosion control. Similarly, national and international organisations in Nepal should take appropriate initiatives.

### **Causes of soil erosion:**

#### *1. Heavy Rainfall*

One of the main causes of soil erosion is incessant rainfall. The rainwater is soaked up in the deep layers of the soil making them soft. In the summer months, the heat from the sun makes the soil dry and forms cracks on them. Rainwater infiltrates through those cracks and reaches the deep layers, which weakens the cohesion between soil particles and may result in landslides and/or soil erosion. Heavy rainfall also turns small rivers and rivulets into bigger waterways, and washes away the surrounding area causing erosion as the water overflows from the rivers.

#### *2. Increase in population*

Increasing population contributes directly or indirectly to erosion. As population grows, the demand for farmland and housing increases, and as a result, usable lands are converted into farmlands rendering the soil weak and prone to erosion.



3. *Haphazard logging of trees*

Haphazard logging of trees also contributes to erosion. The roots spread deep into the soil and stabilise the soil. When a tree is cut, the roots dry up and can no longer hold the soil together which increases the chances of erosion.

4. *Rock extraction activities*

The earth is formed of both rocks and soil. Therefore, rock extraction (from the soil) may break the land structure and lead to erosion.

5. *Lack of public awareness*

Lack of awareness in the communities is also a major cause behind erosion in Nepal. Indiscriminately cutting trees in order to cultivate farmlands and unsystematically discharging water may contribute to soil erosion especially during the rainy season.

**Ways to prevent erosion:**

Both natural and human induced causes contribute to erosion. While nothing can be done to stop the natural causes, human induced causes can be minimised. The following are some of the suggested ways to prevent erosion:

a. *Forestation*

The roots of trees and plants play an important role in preventing soil erosion. A campaign to plant trees, *daale ghans*, bamboo etc. should be launched.

b. *Family planning*

Population growth also contributes to erosion. Therefore, family planning should be promoted in order to check population growth

c. *Stopping rock extraction work*

Quarrying contributes to erosion. Therefore, rock extraction should be stopped.

d. *River training works*

Nepal has many rivers and rivulets which may potentially cause erosion. In order to prevent erosion, embankments should be built wherever required.

e. *Public awareness raising through education*

Lack of awareness at community level may contribute to erosion. Practices such as indiscriminate cutting down of trees and inappropriate drainage of water should be discouraged whereas planting trees and adopting farming methods according to soil type should be promoted through awareness education.

### **Being Safe from Erosion:**

a. Constructing houses at appropriate places

In Nepal, many people lose their lives every year due to the practice of building houses without considering erosion risks. Therefore, houses should be built where chances of erosion are low.

b. Relocating settlements during the rainy season

People residing in erosion prone areas should be resettled in a safe location, considering the high possibility of erosion during rainy season.

c. Being familiar with the early signs/warnings of erosion

A loud sound (*hiiiiii*) is usually heard before landslides takes place. Therefore, one should move away from the place as soon as such a sound is heard. It is also said that a couple of days before erosion takes place, large snakes appear in the surrounding areas. One should be aware of such warning signs of erosion.

## Exploring Bhaktapur from an Earthquake Perspective

*Khwopa Adarsha Community Learning Centre  
Bhaktapur Municipality, Ward 2, Jelaan*

We are all aware of the loss that natural disasters cause in our societies, both to human life and property. We cannot prevent [natural disasters] but we can certainly minimise the possible loss by being alert and aware the risks at all times. Disaster reduction is possible if the citizens, government and the various social organisations [incorporate disaster preparedness] into their daily activities.

Our ancestors have born great loss from natural disasters because of less education opportunities, traditionalism and poverty in the society. Rather than ignoring the hardships our ancestors went through, we should closely inspect our history and learn from it to pass the information on to the future generations so that they can be made aware and alert.

Among the three cities in Kathmandu, Bhaktapur was most severely affected by the earthquake that hit during the night of September 25th, 1833. The number of houses destroyed in Kathmandu and Patan were 643 and 824 respectively, but Bhaktapur lost a total of 2,747 houses. (Sharma, 1969: 281)<sup>65</sup>. The damage received was on a much bigger scale when a massive earthquake hit [the valley] on January 15<sup>th</sup>, 1934. The number of houses destructed was 19,807 in Kathmandu, 24,047 in Patan, and 11,865 in Bhaktapur. A total of 724 people were killed and 86 were injured in Kathmandu, 2,224 killed and 426 injured in Patan, and 1,328 killed and 5 injured in Bhaktapur (Sharma, 1969: 369)<sup>66</sup>. Similarly, among the three cities in the valley, Bhaktapur was the mostly severely affected by the earthquake on 21<sup>st</sup> August, 1988 . Therefore, as the past records show, Bhaktapur is vulnerable to earthquakes.

Bhaktapur was able to enlist itself on the World Heritage Site list. In case of an earthquake, there is a high possibility that [our many symbols of] heritage such as the *Pachpanna Jhyale Durbar*, *Paachtale Mandir*, *Dattatraya Temple* and traditional houses in the Monument Zone would be destroyed. It is therefore important that the concerned organisations pay attention to conserve these areas.

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<sup>65</sup> Sharma, Bal Chandra, Nepal ko Aitihasik Rooprekha, 1969

<sup>66</sup> Sharma, Bal Chandra, Nepal ko Aitihasik Rooprekha, 1969

It is our understanding that Bhaktapur municipality has one of the densest settlements in Nepal: the population density in Bhaktapur municipality is very high. Risk indicators in the context of Bhaktapur are densely populated settlements, narrow access routes to *chowks*, houses made from sun-dried bricks, decaying wood and old bricks, tall buildings on weak foundation, additional floors built on old houses or foundations etc. Those who are in poverty cannot reconstruct their houses. Moreover, various conflicts [such as ownership conflict] prevent clearing houses that have already collapsed. Therefore, the local authorities need to pay attention to the current situation.

[Reconstructing the infrastructure] in the existing settlements is a very difficult task. However, it is important to pay attention to what can be done for disaster preparedness. The following steps are required in Bhaktapur for natural disaster related loss minimisation:

1. Reconstructing old houses in an earthquake resilient way.
2. Prohibiting the construction of new houses in densely populated settlements. For those who need to build new houses [in the dense settlements], an alternative land could be provided in an area with town planning at an affordable price. They should be encouraged to make their house earthquake resilient.
3. Making necessary arrangements for fire engines to reach each corner of the settlements. Accessibility for fire engines should be improved by demolishing a few houses, or arranging pipes.
4. Conducting trainings on disaster preparedness and safety measures
5. Forming a *Daivi Prakop Poorva Tayari Samiti* (Disaster Preparedness Committee) in each of the *toles* and conducting regular trainings.
6. Conducting first aid trainings for the youth [and] students regularly
7. Imposing rules on building height [building code].
8. Conducting awareness programmes on how to remain safe while staying inside the house since Bhaktapur lacks open spaces when there is an earthquake.

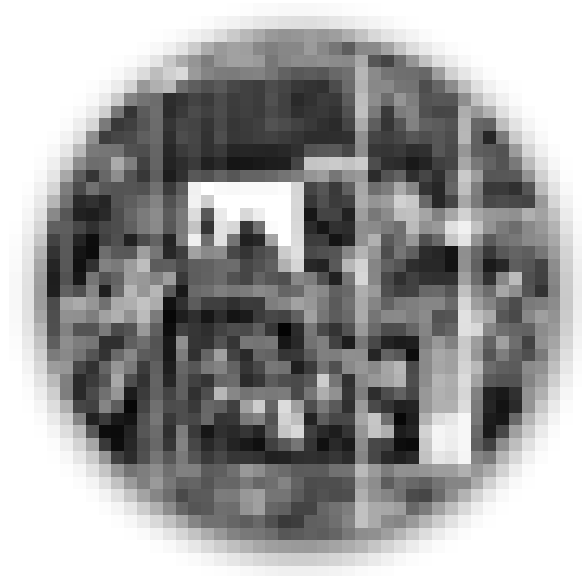
# Annex III

## Participatory Workshop Programme

(July 19-21, 2006)

Participant List





## **Programme**

# **UNCRD Participatory Workshop on: Urbanisation and Community Based Disaster Management (CBDM)**

**July 19th - 21st, 2006  
Venue: Yala Maya Kendra  
Patan, Nepal**

### **Convenors:**

Community Learning Centres (CLCs): Bungmati CLC, Ichangu Narayan CLC, Khokana CLC, Khwopa Adarsha CLC & Tamsipakha CLC

United Nations Educational, Scientific and Cultural Organisation (UNESCO)  
Office in Kathmandu

United Nations Centre for Regional Development,  
Disaster Management Planning Hyogo Office

## DAY 1: Participatory Workshop Programme

Time	Session	Activities
9:00-9:30 am	Opening	Registration
9:30-9:45 am		Opening Ceremony by Sir Mohad Prasad Joshi (Special Guest Contributor: Nepal Music Band)
9:45-9:55 am		Welcome Speech by Ms. Koto Kanno, United Nations Educational, Scientific and Cultural Organisation (UNESCO) Representative to Nepal
10:05-10:15 am		Keynote Speech by Mr. Haribol Khanal, Non Formal Education (MoE) <ul style="list-style-type: none"> <li>• Linking disaster preparedness at national level with Community Based Disaster Management (CBDM)</li> </ul>
10:15-10:30 am		Introduction to Participatory Workshop programme (HTF VII): Mayumi Yamada, (UNCRD Hyogo), Japan: <ul style="list-style-type: none"> <li>• HTF VII Objectives</li> <li>• Participatory approaches</li> <li>• Urbanisation/CBDM/Gender</li> </ul>
10:30-11:30 am	Ice-Breaking	Self-introductions for participants
11:30-12:00 am	Learning/Seminar	Presentation by the Nepal Red Cross Society (NRCS): <ul style="list-style-type: none"> <li>• Disaster situations in Nepal</li> <li>• Success stories and Lessons learnt in the urban contexts (Kathmandu valley)</li> <li>• Recommendations</li> </ul>
12:00-12:15 pm	Group work	Briefing on the group working themes by Ms. Aliza Shrestha Dhungana (UNESCO): <ul style="list-style-type: none"> <li>• Integrating disaster management into community action plans</li> <li>• Listing the questions participants want to know about disasters or any relevant issues</li> </ul>
12:15-1:15 pm		Group work/exercise
1:15-1:45 pm		Group Presentation
1:45-2:45 pm	Break (Lunch)	
2:45-3:15 pm	Learning	Dialogue: Exploring the linkages between community action plans and the national policies (CLC)
		Presentation: Question of minimising earthquake hazards: problems of the inner cities of Kathmandu by Prof. Bhagawan Ratna Tuladhar, Tamsipakha CLC
3:15-3:30 pm		Presentation on traditional settlement & buildings from the perspective of disaster preparedness by Ms. Nipuna Shrestha (UNCRD Facilitator) <ul style="list-style-type: none"> <li>• What can be done? Disaster preparedness in our communities</li> </ul>
3:30-4:30 pm		Group work/exercises and discussion
4:30-5:00 pm		Group presentation (6 mins. for each CLC)
5:00-5:30 pm	Brief for the next day & End of Day:	Briefing for the next day by Mayumi Yamada (UNCRD Hyogo): <ul style="list-style-type: none"> <li>• Urban vulnerability and dynamics</li> <li>• Community assessments including evacuation mapping</li> </ul>





## Day 2: Fieldwork: Joint Community Assessment for Risk Awareness and Disaster Management

Time	Session	Activities
8:30 AM		Registration
9:00-9:30 am	Field Exercise (A pilot training of community facilitators)	Briefing on fieldwork: <ul style="list-style-type: none"> <li>• Community Assessments</li> <li>• Evacuation maps</li> <li>• Expected outcomes</li> </ul>
9:30-10:45 am		Leave for field: Group 1: Kathmandu Group 2: Patan Group 3: Bhaktapur
10:45-11:15 am		Arrive at sites and start fieldwork: <ul style="list-style-type: none"> <li>• Initiating Community Assessments</li> <li>• Sketch mapping and note taking of the safe and risky places, water sources, densely populated areas etc.</li> </ul>
11:15-12:15 pm		Group fieldwork: <ul style="list-style-type: none"> <li>• Sketch out evacuation maps for the areas</li> <li>• Specific recommendations and practical action plans required for the areas</li> </ul>
12:15--2:00 pm	Lunch Break	
2:00 pm		Group fieldwork continues
2:15-3:30 pm	Field Exercise	
3:30-4:00 pm	(A pilot training of community facilitators)	
4:00-5:00 pm		
5:00-5:15 pm		Fieldwork ends

### About the UNCRD Disaster Management Planning Hyogo Office

The United Nations Centre for Regional Development (UNCRD) was founded in 1971 in Nagoya, under an agreement between the United Nations and the Government of Japan. In 1999, the UNCRD Disaster Management Planning Hyogo Office was established in Kobe, where the Great Hanshin-Awaji Earthquake had claimed the lives of more than 6,000 people in 1995. The Hyogo Office focuses on key elements of self-reliance, cooperation, and education through activities such as: (a) research projects; (b) training and capacity-building; (c) a series of international workshops; and (d) advisory services.



### Day 3: Workshop

Time	Session	Activities
10:00-10:15 am		Registration
10:15-10:30 am		Reviewing the last two days' activities (UNCRD Hyogo)
10:30-12:00 am	Learning & Group/team work exercises	Group presentation and discussion on achievements and difficulties participants faced on the 2nd Day
12:00-12:15 pm		Briefing on the group working theme by Ms. Aliza Shrestha Dhungana (UNESCO): <ul style="list-style-type: none"> <li>• What particular information is missing in your community to protect people's lives?</li> <li>• Develop strategy for the future</li> <li>• Write brief action plans (the follow up activities) for our communities</li> </ul>
12:15-1:15 pm		Group work
1:15-2:00 pm		Group presentation and comments by participants
2:00-3:00 pm	Lunch time	Evacuation exercises:
3:00-3:30 pm	Practical CBDM Exercises	1. Learning how to fix tent in times of emergency
3:30-4:30 pm		2. How to use fire extinguisher: Handling urban fire
4:30-5:30 pm		3. Practicing basic first aid
5:30-6:00 pm	Concluding Session	Community experience on the workshop (6 min for each CLC)
		Closing remarks by Community Learning Centres (CLCs)
6:00-6:15 pm		Closing speech by Ms. Koto Kanno, UNESCO Representative to Nepal
6:15-6:30 pm		Closing remarks by Ms. Mayumi Yamada, UNCRD Hyogo



United Nations Centre for Regional Development  
Disaster Management Planning Hyogo Office

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**Urbanisation and Community Based Disaster Management (CBDM)  
Workshop Day 1, July 19, 2006**

**Participant List (Opening and Introductory Session)**

No.	Name	Organisation	Designation
1	Mr. Haribol Khanal	Non Formal Education Centre	Director
2	Mr. Tula Bahadur Lama	Bungmati CLC	Member
3	Ms. Sabitri Devi Dhungana	Bungmati CLC	Member
4	Mr. Prem Bhakta Maharjan	Bungmati CLC	Chairperson
5	Mr. Madan Krishna Dangol	Khokana CLC	Chairperson
6	Ms. Sangita Shakya	Bungmati CLC	Social Mobiliser
7	Mr. Laxmi Narayan Duwal	Khwopa Adarsha CLC	Chairperson
8	Ms. Shree Laxmi Duwal	Khwopa Adarsha CLC	Member
9	Mr. Krishna Bhagat Maharjan	Khokana CLC	Secretary
10	Mr. Sita Ram Prajapati	Khwopa Adarsha CLC	Member
11	Mr. Hari Sundar Potamaha	Khwopa Adarsha CLC	Joint-Secretary
12	Ms. Sulochana Chhwaju	Khwopa Adarsha CLC	Member
13	Ms. Sumitra Bohaju	Khwopa Adarsha CLC	Member
14	Ms. Chandeswori Kaju	Khwopa Adarsha CLC	Member
15	Ms. Bishnu Keshari Hengwoju	Khwopa Adarsha CLC	Member
16	Mr. Jeetendra Khayamali	Khwopa Adarsha CLC	Treasurer
17	Mr. Madhukar Tuladhar	Bungmati CLC	Secretary
18	Ms. Suryabati Maharjan	Khokana CLC	Member
19	Mr. Ganga Lal Dangol	Khokana CLC	Member
20	Mr. Surendra Shrestha	Ichangu Narayan CLC	Member
21	Mr. Thum Raj K. C.	Ichangu Narayan CLC	Member
22	Mr. Mani Raj Dongol	Khokana CLC	Member
23	Ms. Anjana Pandey	Ichangu Narayan CLC	Member
24	Ms. Punam Lama	Ichangu Narayan CLC	Member
25	Mr. Pandav Shrestha	Ichangu Narayan CLC	Member
26	Mr. Shyam Shrestha	Ichangu Narayan CLC	Member
27	Ms. Arati Nagakoti	Ichangu Narayan CLC	Member
28	Ms. Sarita Shrestha	Ichangu Narayan CLC	Member
29	Mr. Sangha Ratna Shakya	Nepal Red Cross Society, Kathmandu District Committee	Secretary
30	Mr. Prem Sagar Karmacharya	Nepal Red Cross Society	Member
31	Mr. Ram Govinda Shrestha	Bhaktapur Municipality	Sr. Architect
32	Mr. Bijaya Bahadur Mali	Ward 17 Disaster Management Committee, Kathmandu	General Secretary
33	Mr. Bibhuti Man Singh	Ward 17 Disaster Management Committee, Kathmandu	Convener
34	Mr. Ram Kumar Shrestha	Ichangu Narayan CLC	Chairperson
35	Mr. Dilli Bahadur Dongol	Khokana CLC	Vice Chairperson
36	Mr. Bekha Bahadur Maharjan	Khokana CLC	Advisor
37	Mr. Kedar Koirala	JICA	Officer

No.	Name	Organisation	Designation
38	Mr. Ramesh Thapaliya	Department of Archeology (DoA)	Engineer
39	Mr. Bhim P. Subedi	UNFPA Nepal	Consultant
40	Mr. Chandra N. Newa	Tamsipakha CLC	Chairperson
41	Ms. Sushila Tuladhar	Tamsipakha CLC	Health Worker
42	Mr. Niranjana Basnet	Ward 18 Kathmandu Metropolitan City Office	Ward Secretary
43	Mr. Dhan Bahadur Maharjan	Tamsipakha CLC	Member
44	Mr. Umesh Prasad Dhakal	Nepal Red Cross Society	Executive Director
45	Mr. Suraj Shakya	Kathmandu Metropolitan City	Architect
46	Ms. Shrishti Mishra	Green Valley School	Teacher
47	Mr. Kedar Babu Dhungana	Nepal Red Cross Society	Program Coordinator
48	Mr. Nur Bahadur Thapa	Nepal Red Cross Society	Program Coordinator
49	Ms. Shakuntala Suwal	Nardevi Hospital	Nurse
50	Ms. Kalpana Simkhada	National Lower Secondary School	Teacher
51	Mr. Rajendra Byanjankar	Nepal Red Cross Society	Social Worker
52	Mr. Rahul Sengupta	UNV/UNDP	Project Officer
53	Ms. Miyuki Tsujii	Yatachhen (Patan)	Volunteer
54	Mr. Gun Muni Shakya	Patan Tourist Development Organisation	President
55	Mr. Jitendra Shrestha	Yatachhen (Patan)	Manager
56	Ms. Sapana Aryal	Ichangu Narayan CLC	Treasurer
57	Mr. Sita Ram Bhandari	Ichangu Narayan CLC	Member
58	Ms. Kalpana Adhikari	Ichangu Narayan CLC	Vice Chairperson
59	Ms. Nani Hira Maharjan	Tamsipakha CLC	Social Mobiliser
60	Ms. Meela Maharjan	Tamsipakha CLC	Volunteer
61	Ms. Shila Devi Maharjan	Tamsipakha CLC	Volunteer
62	Ms. Kamala Maharjan	Tamsipakha CLC	Volunteer
63	Ms. Sanu Chhori Maharjan	Tamsipakha CLC	Volunteer
64	Ms. Beti Maharjan	Tamsipakha CLC	Volunteer
65	Mr. Ritish Maharjan	Tamsipakha CLC	Volunteer
66	Ms. Bhawana Prajapati	Tamsipakha CLC	Volunteer
67	Ms. Sudha K. C.	-	Social Worker
68	Ms. Chihiro Oikawa	JICA Nepal	Security Officer
69	Ms. Koto Kanno	UNESCO Office in Kathmandu	UNESCO Representative to Nepal
70	Ms. Elke Selter	UNESCO Office in Kathmandu (Culture Unit)	-
71	Ms. Nipuna Shrestha	UNCRD/UNESCO Office in Kathmandu (Culture Unit)	Facilitator (HTF VII)
72	Ms. Aliza Shrestha Dhungana	UNESCO Office in Kathmandu (Education Unit)	National Project Coordination Officer
73	Ms. Anuradha Tulachan	UNCRD/UNESCO Office in Kathmandu	Editor (HTF VII)
74	Ms. Mayumi Yamada	UNCRD Disaster Management Planning Hyogo Office	Researcher

**Urbanisation and Community Based Disaster Management  
Workshop Day 1, July 19, 2006**

**Group List**

**Group I: Tamsipakha CLC**

No.	Name		Organisation	Designation
1	Mr.	Chandra Nanda Newa	Tamsipakha CLC	Chairperson
2	Mr.	Niranjan Bikram Basnet	Ward 18 Kathmandu Metropolitan City Office	Former Ward Secretary
3	Mr.	Dhan Bahadur Maharjan	Tamsipakha CLC	Member
4	Ms.	Nani Hira Maharjan	Tamsipakha CLC	Social Mobiliser
5	Ms.	Meela Maharjan	Tamsipakha CLC	Volunteer
6	Ms.	Kamala Maharjan	Tamsipakha CLC	Volunteer
7	Ms.	Shila Devi Maharjan	Tamsipakha CLC	Volunteer
8	Ms.	Sanu Chhori Maharjan	Tamsipakha CLC	Volunteer
9	Ms.	Beti Maharjan	Tamsipakha CLC	Volunteer
10	Ms.	Sushila Tuladhar	Tamsipakha CLC	Health Worker
11	Ms.	Sakuntala Prajapati	Nardevi Hospital	Nurse
12	Ms.	Kalpana Simkhada	Tamsipakha CLC	Teacher
13	Ms.	Srishti Mishra	Tamsipakha CLC	Teacher
14	Mr.	Ritish Maharjan	Tamsipakha CLC	Volunteer
15	Ms.	Bhawana Prajapati	Tamsipakha CLC	Volunteer
16	Mr.	Bhagawan Ratna Tuladhar	Tamsipakha CLC	Coordinator

**Group II: Khwopa Adarsha CLC**

No.	Name		Organisation	Designation
1	Mr.	Jeetendra Khayamali	Khwopa Adarsha CLC	Member
2	Mr.	Hari Sundar Potamaha	Khwopa Adarsha CLC	Member
3	Ms.	Chandeswori Koju	Khwopa Adarsha CLC	Member
4	Ms.	Sumitra Bohaju	Khwopa Adarsha CLC	Member
5	Mr.	Sita Ram Prajapati	Khwopa Adarsha CLC	Member
6	Ms.	Shree Laxmi Duwal	Khwopa Adarsha CLC	Member
7	Ms.	Bishnu Keshari Hengwoju	Khwopa Adarsha CLC	Member
8	Ms.	Sulochana Chhwaju	Khwopa Adarsha CLC	Member
9	Mr.	Laxmi Narayan Duwal	Khwopa Adarsha CLC	Chairperson

### Group III: Bungmati CLC

No.	Name		Organisation	Designation
1	Mr.	Prem Bhakta Maharjan	Bungmati CLC	Chairperson
2	Mr.	Madhukar Tuladhar	Bungmati CLC	Secretary
3	Mr.	Tula Bahadur Lama	Bungmati CLC	Member
4	Ms.	Sangita Shakya	Bungmati CLC	Social Mobiliser
5	Ms.	Mandevi Tuladhar	Bungmati CLC	Member
6	Ms.	Keshari Maharjan	Bungmati CLC	Member
7	Ms.	Sulochana Shakya	Bungmati CLC	Member
8	Mr.	Kedar Babu Dhungana	Nepal Red Cross Society	Program Coordinator

### Group IV: Khokana CLC

No.	Name		Organisation	Designation
1	Mr.	Mani Raj Dongol	Khokana CLC	Member
2	Ms.	Suryawati Maharjan	Khokana CLC	Social Mobiliser
3	Mr.	Dilli Bahadur Dongol	Khokana CLC	Vice Chairperson
4	Mr.	Krishna Bhagat Maharjan	Khokana CLC	Secretary
5	Mr.	Madan Krishna Dongol	Khokana CLC	Chairperson
6	Mr.	Ganga Lal Dongol	Khokana CLC	Member
7	Mr.	Bekha Bahadur Maharjan	Khokana CLC	Advisor
8	Mr.	Bekha Muni Maharjan	Khokana CLC	Member

### Group V: Ichangu Narayan CLC

No.	Name		Organisation	Designation
1	Ms.	Kalpna Sharma	Ichangu Narayan CLC	Vice Chairperson
2	Ms.	Uma Thapa Magar	Ichangu Narayan CLC	Health Worker
3	Mr.	Sita Ram Bhandari	Ichangu Narayan CLC	Member
4	Ms.	Sarita Shrestha	Ichangu Narayan CLC	Social Worker
5	Ms.	Poonam Lama	Ichangu Narayan CLC	Social Worker
6	Ms.	Arati Nagarkoti	Ichangu Narayan CLC	Social Worker
7	Ms.	Anajana Pandey	Ichangu Narayan CLC	Social Worker
8	Ms.	Sapana Aryal	Ichangu Narayan CLC	Social Worker
9	Mr.	Thum Raj K.C.	Ichangu Narayan CLC	Social Worker
10	Mr.	Pandav Shrestha	Ichangu Narayan CLC	Social Worker
11	Mr.	Shyam Shrestha	Ichangu Narayan CLC	Social Worker
12	Mr.	Surendra Shrestha	Ichangu Narayan CLC	Member
13	Mr.	Ram Kumar Shrestha	Ichangu Narayan CLC?	Chairperson
14	Mr.	Nur Bahadur Thapa	Nepal Red Cross Society	Program Coordinator

**Urbanisation and Community Based Disaster Management (CBDM)  
Workshop Day 2, July 20, 2006**

**Participant List**

No.	Name	Organisation	Designation
1	Mr. Ganga Lal Dangol	Khokana CLC	Member
2	Mr. Bekha Muni Maharjan	Khokana CLC	Member
3	Mr. Dilli Bahadur Dongol	Khokana CLC	Vice Chairperson
4	Mr. Krishna Bhagat Maharjan	Khokana CLC	Secretary
5	Mr. Bekha Bahadur Maharjan	Khokana CLC	Advisor
6	Ms. Meela Maharjan	Tamsipakha CLC	Volunteer
7	Ms. Nani Hira Maharjan	Tamsipakha CLC	Social Mobiliser
8	Ms. Kamala Maharjan	Tamsipakha CLC	Volunteer
9	Ms. Sanu Chhori Maharjan	Tamsipakha CLC	Volunteer
10	Ms. Shila Devi Maharjan	Tamsipakha CLC	Volunteer
11	Ms. Beti Maharjan	Tamsipakha CLC	Volunteer
12	Ms. Keshari Maharjan	Bungmati CLC	Member
13	Ms. Mandevi Tuladhar	Bungmati CLC	Member
14	Ms. Kalpana Sharma	Ichangu Narayan CLC	Member
15	Ms. Sapana Aryal	Ichangu Narayan CLC	Member
16	Mr. Ram Kumar Shrestha	Ichangu Narayan CLC	Chairperson
17	Mr. Thum Raj K. C.	Ichangu Narayan CLC	Member
18	Mr. Ritish Maharjan	Tamsipakha CLC	Volunteer
19	Ms. Bhawana Prajapati	Tamsipakha CLC	Volunteer
20	Mr. Kedar Koirala	JICA	Officer
21	Mr. Chandra Nanda Newa	Tamsipakha CLC	Chairperson
22	Mr. Dhan Bahadur Maharjan	Tamsipakha CLC	Member
23	Mr. Shyam Shrestha	Ichangu Narayan CLC	Member
24	Mr. Pandav Shrestha	Ichangu Narayan CLC	Member
25	Mr. Surendra Shrestha	Ichangu Narayan CLC	Member
26	Ms. Kalpana Simkhada	National Lower Secondary School	Teacher
27	Ms. Anjana Pandey	Ichangu Narayan CLC	Member
28	Ms. Sarita Shrestha	Ichangu Narayan CLC	Member
29	Ms. Punam Lama	Ichangu Narayan CLC	Member
30	Ms. Arati Nagakoti	Ichangu Narayan CLC	Member
31	Ms. Shrishti Mishra	Green Valley School	Teacher
32	Mr. Sita Ram Prajapati	Khwopa Adarsha CLC	Member
33	Ms. Shree Laxmi Duwal	Khwopa Adarsha CLC	Member
34	Mr. Hari Sundar Potamaha	Khwopa Adarsha CLC	Joint-Secretary
35	Mr. Bishnu Keshari Hengwoju	Khwopa Adarsha CLC	Member
36	Ms. Sulochana Chhwaju	Khwopa Adarsha CLC	Member
37	Ms. Chandeswori Koju	Khwopa Adarsha CLC	Member
38	Ms. Sulochana Shakya	Bungmati CLC	Member
39	Ms. Sushila Tuladhar	Tamsipakha CLC	Health Worker
40	Mr. Madan Krishna Dangol	Khokana CLC	Chairperson
41	Ms. Sabitri Devi Dhungana	Bungmati CLC	Member
42	Mr. Jeetendra Khayamali	Khwopa Adarsha CLC	Treasurer
43	Ms. Suryabati Maharjan	Khokana CLC	Social Mobiliser

## Urbanisation and Community Based Disaster Management Workshop Day 2, July 20, 2006

### Fieldwork Contributors

#### Kathmandu Site Visit Group

No.	Name	Organisation	Designation
1	Mr. Chandra Nanda Newa	Tamsipakha CLC	Chairperson
2	Ms. Nani Hira Maharjan	Tamsipakha CLC	Social Mobiliser
3	Ms. Meela Maharjan	Tamsipakha CLC	Volunteer
4	Mr. Niranjan Basnet	Ward 18 Kathmandu Metropolitan City Office	Former Ward Secretary
5	Ms. Sakuntala Prajapati	Tamsipakha CLC	Volunteer
6	Mr. Bhagawan Ratna Tuladhar	Tamsipakha CLC	Coordinator
7	Mr. Hari Sundar Potamaha	Khwopa Adarsha CLC	Co-Secretary
8	Ms. Shree Laxmi Duwal	Khwopa Adarsha CLC	Member
9	Ms. Sulochana Chhwaju	Khwopa Adarsha CLC	Member
10	Mr. Madan Krishna Dangol	Khokana CLC	Chairperson
11	Mr. Bekha Muni Maharjan	Khokana CLC	Member
12	Mr. Sita Ram Bhandari	Ichangu Narayan CLC	Member
13	Ms. Uma Thapa Magar	Ichangu Narayan CLC	Health Worker
14	Mr. Thum Raj K. C.	Ichangu Narayan CLC	Member
15	Mr. Pandav Shrestha	Ichangu Narayan CLC	Member
16	Mr. Ram Kumar Shrestha	Ichangu Narayan CLC	Chairperson

#### Patan Site Visit Group

No.	Name	Organisation	Designation
1	Ms. Shrishti Mishra	Green Valley School	Teacher
2	Ms. Bhawana Prajapati	Tamsipakha CLC	Volunteer
3	Mr. Ritish Maharjan	Tamsipakha CLC	Volunteer
4	Ms. Beti Maharjan	Tamsipakha CLC	Volunteer
5	Ms. Shila Devi Maharjan	Tamsipakha CLC	Volunteer
6	Ms. Bishnu Keshari Hengwoju	Khwopa Adarsha CLC	Member
7	Ms. Sulochana Chhwaju	Khwopa Adarsha CLC	Member
8	Mr. Madhukar Tuladhar	Bungmati CLC	Secretary
9	Ms. Mandevi Tuladhar	Bungmati CLC	Member
10	Mr. Dilli Bahadur Dongol	Khokana CLC	Vice Chairperson
11	Mr. Ganga Lal Dangol	Khokana CLC	Member
12	Mr. Bekha Bahadur Maharjan	Khokana CLC	Advisor
13	Ms. Kalpana Adhikari	Ichangu Narayan CLC	Vice Chairperson
14	Ms. Sarita Shrestha	Ichangu Narayan CLC	Member
15	Ms. Arati Nagakoti	Ichangu Narayan CLC	Member
16	Ms. Sapana Aryal	Ichangu Narayan CLC	Treasurer
17	Ms. Chandeshwari Kaju	Khwopa Adarsha CLC	Member



## Bhaktapur Site Visit Group

No.	Name	Organisation	Designation
1	Mr. Dhan Bahadur Maharjan	Tamsipakha CLC	Member
2	Ms. Kamala Maharjan	Tamsipakha CLC	Volunteer
3	Ms. Sanu Chhori Maharjan	Tamsipakha CLC	Volunteer
4	Ms. Sushila Tuladhar	Tamsipakha CLC	Health Worker
5	Ms. Kalpana Simkhada	National Lower Secondary School	Teacher
6	Mr. Jeetendra Khayamali	Khwopa Adarsha CLC	Treasurer
7	Ms. Sumitra Bohaju	Khwopa Adarsha CLC	Member
8	Mr. Sita Ram Prajapati	Khwopa Adarsha CLC	Member
9	Mr. Laxmi Narayan Duwal	Khwopa Adarsha CLC	Chairperson
10	Mr. Prem Bhakta Maharjan	Bungmati CLC	Chairperson
11	Mr. Mani Raj Dongol	Khokana CLC	Member
12	Ms. Suryabati Maharjan	Khokana CLC	Social Mobiliser
13	Mr. Krishna Bhagat Maharjan	Khokana CLC	Secretary
14	Ms. Punam Lama	Ichangu Narayan CLC	Member
15	Ms. Anjana Pandey	Ichangu Narayan CLC	Member
16	Mr. Shyam Shrestha	Ichangu Narayan CLC	Member
17	Mr. Surendra Shrestha	Ichangu Narayan CLC	Member

## Urbanisation and Community Based Disaster Management Workshop Day 3, July 21, 2006

### Participant List

No.	Name	Organisation	Designation
1	Mr. Chandrananda Newa	Tamsipakha CLC	Chairperson
2	Mr. Dhan Bahadur Maharjan	Tamsipakha CLC	Member
3	Mr. Surendra Shrestha	Ichangu Narayan CLC	Member
4	Mr. Pandav Shrestha	Ichangu Narayan CLC	Member
5	Ms. Sushila Tuladhar	Ward 18	Health Worker
6	Mr. Prem Bhakta Maharjan	Bungmati CLC	Chairperson
7	Ms. Sabitri Devi Dhungana	Bungmati CLC	Member
8	Mr. Thum Raj K. C.	Ichangu Narayan CLC	Member
9	Ms. Sulochana Shakya	Bungmati CLC	Member
10	Ms. Nani Hira Maharjan	Tamsipakha CLC	Social Mobiliser
11	Ms. Meela Maharjan	Tamsipakha CLC	Volunteer
12	Ms. Shila Devi Maharjan	Tamsipakha CLC	Volunteer
13	Ms. Kamala Maharjan	Tamsipakha CLC	Volunteer
14	Ms. Beti Maharjan	Tamsipakha CLC	Volunteer
15	Ms. Sanu Chhori Maharjan	Tamsipakha CLC	Volunteer
16	Mr. Laxmi Narayan Duwal	Khwopa Adarsha CLC	Chairperson
17	Ms. Kalpana Sharma	Ichangu Narayan CLC	Vice Chairperson
18	Ms. Sapana Aryal	Ichangu Narayan CLC	Treasurer
19	Ms. Bhawana Prajapati	Tamsipakha CLC	Volunteer
20	Mr. Ritish Maharjan	Tamsipakha CLC	Volunteer
21	Ms. Anjana Pandey	Ichangu Narayan CLC	Member
22	Ms. Arati Nagarkoti	Ichangu Narayan CLC	Member
23	Ms. Santa Shrestha	Ichangu Narayan CLC	Volunteer
24	Ms. Punam Lama	Ichangu Narayan CLC	Member
25	Mr. Shyam Shrestha	Ichangu Narayan CLC	Member
26	Ms. Shakuntala Suwal Prajapati	Nardevi Hospital	Nurse
27	Ms. Kalpana Simkhada	National Lower Secondary School	Teacher
28	Ms. Chandeswori Koju	Khwopa Adarsha CLC	Member
29	Ms. Bishnu Keshari Hengwoju	Khwopa Adarsha CLC	Member
30	Mr. Hari Sundar Potamaha	Khwopa Adarsha CLC	Joint-Secretary
31	Ms. Shree Laxmi Duwal	Khwopa Adarsha CLC	Member
32	Mr. Madan Krishna Dangol	Khokana CLC	Chairperson
33	Mr. Prem Lal Kasula	Bhaktapur	Mason
34	Mr. Tulsi Das Kasula	Bhaktapur	Mason
35	Ms. Suryabati Maharjan	Khokana CLC	Member
36	Mr.? Ganga Lal Dangol	Khokana CLC	Member
37	Ms. Keshari Maharjan	Bungmati CLC	Member
38	Ms. Mandevi Tuladhar	Bungmati CLC	Member
39	Mr. Madhukar Tuladhar	Bungmati CLC	Secretary

No.	Name		Organisation	Designation
40	Mr.	Jeetendra Khayamali	Khwopa Adarsha CLC	Treasurer
41	Ms.	Shrishti Mishra	Green Valley School	Teacher
42	Mr.	Krishna Bhagat Maharjan	Khokana CLC	Secretary
43	Mr.	Kedar Koirala	JICA	Officer
44	Mr.	Jitendra Shrestha	Yatachhen	Manager
45	Ms.	Miyuki Tsujii	Yatachhen	Volunteer
46	Ms.	Koto Kanno	UNESCO Office in Kathmandu	UNESCO Representative to Nepal
47	Ms.	Nipuna Shrestha	UNCRD/UNESCO Office in Kathmandu	Facilitator
48	Ms.	Aliza Shrestha Dhungana	UNESCO Office in Kathmandu	National Project Coordination Officer
49	Ms.	Mayumi Yamada	UNCRD Disaster Management Planning Hyogo Office	Researcher



# Annex IV

## Community Disaster Management Workshop Programme

(September 2 & 18, 2006)

Participant List



**Urbanisation & Community Based Disaster Management:  
Community Assessment in the core areas of  
Khokana & Bungmati**

2nd September 2006

<b>Time</b>	<b>Activity</b>
10:00am -10:15 am	Participant registration at Khokana CLC
10:15am -10:30am	Briefing on the site visit: <ul style="list-style-type: none"> <li>• Community Assessment</li> <li>• Evacuation Mapping</li> </ul>
10:30am -11:45am	Leave for core area in Khokana: <ul style="list-style-type: none"> <li>• Field work begins</li> <li>• Mapping individually taking note of safe and risky areas, sources of water, densely populated areas etc.</li> </ul>
11:45am -12:45pm	Group work begins: <ul style="list-style-type: none"> <li>• Evacuation Mapping</li> <li>• Formulation of action plan</li> </ul>
12:45pm -1:45pm	Break
1:45pm -2:15pm	Arrive at Bungmati
2:15pm -3:30pm	Leave for core area in Bungmati: <ul style="list-style-type: none"> <li>• Begin field work</li> <li>• Mapping individually taking note of safe and risky areas, sources of water, densely populated areas etc.</li> </ul>
3:30pm -4:30pm	Group work begins: <ul style="list-style-type: none"> <li>• Evacuation Mapping</li> <li>• Formulation of action plan with suggestions</li> </ul>
4:30pm -4:45pm	Closing: Briefing on future activities: <ul style="list-style-type: none"> <li>• Khokana CLC to discuss the action plan formulated including the local CBDM agenda and Community Assessments with the wider community</li> <li>• Revise the action plan according to local context</li> <li>• Finalise the action plan formulated with technical support and support from local authorities</li> </ul>

**Organisers**

Bungmati CLC, Ichangu Narayan CLC, Khokana CLC,  
Khwopa Adarsha CLC and Tamsipakha CLC

UNESCO Office in Kathmandu  
UNCRD Disaster Management Planning Hyogo Office

## Community Assessments in Ward 1, 2 and 3 of Ichangu Narayan VDC for disaster risk awareness and disaster management

18th September, 2006

Time	Activity
10:00am	Participants gather at Ichangu Narayan VDC sign board located towards the western side of Swayambhunath across the Ring Road.
10:00am-10:30am	Participant registration at Ichangu VDC building
10:30am-11:00am	Brief introduction to field visit activities: <ul style="list-style-type: none"> <li>• Community Assessment Exercise</li> <li>• Evacuation Mapping Exercise</li> </ul>
11:00am-2:00pm	Fieldwork: <ul style="list-style-type: none"> <li>• Community assessment begins</li> <li>• Mapping individually taking note of safe and risky areas, sources of water, densely populated areas etc.</li> </ul>
2:00-2:45pm	Break
2:45pm-3:45pm	Begin group work (Ichangu Narayan CLC): <ul style="list-style-type: none"> <li>• Evacuation mapping</li> <li>• Formulation of action plan with suggestions</li> </ul>
3:45pm -4:15pm	Complete any remaining work from Community Assessments held in Khokana and Bungmati. Submission of completed work by Khokana CLC.
4:15pm-4:30pm	Closing: Briefing on future activities: <ul style="list-style-type: none"> <li>• Discussing the action plan formulated with local CBDM agenda and the Community Assessment [outcomes] with the wider community</li> <li>• Revise the action plan according to the local context</li> <li>• Receiving technical support and finalising the action plan with local authorities</li> </ul>

### Organisers

Bungmati CLC, Ichangu Narayan CLC, Khokana CLC,  
Khwopa Adarsha CLC and Tamsipakha CLC

UNESCO Office in Kathmandu  
UNCRD Disaster Management Planning Hyogo



## Community Assessments in Khokana

### September 2nd 2006

#### Post-Workshop Participants List

No.	Name	Organization
1.	Mr. Diwaker K.C.	Bungmati CLC
2.	Mr. Madhukar Tuladhar	Bungmati CLC
3.	Mr. Prem Bhakta Maharjan	Bungmati CLC
4.	Ms. Sangeeta Shakya	Bungmati CLC
5.	Ms. Sushila Shakya	Bungmati CLC
6.	Mr. Pandav Shrestha	Ichangu Narayan CLC
7.	Ms. Pratima Acharya	Ichangu Narayan CLC
8.	Mr. Rabin Shrestha	Ichangu Narayan CLC
9.	Mr. Rajendra Bhatta	Ichangu Narayan CLC
10.	Mr. Ram Kumar Shrestha	Ichangu Narayan CLC
11.	Mr Surendra Shrestha	Ichangu Narayan CLC
12.	Mr. Madan Krishna Dangol	Khokana CLC
13.	Mr. Bekha Bahadur Maharjan	Khokana CLC
14.	Mr. Dilli Bahadur Dangol	Khokana CLC
15.	Ms. Suryabati Maharjan	Khokana CLC
16.	Mr. Hari Krishna Duwal	Khwopa Adarsha CLC
17.	Mr. Hari Sundar Potamaha	Khwopa Adarsha CLC
18.	Ms. Prakriti Bashi	Khwopa Adarsha CLC
19.	Mr. Ram Sundar Bashi	Khwopa Adarsha CLC
20.	Ms. Beti Maharjan	Tamsipakha CLC
21.	Mr. Dhan Bahadur Maharjan	Tamsipakha CLC
22.	Ms. Kamala Maharjan	Tamsipakha CLC
23.	Ms. Sheela Maharjan	Tamsipakha CLC
24.	Mr. Ramesh Kumar Maharjan	Nepal Red Cross
25.	Ms. Anuradha Tulachan (Editor)	UNCRD/UNESCO Office in Kathmandu
26.	Ms. Nipuna Shrestha (Facilitator)	UNCRD/UNESCO Office in Kathmandu
27.	Ms. Neerana Shakya	UNESCO Office in Kathmandu
28.	Mr. Hari Govinda Maharjan	District Nepal Red Cross

Team leader: Mr. Madan Krishna Dangol, Chairperson, Khokana CLC

Facilitator: Nipuna Shrestha

Documentation, translation and editing: Anuradha Tulachan

## Community Assessment in Bungmati

September 2nd 2006

### Post-Workshop Participants List

No.	Name	Organization
1.	Mr. Diwaker K.C.	Bungmati CLC
2.	Mr. Madhukar Tuladhar	Bungmati CLC
3.	Mr. Prem Bhakta Maharjan	Bungmati CLC
4.	Ms. Sangeeta Shakya	Bungmati CLC
5.	Ms. Sushila Shakya	Bungmati CLC
6.	Mr. Pandap Shrestha	Ichangu Narayan CLC
7.	Ms. Pratima Acharya	Ichangu Narayan CLC
8.	Mr. Rabin Shrestha	Ichangu Narayan CLC
9.	Mr. Rajendra Bhatta	Ichangu Narayan CLC
10.	Mr. Ram Kumar Shrestha	Ichangu Narayan CLC
11.	Mr. Surendra Shrestha	Ichangu Narayan CLC
12.	Ms. Beti Maharjan	Tamsipakha CLC
13.	Mr. Dhan Bahadur Maharjan	Tamsipakha CLC
14.	Ms. Kamala Maharjan	Tamsipakha CLC
15.	Ms. Sheela Maharjan	Tamsipakha CLC
16.	Mr. Hari Govinda Maharjan	Nepal Red Cross Society
17.	Mr. Ramesh Kumar Maharjan	Nepal Red Cross Society
18.	Ms. Anuradha Tulachan (Editor)	UNCRD/UNESCO Office in Kathmandu
19.	Ms. Nipuna Shrestha (Facilitator)	UNCRD/UNESCO Office in Kathmandu

Team leader: Mr. Prem Bhakta Maharjan, Chairperson Bungmati CLC

Facilitator: Nipuna Shrestha

Documentation, translation and editing: Anuradha Tulachan

**Community Assessment in Ichangu VDC**  
**18th September 2006**

**Post-Workshop Participants List**

No.	Name	Organization
1.	Mr. Dhan Bahadur Maharjan	Tamsipakha CLC
2.	Ms. Mila Maharjan	Tamsipakha CLC
3.	Mr. Diwakar K.C.	Bungmati CLC
4.	Ms. Sangita Shakya	Bungmati CLC
5.	Mr. Ram Kumar Shrestha	Ichangu Narayan CLC
6.	Mr. Thum Raj K. C.	Ichangu Narayan CLC
7.	Mr. Pandav Shrestha	Ichangu Narayan CLC
8.	Mr. Surendra Shrestha	Ichangu Narayan CLC
9.	Ms. Nipuna Shrestha (Facilitator)	UNCRD/ UNESCO Office in Kathmandu
10.	Ms. Anuradha Tulachan (Editor)	UNCRD/ UNESCO Office in Kathmandu

Team leader: Mr. Ram Kumar Shrestha

Facilitator: Nipuna Shrestha

Documentation, translation and editing: Anuradha Tulachan





## **About the UNCRD Disaster Management Planning Hyogo Office**

The United Nations Centre for Regional Development (UNCRD) was founded in 1971 in Nagoya, under an agreement between the United Nations and the Government of Japan. UNCRD has been striving to achieve the following objectives:

- Serve as a training and research centre
- Provide advisory services
- Promote global knowledge-sharing
- Encourage international cooperation among nations, regions, and organizations

In 1999, the UNCRD Disaster Management Planning Hyogo Office was established in Kobe, where the Great Hanshin-Awaji Earthquake had claimed the lives of more than 6,000 people in 1995. The Hyogo Office focuses on various disaster management initiatives through multi-lateral collaboration at the international level while utilizing the momentum created during the IDNDR 1990-99 (International Decade for Natural Disaster Reduction). It promotes effective disaster mitigation, focusing on key elements of self-help, cooperation, and education through activities such as:

- (a) research projects
- (b) training and capacity-building
- (c) a series of international workshops
- (d) advisory services

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