PROMISE IN BANGLADESH

SETTING UP URBAN SEARCH AND RESCUE TEAM AT COMMUNITY LEVEL

Bangladesh

JULY 2008

NEED

- COMMUNITY PEOPLE-FIRST RESPONDER
- PRONE TO DISASTER-CCC
- LACK OF SKILLED PEOPLE

SIMILAR INITIATIVE

- **CYCLONE PREPAREDNESS PROGRAM**
  - COMMUNITY EARLY WARNING
  - DEMONSTRATED
  - ESTABLISHED

ADDITIONAL COMPONENT

- EMERGENCY RESPONSE AND SEARCH AND RESCUE

PROMISE INITIATIVE

- CONDUCTION OF COMMUNITY BASIC EMERGENCY RESPONSE COURSE- PIONEERING EFFORT IN BANGLADESH

PARTICIPANTS

- COMMUNITY VOLUNTEER
- CCC
- FIRE SERVICE AND CIVIL DEFENCE
- SCHOOL TEACHER
- PROJECT STAFF

FACILITATION

- ADPC
- BDRCS

CONTENT

- CONTEXT OF DISASTER MANAGEMENT IN BANGLADESH
- PRINCIPLES OF FIRST AID
- CARDIOPULMONARY RESUSCITATION (CPR)
- FOREIGN BODY AIRWAY OBSTRUCTION (FBAO)
- BLEEDING AND SHOCK
- FRACTURES, DISLOCATION
- & SPRAINS

CONTENT

- LIFTING & MOVING PATIENTS
- MASS CASUALTY MANAGEMENT & TRIAGE

MOCK DEMONSTRATION ON MFR AND SAR

OPPORTUNITY

- DEMONSTRATING SKILL
  - LANDSLIDE
  - SIDR

EMERGENCY RESPONSE

LESSON LEARNT

IMPORTANT ASPECT OF CBDRM

NEXT STEP

- ESTABLISHMENT OF STRONG NETWORK OF THE FIRST RESPONDER
- DEVELOP MORE TEM

Modeling Kalu River Floods for Early Warning

U K N P Dharmasena,

Scientist, National Building Research Organization

Actions taken by National Building Research Organisation (NBRO) of Sri Lanka -1

1. Data Collection:

DATA		Source
1. Topographical data	→	Survey Dept. - SL
2. Daily rainfall data	→	Meteorological Dept. - SL (*For past 30 years)*
3. Daily river discharge at selected locations	→	Irrigation Dept. - SL
4. Historical flood levels	→	Irrigation Dept.
5. River cross sections *at selected locations between Ratnapura and Kalutara*	→	NBRO
6. Water levels *at marshy locations along river*	→	NBRO

Actions taken by NBRO - 2

Data Collection:

Topographical data

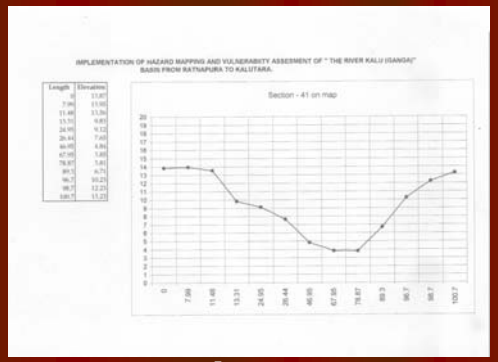
Survey Dept. -SL

Daily rainfall data

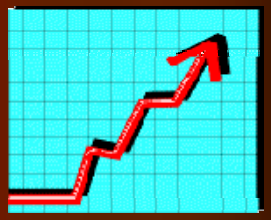
Met Dept. - SL

Daily river discharge at selected locations

Irrigation Dept. - SL



About 100 river cross sections at selected location *(between Ratnapura and Kalutara)* **- NBRO**

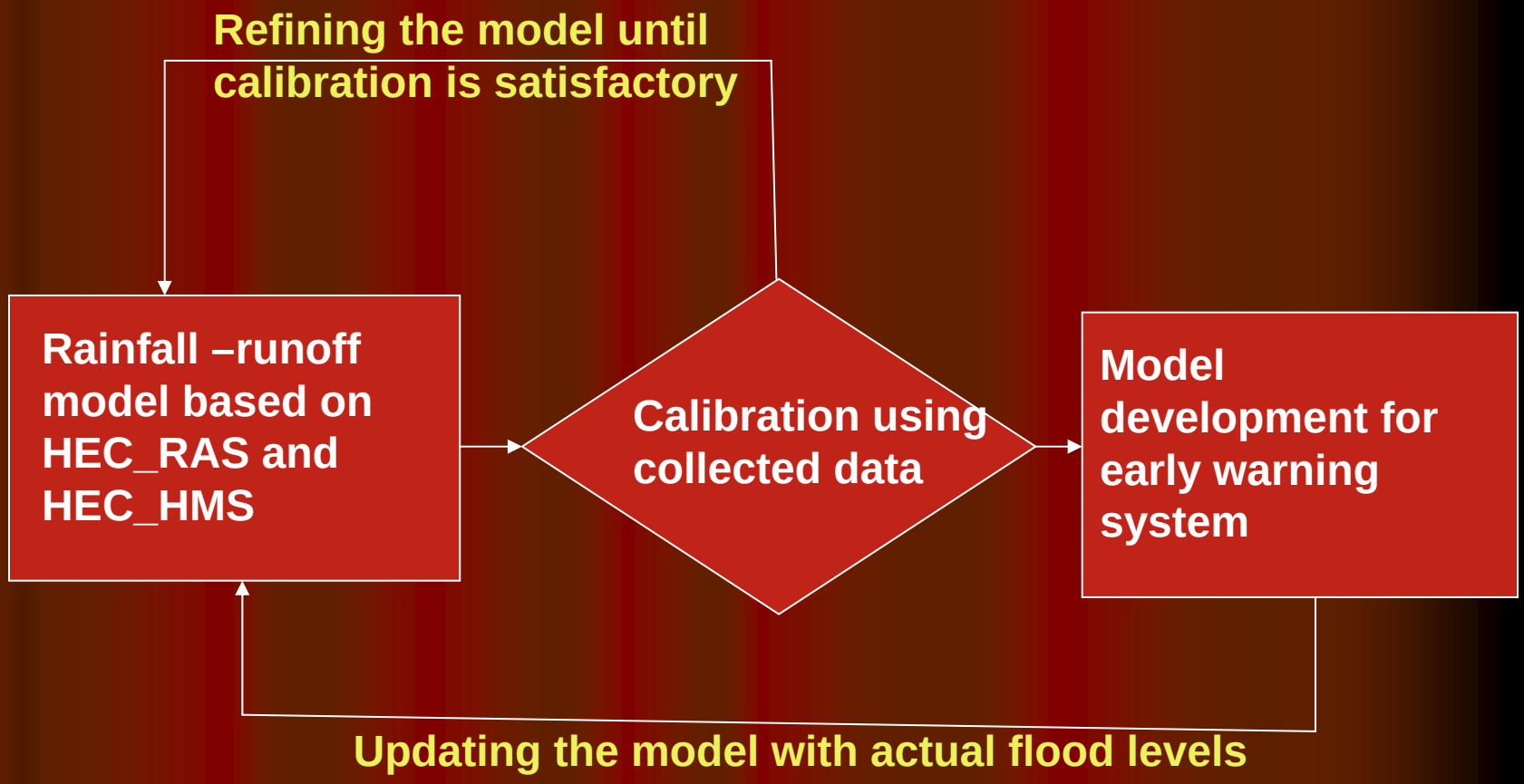


Historical flood levels

Irrigation Dept. - SL

Actions taken by NBRO contd.

2. Data Analysis and modelling:



Achievements - 1

1. By reading levels of existing flood gauges at river upstream - Probability of flood level at downstream can be predicted
2. Originally expected to make a dynamic model; Not achieved due to inherent nature of micro catchments & uneven rainfall within catchments

MODEL DISPLAY

Pic. 1

Achievements - 2

3. **By studying flood model along left & right banks of river segment from Kalawellawa bridge up to Kalutara bridge: Installation of 10 flood gauges.**

Pic. 2 LOCATION MAP OF ERECTED FLOOD GAUGES

Pic. 2

Achievements - 3

4. By Training Communities living near above flood gauges Build up capacity to assess risk levels (warning, alert and evacuation) based on predicted flood levels

Anguruwatota Flood gauge (Right bank of the river)

Gauge reading

- 0.0m- Warning Level
- 0.4m- Alert level-
- 1m - Evacuation Level

Tebuwana Flood gauge- Right bank of the river

Gauge reading

- 0.0m- Warning Level
- 0.5m - Alert level
- 1m - Evacuation Level

Achievements - 3

4. By Training Communities living near above flood gauges

Build up capacity to assess risk levels (warning, alert and evacuation) based on predicted flood levels

Tebuwana Flood gauge- Left bank of the river

Gauge reading-

- 0.0m- Warning Level
- 0.5m - Alert level
- 1m - Evacuation Level-

Achievements - 4

5. Formation of community based disaster management groups within each community to maintain installed flood gauge and issuing early warning based on gauge readings

PHOTO

Pic. 3

PHOTO

Pic. 4

PHOTO

Pic. 5

During June 2008 floods, CBDM acted according to instructions given and people were timely evacuated

Lessons Learned - 1

1. During June 2008 floods, out of 10 gauges, 8 were totally submerged within a short period of time
   - Situation attributed due to simultaneous heavy rainfalls on both major catchments
   - Opening of flood gates at major hydro power plant , upstream of Kuda Ganga catchment
2. If heavy rainfall covers whole catchments, timing for evacuation is very limited.

Pic. 6

MAP

Lessons Learned - 2

3. During June 2008 floods, communities were evacuated in advance, before gauges reaching warning level,
   - Because surrounding roads got submerged due to poor surface draniage system
4. Original plan was to install gauges by the road, but they were finally installed in private properties. Because,
   - Communities did not commit to look after gauges installed away from their properties.
   - Vandalism and road accidents

Pic. 7

PHOTO

Lessons Learned - 3

5. People showed less faith in an early warning system. They preferred to depend on their own experience and ancestral beliefs
6. They were interested on the time they will be flooded. The model failed to cater that requirement. Model Needs further developments
7. Flood model has to be updated to accommodate the rate of rain fall within the entire catchments

Conclusion

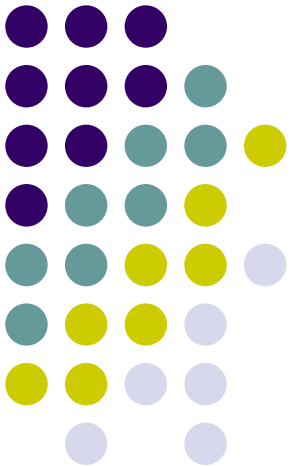
1. Maintenance of flood gauges after project completion

2. Ensure chain of information through frequent meetings with both stake holders
3. Continue collecting data on rainfall, river discharge and flood
4. Update the model to increase reliability in early warning

Integrating Disaster Resistant Construction Techniques in Post-Typhoon Recovery Programs

PROMISE VIETNAM / RELIEF AND RECOVERY FROM TYPHOON XANGSANE PROJECTS

CAM LE (& NGU HANH SON) DISTRICT
Danang City



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CENTRE FOR INTERNATIONAL STUDIES AND COOPERATION

Typhoon Xangsane

- October 2006 : Winds over 125Km/hr with heavy rainfall
- 1.3M people affected
- Danang
  - 5290 billion VND in damage
    - $US 330,000,000M
  - 14,138 houses completely collapsed
  - 42,691 unroofed and badly damaged
  - 65,271 partly unroofed and lightly damaged

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Joint Needs Assessment in Danang

- Food security – food, and seeds to rehabilitate livelihoods
- Shelter – Cam Le District alone more than 16,000 households suffering some shelter damage and up to 2000 with a fully collapsed home
- High number unroofed (6000 totally and 7000 partially)

CECI & Partners response

- CECI
  - Humanitarian response to communities where we are present
  - Specialise in participatory reconstruction with local materials
  - Raised $160,000 in Canada and $60,000 from Canadian Embassy in Vietnam for housing reconstruction and livelihood reconstruction in Thua Thien Hue and Danang City

CECI
CENTRE FOR INTERNATIONAL STUDIES AND COOPERATION

CECI & Partners Response

Danang City:

- Component 1 – Food Relief (1 month after)
- Component 2 - Livelihood Recovery
- Component 3 – Rebuild and repair 52 houses of poor and vulnerable people
  - Build solid, safe houses
  - Raise awareness on disaster resistant building techniques

CECI & Partners response

- Cam Le, Ngu Hanh Son and Danang City: co-ordination and guidance for coherence with goverment response
- ADPC / PROMISE (USAID-OFDA) – responsive to post-disaster situation : adjust program for technical support on disaster resistant building techniques

Step 1: Beneficiary Selection

- Collaboration with the Department of Labour, and Social Affairs, Department of Urban Planning, District and Wards to agree on criteria to select beneficiaries

- District Authority was responsible for giving CECI team a suggested list of households based on agreed criteria;

Step 2 : Surveys for beneficiary selection & technical assessment

- Train district and ward engineers in conducting surveys;

- Survey one:
  - Selection of households using criteria : poverty level, status of damage, recovery stage, size of family, economic circumstances
  - Community meeting to finalize the list of beneficiaries

- Survey two:
  - Conducted with district engineers
  - Assess technical issues for houses selected for reconstruction (land survey with dimension, house survey with dimensions, etc.).

Step 3 : Participatory house design

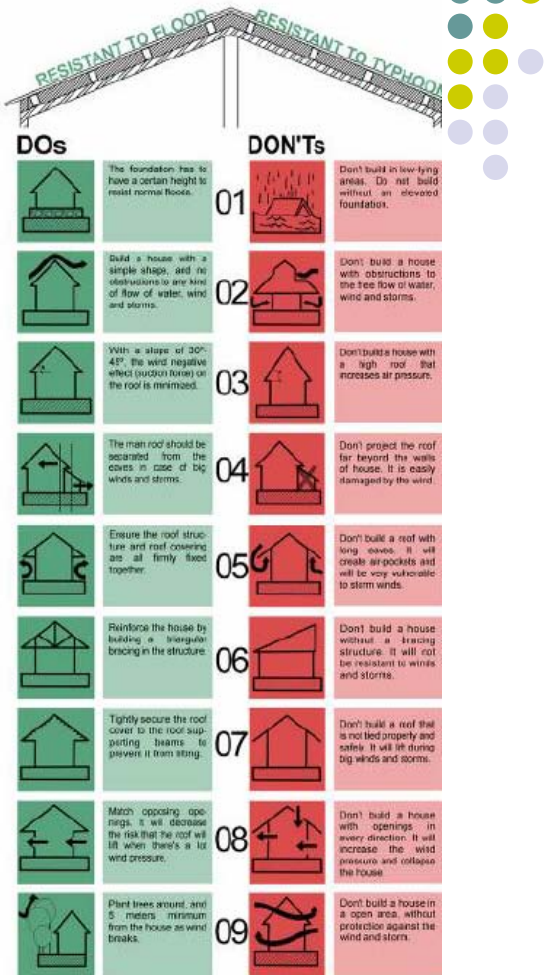
- Training on *Building techniques resistant to typhoon and flood for Ward and District Engineers* – TOT.
- Wards and district engineers conducted training to beneficiaries and local builders.
- Men and women consulted on design and materials
- Respect local culture, tradition and preferences
- Design finalized by district engineers.

Step 4 : House construction

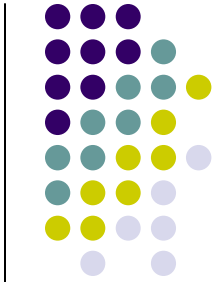
- Construction materials delivery: Mobilized local labors (builders, masons) and family's contribution for construction;
- Ward, Districts Engineers, local builders and CECI team supervised the construction;
- Monitoring sheet (check list) filled by the ward and CECI team during the construction;

Step 5: Dissemination

- A Poster (A3) with construction techniques displayed in communities where homes were built
- Construction guidelines for home builders, construction companies and ward engineers
- Disaster resistant techniques displayed and promoted through disaster preparedness information sessions

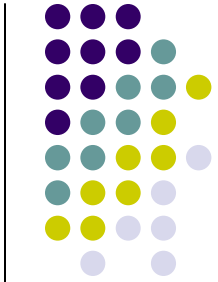


Lessons Learned



- Post-disaster is an opportunity to raise awareness on how to reduce risks.
- Reconstruction contributes to capacity development on disaster resistant techniques for City, District and Ward Engineers, Construction Companies and residents.
- Integrating risk reduction into reconstruction requires more time and technical support than rapid reconstruction projects.
- Disaster resistant building techniques can apply to many designs – not a single house model.

Lessons Learned



- Must not underestimate people's desire to improve and extend their home – can override their concerns over risk
- Awareness raising on building techniques must be continual, intensive and directed at all levels: home-owner, builders, government engineers
- Awareness raising on reconstruction must be scaled up through government programs.
- Mechanisms must be developed to measure results of awareness raising programs.

PROMISE Philippines

Planning and Implementation of the City and Community Emergency Plan

Dr. Leo Carbonell

City Health Officer,

Dagupan City

PROMISE Program for Hydro-meteorological Disaster Mitigation for Secondary Cities in Asia

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Typhoon Cosme

Early Warning System

Warning Level Control	Status	Flood Indicators	Barangay Indicators	Depth Indicators	CDCC/Committee	Response
1. WHITE	1. High Tide Forcast	Rain + High Tide	Lasip Chico	Hips (<2 ft.)	CDCC Deputized Officer	1. CDCC convened and conduct immediate briefing to CDCC Members.
"READY"	2. Heavy Rain Downpour (within 3 Days)		Pogo Grande	Knee (<1ft.)	CDCC Operation Team (Warning)	1. Establish proper coordination and update report with Line Agencies, PAGASA, PHILVOLCS, RDCC, OCD, Agno Flood Control Forcasting System.
			Pantal (Riverside & Arellano)	Knee (<1ft.)		2. Establish proper coordination and update report with BDCC with the aid of early warning device installed/improvised.
			Bacayao Sur	Hips (<2 ft.)	CDCC Staff Team (Communication)	1. Media information dissemination thru press release as well serves as warning information.
			Bonuan Gueset (Bagong Barrio)	Knee (<1ft.)	CDCC Staff Team (Supply/Logistics)	1. Inventory of logistics and manpower resources.
			Herrero Perez (Near Creek)	Knee (<1ft.)		
2. YELLOW	1. High Tide Forcast	Rain + High Tide + River Overflow	Lasip Chico	Hips (<2.5 ft.)	CDCC	1. CDCC activated, EOC operational.
"GET SET"	2. Heavy Rain Downpour (more than 3 Days)		Pogo Grande	Hips (2 ft.)	CDCC Operation Team (Warning)	1.Establish proper coordination and update report with PAGASA, PHILVOCS, RDCC, OCD, Agno Flood Control Forcasting Saytem, Red Cross, DepED.
	3. Flood Alert Forcast by Agno Flood Control		Bacayao Sur	Hips (2.5 ft.)		2. Update situational report to CDCC Deputized Officer and establish the possible scenario from the gathered reports.
			Bacayao Norte	Knee (<1ft.)		3. Establish proper coordination and update report with BDCC with the aid of early warning device installed/improvised.
						4. Instruct the BDCC to conduct disseminate warning if possible by house to house basis.
						1. Announcement of warning alert and information dissemination thru media, radio, press release.
						1. Medical, search and rescue teams on alert.
					Team	2. Medical and relief services deployed to community evacuation centers.
						3. Close coordination with Red Cross, PNP, BFP, POSO.
						1. Rescue Team activated.
					Team	2. Close coordination with Red Cross, CDCC Staff Team Transpo, Security & other Line Agencies.
						1. Evacuation operation to the first priorities area with head counts and submit reports.
					Team	2. Relief services deployed to evacuation centers and other temporary shelters.
3. ORANGE	1. High Tide Forcast					1. CDCC on high alert.
"GO"	2. Heavy Rain Downpour (continuous)					2. Recommends declaration of state of calamity for release of calamity fund.
					Team	
	3. Dam Release				Team	1. Cleaning/Monitoring Operations for the Route to the affected communities.
	4. Neighboring towns Flooded				nage	2. Continuous on site flood monitoring on a 24-hour basis and conduct damage, affected elements (people, livelihood, infra) assessement.
	5. Routes not passable by light vehicles				Team	
						1. Medical, search and rescue teams activated.
						2. Medical and relief services deployed to city and community evacuation centers.
			Salisay	Hips (<2.5 ft.)	CDCC Operation Team (Evacuation)	1. Force evacuation operation to the all affected areas with head counts and update reports.
			Mangin	Hips (<2.5 ft.)		2. Institute evacuation management at evacuation centers.
			Lasip Grande	Waist (<3 ft.)		
			Herrero Perez	Hips (<2.5 ft.)		
			Pogo Chico	Hips (<2.5 ft.)		
			Mayombo	Hips (<2.5 ft.)		
			Carangtaan	Hips (<2.5 ft.)		
			Tapuac	Hips (<2.5 ft.)		
			Bolosan	Hips (<2.5 ft.)		
			Mamalingling	Hips (<2.5 ft.)		
			Tambac	Hips (<2.5 ft.)		
			Barangay IV	Knee (<1.5 ft.)		
			Poblacion Oeste	Knee (<1.5 ft.)		
			Lucao	Knee (<1.5 ft.)		
4. RED	1. Super Typhoon	Typhoon Rain + Dam Release + High Tide	City Wide (31 Barangays)		NDCC Takeover, Civil Defense	1. Declares State of Calamity.
	2. High Tide Forcast					2. Implementation of emergency evacuation plan.
	2. Heavy Rain Downpour (continuous)					3. Full evacuation operation to the all affected areas with head counts and update reports.
	3. Dam Release					
	4. Neighboring towns Flooded					

The Early Warning and Evacuation Plans were used:

- 8 high risk communities
- City of Dagupan

PROMISE

Program for Hydro-meteorological Disaster Mitigation for Secondary Cities in Asia

COORDINATION

Community RESPONSE

- Early Community Evacuation
- Assessment of Damage, Needs and Capacity
- BDCC relief Operation
- Clearing of Affected areas

City's Immediate Response

- Damage Needs Capacity Assessment was done
- Declaration of the State of Calamity
- Relief Assistance
- Resource Generation
- Restoration of lifelines
- Dispatching of the Medical Teams to assist in the communities
- Clearing of the areas by POSO

Lessons Learnt

- Community involvement foster higher degree of success in implementation of DRR practices locally conceptualized
- Active participation of the BDCC in the aspect of DRR elicited cooperation and insure coordinated response.
- Partnerships and netwoking done during pre disaster times helped alot during emergencies

Challenges

- **Improvement of the City Operations Manual based on the City's Assessment of Response Incorporating Climate Change/Crisis Issues**

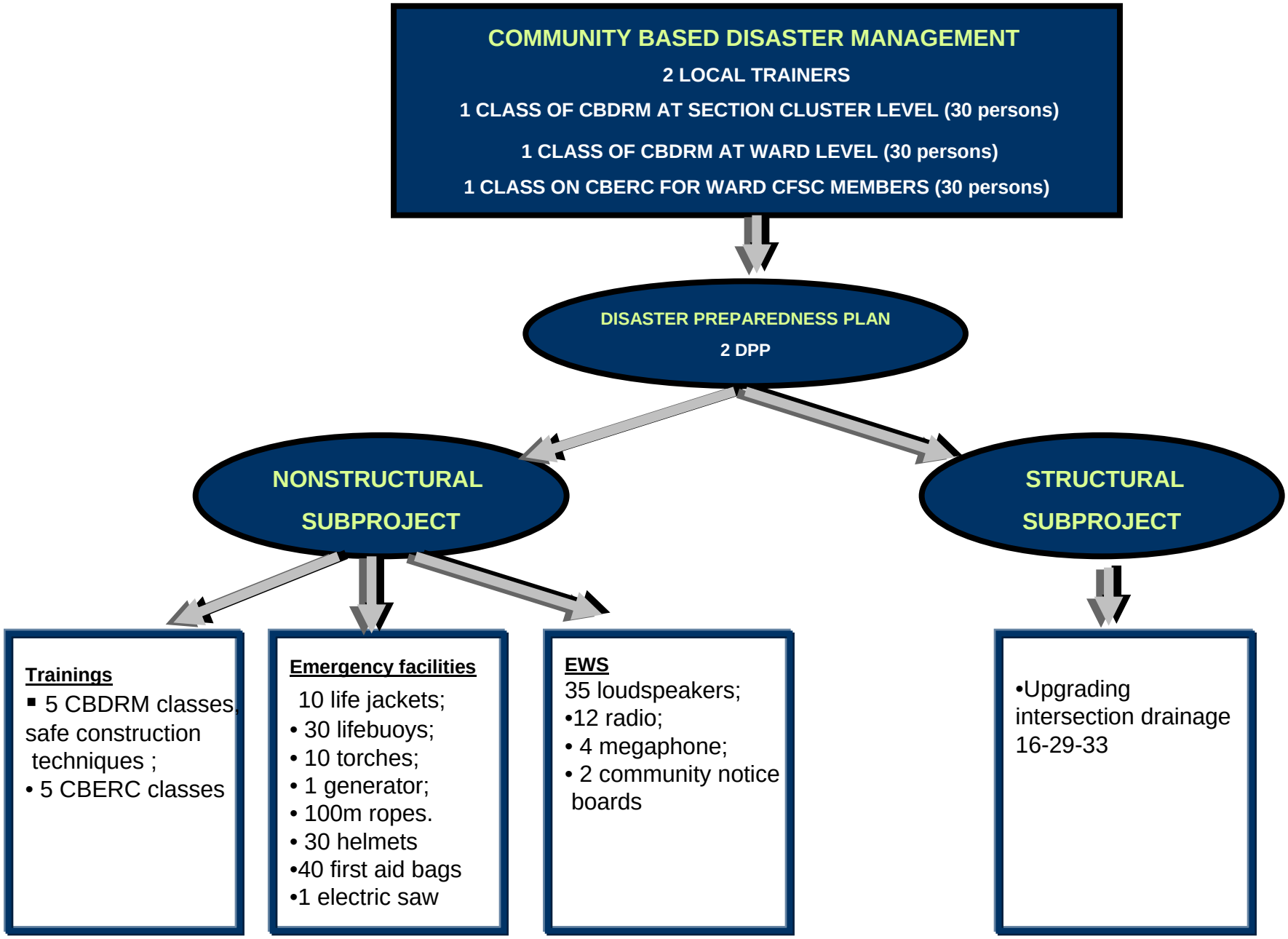
- **The establishment of the EOC should be continuously supported and campaigned through all departments in the LGU of Dagupan City**

- **The sustainability of the Northern Luzon Network for DRR should be encouraged. Plans should be established**

A case study of Hoa Tho Dong Ward, Cam Le district, Danang city

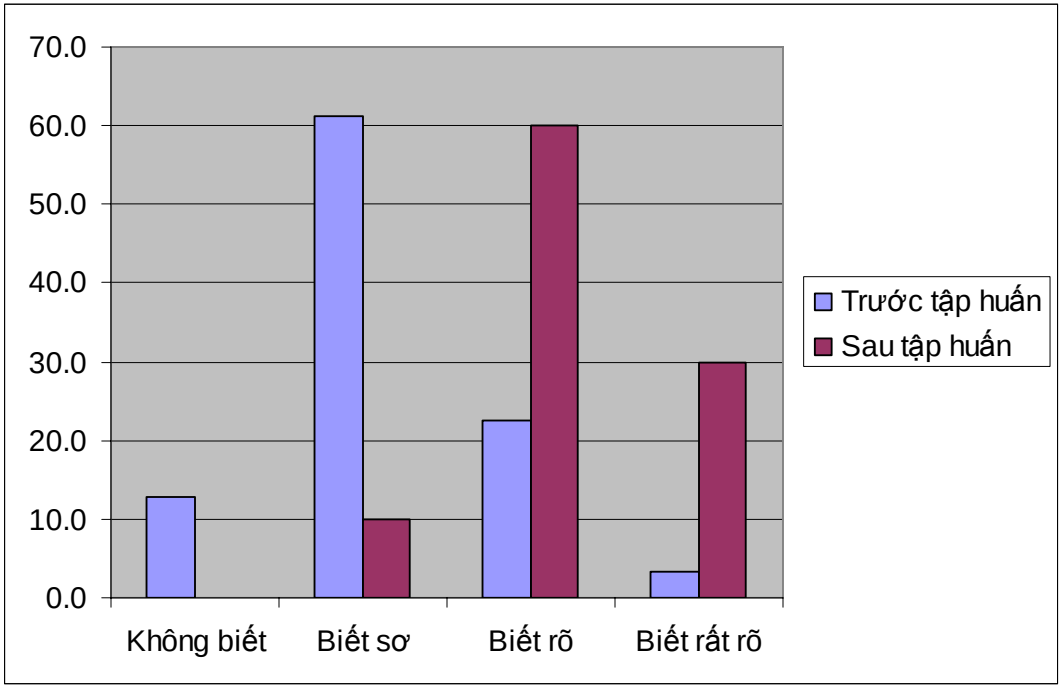
COMMUNITY AWARENESS RAISING

Presenter: Mr. Truong Van Vy, Vice-chairman of People's Committee of Hoa Tho Dong Ward


COMMUNITY BASED DISASTER MANAGEMENT
2 LOCAL TRAINERS
1 CLASS OF CBDRM AT SECTION CLUSTER LEVEL (30 persons)
1 CLASS OF CBDRM AT WARD LEVEL (30 persons)
1 CLASS ON CBERC FOR WARD CFSC MEMBERS (30 persons)
DISASTER PREPAREDNESS PLAN
2 DPP
NONSTRUCTURAL SUBPROJECT
STRUCTURAL SUBPROJECT
Trainings
▪ 5 CBDRM classes, safe construction techniques ;
• 5 CBERC classes
Emergency facilities
10 life jackets;
• 30 lifebuoys;
• 10 torches;
• 1 generator;
• 100m ropes.
• 30 helmets
•40 first aid bags
•1 electric saw
EWS
35 loudspeakers;
•12 radio;
• 4 megaphone;
• 2 community notice boards
•Upgrading intersection drainage 16-29-33

CBDRM TRAINING AND DISASTER PREPAREDNESS PLANNING

- **Change in awareness of community in disaster preparedness planning**



Before training:

-Do not know: 10%
-Know little: 61%
-Know well: 22%
-Know very well: 4%

After training:

-Do not know : 0%
-Know little: 10%
-Know well: 60%
-Know very well: 30%

DISASTER PREPAREDNESS PLANNING

Before having project:

- Disaster preparedness plan of the ward was developed every year by ward CFSC;
- Content of plan just focused on reactive measures to disaster in one year, no anticipatory measures included;
- Community implemented the plan, but not participate in planning.

After having project:

Commune staff and Communities have better knowledge of:

- CBDRM and participatory planning techniques;
- Know how to use risk assessment tools (historical profile, season calendar, risk mapping, etc) and to conduct participatory risk assessment;
- Identify problems and relevant risk reduction measures to develop a community disaster preparedness plan.

Awareness raising on Application of Disaster Resistant building Techniques

Before having project:

- Houses were built with no application of disaster resistant building techniques (wall without concrete poles, bracing system, etc) because of:
  - Lacking knowledge
  - Being reluctant
  - Having small investment for large construction areas
  - Constructing temporary houses to get compensation from urban development program;

➔ *Loss caused by Xangsane: 400 totally collapsed,1.000 Partially damaged and thousands of houses roofed off.*

After having project:

- Local builders, masons and villagers received training on disaster resistant building techniques for safer shelter;
- Communities are more aware of effectiveness of application of disaster resistant building techniques (delivery posters of 10 building principles in flood and typhoon prone areas);
- Safer shelter models were built under support of relief program after Xangsane typhoon (typhoon victims received support to rebuild their home);

Impacts of sub-projects

Nonstructural subprojects:

•Training courses enhanced knowledge and awareness of local people and strengthened disaster planning;

• Emergency facilities helped community to be active and ready for response, reducing losses and damages;

Structural subprojects:

• Upgrading of inter-section drainage (improve drainage for inter-sections19-26-33, Safe evacuate during flooding periods and improve production, etc).

Recommendations

- Continue with and replication of CBDRM and participatory planning;
- Selection of risk reduction measures should link to sustainable community development goals relevant to actual situation of each ward;
- Continue with and expand widely community awareness raising activities on disaster mitigation and application of disaster resistant building techniques.

Technology Development and Transfer for DRR

Community Capacity Development for

Establishment of Early Warning System

Bernard Cabison

Barangay Captain, Brgy. Mangin

Barangay Disaster Coordinating Council Chairman

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Earthquake	**July 16, 1990**
Typhoon Gading	**Sept. 17-21,1998**
Typhoon Rening	**Oct. 15-18,1999**
Typhoon Feria	**July 2-5, 2001**
Typhoon Gloria	**July 7-9, 2002**
Typhoon Chedeng	**May 25-29, 2003**
Typhoon Yoyong	**Nov.30-Dec.3, 2004**
Heavy Rains **Stong Winds**	**2004** **2008**

Before promise no Community Early Warning System

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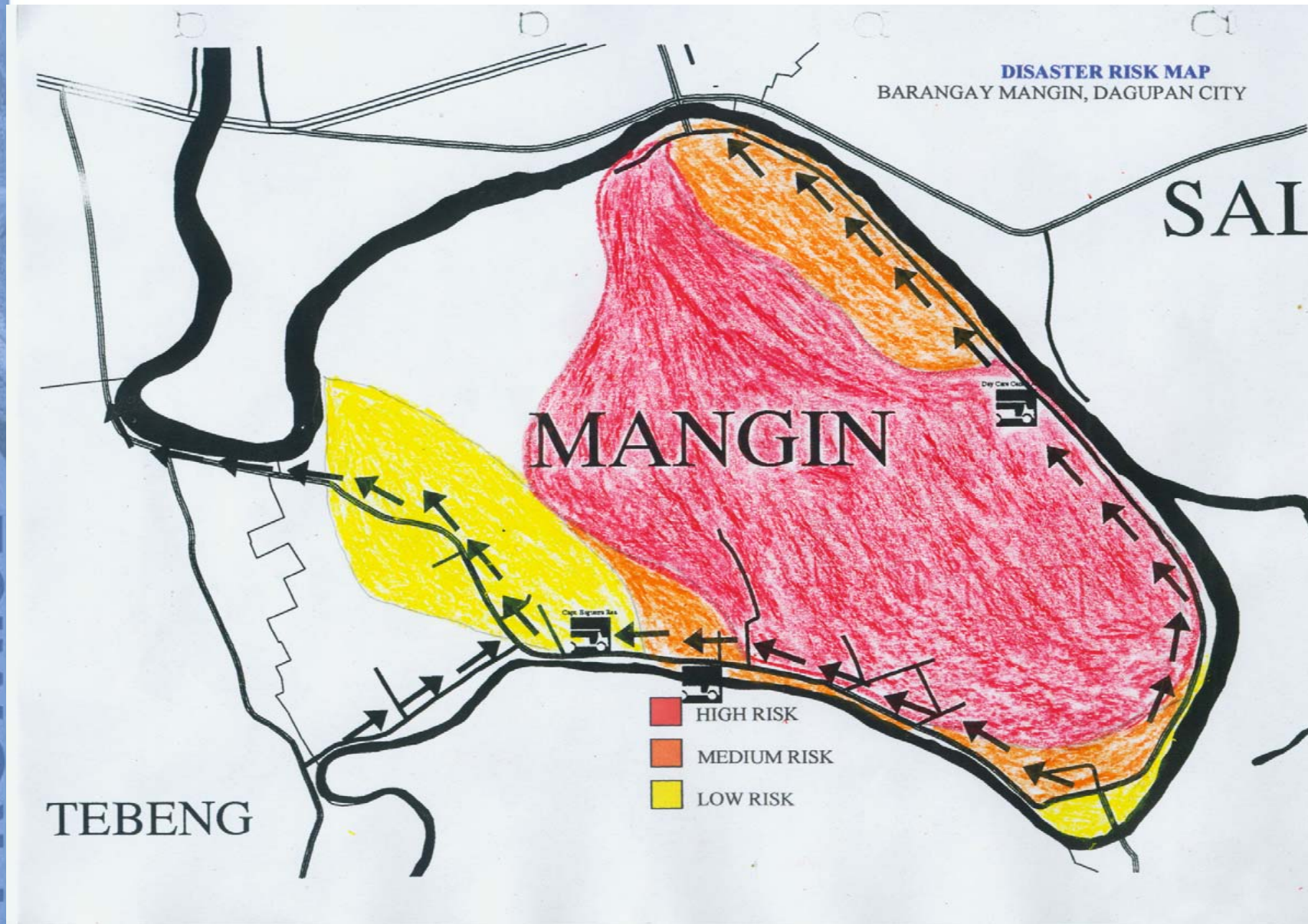
Capacity Development

- Barangay Disaster Risk Management and Participatory Risk Assessment and Planning Workshop
- Early Warning and Evacuation-Barangay Workshop
- Training on Basic Life Support and First Aid in the Community-PNRC

FLOOD RISK MAP
with Evacuation Route



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Early Warning System

- Alert Level – **White or NORMAL**
- Level of Measurement: 0-1ft. (flood markers)
- Situation – High Tide
- Warning Signal – Bamboo sound (karongkong), Church bell

- **ACTION TO BE TAKEN**
- Household: Radio/News Monitoring
- Initial meeting of BDCC
- Inventory of Equipment
- Check-up of transportation/facilities

Flood Simulation Response

Lessons Learnt

- Indigenous Early Warning practices can be incorporated in the Community Early warning System to increase the EWS‘ level of acceptance
- Capability Development should always be based upon the need of the community
- Secondary hazards should be incorporated in the EWS and be given enough preparedness measures as well.

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Challenges

- Early Warning System for all hazards needed to be developed not only in the community level but for the city
- Continuous Public Awareness Campaign for the People of Dagupan is needed
- Updating Risk Assessment Results is a must