

EARLY WARNING SYSTEM SURVEY

COUNTRY: **BELIZE**

Please complete one form for each Hazard

I INFORMATION ON THE HAZARD

1. The Hazard **RIVER FLOODING**

2. Summary of events triggered by the hazard

FLOODING OF RIVER BASINS

3. Historical events of significance.

ANNUAL EVENTS

4. Description of the region and the population under hazard and of the existing vulnerabilities

b. Degree of exposure of population to hazards (High/Medium/Low) **MEDIUM**

a. Number of communities affected by the hazards (Approximate #) **100**

c. Number of persons exposed (#) **140,000**

c. Percentage of people exposed to hazard, etc).(%) **50%**

5. Is there adequate public awareness about the hazard? (Y/N) **NO**

6. Attitude towards freedom of hazard information: (Very good/Good/Poor/None) **GOOD**

II TECHNICAL ASPECTS OF THE EARLY WARNING SYSTEM

1. Type of system employed to monitor the hazard:

RIVER GAUGES, HUMAN REPORTING, COMPUTER FLOOD MAPPING MODELS, MIXTURE

2. Year in which system became operational. **1998 - 2003 (GRADUAL DEVELOPMENT)**

3. Time employed for the design and implementation of the system. **5 YRS**

4. Geographic coverage of EWS. **ALONG ALL MAJOR RIVER BASINS**

5. Arrangements made for remote areas? (Y/N) **YES**

6. Routine operation of the EWS:

a. Members of the Community; (Position) **COMMUNITY LEADERS AND SELECTED INDIVIDUALS**

b. Personnel from:

1) National; (Position) **HYDRO-MET DEPT, NEMO, MEDIA HOUSES**

2) Regional; (Position)

3) Local government agency; (Position) **DISTRICT DISASTER COORDINATORS**

4) Research center; (Name) **HYDRO-MET DEPT, CLIMATE CHANGE PROJECT**

5) Consulting firm; (Y/N) **NO**

6) NGO; (Name)

7) Other (Name)

8) Mixed; (Y/N) **YES**

7. Type of instrumentation used

a. to monitor the hazard; **RIVER GAUGES**

b. to process information gathered; **COMPUTERS, COMPUTER FLOOD MODELS, CALCULATORS**

c. to transfer it. **RADIO TRANSMITTERS**

8. Mechanisms used to forecast the events:

a. Procedures? (Y/N) **YES**

b. Are procedures documented in a national plan? (Y/N) **YES**

c. Are procedures backed by legal authority? (Y/N) **YES**

d. Who carries out this task?

1) Members of the community? (Y/N) **NO**

2) Personnel from technical institutions? (Y/N) YES - HYDRO-MET, NEMO	
3) Other (Name)	
4) Automatic? (Y/N) NO	
5) Mixed? (Y/N) YES	
6) Other (Name)	
9. Is warning adequately published in public broadcast media? (Y/N) YES	
10. Are forecast and media agencies fully integrated? (Y/N) YES	
11. Is there redundancy and backup for the EW system? (Y/N) NO	
12. Is lifeline equipment (eg standby power) adequate? (Y/N) NO	
13. Is there adequate provision for maintenance of the EWS? (Y/N) NO	
14. Technical support used for the Design, Implementation, Development of the EWS:	
a. International (Name)	
b. National (Name)	HYDRO-MET DEPT, NEMO, LOCAL CONSULTANTS
c. Technical (Name)	HAM OPERATORS
d. Scientific (Name)	
e. Academic (Name)	UNIV OF BELIZE
f. Consulting firm (Name)	DIVERSE
g. Civil defense agency (Name)	DEFENCE FORCE, POLICE
h. NGO (Name)	RED CROSS
i. Other (Name)	NEWS MEDIA (CABLE OPERATORS, PRINT, TV, RADIO)
III INSTITUTIONAL AND FINANCIAL ASPECTS OF THE EWS.	
1. Is there a legal framework for the EWS? (Y/N) YES	
2. Institution(s) in charge of design and implementation (Name) HYDRO-MET DEPT, NEMO	
3. Institution (s) which participate routinely in monitoring the hazard (Name)	
	HYDRO-MET DEPT, NEMO
4. Is there adequate public awareness of the EWS? (Y/N) YES	
5. Is there parity between forecasting and warning? (Y/N) YES	
6. Is there provision for nighttime warning and response? (Y/N) YES	
7. Type of resources required for the implementation, routine operation, and maintenance of the EWS:	
a. Technical personnel	METEOROLOGISTS, HYDROLOGISTS, TELECOMMUNICATIONS ENGINEERS, COMPUTER PROGRAMMERS, OPERATORS AND TECHNICIANS, RADIO OPERATORS, MEDIA PERSONNEL
b. Equipment:	COMPUTERS, RADIOS, CELL PHONES, SATELLITE PHONES, SIRENS, BULL HORNS, AM TRANSMITTERS, FIXED FREQUENCY RECEIVERS GIS SYSTEMS, SMS READY CELL SYSTEMS, INTERNET ACCESS, COUNTRYWIDE MEDIA (RADIO & TV) COVERAGE,
c. Logistical support (transportation for example)	4WD PICKUPS AND SMALL BOATS
d. Monetary resources	ADEQUATE FUNDING FROM GOVERNMENT
e. Other (Name)	COMMUNITY PERSONNEL FOR A VARIETY OF MANUAL OPERATIONS
8. Origin of resources required to implement, operate, and provide maintenance to the EWS:	
a. Community (Y/N)	NO
b. National (Name)	GOVERNMENT MINISTRY
c. Regional (Name)	CDERA, CDB, UWI
d. Local institutions (Name)	GOVERNMENT MINISTRY
e. International agencies (Name)	UNDP, OCHA, ECHO, DFID, USAID, CIDA,
f. Donors (Name)	INDIVIDUAL COUNTRIES THROUGH MULTILATERAL AGENCIES
g. NGOs (Name)	RED CROSS
h. Mixed (Y/N)	YES
9. Inter agency and Inter personal relations between emergency agencies and personnel: (Very good/Good/Poor/None) GOOD	
IV MECHANISMS TO ISSUE A WARNING AND AN ALERT	
1. Who is warned or alerted by those who monitor the hazard?	
a. Community (Y/N)	YES
b. Local (Name)	FIRST RESPONDERS AND THREATENED COMMUNITIES

	c. Regional (Name) CDERA
	d. National Government (Name) PRIME MINISTER, ALL MINISTRIES, RESPONSE AGENCIES
2. Which means are employed to warn the people and the various agencies or institutions?	
	TELEPHONE, FAX, EMAIL, PUBLIC MEDIA, ULL HORNS, SIRENS, ETC
3. Who is in charge of declaring the state of alert:	
	a. The Community (Y/N) NO
	b. Technical personnel who monitor the hazard (Y/N) NO
	c. Local (Name)
	d. Regional (Name)
	e. National level government (Name) NEMO
	f. National civil protection agency (Y/N) NO
4. Type of public alert employed:	
	Siren / Bells / Public Radio / TV / Flags / Whistles / Megaphones / Email / Fixed Frequency
	Radio / Fax / Satphone / Cell Phone / Community Members Cascade / Multiple options
5. Who is in charge of operating the alert mechanisms/equipment and orders the activation of alerts?	
	NEMO
6. Official policies, norms, and procedures in place to issue warnings and alerts (if any)	
	YES - NATIONAL DISASTER PLAN
7. Local government participation: YES	
8. Is the content of the alert message adequate? (Y/N) YES	
9. Is there verification that the information is correct and acted on? (Y/N) YES	
	a. Type of municipal organization (Name Type) DISTRICT DISASTER COMMITTEES
	b. Resources provided. AS SPECIFIED ABOVE
10. Community participation:	
	a. Type of organization (Name Type) CITIZENS ASSOCIATIONS, NGO'S, CHURCHES, ETC
	b. Participants (Name Organizations) RED CROSS, ADRA, MENNONITES, ETC
	c. Relation with the local government. (Very good/Good/Poor/None) GOOD
11. Special arrangements for social groups with limited resources and special needs? (Y/N) YES	
V ANALYSIS OF EWS	
1. Comments regarding successful and unsuccessful results during the operation of the EWS.	
	GOOD COOPERATION FROM COMMUNITIES AND SOME HAM OPERATORS IN READING AND TRANSMITTING INFORMATION
2. Strengths and weaknesses of the EWS.	
	STRENGTHS: COMMUNITY INVOLVEMENT, PUBLIC AWARENESS, VARIETY OF WARNING METHODS ALLOWS REDUNDANCY
	WEAKNESSES: INSUFFICIENT EQUIPMENT DEPLOYED FOR ACCURATE AND TIMELY WARNINGS IN ALL VULNERABLE AREAS
3. Lessons learned, benefits of the EWS.	
	EW SYSTEM SAVES LIVES BUT NOT MUCH PROPERTY AS PEOPLE STILL REMAIN AND OPERATE IN FLOOD PRONE AREAS REGARDLESS OF THREAT
4. Added value gathered from the EWS (benefits not initially conceived during the planning stages, which emerged during standard operation of the system).	
	COMMUNITY INVOLVEMENT
ANNEX: MAP OF THE REGION WHERE EWS IS OPERATED.	