EARLY WARNING SYSTEM SURVEY

COUNTRY: **BELIZE**

Please complete one form for each Hazard

I INFORMATION ON THE HAZARD

1. The Hazard HURRICANE

2. Summary of events triggered by the hazard

WIND DAMAGE, STORM SURGES, FLOODING OF FLAT AREAS AND MOUNTAIN VALLEYS, FLOODING FROM RIVER OVERFLOWS

3. Historical events of significance.

HURRICANES HATTIE, MITCH, KEITH, IRIS

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)** HIGH

a. Number of communities affected by the hazards **(Approximate #)** 500

c. Number of persons exposed **(#)** 240,000

c. Percentage of people exposed to hazard, etc).**(%)** 90%

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:

SATELLITE (INTERNET) MONITORING, WIND VANES, RAIN GAUGES HUMAN REPORTING, CABLE CHANNELS, MIXTURE

2. Year in which system became operational. 1999

3. Time employed for the design and implementation of the system. GRADUALLY DEVELOPING

4. Geographic coverage of EWS. ENTIRE COUNTRY

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

6. Routine operation of the EWS:

a. Members of the community; **(Position)** VILLAGE ALCALDE (LEADER)

b. Personnel from:

1) National; **(Position)** MET OFFICE, NEMO, MEDIA HOUSES

2) Regional; **(Position)**

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

4) Research center; **(Name)** MET OFFICE, UWI, NHC

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

6) NGO; **(Name)** RED CROSS

7) Other **(Name)** DEFENCE FORCE, POLICE

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

7. Type of instrumentation used

a. to monitor the hazard; ANEMOMETERS, SATELLITE TVRO, COMPUTERS-INTERNET, RAIN GAUGES, 2 WAY RADIOS,

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

c. to transfer it. BROADCAST RADIO AND TV, SIRENS, BULL HORNS, FAX, HF/VHF/UHF RADIO, EMAIL, TELEPHONES, CELL PHONES, SATELLITE PHONES

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 - **MET OFFICE, NEMO**

3) Other **(Name)**

4) Automatic? **(Y/N)** **YES**

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) **INADEQUATE**

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)** **NHC, NOAA, CMO, CDERA**

b. National **(Name)** **MET OFFICE, NEMO, LOCAL CONSULTANTS**

c. Technical **(Name)** **DEFENCE FORCE, POLICE**

d. Scientific **(Name)** **UWI**

e. Academic **(Name)** **UWI**

f. Consulting firm **(Name)** **DIVERSE**

g. Civil defense agency **(Name)** **DEFENCE FORCE, FIRE SERVICE, POLICE**

h. NGO **(Name)** **RED CROSS**

i. Other **(Name)** **NEWS MEDIA (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) **MET OFFICE, NEMO**

3. Institution (s) which participate routinely in monitoring the hazard (Name) **MET OFFICE, NEMO**

4. Is there adequate public awareness of the EWS? (Y/N) **NO**

5. Is there parity between forecasting and warning? (Y/N) **YES**

6. Is there provision for nightime 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, TELECOMMUNICATIONS ENGINEERS, COMPUTER 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, INTERNET ACCESS, COUNTRY WIDE MEDIA (RADIO & TV) COVERAGE,**

c. Logistical support (transportation for example) **4WD PICKUPS WITH MAINTENANCE PACKAGE COMMUNICATIONS EQUIPMENT FOR RESPONSE AGENCIES**

d. Monetary resources **REVENUE STREAM GENERATED FROM DISASTER MANAGEMENT SERVICES, BUDGETED GOVERNMENT REVENUES,**

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**

c. Regional **(Name)** **CDERA, CDB, UWI**

d. Local institutions **(Name)** **GOVERNMENT**

e. International agencies **(Name)** **UNDP, OCHA, IDB, 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 COMMUNITIES VIA MASS MEDIA

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,

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 COMMITTEES AND TOWN COUNCILS

b. Resources provided. AS SPECIFIED ABOVE

10. Community participation:

a. Type of organization **(Name Type)** VILLAGE/TOWN COUNCILS, 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.

INCREASING SUCCESS OVER THE YEARS AS PEOPLE BECOME MORE AWARE AND TAKE PRECAUTIONARY MEASURES.

2. Strengths and weaknesses of the EWS.

STRENGTHS: INCREASED PUBLIC AWARENESS, VARIETY OF WARNING METHODS ALLOWS REDUNDANCY,

WEAKNESSES: MANY RURAL COMMUNITIES HAVE NO AMENITIES SUCH AS ELECTRICITY

3. Lessons learned, benefits of the EWS.

INVOLVED COMMUNITIES AND GOOD PUBLIC EDUCATION AND AWARENESS PROGRAMMES WILL DECREASE LOSS OF LIFE DURING DISASTERS

4. Added value gathered from the EWS (benefits not initially conceived during the planning stages, which emerged during standard operation of the system).

COMMUNITY EXPOSURE TO TECHNICAL SYSTEMS

ANNEX: MAP OF THE REGION WHERE EWS IS OPERATED.