



National Emergency Management Organization

Damage Assessment and Needs Analysis

INITIAL DAMAGE ASSESSMENT REPORT



TROPICAL DEPRESSION #16

FLOODING EVENTS

Belize District, Cayo District (east)

& Orange Walk District

As at 29TH OCTOBER, 2008

BELIZE C. A.

An Initial Damage Assessment aims at determining relief and immediate response requirements and is conducted immediately in the early and critical stage of a disaster, as soon as the conditions allow survey teams to operate. The characteristic of such an assessment is that it is broad in scope and focuses on overall patterns and trends. It identifies:

- *The magnitude of the disaster (without delivering exact figures)*
 - *The impact of a disaster on the society*
 - *Peoples capacity to cope*
 - *The most urgent relief needs and potential methods of delivery*
 - *Priorities for action*
 - *The utilization of resources for immediate response*
 - *The need for detailed assessment of specific geographical areas or substantive sectors*
 - *The level of continuing or emerging threats*
 - *The need for international assistance*
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- *It is important to note that these estimates are preliminary due to the quick turn around time required for an assessment of this nature. The damage and losses here reflect the available information, compiled from; district sources, aerial reconnaissance, district/local surveys and through the application of pre-established baseline database. This is not a final assessment of damage and needs since it reflects information available at the time of this report, taking into account that at this time a number of surveys and specialist sectoral analysis will only be commencing.*

Event Summary

Tropical Depression No. 16 (TD 16), which threatened Honduras, Guatemala and Belize made landfall in northern Honduras on Thursday, 16th October 2008. The remnants of TD 16 caused widespread rainfall across Belize which resulted in initial life threatening floods in communities along the Mopan, Macal and upper Belize Rivers. Over a period of approximately 5 days these waters moved down to the lower Belize River Watershed resulting in the flooding of those communities which straddles the banks of the Belize River. Unstable weather conditions over Belize during the past week have maintained moist conditions.

The national disaster zone has expanded as rains in Mexico resulted in the swelling of the Rio Hondo and New Rivers in the northern territories of Corozal and Orange Walk.

Initial assessments indicate varying levels of impacts within 109 communities distributed across the Cayo, Belize, Orange Walk and Corozal Districts. Based on house to house surveys some 16,455 individuals are in need of relief assistance and aid for early recovery. The Government of Belize have to date provided the equivalent of one week of foods and water supplies for 6035 individuals.

Communities of the extended impact zone which have sustained the most severe impacts include Burrell Boom, Crooked Tree, LEMONAL, Maypen, Scotland Halfmoon, San Roman, San Antonio, Douglas and San Victor. A total of 297 individuals remain in official government Shelters, however it is believed that the number of displaced individuals are much greater as families have opted to move in with friends and relatives at more secure locations. Within the Belize River Valley many inhabitants have chosen to stay in their homes as these houses were initially built on stilts 5 to 6 ft tall as a measure to mitigate rising flood waters.

Subsistence farming, agriculture smallholding, small trading and casual employment in the agriculture and tourism sector represent the primary livelihood sources within the extended impact zone. Important agricultural produces within these communities include livestock, small ruminants, vegetables and root crops, and sugar cane.

There are 4 confirmed fatalities resulting from the flooded waterways. Of the dead three were female; one of which was a minor. The general health situation remains stable however the preliminary epidemiological profile indicates several health conditions of interest. Most prominent among these are fevers and coughs, skin infections, diarrhea and rashes.

Destruction to road infrastructure nationally is principal among recorded impacts of TD16, secondary are the impacts to productive sectors which influences the livelihoods

of the affected population. Loss of personal effects including household furnishing and the extended isolation of communities has dampened the moral of the flood victims.

Total Direct Losses to the extended impact zone have been estimated at \$22.5 Million Dollars based on October 29th 2008 information.

- Household Items \$1.3 Million Dollars
- Housing Infrastructure \$1.3 Million Dollars
- Road Infrastructure \$10.4 Million Dollars
- Agriculture \$9.5 Million Dollars

All estimates are presented in BZD.



**Belize River
Lodge
Resort**



San Antonio



**Burrell Boom/Northern
Highway**



San Roman



**Crooked Tree
Causeway**

48-hour report
NATIONAL DISASTER SITUATION REPORT

Flooding Events associated with Tropical Depression No. 16

29th October, 2008

A. SITUATION:

1. Nature of the Disaster

Tropical Depression No. 16 (TD 16), which threatened Honduras, Guatemala and Belize made landfall in northern Honduras on Thursday, 16th October 2008. The remnants of TD 16 caused widespread rainfall across Belize which resulted in initial life threatening floods in communities along the Mopan, Macal and upper Belize Rivers. Over a period of approximately 5 days these waters moved down to the lower Belize River Watershed resulting in the flooding of those communities which straddles the banks of the Belize River. Unstable weather conditions over Belize during the past week maintained moist conditions over the country contributing to an increase in surface flow volumes.

The national disaster zone has expanded as rains in Mexico triggering the swelling of the Rio Hondo and New Rivers in the northern territories of Corozal and Orange Walk. Flood stage continues to rise rapidly near San Antonio, San Roman and San Victor.

2. Area Affected

The water levels of the Macal, Mopan and upper Belize River have started to slowly subside offering some relief to those communities heavily affected by the first wave of flooding. The flood waters have moved down the Belize River and are now settling in the natural catchment basins of the Belize District and there are records of spillage into the New River watershed resulting in the river over flooding its banks impacting those communities along the upper reaches of the New River.

This report encapsulates the areas impacted in the Belize District, the eastern sections of the Cayo District (extending from Unitedville extending eastwards to Franks Eddy) and the Orange Walk District which sustained impacts as flood waters caused by the heavy torrential rains and resultant floods as a result of TD #16 compounded by the subsequent tropical waves that have passed over Belize and northern Central America since 16th October 2008. For those areas impacted from the initial wave of flooding which was as a result of the storm event please refer to Initial Damage Assessment Report, Tropical Depression No. 16, Flooding Events, as at 20th October 2008.

For the reasons of this report, an affected area represents regions where populations have sustained direct or indirect impacts as a result of the event. Based on this definition it can be recorded that all communities along the lower reaches of the Belize River and its

associated wetland areas as well as those communities ribboning the New River have been affected. This number totals 109 communities.

Communities located along the banks of the Belize River and Roaring River within eastern Cayo District are inundated by flood waters as the flood wave move downstream towards the Belizean Coast (refer annex 2). Those communities along the upper reaches of the Rio Hondo and lower sections of the New River within the Orange Walk District are also experiencing rising waters within their villages (see annex 3). Most of these communities have become isolated as the connecting road network now lies under several feet of water. A total of 9 communities in eastern Cayo District were impacted as waters moved downstream, with More Tomorrow being the hardest hit.

Within the Belize District a total of 29 communities have reported varying degrees of flood impacts. The communities hardest hit include Crooked Tree, Lemonal, Scotland Halfmoon, Maypen, Burrell Boom and Lords Bank/Ladyville area. The other communities found along the banks of the Belize River continue to monitor their local situations and prepare for potential rises. Most of the communities within the Belize River Valley have lost accessibility by road and are now dependent on boats for crossing and in some cases to facilitate mobility within the communities.

Impacts are recorded in a total of 19 communities of the Orange Walk District this includes sections of Orange Walk Town (Louisiana farm), Guinea and San Estevan along the New River and Douglas, San Antonio, San Roman and Blue Creek along the Rio Hondo being severely impacted.

The total estimated affected population within the extended impact zone is 50,450. Flood conditions are expected to continue into November with additional communities of the northern Orange Walk District and the Corozal District being affected.

3. Impact

3.1. Damage by Sector:

Road Infrastructure: The road network throughout the entire country has been severely impacted by rains and flood waters as a result of TD 16. These impacts are as a result of the force of the flood related surface water flows as well as to developing conditions of saturation. Both causalities have undermined the integrity of the road base as well as caused erosion of the shoulders, the washout of culverts, the undermining of bridge supports and abutments. There is a reported immediate need for the installation of trenches and additional drainage, the scouring of bridges that have been inundated and for spot patching and surfacing of several miles of roadway, both paved and unpaved within the affected zones. The initial estimated cost of damages and recovery within the road infrastructural system for the Belize, eastern Cayo and Orange Walk Districts is \$10.4 Million Dollars. This estimate is anticipated to increase as the waters recede allowing for more detailed assessments of exact damages.

Within the Belize District numerous bridges have been completely flooded including the Rancho Dolores Bridge and the Santa Martha Bridge. Several miles of roadway have been inundated with records showing as much as 6 ½ ft of water on roads including the Burrell Boom/Hattievile road the Crooked Tree Causeway. Actual determination of damage must await the subsidence of water along these road sections. The road network within Belize City limits is also recorded as sustaining significant damages with the need for revetments and resurfacing in some areas.

The Roaring Creek Bridge and the Roaring River Crossing suffered damages to the actual bridge infrastructure as well as to several miles of roadway leading up to the bridge. Both paved and unpaved roads within the eastern Cayo District have recorded washouts, loss of shoulders and undermining from extended inundation.

Sugar cane access roads in the Orange Walk District have also been adversely affected by the continuous rains. Access roads to San Roman, San Antonio, Douglas, Blue Creek, Yo Creek, Trial Farm and old Northern Highway will require significant repairs after the water subsides.

With the continuation of flood conditions and waters rising in some areas it is expected that additional areas will become impacted and the areas already impacted are expected to continue to degrade. With expected stagnation and pooling of water the issue of the isolation of communities will need to be addressed and alternatives for the passage of persons and goods will need to be established and implemented as an interim measure.

PRELIMINARY ASSESSMENT- ROAD INFRASTRUCTURE		
DISTRICT		COST
Orange Walk		\$4,429,375.00
Belize		\$4,815,000.00
eastern Cayo		\$1,150,000.00
TOTAL BZ\$		\$10,394,375.00

Source: Ministry of Works

Housing: The houses and structures primarily impacted in the three regions directly adjacent to the flooded rivers. Damages to structure are as a result of water intrusion into households and water logging. Structural damage estimates at this time is limited to estimates for damages to electrical, plumbing, paint, doors, wooden flooring, wooden siding and wooden stairs and steps, estimates as to structural integrity of the walls and foundations will be conducted once the waters have receded to allow for proper inspections. Flooded wooden structures are expected to suffer greater impact by water

logging particularly in areas where the waters will not recede for several weeks, resulting in undermining of posts and accelerated rotting of floors and walls.

Preliminary estimates for structural damages in the Belize, eastern Cayo and Orange Walk Districts total approximately \$1.3 Million Dollars, this estimate does not account for losses of household items and personal effects.

PRELIMINARY ASSESSMENT HOUSING STRUCTURAL DAMAGE		
District		Estimated Damage
Belize		\$561,000.00
eastern Cayo		\$32,000.00
Orange Walk		\$679,000.00
TOTAL BZ\$	-	\$1,272,000.00
<p>Note: Structural damage is limited to damages to electrical, plumbing, paint, doors, timber floors, timber walls and timber stairs and steps.</p>		

Source: Ministry of Housing

Tourism: Reports from tourism operations within the extended impact zone indicate that flooding, or the threat thereof, has negatively impacted the industry as cancellations are widespread. Disruption of tourism services and the inaccessibility to sites further exacerbates the situation as the impact is extended to include day users associated with the cruise tourism industry. Popular destinations including the Jaguar Paw Jungle Resort in Frank's Eddy have suspended the sale of tours until the river returns to its normal levels and safety standards could be assured.

The impact of flooding of tourism infrastructure and destinations in the Belize River Valley is considered acute as the industry in this area is comprised mostly of cottage industries or "Mom and Pop" establishment. Most of the service providers in this region will be unable to quickly recover from this event. The industry in villages such as Crooked Tree have reported significant losses as the foundation of the industry is the lagoon and most of the supporting tourism infrastructure lined the lagoon and are now under 4 to 5 ft of water.

Other sites with report of significant flood damage include the Black Orchid Resort and Belize Eco Park in Burrell Boom the Lamanai Riverside which sustained up to 5' of flood water and M and H River Camp and Ranch in Scotland Halfmoon.

Economic Losses to the industry have not yet been quantified but are expected to be significant once detailed assessments can be done.

Agriculture: The agricultural sector in the affected regions has suffered heavy impacts particularly in the industrialized papaya industry in the Orange Walk District, the mechanized corn production in the eastern Cayo District and the subsistence/cash crop farming in the Belize District, pasture lands have also been severely degraded and there have been losses in livestock. Impacts to pasture land in the Belize River Valley are difficult to ascertain as livestock in this region tend to be free ranged with very little formal pastureland established.

The preliminary estimates for agricultural losses of crops (corn, vegetables and fruit trees) in the extended impact zone total \$9.5 Million Dollars. Preliminary reported losses of livestock. Includes 116 cattle, 281 poultry (primarily backyard chickens), 127 sheep, 19 pigs, 1 tilapia pond, 50 fowls (turkey, geese and ducks) and 141 colonies of honey bees. The estimated cost associated with the loss of livestock has not yet been ascertained as livestock weight is being verified by the District Agricultural Officers. Preliminary costs reflected in the above mentioned estimate does not factor in the losses to pasture land and the subsequent economic loss from both recovery periods needed for production and effect on subsistence livelihoods.

Across the entirety of the Belize River Valley area, impacted productive lands are estimated at 70% of lands under cultivation. Initial recovery time estimate provided by Ministry of Agriculture functionaries is 2 years. This region records an estimated 50% damage to cash crops, 10% losses of large livestock and 25% losses to poultry and sheep.

More Tomorrow, Young Gal, Valley of Peace and Cotton Tree in eastern Cayo District has suffered significant losses in productivity of vegetable crops which has traditionally recorded high yields per acre. Mechanized corn and losses fowls is also considered significant.

The losses in the Orange Walk District while high are seen primarily in the papaya and rice industries, an estimated 30% of total major crops were lost, the damages to the sugar cane industry are still being assessed, the expected economic losses will be significant and will have an overall impact on Belize's GDP, as these industries contribute significantly to foreign exports.

Summary of Agricultural Losses on the Crops (corn, vegetables, fruit trees)		
District	Acreage Lost	Estimated Cost
Belize District	197	\$2,268,804.00
eastern Cayo	843	\$2,013,724.00
Orange Walk	3,211	\$5,187,025.00
Total Loss	4,251	\$9,469,553.00

Source: District Agriculture Coordinators, Ministry of Agriculture and Fisheries

Summary of Agricultural Losses on the Livestock										
District	Cattle	Poultry	Sheep	Pigs	Fish	Turkey	Duck	Geese	Bees	Others
Belize District	89	64	51	13	600					
eastern Cayo	27	217	76	6		20	20	10		3
Orange Walk									141 Colonies	
Total Loss	116	281	127	19	600	20	20	10	141 Colonies	3

Source: District Agriculture Coordinators, Ministry of Agriculture and Fisheries

Rural Water Supply: The rudimentary water systems in place have not been severely impacted in terms of distribution networks. Impacts to water supply come as a result of contamination of supply wells by flooding waters. The need for potable water both for consumption and domestic purposes is high in all of the affected areas.

Most regions within the Orange Walk District utilize rain water catchment or are supplied by Belize Water Services, there have been no reports of significant impacts to these systems. Likewise the water supply from Belize Water Services and from rain water catchment systems in the eastern Cayo District has not been severely impacted.

Those communities relying primarily of rain catchment systems are also warned of possible contamination of catchments cistern as there exist the possibility of cross contamination by flood waters.

Telecommunications/ Electricity: There has been no report of disruptions in these essential lifelines.

3.2. Effects on Population

There have been no reports of casualties resulting from flooding in the three main areas being focused on in this report, namely: the Belize District, Eastern Cayo District, and the Orange Walk District. However, since the Initial Damage Assessment Report was done on 20th October 2008, there were 5 casualties reported being 3 persons for the Cayo and 2 persons for the Stann Creek District. The major impacts on the population are related to challenges faced due to displacement as a result of homes and surrounding areas being flooded. Within these areas, the most impacted communities in the Belize District are Lemonal, May Pen, Burrell Boom, Scotland Halfmoon and Crooked Tree, and in the Orange Walk District, San Estevan, San Antonio, San Roman, and Blue Creek were most severely impacted. Most of the impacted populations also experienced difficulties as access roads to their communities were either completely covered or were damaged due to heavy rainfall and/or water runoff. The human population impacts due to losses by the Agriculture and other productive sectors are expected to be tremendous due to crops being inundated, livestock affected, and transportation routes being affected.

At least 336 households or 1256 persons' homes have been directly impacted due to flooding. The Orange Walk District was most severely impacted followed by the Belize District (See Table). Two hundred and forty eight (248) persons that were evacuated had to be placed in national shelters, while others are temporarily staying with family and friends in higher areas. The entire population or approximately 36,880 persons was affected by this event resulting from transportation challenges in getting around and in and out of their communities for livelihood, school attendance and other routine activities.

Persons directly impacted are expected to experience great difficulties in recovering from this incident and will need assistance with water, food, housing materials, household items, cleaning kits, personal effects, and medical supplies and services. In the immediate to long term, food security is expected to pose a problem due to losses in subsistence crops and disruption of livelihoods.

The Education Sector has been impacted as classes in all areas were suspended due to challenges in transportation faced by students, teachers and direct impacts to the families. Classes resumed for most areas in the country on Monday 27th October, except for areas in the Belize River Valley (including Crooked Tree), and rural Orange Walk and Corozal Districts. This suspension of classes impacted all school age children and adolescents (over 55,000) in these districts.

An estimated 336 houses have been flooded within the Belize, Eastern Cayo District and the Orange Walk District with an estimated loss of household items totaling \$1.3Million Dollars.

Major health threats posed by such an event – water-borne disease (typically manifesting as diarrhea), vector-borne diseases, skin infections, respiratory illnesses, injuries

Diarrhea

- This typically manifests as diarrhea and is usually the result of the contamination of water supplies with fecal coliform, though such conditions are also favorable for outbreaks of cholera
- Disease and outbreak potential dependent on water supply and sewage disposal methods
- None of the hardest hit have rudimentary water systems
- No outbreaks, few & spurious cases of diarrhea
- Health teams deployed to these areas do health education, and public health interventions such as water treatment
- Water samples taken show fecal coliform in several of high risk communities in the Belize River Valley area.

Vector-borne diseases

- Malaria & Dengue – through the proliferation of mosquito breeding sites
- Leptospirosis through rat infestations also a threat if garbage is stored and disposed of improperly.

Fungal skin infections continue to dominate among health issues

- Will continue to be an issue for several more weeks

Respiratory Illnesses

- Conditions rife for proliferation of mold
- Threat of increase in respiratory complaints including exacerbation of asthma

Injuries and risk of tetanus should be borne in mind as flood waters recede and puncture injuries become more frequent.

Table 4: Summary Table of Direct Impacted Population and Household Items Lost

Impacted Area	Approx. Population	No. Households	No. Households Flooded	Wooden Houses			Concrete Houses			Other Houses			Total
				% Total	No.	Average \$ Loss	% Total	No.	Average \$ Loss	% Total	No.	Average \$ Loss	
Belize District	12594	2953	126	47%	59	\$4,500.00	42%	53	\$5,500.00	11%	14	\$1,000.00	\$571,410.00
Cayo East Area	3159	669	13	46%	6	\$2,500.00	48%	6	\$5,500.00	6%	1	\$1,000.00	\$50,050.00
Orange Walk District	20939	4269	197	32%	63	\$2,500.00	44%	87	\$5,500.00	24%	47	\$1,000.00	\$681,620.00
Total	36880	7940	336										\$1,303,080.00

Source: DANA NEMO, Statistical Institute of Belize, Living Standards Survey

4. Projected Evolution/Secondary Threats

The weather outlook for Belize over the next two days is for cool and fair conditions to prevail, with isolated showers and periods of rain along the southern coast. This means an end to the rains allowing for the subsidence of the peaking water levels in the communities of Double Head Cabbage, Lemonal, More Tomorrow, Rancho Dolores, St. Paul's, and Willows Bank.

Water levels remain steady near Bermudian Landing, Flowers Bank and Isabella Bank, and are expected to take longer to return to normal levels. The last official report from Crooked Tree was that approximately 6.7 feet of water covered the Crooked Tree Causeway and that water levels continued to rise slowly. This is the case as Crooked Tree and the areas surrounding Crooked Tree acts as a natural sink for excess waters generated by the Belize River Watershed. Inundation and soil saturation is also expected contribute to further losses in subsistence agriculture as submerged crops and pasture lands will be destroyed, adversely affecting livestock.

River levels continue to rise near Burrell Boom, Double Run, Lord's Bank, Maypen, the PSWG International Airport, and the Haulover Bridge as water continues to be driven down river. This must be monitored as there is possibility for a breach in the highway system between Ladyville and Belize City.

As flood water infiltrate the wetlands surrounding Belize City it is expected for conditions in low lying areas in the city to worsen. The uptake of flood waters by the wetland systems also means that this water will naturally drain towards the coast and coastal lagoons. This increases the possibility for future interruptions along the Western Highway and possible undermining of highway infrastructure. Flood waters on the highways impede traffic and are expected to impact national productivity.

The flooding of the Belize River Watershed is also expected to further impact the New River Watershed resulting in continued rises in water level. The Rio Hondo in the Orange Walk District is also rising and further affects on the villages of Douglas, San Antonio, San Roman and San Victor is expected.

The treat of outbreaks of water and vector borne diseases should always be considered in conditions where water is allowed to pond and stand. Increased interaction between the affected population and this water increases the possibility for contamination.

A major concern for the communities impacted is one of food security and livelihoods as many individuals depend heavily on subsistence farming, cash crops and daily earnings, the combination flooded agricultural lands and total loss of subsistence crops along with the flooded access routes lends itself to a dire situation, these communities will need to be subsidized heavily with the basic food items until recovery can be implemented for the farm lands and road access can be restored.

B. NATIONAL RESPONSE

5. Administrative Measures

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6. Operations/Mobilization of Resources

Search and Rescue/Evacuations: A total of fourteen boats and nineteen vehicles have been deployed by NEMO to conduct search and rescue and evacuation activities. Shelters were opened to accommodate evacuees in some affected areas soon after the threat of flooding became a reality, and private entities and individuals have volunteered time and resources in assisting the persons impacted by the floods. Approximately 212 persons are in shelters staffed by some forty public officers.

Assessment: NEMO has activated the Damage Assessment and Needs Analysis Committee which is presently gathering and compiling information to aid relief/recovery efforts.

Distribution of Relief:NEMO and agencies such as the Red Cross and other private entities are involved in distributing relief supplies to the affected populace. Roughly 711 persons have received one week's worth of supplies from NEMO, including staples such as rice, milk and flour, cleaning agents (Clorox and soap powder), and personal items like pampers and sanitary napkins. The public at large has also contributed in cash or kind to disaster relief.

Allocation of Emergency Funds :The Prime Minister has announced an allocation of \$3.0 Million to the recovery effort, to be divided equally between relief to small farmers who have lost crops and livestock, street rehabilitation in municipalities, and repairs to highways and feeder roads. Monies, equipments and supplies have been mobilized from General Government Revenues and Assets to undertake; evacuations, relief efforts, feeding programs, movement of persons and livestock, damage assessment and shelter needs.

7. Constraints

At present the emergency response systems are coping with the management of the disaster, however the need for sustained medium to long term relief, up to 6 weeks will overwhelm the national capacities and alternatives for food supply will have to be found. The scope and magnitude of the recovery required for the entire affected regions; Toledo, Stann Creek, Cayo and Orange Walk Districts will be beyond the national capacity.

With the continued flood event on-folding in the Belize, Orange Walk and Corozal Districts it is anticipated that the needs for both relief and recovery supplies will escalate exponentially. Until the flood waters have peaked and start to abate the full extent of the impact is unknown.

8. Priority Needs

Relief Supplies

- **Food supplies and water:** At present over 1,300 families are being provided for with food supplies. This number is expected to increase significantly as the flood events propagate. The projections from the Meteorological Department is for flood conditions to prevail for up to 6 weeks, however even after flood the flood waters recede the subsistence livelihoods will be impacted for up to 3months. Food supplies and water will need to be secured to sustain these families in need (see annex 4 for projection of basic food items for 1family for 1 week).
- **Household items:** 336 homes have been flooded or destroyed by flood waters in the three regions, clothing, household items, personal effects have been destroyed.
- **Cleaning and sanitation kits:** 336 homes have been flooded or destroyed by flood waters in the three regions, prior to reoccupation these homes will need to be sanitized and cleaned.
- **Portable power washers:** to assist in adequately cleaning flooded homes.

Agricultural

- **Animal feed:** pasture lands and loss of grains threatens the sustainability of livestock. At present over 500 cattle and 20 horses in the Crooked Tree village are stranded on isolated islands.
- **Seeds:** in order to recover from the severe losses to crops, vegetables and grains, approximately 183,000 lbs of seeds are needed for the Cayo District, the need from the other affected areas will need to be assessed once ground surveys can be done.

Medical Supplies

- **Medical supplies:** Oral Re-hydration Salts (ORS), antipyretics, tetanus toxoide, anti-inflammatory drugs, anti-malaria drugs, and blood testing supplies.
- **Vector control interventions:** chlorination tablets, ULV spraying and larviciding.

Transportation

- **Boats:** an assessment of key crossing points within the Belize River Valley, along the New River and along the Rio Hondo needs to be conducted and vessels capable of securely transporting people, goods and services be sourced and deployed in an effort to return routine community actions to a level similar to pre flood conditions within as short a possible time period.

Housing

- Construction/rehabilitation supplies as sheetrock, plycem, plywood and timber will be required after the waters recede.

C. IN-COUNTRY INTERNATIONAL RESPONSE

The Government of Belize, through the Ministry of Foreign Affairs and Foreign Trade, has requested financial assistance from Embassies and international organizations resident in Belize, as well as from the host countries of Belize's Diplomatic Missions. The following commitments/contributions have been received to date:

(1) The Belize Red Cross Society has secured assistance from the International Federation of Red Cross and Red Crescent Societies (IFRC) and the United States Agency for International Development/Office for Disaster Assistance (USAID/OFDA) in the amounts of \$0.206 Million and \$0.10 Million BZ, respectively. These amounts, though approved, have not yet been received.

(2) The United Nations agencies have provided assistance in the form of 600 collapsible water bottles (UNICEF), medical supplies and technical assistance (PAHO), and transportation (UNDP). UNDP is also to confirm the provision of 105 butane gas tanks left over from the T. S. Arthur response, and \$0.04 Million US (\$0.08 Million BZ) for the purchase of emergency relief supplies including cleaning kits and mattresses.

Additionally, the Supreme Masters Ching Hai International Association of Costa Rica has provided \$21,000 BZ in food items to victims in Calla Creek and Bullet Tree Falls in western Cayo District.

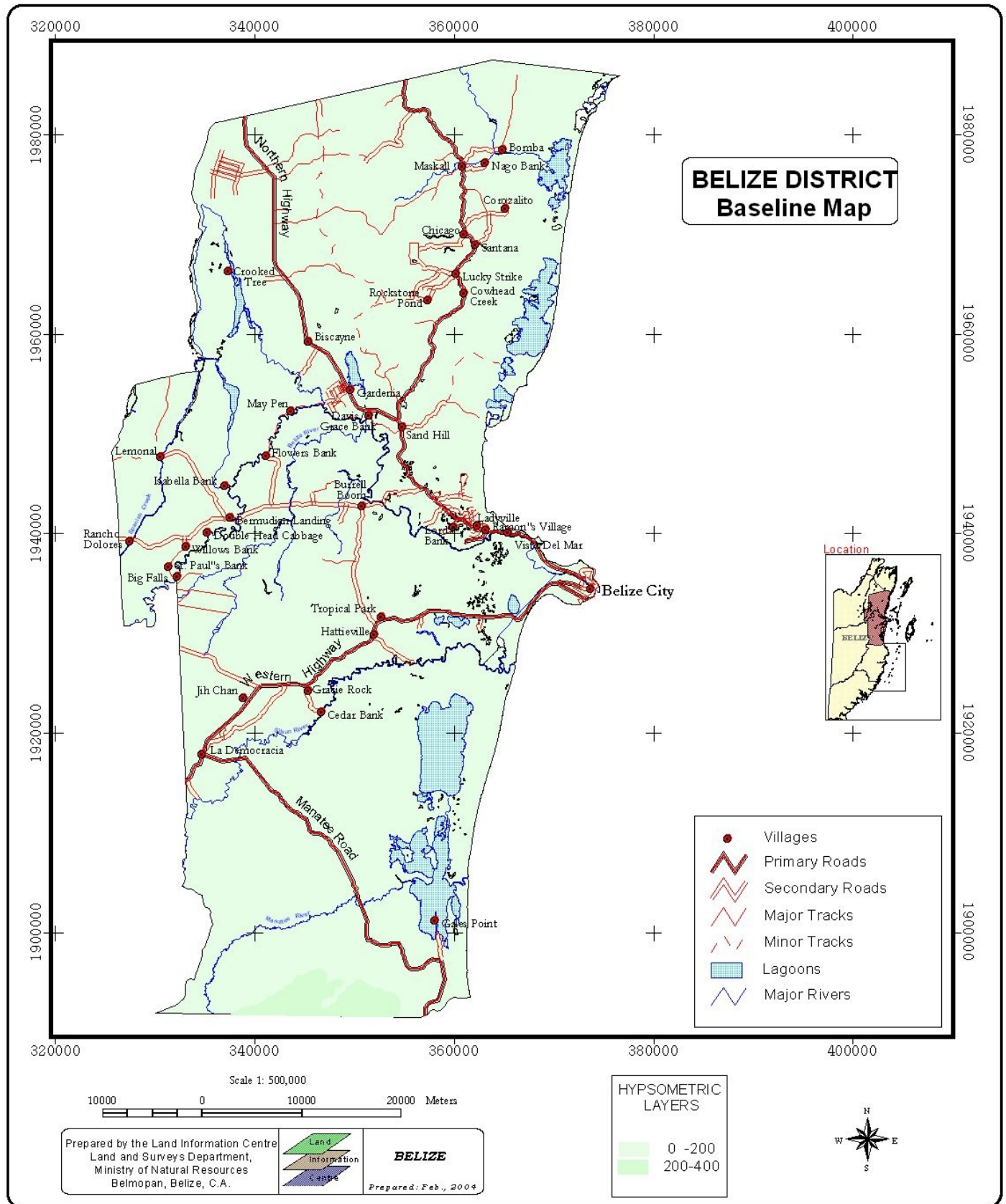
Table : Summary of Financial Assistance

ENTITY	PLEDGE/DONATION (BZ\$)	STATUS
International Federation of Red Cross and Red Crescent Societies	\$0.206 mn	Approved but pending
Pan-American Health Organization	Medical supplies and Technical Assistance	Received
Supreme Masters Ching Hai International Association – Costa Rica	\$21,000 in foodstuff (Calla Creek and Bullet Tree Falls)	Received
United Nations Development Program (UNDP)	Transportation support	Ongoing
	105 gas tanks	To be confirmed
	\$0.08 mn for mattresses and cleaning kits	To be confirmed
United Nations Children's Fund (UNICEF)	600 collapsible water bottles	Received
United States Agency International Development Fund/Organization for Development Assistance (USAID/OFDA)	\$0.1 mn	Approved but pending

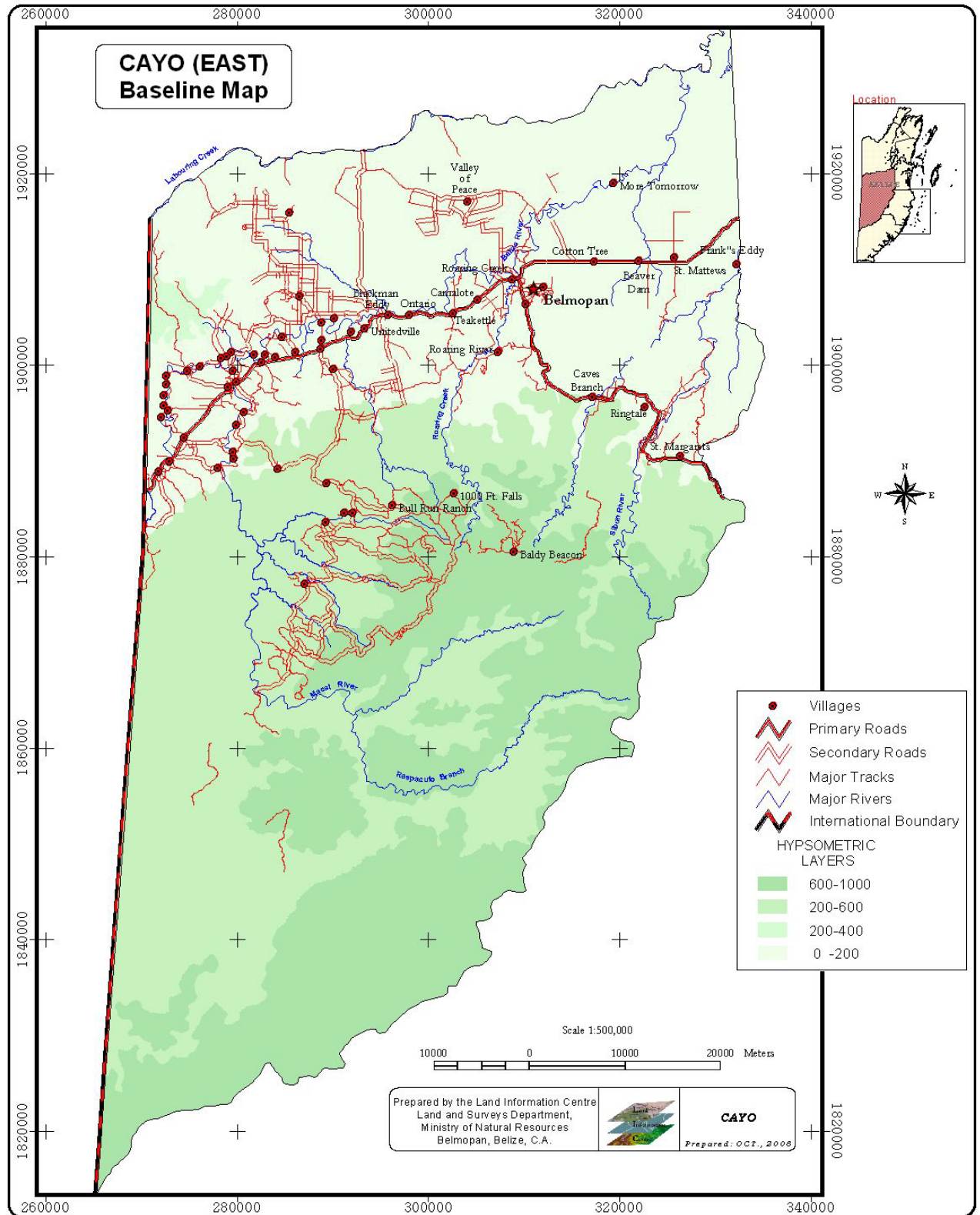
Source: NEMO Foreign Assistance Committee

This report is submitted to NEMO for its consideration and action.

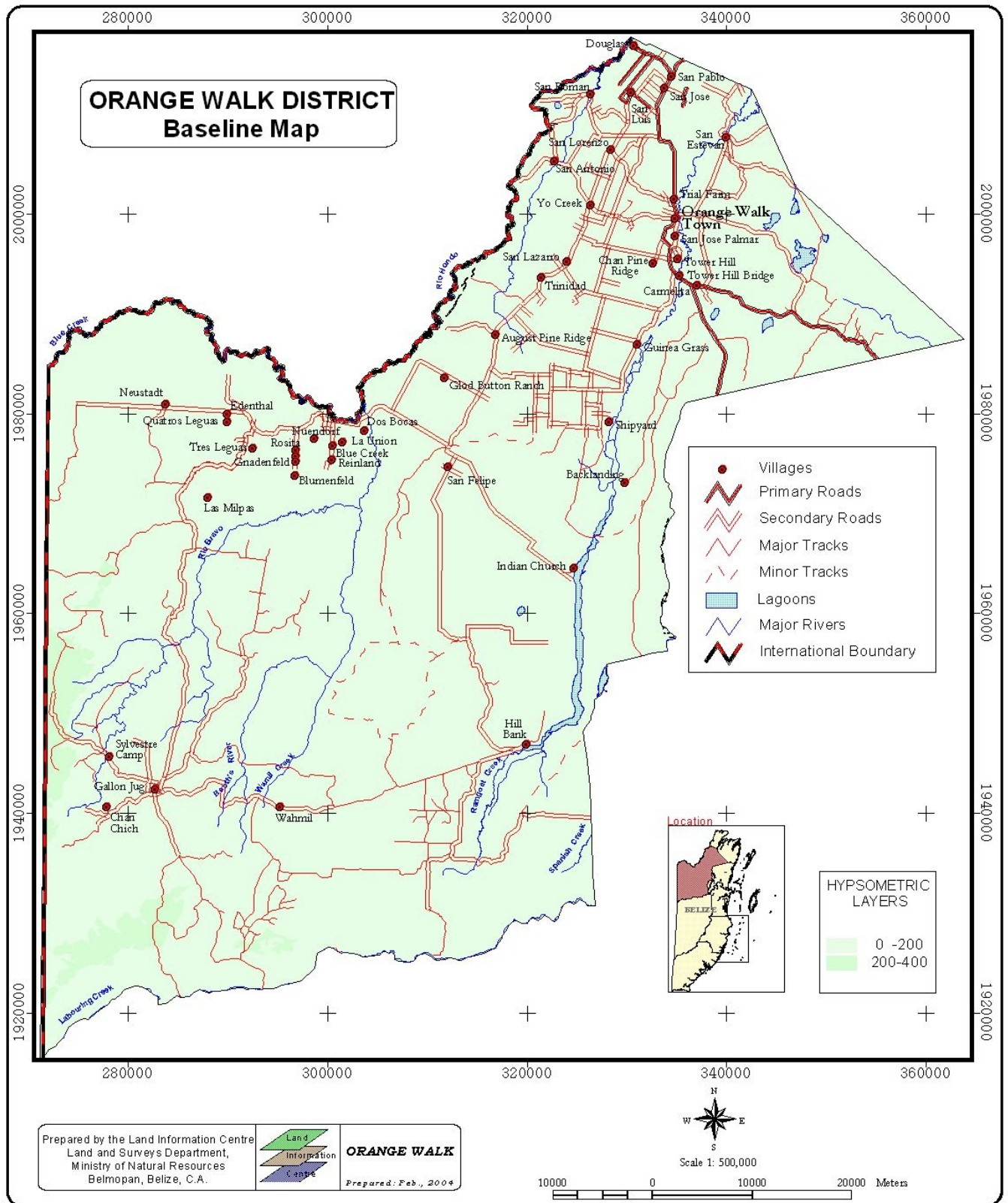
Annex 1: Belize District



Annex 2: eastern Cayo District



Annex 3: Orange Walk District



Annex 4: Basic Needs List (1 family of 5 persons for 1 week)

Summary Basic Food Items	
Item	Quantity
Flour	5lbs
Rice	5lbs
Sugar	5lbs
Beans (Kidney)	5lbs
Can Sausage	10 tins
Sardines	3 tins
Corned Beef	3 tins
Cheese	1lb
Ramen Noodles	10 packs
Shortening	1 can
Yeast	1 box
Baking Powder	1 tin
Salt	1 bag
Condensed Milk	3 cans
Powdered Milk	1 can
Peanut Butter	1 jar
Biscuits (Soda)	2 packs
Ovaltine/Coffee/Tea	1 jar/pack
Matches	2 boxes

Summary Hygiene Kits	
Item	Quantity
Bath Soap	2 bars
Toothpaste	1 tube
Toilet Paper	4 rolls
* Femle Sanitary Napkins	1 pack
*Diapers	1 pack
* as is required	

Summary Sanitation Kits	
Item	Quantity
Bleach	1 bottle
Soap Powder	1 bag
Chorination Tablets	13
Antiseptic	1 bottle

Projections are done for a family unit of five persons for 7 days supply

Source: DANA NEMO, adopted from District Emergency Management Cayo