

FINAL REPORT



International Federation of Red Cross and Red Crescent Societies
Fédération internationale des Sociétés de la Croix-Rouge et du Croissant-Rouge
Federación Internacional de Sociedades de la Cruz Roja y de la Media Luna Roja
الاتحاد الدولي لجمعيات الصليب الأحمر والهلال الأحمر

BELIZE: HURRICANE KEITH

30 August 2002

This Final Report is intended for reporting on emergency appeals

Appeal No. 29/2000

Launched on: 6 October 2000 for 4 months for CHF 1,260,502; extended to 8 months for CHF 1,828,287

Disaster Relief Emergency Fund (DREF) Allocated: CHF 120,000

Beneficiaries: 7,000

“At a glance”

Appeal coverage: 97.2%

Related Appeals: 01.49/2000 Caribbean

Summary/Update: The Disaster/Situation: The hurricane Keith operation was successfully completed through the implementation of relief, health, water and sanitation and capacity building components. In addition to distribution of food and hygiene parcels to over 38,750 beneficiaries, cleaning of 64 wells took place in affected communities, 150 latrines were repaired, 60 emergency water systems were set up for use in emergencies, vector control activities were carried out and a pilot project involved the construction of 20 composting latrines. Difficulties encountered included the need for improved reporting systems on the flow of relief goods and for standard use of beneficiary lists. The Belize Red Cross Society (BRCS) benefited from training in logistics procedures and telecommunications systems were improved. Through the hurricane Keith operation, the BRCS enhanced skills in disaster response, conducting a needs assessment, launching an appeal, receiving and distributing relief supplies, reporting on relief distribution, cleaning wells, constructing water tanks, building latrines and training community members.

Operational Developments:

Hurricane Keith battered Belize between 30 September and 2 October 2000, strengthening from a category 1 hurricane to a category 4 hurricane. Ambergris Caye and Caye Caulker were exposed to hurricane force winds for almost 24 hours and unprecedented amounts of rainfall fell over the Corozal, Orange Walk, Cayo and Belize districts, flooding vast stretches of farmland and communities, with almost an inch per hour of water falling during the period of highest intensity.

Hurricane Keith affected four districts: Corozal, Orange Walk, Cayo and Belize with a total population of over 125,000 people, of whom more than 57,000 people were affected. This represents 46% of the population of these districts and 23% of the nation's population. More than 5,000 persons were evacuated and 3,279 made homeless.

Red Cross and Red Crescent action w

All projects were successfully completed: 13,750 parcels were distributed to 6,750 needy beneficiaries, 64 wells were cleaned in 21 villages, 60 emergency water systems were established throughout the country, 150 latrines were repaired; 20 pilot composting latrines were built; 630 individuals received training in 30 Red Cross workshops in every district in the country; an enhanced telecommunications system was set up; 6 container/warehouses were weatherized; branch offices in Belmopan and Orange Walk received substantial upgrades; a new roof was erected at the National Society headquarters; and a professional video and booklet summarizing the activities was produced.

Red Cross and Red Crescent Society w

This operation relied on the strong working relationship with Belize Red Cross Society (BRCS) counterparts in order to implement all aspects of the operation. All activities undertaken “by the Federation” imply full involvement of the BRCS.

Objectives:

The objectives of the hurricane Keith operation as stated in the appeal are as follows: the main goal of the operation was to ensure the maintenance of the nutritional and health status of the most seriously affected populations in the target areas of Belize over a four month period (later extended to 8 months) by:

- Ensuring provision to the beneficiaries of basic relief items and food rations for a maximum of three months (October to December 2000).
- Contributing substantially to the maintenance of the health status of the target population for 8 months (October 2000 to May 2001).
- Contributing to the reinforcement of the operational capacity of the BRCS to prepare for response to and mitigation of disasters.
- The objectives below are project specific objectives which were developed after the submission of the appeal. They all support the main appeal objectives listed above.

Health and Trainingw

All health related projects for operation Keith were in the area of training, with the exception of vector control which will be covered in water and sanitation.

Objective 1: To minimize any negative impact on the health of inhabitants of affected areas due to flooding from hurricane Keith.

Objective 2: To provide community members and leaders with basic health and hygiene information and training materials in order to protect their health and prevent disease.

Objective 3: To provide follow-up training for the water and sanitation projects implemented in affected communities by the Federation in the areas of well cleaning; emergency water systems; latrine repair; and composting latrines.

Objective 4: To develop the capacity of the National Society to respond to disasters and emergencies in the future.

Training was an important component of the hurricane Keith operation. The following workshops were held during the 8 months of the operation:

1. Environmental sanitation and hygiene workshops (fourteen workshops for all 6 districts).
2. Community water safety and sanitation workshops (ten workshops for 20 communities).

3. National public health coordination meeting (one 2-day workshop for public health technicians and professionals).
4. Disaster assessment and needs analysis workshop (two 2-day workshops for National Emergency Management Office (NEMO) and Red Cross volunteers).
5. Management of relief supplies (four workshops for Red Cross and other disaster management personnel).
6. Project cycle management and ECHO workshop (2-day workshop for BRCS and the Federation).

Difficulties encountered in the area of training were as follows:

1. Participation was less than expected at some of the community based workshops that were co-hosted with the Ministry of Health (MoH). The BRCS has an active follow-up technique when hosting field trainings, but the MoH invitations tended to be issued late with no follow-up, thus a lower turnout than expected. Measures to counteract this were to discuss the problem with the MoH, which led to some improvement in participation.
2. Additionally, many of the field based trainings were well received by the community and left high expectations for future workshops. This positive response was encouraging for the BRCS, but also difficult given that current level of resources (personnel and other) make it unrealistic for follow-up of training to be carried out.

Water and Sanitation w

Objective 1: To clean 64 contaminated wells

Severe flooding caused by hurricane Keith contaminated many wells in rural Belize. In order to carry out cleaning of wells, OXFAM provided three submersible pumps and various supplies and funding, in addition to providing a public health engineer for one month. One of the problems encountered in this project was that the pumps that were ordered through OXFAM were submersible pumps designed to drain hand dug wells. It was later discovered that the majority of wells in Belize are bore holes, and not suitable for the OXFAM pumps. In order to go ahead with the cleaning, it was decided to clean the hand dug wells instead. This proved successful, as despite the government's significant investments in boreholes, most residents still preferred the water from the hand dug wells.

The BRCS took on the task of cleaning viable hand dug wells that would be used by the general public in future emergencies. The BRCS established two well cleaning teams to conduct the fieldwork. In total, 64 wells were cleaned in 21 villages - a process that involved pumping out the wells, removing any debris, and disinfecting the wells as the water returned to its natural level. This activity was very popular with villagers as it not only provided them with safe drinking water, but it was found that they were eager to learn more about well maintenance, water safety and sanitation.

Objective 2: To construct 60 emergency water systems

During the flooding, many villagers suffered from an acute shortage of safe drinking water. The BRCS responded by establishing an emergency water supply system for future floods (and droughts). This rainwater collection system is designed to enable residents in rural communities to collect rainwater drained from roofs into 660 gallon storage tanks. This water will be available to the communities as an alternative source of drinking water during emergencies. Under the activity, a total of 60 villages were selected, and each received two tanks. Each system was built on a reinforced concrete base, with a guttering system to drain the rainwater from the roofs into the tanks.

In the process of constructing these systems, two difficulties were encountered.

1. The project was designed to use voluntary community labour. However, this proved to be difficult because a certain level of construction experience was required in order to attain the necessary

quality; also, without a monetary incentive, it was difficult to ensure completion of the work in the limited time available. Therefore, it was necessary to include a USD 150 stipend per team for work that took approximately 5 days per system. Each team usually consisted of 3 people. This “stipend” was able to come directly out of the cost per system, which was estimated first at about USD 1,500, but later fell to \$1,300 due to discounts offered to the Red Cross.

2. Another difficulty was dealing with the delays caused by the nonstop rains and flooding that occurred after the hurricane. Many roads were still flooded just before the Christmas break. This greatly slowed the delivery of materials, the construction and the completion of the project anticipated for 31 March, thus resulting in the need for a programme extension.

Objective 3: To rehabilitate 150 latrines

Many latrines suffered considerable damage as a result of the hurricane. After an extensive survey, the BRCS undertook the repair of 150 of the most seriously damaged latrines in the villages of Douglas, Lemonal and Santa Cruz. All materials and supervision were supplied by the BRCS, while the reconstruction of the latrines was carried out by village volunteers to encourage community involvement.

One of the limiting factors encountered was a shortage of lumber by the suppliers. As is common during the dry season in Belize, much construction takes place, and lumber becomes scarce. This created a strain on the staff and construction teams to finish the work on time. Because of the limited time, each team was offered a USD 25 stipend if it finished the work according to specifications and within a 5-day period. This strategy was very effective, and 95% of all latrines were finished on time.

Objective 4: To build 20 composting latrines

The composting latrine project was a pilot project endorsed by the Ministry of Health. In a country prone to flooding, where the majority of the population lives in rural communities and rely on outdoor latrines, it is essential to public health that proper waste disposal is established. Today, even the “ventilated, improved, pit latrines” used in many parts are still subject to flooding and the subsequent contamination of drinking water. The composting latrines are regarded as flood-proof. Twenty above-ground composting latrines were constructed in two different flood prone communities (Douglas and Lemonal) in order to test their effectiveness, and monitor the compliance and cultural acceptance of this method. The families were carefully selected for this project and have been trained in how to use the new technology. There will be a one-year follow up to monitor the results and determine if such a project could be expanded in the future.

The design of the composting latrine ran into some trouble related to the high levels of humidity in Belize. As there is a mechanical baffle that will shift from one chamber to the next, concern over possible rusting required that protective coatings of fiberglass be applied. This led to an unforeseen increase in the cost of the construction of the composting latrines. However, this overrun was absorbed by other savings in the water and sanitation budget so that the overall water and sanitation budget line was not exceeded.

Objective 5: To prevent vector borne diseases due to post hurricane flooding

After the severe flooding associated with hurricane Keith, officials were concerned about the possible spread of vector borne diseases such as malaria and haemorrhagic dengue fever. Health officials wished to increase both the frequency and coverage of their normal fogging activities in order to prevent such a possibility. The BRCS assisted by purchasing essential and costly vector control chemicals (1,500 kg of Malathion for fogging; 250 kg of K-Othrine for house to house spraying; and 160 kg of Abate for stagnant waters) that were used in the government organized spraying program. As a result, no significant increase in vector borne diseases was reported.

In addition, the BRCS engaged in a special clean-up campaign in the western region of Belize, around Benque Viejo del Carmen, Succotz, and San Ignacio, bordering on Guatemala. Activities included indoor and outdoor spraying, clean up of mosquito breeding areas, and a community education campaign. All vector programmes were planned in coordination with the MoH and the Pan American Health Organization (PAHO).

Relief Distributions w

The main goal of the hurricane Keith relief operation was to maintain the nutritional and health status of the most seriously affected populations in the target areas of Belize by:

Objective 1: Ensuring the beneficiaries basic relief items and food rations

The day after the hurricane struck, the BRCS began distributing blankets, kitchen sets, hygiene kits and tarpaulins from disaster preparedness stocks supplied earlier by the Federation regional disaster preparedness programme funded by the Japanese Red Cross Society.

The National Society purchased and distributed 7,744 food and hygiene parcels to 3,720 beneficiaries in Belize District, Orange Walk District, and Belmopan between early October and mid November. The parcels consisted of flour, sugar, beans, rice, corned beef, vegetable oil, baking powder, toilet paper, toothpaste and soap.

Additionally, the BRCS distributed 1,656 mixed relief parcels to 8,280 vulnerable individuals in Belize City during October through March. Relief items for these parcels were donated by the local community and included food, clothing, blankets and hygiene supplies. An American Red Cross (ARC) shipment of 2,700 food parcels and 4,086 hygiene kits was received and distributed between mid November and mid December. After the distribution of ARC supplies, another 1,650 food parcels were distributed in the Orange Walk and Belize Districts from mid December to mid January. **In total, the BRC distributed 13,750 food parcels reaching an estimated 68,750 needy beneficiaries.** The distribution was facilitated with help from the Belize Audubon Society and Program for Belize.

Supplementary nutrition was provided by the BRCS to children who were indirectly affected by the hurricane through a donation of 5,000 lbs of powdered milk distributed to 50 primary schools during the first school term of 2001.

The BRCS also received 2 containers from the Honduran Red Cross filled with flour, rice, kitchen sets, blankets, and clothing. The German Red Cross dispatched 1,600 kitchen sets and water buckets. The Honduran and German donations were distributed as part of the operation.

Concerned Belizeans living in the USA sent cash and relief supplies to the BRCS to assist their families and friends back home.

Additionally, the BRCS responded to an urgent request by local subsistence farmers in Belmopan and the surrounding area by providing 52 families (360 individuals) in 9 communities with seeds and fertilizers so they would not lose a second crop due to hurricane Keith.

The difficulties encountered in the relief portion of the operation can be grouped into two interdependent areas: 1) weak documentation and reporting; and 2) limited number of Red Cross volunteers.

1. Weak Documentation and Reporting: One of the problems at the outset was that when the hurricane struck, stock reports of goods in the warehouses were not in place; nor were there uniform

beneficiary lists or stock reports after the initial emergency distributions. A relief delegate was assigned to the operation for one month and assisted BRCS counterparts in setting up the distributions. This was a considerable task as numbers of vulnerable and affected kept changing. However, once the lists were confirmed, the BRC volunteers handled the reporting thereafter. Training in this area was not adequate, and therefore reporting on relief supplies proved difficult and was one of the weakest points of the operation.

2.Limited Number of Red Cross Volunteers: This factor hindered the effective distribution and also the reporting on relief goods. The vast majority of Red Cross workers in Belize are unpaid volunteers who hold down full time jobs else where. Therefore, their time is limited. Thus, the record keeping was not as accurate as it should have been. Many beneficiary lists remained in the field for months after the distribution. Forms were filled out in non-standard ways, and distribution managers made their own decisions about how many parcels individuals should receive, contrary to instructions from headquarters.

To avoid such confusion in the future, the Federation ran 4 relief and logistics workshops focusing on the management of relief supplies. The BRCS received copies of all standard Federation logistics forms: stock cards, stock reports, waybills and beneficiary lists.

Logistics w

Objective 1: To provide support for all procurement according to Federation procedures

All procurement was the responsibility of the area of logistics. Standard Federation procurement procedures were followed at all times. Remaining assets turned over to the National Society include office furniture and household supplies (Office: 2 desktop computers and printers, 4 desks, 2 filing cabinets, 7 chairs, 1 bookshelf; Apartment: 3 beds, 1 table, 6 chairs, assorted linen, assorted cookware). All donated items are itemized in the final financial report and a gift certificate has been issued to the Belize Red Cross Society.

Objective 2: Management and maintenance of the delegation vehicle fleet

During the course of the 8 month operation, a total of 12 different vehicles were used: 3 National Society vehicles, 4 rental vehicles, 2 Federation vehicles on loan from the region, and 3 private vehicles belonging to Red Cross volunteers. However, at any given time, the operation benefited from only two or three cars. The operation was initially expected to last three months, but was subsequently extended to a total of 8 months. Therefore, the fleet was not permanent, and there was a need for rented vehicles. A Toyota land cruiser was purchased at the beginning of the operation in the name of the BRCS so no vehicular assets remained with the delegation to dispose of at the close of operation.

Objective 3: To receive, store, dispatch and report on all relief supplies

Many international containers arrived with relief supplies, and all had to be cleared through customs, unloaded in warehouses and dispatched to the field for distribution. Field distributions occurred on the same day the goods arrived. Therefore, no warehouses were used in the field. Only two central warehouses were used for this operation.

The only remaining relief supplies were 950 tarpaulins which were repositioned in district warehouses as part of the disaster preparedness stock. The reason this quantity was not distributed is that these tarpaulins were intended for the homeless on the barrier islands (Caye Caulker and Ambergris Caye) where the wind damage was worst. However, the government halted the distribution of tarpaulins. A decision was taken not to erect plastic sheeting, but to concentrate on rebuilding as quickly as possible.

Shelter w

With the exception of 300 tarpaulins which were distributed in the Cayes, the Red Cross was not involved in erecting emergency shelters. BRCS volunteers did, however, provide health related services in the government run emergency shelters.

Telecommunications w***Objective 1: To enhance the existing telecommunications system of the BRCS***

The existing telecommunications system was expanded by the installation of 6 VHF base stations, 6 VHF mobile stations, 1 repeater station, and 1 HF station. This equipment will enhance the BRCS' communication with its branches especially during emergencies. The regional telecommunications delegate paid a preliminary visit to Belize to assess what type of equipment would be needed. The equipment was later purchased in Miami and installed by the delegate and a local firm (Tenchtronics).

There were some difficulties in initially operating the system as it was discovered that the cable to the main antenna in Pine Ridge Mountains had been severed in an accident. That cable was later replaced by Tenchtronics and the situation was rectified. Other difficulties were weather related as the installation took place in November when there was still considerable rain and flooding.

During the last year, under changing administrations of the BRCS, the weekly radio checks once initiated by headquarters to its branches ceased. This led to a lack of knowledge of how to use the equipment which affects response during an emergency. The BRCS is in agreement of the need to restart the weekly radio checks.

National Society Capacity Building w

The Belize Red Cross Society is a well respected organization in Belize with strong support from the public, private and governmental sectors. The National Society has some capacity to generate its own funds, when needed, and relies largely on the spirit of volunteerism to achieve its work. The BRCS has potential, but without more funding, this cannot be realized.

Through the hurricane Keith operation, the BRCS improved skills in disaster response, conducting a needs assessment, launching an appeal, receiving and distributing relief supplies, reporting on relief distribution, cleaning wells, constructing water tanks, building latrines and training community members.

The Belize Red Cross Society developed its capacity as a result of hurricane Keith without a doubt. However, left behind after 8 months of operation in Belize are pieces of random "capacity development" dictated by the nature of the operation. Some of the trained staff cannot be retained by the BRC when the Federation closes its operation.

Real "capacity development" has to be insitutionalized within the organization, secured beyond the length of the disaster. For Belize this means a commitment to developing key, full time, salaried staff at headquarters that can dedicate their time and energy toward the further development of the organization.

Coordination

As mentioned above, the Belize Red Cross Society was fully involved in all aspects of the hurricane Keith operation.

In terms of coordinating with other organizations, in the early phases the Federation was attending regular coordination meetings for the distribution of relief supplies. With regard to all water and sanitation projects and health training, the Federation cooperated closely with the Ministry of Health. One of the major accomplishments of the training activities was the holding of a water and sanitation coordination meeting, gathering professionals and technicians in the field.

For further details please contact: Leon Prop, Phone: 41 22 730 4258; Fax: 41 22 733 03 95; email: prop@ifrc.org

All International Federation Operations seek to adhere to the Code of Conduct and are committed to the Humanitarian Charter and Minimum Standards in Disaster Response (SPHERE Project) in delivering assistance to the most vulnerable.

For support to or for further information concerning Federation operations in this or other countries, please access the Federation website at <http://www.ifrc.org>.

This operation sought to administer to the immediate requirements of the victims of this disaster. Subsequent operations to promote sustainable development or long-term capacity building will require additional support, and these programmes are outlined on the Federation's website.

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INTERNATIONAL FEDERATION OF RED CROSS AND RED CRESCENT SOCIETIES

Interim report	
Annual report	
Final report	X

Appeal No & title: 29/2000 Belize Hurricane Keith
Period: years 2000, 2001, 2002 up to July
Project(s): PBZ503
Currency: CHF

I - CONSOLIDATED RESPONSE TO APPEAL

FUNDING	CASH		KIND & SERVICES		TOTAL INCOME
	Contributions		Goods/Services	Personnel	
Appeal budget	1,828,287				
less					
Cash brought forward					
TOTAL ASSISTANCE SOUGHT	1,828,287				
<u>Contributions from Donors</u>					
Canadian Government (DGCA)	53,907				53,907
DFID - British Government (DFID)	249,902				249,902
ECHO/Belize Floods (DEBZ01)	673,118				673,118
German Red Cross (DNDE)	5,698				5,698
Icelandic Red Cross (DNIS)	8,043				8,043
Irish Government (DGIE)	183,385				183,385
Japanese Red Cross (DNJP)	67,000				67,000
Monaco Red Cross (DNMC)	4,586				4,586
OXFAM (DM02)	46,429				46,429
Swiss Government (DGCH)	88,875				88,875
United States - Private Donors (D)	177				177
Norway				10,513	10,513
Oxfam				87,159	87,159
Spain				14,291	14,291
Sweden				13,634	13,634
Germany			113,960		113,960
TOTAL	1,381,119		113,960	125,597	1,620,676

II - Balance of funds

Opening balance	
CASH INCOME Rcv'd	1,381,119
CASH EXPENDITURE	-1,368,492

CASH BALANCE	12,627

Appeal No & title: 29/2000 Belize Hurricane Keith

Period: years 2000, 2001, 2002 up to July

Project(s): PBZ503

Currency: CHF

III - Budget analysis / Breakdown of expenditures

Description	Appeal Budget	CASH Expenditures	KIND & SERVICES		TOTAL Expenditures	Variance
			Goods/services	Personnel		
<u>SUPPLIES</u>						
Shelter & Construction	369,630	340,095			340,095	29,535
Clothing & Textiles						
Food/Seeds	218,154	76,402			76,402	141,752
Water	158,720	80,859			80,859	77,861
Medical & First Aid	46,700	48,035			48,035	-1,335
Teaching materials	2,125	12,696			12,696	-10,571
Utensils & Tools	100,896	2,804	113,960		116,764	-15,868
Other relief supplies	42,574	7,294			7,294	35,280
Sub-Total	938,799	568,184	113,960		682,144	256,655
<u>CAPITAL EXPENSES</u>						
Land & Buildings		52,286			52,286	-52,286
Vehicles	49,000	49,001			49,001	-1
Computers & Telecom equip.	4,160	4,154			4,154	6
Medical equipment						
Other capital expenditures	13,000	15,559			15,559	-2,559
Sub-Total	66,160	121,000			121,000	-54,840
<u>TRANSPORT & STORAGE</u>	56,465	138,775			138,775	-82,310
Sub-Total	56,465	138,775			138,775	-82,310
<u>PERSONNEL</u>						
Personnel (delegates)	244,480	111,361		125,597	236,958	7,522
Personnel (local staff)	227,764	149,157			149,157	78,607
Training						
Sub-Total	472,244	260,518		125,597	386,115	86,129
<u>GENERAL & ADMINISTRATION</u>						
Assessment/Monitoring/experts		5,405			5,405	-5,405
Travel & related expenses	19,220	33,401			33,401	-14,181
Information expenses	35,953	54,660			54,660	-18,707
Administrative expenses	38,335	57,653			57,653	-19,318
External workshops & Seminars		23,504			23,504	-23,504
Sub-Total	93,508	174,622			174,622	-81,114
<u>PROGRAMME SUPPORT</u>						
Programme management	123,281	64,598			64,598	58,683
Technical services	36,904	19,341			19,341	17,563
Professional services	40,926	21,455			21,455	19,471
Sub-Total	201,111	105,393			105,393	95,718
Operational provisions						
Transfers to National Societies						
TOTAL BUDGET	1,828,287	1,368,492	113,960	125,597	1,608,049	220,238