2. Introduction

This report concerns CARE's humanitarian response to the effects of Tropical Storm Jeanne in NW Haiti of 18th. September 2004 which caused up to four metre high flash floods, landslides and the subsequent up to 4 metre inundation of Gonaives, Port de Paix, Basin-Bleu and Chansholme towns with mud depositing flood waters.

The Terms of Reference (presented in **Annex A**) required that, *inter alia,* the Team should evaluate the success of the Flood Operation against both classical evaluation criteria and international performance standards. It should also develop recommendations to assist CARE to understand/improve its early warning, emergency preparedness and response capacities.

The study was carried out between 14th February and 15th March by:
John Wilding, an agricultural economist with a wide experience of Relief and Development issues in Africa and Asia
Jacqueline Wood, a development specialist with a background in Africa and Haiti and a knowledge of CARE's international network.
Yves-Laurent Régis, an agronomist with a long experience in rural assessment, local development, partnering and currently employed as CARE Haiti's Monitoring & Evaluation Coordinator.

This report was prepared with financial assistance from CARE. The views expressed herein are those of the consultants and do not represent any official view of CARE.

3. Methodology

The consultants undertook Document Review, made Field visits and Observations and held discussions with WFP, USAID, International agencies, NGOs and CBOs as well as carrying out participatory Semi-structured Interviews with Key Informants, Focus Groups and households.

Information was triangulated with the different respondents and a very short[14] ZOPP participatory problem/solution analysis workshop was held with a representative cross-section of CARE staff in Gonaives. In the same session, a short SWOT analysis was undertaken and the staff asked to add more indicators and sources to those which the Team had already suggested.

A chronology[15] was recorded by the team with the assistance of two CARE staff.

The Team established an ex- post Logical Framework[16] from available documents and particularly from proposals to donors and, drawing a Planned/Achieved matrix[17] from this, performance was assessed according to the various DAC evaluation criteria using those indicators and sources[18] indicated in the LogFrame. [19]

Findings were presented to CARE senior management in Port au Prince and feed-back gathered.

In gathering information and particularly in writing up the report, both CARE and the Team were aware of the shortage of accurate data both in terms of planned and achieved results. This is quite clear in the LogFrame and associated matrix. While understanding the work pressures on its staff, it

[14] There was only time for a four-hour session.
[15] See **Section 4** (Background) below.
[16] See **Annexe B.**
[17] See **Annexe C.**
[18] These were not exhaustive.
[19] See **Annexe K.** (Planning and Evaluation methodology).

would be useful if CARE could fill these gaps (as and when final reports are completed) in order to make this a more comprehensive report.

4. Background

At 20.00 hours on Wednesday 15th.September 2004, Tropical Storm Jeanne was located at 17.8 degrees North/65.8 degrees West to the South-east of Puerto Rico and was moving slowly along the Northern coast of the Dominican Republic by the morning of Friday 17th when warnings of flooding were issued for the North East, North and North West of Haiti but not for the Gonaives area.

By the morning of Saturday 18th September, and still only moving at about four knots, the storm clouds associated with Jeanne were rising above the northern land mass of Haiti and, between 12.30 and 17.30, deposited some 261 mm[20] of rainfall over the water-shed to the North of Gonaives.[21] This level of precipitation (nearly half the average annual[22]) is exceptional and caused by the facts that:

- the hurricane had moved so slowly that it had gathered an inordinate amount of energy and moisture from the warm open water to the East; and
- the resultant storm clouds passed (and almost stopped) over the warm land mass which, by virtue of its height and the effects of convection, pushed them up to an altitude at which precipitation was initiated.

The consequent massive flow of water down onto the low lying basin of Gonaives, surrounded on three sides by the high land mass, then became a matter of time. While the flows of water were unavoidable, their destructive forces were not helped by the facts that:

- the slopes of the land mass are steep, denuded of all vegetation and already subject to gulley erosion;
- rivers, streams, drainage ditches and canals were not maintained and already full of household and industrial debris; and
- tides were high and coastal water levels raised by the effects of the cyclone.

Mud slides became inevitable, flood waters carried large volumes of suspended clay material, un-maintained protective river banks were breached and, with the sudden slowdown of water flows in the basin and particularly in the town, large quantities of mud were precipitated.

While the meteorological circumstances had never been experienced in living memory and were, in legal terms, likely to have been an 'Act of God' (ie. a statistically unlikely to happen), the level of destruction was higher than it would have been if environmental practices and human behaviour had been different over the previous century.

A time-line of events is presented in **Annexe J.** (Chronology) below and a more detailed (personal) account of what happened between 17th September and 3rd October 200 on the ground in Gonaives is presented in **Annexe K.** (Detailed chronology of activities).

[20] Recorded at Ennery.
[21] **Georges.J.B.** *Inondations a Gonaives – Diagnostic et actions a court terme,* Beta Ingenieurs-Conseils, Haiti, Oct.'04
[22] Average annual rainfall at Gonaives is 550 mm.