



# Environmental Health Newsletter

**Summer 2006**

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## HEALTH UNIT EH TEAM

**Christophe Nouvet**  
Acting Senior  
Technical Advisor  
christophen@theirc.org

**Ben Harvey**  
Regional Technical  
Advisor  
benh@theirc.org

**Frank Broadhurst**  
Technical Advisor  
franklinb@theirc.org

**Anne Abbott**  
Program Manager  
annea@theirc.org

## SANITATION IS EVERYBODY'S BUSINESS

### HYGIENE PROMOTION USING COMMUNITY RADIO STATIONS IN LIBERIA

BY: JAMES KAHIA, ENVIRONMENTAL  
HEALTH COORDINATOR, LIBERIA

The use of radio as a hygiene promotion communication strategy was conceived to take advantage of the apparently high radio audience in Liberia; a social characteristic occurring due to the protracted conflict era used to keep abreast of security situations and currently a highly popular mode of information sharing, leisure and recreation. The radio medium was considered a more cost-effective strategy compared to the already established modes i.e. billboards, posters fliers, and public performances. Its entry provided the much needed optimization of the hygiene promotion communication strategy using a media mix that reinforced each other. IRC-Liberia started using radio as a communication strategy for hygiene promotion in August 2005.

Four key hygiene practices namely: **proper hand washing; protection of drinking water from contamination; protection of food from faecal contamination; and safe disposal of human faeces** are promoted using radio drama, talk shows, guest interviews and catchy jingles. Instrumental tracks were produced by Bill Timothy who is a talented and trained music producer and the IRC's hygiene promotion officer based in Nimba County. The instrumental tracks were blended with lyrics of the popular 'Liberian English' and local dialects to make catchy jingles. The currently most popular songs, especially among children, include 'Sanitation is everybody's business' and 'Stop toiletting in the bushes'.

Radio programs are delivered through community FM stations using English and local dialects. The standard package includes jingles played during prime-time periods—especially before news bulletins; 15-minute talk-shows including live-session recordings from schools

where children discuss hygiene practices and a radio drama where 2 or 3 people voice recordings are modified using studio techniques to simulate large crowds. Currently, certain community FM stations have adopted the jingle 'Sanitation is everybody's business' as a signature tune before news bulletins.

The radio programs strategy was based on the standard approach of running a communication program in



*Locally made soap being sold at the market, Liberia*

'phases' with gap 'phases' with gaps between each phase to review and adapt content. Thus, enabling evaluation of the reach of the messages, its content, and the targeted audience's understanding and interpretation are possible. In February 2006 revisions were made to the earlier phase including:

- Improving program listenership (loyalty) by including quizzes and prizes.
- Inclusion of call-in sessions using mobile phones to increase interactivity with targeted audiences.

Findings from a listenership survey conducted in April 2006 confirmed the high levels of radio listenership with 67% of the respondents were regular radio listeners and in particular 63% of the respondents said they listened to IRC's hygiene promotion messages.

**Our lessons from this experience are:**

- Messages properly crafted and delivered can be highly memorable.
- Radio messaging requires high saturation implying repetitive messaging innovatively presented to affect behavior change.

**Our next steps:**

- Continue to build on this success to diversify and expand the radio-based hygiene promotion programs with new materials such as inclusion of local personalities (e.g. town chiefs, community hygiene promoter, and teachers as guest co-presenters/speakers) with a view to draw on the goodwill that they command to influence hygiene behavior change. The preparation of a new series is already underway with the theme "water is life .....sanitation is a way of life."
- To contribute to solutions for long-term financing of radio messaging, IRC-Liberia is considering pursuing co-sponsorships with local hygiene product manufacturers (soap, chlorine solutions) for the radio programs. Metrics from the just concluded listenership surveys conducted in Nimba in April 2006, confirming high levels of radio listenership (67%) and in particular IRC's hygiene messages (63%), will be used to interest manufacturers to advertise to this 'captive' audience for increased market penetration while at the same time providing the much needed continual financing.



*Poster advertising the local radio station in Nimba*

## GIS AND HUMANITARIAN EMERGENCIES

BY: BEHAR HUSSEIN, GIS COORDINATOR, ETHIOPIA

Since the 1990s, geographic information systems (GIS), global positioning systems and remote sensing have been increasingly used in a variety of sectors, including humanitarian emergencies. Recent areas of application of GIS methods in humanitarian emergencies include risk, hazard, and vulnerability assessments; rapid assessment and survey methods; disease distribution and outbreak investigations; planning and implementation of sector information systems; data and program integration; and program monitoring and evaluation.

The main purpose of GIS is to provide maps for decision-making and advocacy. It allows decision-makers to connect information that might not normally be linked. GIS is also used to improve data collection in the field, for example, for rapid water and sanitation, health and education assessments or surveys.

### GIS in Ethiopia

In 2003, geographic information systems were introduced as a supporting component for IRC Ethiopia's emergency water and sanitation program. At that time, IRC used GIS to map potential sources of groundwater for an emergency water intervention in West Haraaghe. Since then, IRC has used GIS to strengthen its analysis of a number of its programs. GIS was used to map and analyze service delivery in Eritrean and Sudanese refugee camps. In 2004 and 2005, IRC used GIS to select sites for its Alternative Basic Education centers. In 2006,

GIS was used to map the location and by extension, coordinate the activities of OFDA and USAID-funded NGO projects in Ethiopia.

**Why do we use GIS?**

*Mapping location of features*



Mapping the location of geographical or human features of a specific area using GIS allows organizations to identify the targeted characteristics and determine where and what type of further action is required.

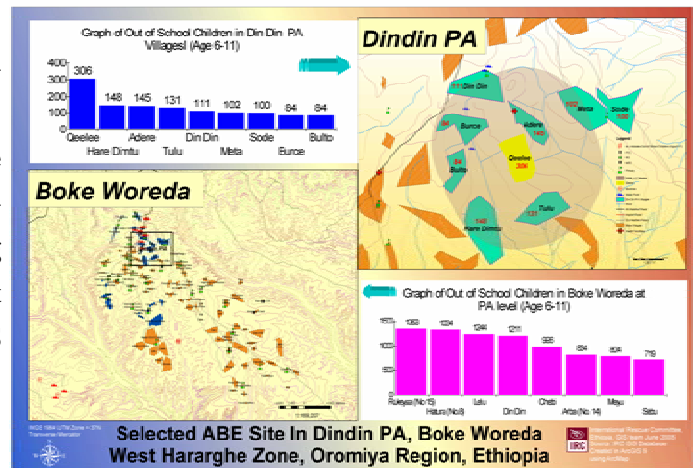
The map on the left shows the location and type of USAID/OFDA funded interventions. The IRC Ethiopia GIS unit created this map to assist in the coordination of the efforts of various agencies country-wide.

*Mapping quantities of features*

GIS mapping can also be used to show the quantity of geographical or human features of a specific area. This allows organizations to determine which areas meet their criteria for action as well as to see the relationships between activities or areas. Mapping quantities provides additional infor-

mation beyond simply mapping the locations of features.

The map on the right shows the number of out-of-school children between the ages of six and eleven years in one IRC intervention area. The purpose of the map was to facilitate the selection of Alternative Basic Education center sites, by determining which areas had the greatest number of out-of-school children located the farthest from existing schools. It was created by the IRC Ethiopia GIS unit for a project aimed at combating the worst forms of child labor, funded by the US Department of Labor.

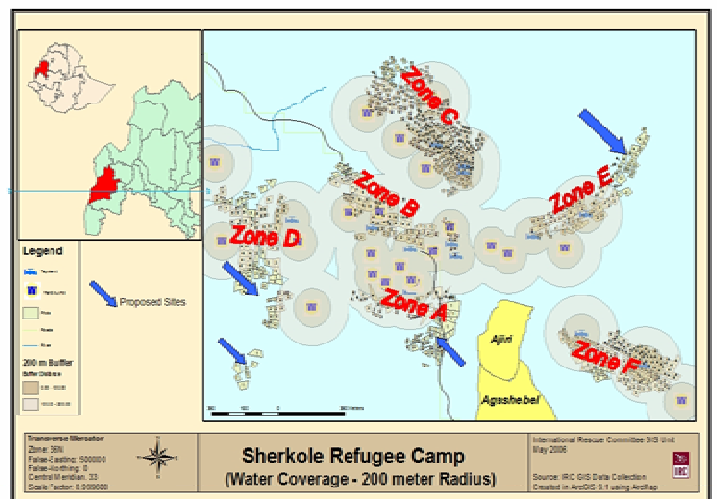


*Map service coverage*

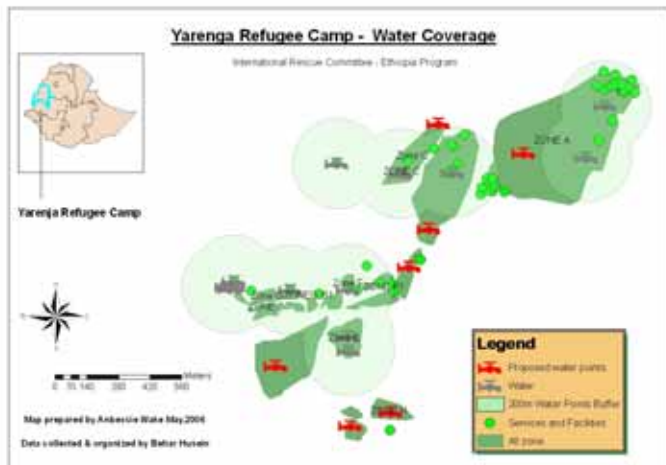
GIS mapping can be used to monitor ongoing projects and activities by showing their coverage of a targeted geographical area.

For example, mapping can be used to determine whether the coverage of a water and sanitation project meets the predetermined standard for access. If gaps in coverage are identified, the team can then recommend additional water schemes. The GIS map on the right shows the Sherkole refugee camp, the water coverage in the camp within a buffer distance of 100 and 200 meters, and proposes additional water point sites.

As the leading expert in GIS in Ethiopia, IRC Ethiopia hosted a five-day GIS workshop in May 2006. Participants included IRC staff from Uganda, Sudan, and Ethiopia, staff from the regional IRC Ethiopia offices, and representatives from World Vision Ethiopia and CARE Ethiopia. the production of useful outputs, including maps.



The workshop focused on ensuring the accurate collection of data using GPS, data entry using the ArcGIS computer program, simple geospatial analysis of the collected data, and the production of useful outputs, including maps. The map below left was produced at the end of the training by workshop attendee Anbessie Wake, IRC Logistics Coordinator. The photograph below right shows the training participants hard at work.



## BEN HARVEY'S TRIP REPORTS

### THAILAND, INDONESIA, & LIBERIA

#### Ben Harvey's Technical Visit to Thailand, Indonesia and Liberia

Ben Harvey, EH Regional Technical Advisor, has had a very busy 2006 so far- already having made three technical visits to Thailand, Indonesia and Liberia and a trip to the UK to meet with EH kit suppliers! See below for a summary of findings from his trips.

#### **THAILAND**

Ben briefly visited the IRC Thailand program for two weeks during February 2006. The main objectives of the technical support trip were to visit all of the refugee programs on the Thai-Burma border (Tham Hin, Mae Sot and Mae Hong Song) and provide guidance and training.

In Tham Hin and Mae Hong Son camps, training was provided to the environmental health teams (in particular in Tham Hin where a new water treatment facility is being installed). As part of the training, focus groups and a household survey were carried out to investigate hygiene practices (safe household water management, handwashing and latrine cleanliness). At the same time, water quality samples were taken from taps and adjacent households to investigate post delivery contamination from poor water handling.



*Coagulation / Flocculation Training with Water System Operators*

In Mae Sot, a limited amount of time restricted investigations to a convenience sample comparing migrant worker community per capita water consumption, latrine coverage and handwashing practice to data collected by Franklin Broadhurst two years earlier. Finally, the IRC supported Mae Tao Clinic was also visited and a full infrastructure assessment was carried out resulting in a large number suggestions for improving the water and sanitation systems.

## INDONESIA

Ben visited the IRC Aceh program for two weeks during the end of February 2006. The main objective of the technical support trip was to present and facilitate at the IRC Aceh National Environmental Health Conference. This was the first conference of its kind held in



*IRC Supported Barracks – Indonesia, February 2006*

Aceh and was designed to improve participants skills in preparing, conducting and analyzing qualitative and quantitative assessments and give the EH team understanding of how to use survey information to design, monitor and evaluate projects within the overall EH strategy for Aceh. The conference also included participative training on water quality testing (introduction to water quality, practical use of the DelAgua and Hach kits, setting up of surveillance system) and EH surveying methodology (random, systematic random, spatial, cluster and KAP surveying methods including calculation of sample sizes, confidence intervals, precisions, and analysis).

Following the Conference, the EH Advisor visited some of the field sites and gave on the job training to the EH team through the design of a water distribution network for Calang Town. Simple water treatment systems were also developed to remove iron and manganese in groundwater around Aceh. Several days were also spent in the IRC supported barracks undertaking an investigation into household water quality in particularly 'post treatment contamination' of boiled water through poor water handling.

## UK EMERGENCY SUPPLIERS VISIT

Ben visited the IRC's main EH kit suppliers EvenProducts, PumpSets and ButylProducts during the last week of March 2006. The main objectives of the trip were to feedback comments from the recent completed IRC EH kits evaluation survey, to review available kits in terms of quality and completeness and collect sufficient information to begin the formulation of technical specifications for the forthcoming preferred supplier competitive bidding RFP.

At length discussions were held with the Directors of the three EH kit suppliers concerning the variety and limitations of water storage, treatment, pumping and distribution kits. Also the development of a number of new kits was also discussed (a replacement for the suction-side doser, an emergency hygiene promotion 'in a box' kit and an EH workers kit for water system operators, vector control staff, solid waste collectors). It is planned that the IRC logistical catalogue will be updated to incorporate a number of recommendations coming from these discussions in the near future.

## LIBERIA

Ben visited the IRC Liberia program for two weeks during end April 2006. The main objectives of the technical support trip were to build capacity of the 36 EH team members during a five day mini-conference and also to carry out a full internal evaluation of two recently finished EH Grants (EC168 and SV228) in Nimba County.

The evaluation was carried out from 26th April to 1st May 2006. The main objectives of the evaluation were to measure whether the major goals and objectives had been achieved and to look at ways that programming could be improved. Thirsty clusters from



*IRC School Latrine Block – Liberia May 2006*

the combined EC168 and SV228 grant project catchment areas were selected randomly on the basis of probability proportional to size. Over a six day period data was collected from a total of 672 households (10.4% of the total population) and a total of 44 water points and 5 VIP institutional latrine blocks were assessed using infrastructure and water quality checklists. These correspond to 20% and 13% samples of the total number of wells and VIP latrine blocks constructed by IRC under the EC and SV grants. Key informants (Town Chief, Water Committee Members, School Principals etc.) were interviewed at all clusters and extensive focus groups were conducted. Recommendations have been made on technical, programmatic and strategic issues and it is planned to share the evaluation report with donors.

## EMERGENCY ENVIRONMENTAL HEALTH SURVEY

### JAVA ISLAND, INDONESIA

FRANK BROADHURST, EH TECHNICAL ADVISOR

In the early morning hours of Saturday, May 27, 2006, an earthquake measuring 6.3 on the Richter scale struck Indonesia's Java Island. Centered close to Indonesia's ancient city of Yogyakarta, the quake lasted for several minutes and was felt in towns and villages more than 60 kilometers away. Estimates indicate that more than 6,000 people were killed, over 20,000 injured and 650,000 displaced.

As a representative of the International Rescue Committee, the former Environmental Health Senior Technical Advisor, Frank Broadhurst, deployed to Indonesia to assist with an Emergency Environmental Health Survey. Below, you will find his memorandum of findings, as well as the questionnaire used and photographs of the destruction.



*Debris post-earthquake. Bantul District, Java Island, May 2007*

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Memorandum for: CARDI Field Coordinator and Environmental Health Manager  
(Yogyakarta, Indonesia)

CC: Key Water and Sanitation Stakeholders Responding to Java Earthquake

From: Franklin Broadhurst (CARDI)

Subject: Results of an Environmental Health Household Survey in Berbah and Pundong Sub-Districts

Date: 12 June 2006

### 1. Background:

The purpose of this report is to detail the results of a household survey undertaken in Berbah and Pundong sub-districts on 9 June 2006.

In response to this earthquake, CARDI (Consortium for Assistance and Recovery toward Development in Indonesia) is working in seven villages in Berbah and Pundong sub-districts in the sectors of environmental health, shelter and NFIs. Based on earlier rapid assessments, the primary environmental health intervention is sanitation with complementary hygiene promotion.

The objectives of this survey were:

- to confirm the key environmental health interventions selected for this response;
- to fine tune those interventions in both the short- and long-term and
- to establish baseline information for performance measurements.

### 2. Methodology:

Ten sub-villages were randomly selected for the survey using probability-proportional-to-size (PPS) sampling. These sub-villages were selected from a list of the seven villages and 115 sub-villages which CARDI is targeting. Village leaders were notified two-days in advance of the survey and were asked to provide a local guide for the surveyor. Within each sub-village, households were selected using systematic random sampling. The aim was a sample size of 200 households (20 per sub-village). The following sub-villages were selected:

Table 1 (Sub-villages Selected for Survey)

| District | Sub-District | Village      | Sub-Village  |
|----------|--------------|--------------|--------------|
| Sleman   | Berbah       | Tegaltirto   | Tlogowono    |
|          |              | Jogotirto    | Jragung      |
|          |              |              | Kranggan II  |
|          |              | Sendangtirto | Krangasem    |
|          |              | Kalitirto    | Mangunan     |
| Bantul   | Pundong      | Srihardono   | Candi        |
|          |              |              | Nangsri      |
|          |              | Panjangrejo  | Jampit       |
|          |              |              | Nglorong     |
|          |              | Seloharjo    | Derma Jurang |

A household questionnaire was developed with input from the Emergency Health Coordinator, the Emergency Preparedness and Response Unit (specifically, the rapid assessment tools), the IRC New York Children's Unit and the CARDI Livelihoods sector. The resulting questionnaire used for the household interview is shown in appendix 1. The surveyors consisted of ten college students from Yogyakarta. Training for 15 students was conducted on 8 June. Based on training evaluations, ten of these students were selected to conduct the survey. The survey was conducted on 9 June 2006. Interviews were conducted in 193 households. Data entry and analysis was conducted on 10 June 2006 using MS Excel.

### 3. Results:

Key findings of the assessment are as follows:

- a. Average household size: 5.6 people/household
- b. Unaccompanied minors: 4% of the population
- c. Water consumption: 29 liters/person/day
- d. Collect water from personal well: 76% of households
- e. Collect water from a neighbor's well: 16% of households
- f. Boil water before drinking: 100% of households
- g. Pre-earthquake latrine coverage: 75% of households had a latrine
- h. Current latrine coverage: 50% of households have a useable latrine
- i. Presence of handwashing facilities: 58% of latrines had handwashing facility & soap
- j. Handwashing practice: 88% reported washing hands before eating  
25% reported washing hands after defecating  
16% reported washing hands before preparing food  
8% reported washing hands before feeding infants
- k. Open-air defecation: 37% of the households reported practicing open-air defecation since the earthquake
- l. Self reported diarrhea prevalence: 25.1 cases / 1000 people / week
- m. Water storage capacity: 31 liters/household
- n. Store water in covered containers: 62% of households
- o. Percent reporting broken bones: 2% of the population
- p. Percent reporting emotional trauma: 32% of the population
- q. Observations of the household area: Human feces observed in 3% of households  
Animal feces observed in 45% of households  
Standing water observed in 77% of households  
Untied animals observed in 54% of households
- r. Unaccompanied minors: 4% of the population

**4. Discussion:**

Households were defined as families or extended families living in one shared compound. The average household size was above normal most probably due to separate families coming together to share living areas as a result of the displacement. No households refused to participate in the survey. Thirty-two (32) households selected in the sample were empty when the surveyor arrived. In each case, the team proceeded to the very next household for the interview. Fourteen percent (14%) of the total houses the surveyors attempted to interview were empty.

Questions with multiple options (4, 5, 10 and 12) were open-ended without offering the potential responses to the respondent. The surveyor merely ticked off the responses relayed by the respondent as he or she stated them.

Unaccompanied minors (UAM) were defined as "under 16 with no accompanying relatives." In the sample population of 193 households, there were 43 UAMs (in Candi, Nglorong and Dermo Jurang). It is not known what percentage of these UAMs are a direct result of the earthquake.

While 92.1% of the population collected water from local wells, the balance of the households collected water from either protected springs or piped systems. No household reported collecting water from a stream or river.

Of the households surveyed, 74.6% owned latrines prior to the earthquake. Of those, 67.3% were still useable even though they may have suffered some damage. The balance were damaged to the point where they were either inaccessible or unsafe. The current latrine coverage figure of 50% is based on the useable pre-existing latrines (i.e. 67.3% of the pre-existing 74.6% latrine coverage).

**5. Conclusions:**

- a. The availability of water is acceptable. The average water consumption is 29.2 l/p/d and the average distance from households to water sources is 20.0 meters. The availability of water storage containers is low, especially in Pundong where the average volume of water storage containers is 19 liters/household. In terms of water quality, the prevalence of boiling water (100% of households) is encouraging.
- b. The prevalence of open-air defecation is unacceptable (37.3% of households). There are sufficient latrines in the communities upon which improvements can be made to ensure access to the entire sub-village populations.
- c. There is a high prevalence of the practice of risky hygiene behaviors. Specifically handwashing (75.1% did not report washing hands after defecation), water storage (37.2% stored water in uncovered containers) and safe excreta disposal (37.3% of households practiced open-air defecation).
- d. There is a considerable level of emotional trauma in the affected population (32.0% of the surveyed population). Emotional trauma was defined as not eating, not sleeping or constantly sad/crying since the earthquake.
- e. The number of UAMs (4.0% of the surveyed population) warrants further investigation.

## 6. Recommendations:

- a. **Sanitation:** This is the primary need and should focus on improving existing latrines in the community to enable improved access to the entire population. For the near-term, this implies expedient rehabilitation of the least damaged latrines and using materials which prevent construction delays. Community agreements or memoranda of understanding need to clearly address the role of both CARDI and the community in this process and must ensure that rehabilitated latrines remain open to the larger community at least for the next three months. Capitalize on the fact that 92.4% of latrine owners interviewed and 91.2% of all respondents interviewed were accepting of sharing household latrines with others.
- b. **Hygiene Promotion:** Activities need to ensure that communities have the necessary materials to practice good hygiene behaviors and that they are encouraged to do so. Specifically, for materials and hardware, this means distribution of jerry cans and latrine construction. In terms of promoting safe practices, the approach should be on reminding and promoting key behaviors versus a purely educational approach. Key behaviors should focus on defecating in latrines, handwashing and safe storage of water post-boiling – no more than these three in the first three months. Adapt CARDI hygiene materials to these key messages and the local context, place visible reminders (signs and posters) in strategic locations in the community and ramp up the recruitment of Environmental Health Advocates in each sub-village to assist.
- c. **Water:** As long as the practice of boiling water continues and water is safely stored thereafter, water supply and quality should not pose a threat. Focus on ensuring that fuel is available and affordable in order to enable continuation of the practice of boiling water. Monitor water quality at the household level in order to emphasize safe water storage and to correct unsafe practices. As a secondary measure, advise households concerning the protection of shallow wells (specifically around the wellhead) in order to minimize contamination from human interaction and above ground sources. In the long-term, monitor water quality (fecal coliforms) at wells in order to identify continuous sources of contamination (e.g. leaking septic tanks).

Franklin Broadhurst  
Environmental Health Advisor  
CARDI  
Yogyakarta, Indonesia



*Woman washing her family's clothes despite the rubble Bantul District*



*EH Team Member conducting household survey Bantul District, Java*

## Appendix 1: Questionnaire

**Emergency Environmental Health Survey**  
**Java Earthquake Response**  
*Survei Kesehatan Lingkungan*  
*Tanggap Darurat Gempa Bumi di Jawa*

Surveyor Name: \_\_\_\_\_ Date: 9 June 2006  
*Nama Surveyor: Tanggal:*

Village: \_\_\_\_\_ Sub-village: \_\_\_\_\_ House Number: \_\_\_\_\_  
*Kelurahan/Desa:: Padukuban/Dusun: No. Rumah:*

**Either tick (✓) responses OR indicate numbers in the blank spaces.**

*Beri tanda (✓) pada jawaban ATAU beri angka pada kolom yang kosong*

1. How many people slept in your household last night? \_\_\_\_\_ people  
*Berapa jumlah orang yang tidur di rumah Anda tadi malam? orang*
2. How many people under 16 with no accompanying relatives are living in your household?  
*Berapa jumlah anak di bawah 16 tahun yang tidak punya saudara/keluarga tinggal di rumah Anda?* \_\_\_\_\_ people  
*orang*
3. How many children under 5 are living in your household?  
*Berapa jumlah anak di bawah 5 tahun yang tinggal di rumah Anda?* \_\_\_\_\_ children < 5  
*anak < 5 thn*
4. How much water was collected for your household yesterday? \_\_\_\_\_ liters  
*Berapa banyak air yang dikumpulkan untuk rumah Anda kemarin? liter*
  - Where did you collect this water? \_\_\_\_\_ meters from house  
*Dimana Anda mengambil air? meter dari rumah*  
 PERSONAL WELL *Sumur pribadi*  
 NEIGHBOR'S WELL *Sumur tetangga*  
 STREAM/RIVER *Sungai*  
 OTHER *Lainnya* \_\_\_\_\_
  - What did you use this water for?  
*Untuk apa air tersebut Anda gunakan?*  
 DRINKING *Air minum*  
 COOKING *Memasak*  
 HYGIENE / BATHING *Menjaga kebersihan/Mandi*
5. Are you treating your water prior to drinking? YES *Ya* NO *Tidak*  
*Apakah anda melakukan perlakuan khusus terhadap air sebelum diminum?*
  - If yes, how are you treating it?  
*Jika ya, bagaimana anda melakukannya?*  
 BOILING *Merebus*  
 CHLORINE *Menggunakan klorin*  
 FILTER *Penyaringan*
6. Observe how drinking water is stored? \_\_\_\_\_  
*Amati bagaimana penyimpanan untuk air minum?*  
 COVERED CONTAINER *Wadah tertutup*  
 UNCOVERED CONTAINER *Wadah terbuka*
7. Estimate the total volume of household water collection/storage containers. \_\_\_\_\_ liters  
*Perkirakan volume air yang dikumpulkan/disimpan dalam wadah air liter*
8. Did you have a toilet in your household prior to the earthquake? YES *Ya* NO *Tidak*  
*Apakah ada WC di rumah anda sebelum gempa bumi?*
  - If yes, is your toilet still useable?  
*Jika ya, apakah WC tersebut masih bisa dipergunakan?*  
 YES *Ya* NO *Tidak*

- If yes, observe the toilet:  
*Jika ya, amati WC tersebut:*
- |                                                                                      |               |                 |
|--------------------------------------------------------------------------------------|---------------|-----------------|
| Damage to floor?<br><i>Kerusakan pada lantai</i>                                     | YES <i>Ya</i> | NO <i>Tidak</i> |
| Damage to water tank?<br><i>Kerusakan pada bak mandi?</i>                            | YES <i>Ya</i> | NO <i>Tidak</i> |
| Damage to well?<br><i>Kerusakan pada sumur air?</i>                                  | YES <i>Ya</i> | NO <i>Tidak</i> |
| Feces observed?<br><i>Apakah ada kotoran manusia?</i>                                | YES <i>Ya</i> | NO <i>Tidak</i> |
| Handwashing water/soap present?<br><i>Apakah ada air/sabun untuk mencuci tangan?</i> | YES <i>Ya</i> | NO <i>Tidak</i> |
- If toilet is useable, are neighbors also using your toilet?  
*Jika WC masih bisa dipergunakan, apakah tetangga Anda juga menggunakan WC tersebut?*
- |  |               |                 |
|--|---------------|-----------------|
|  | YES <i>Ya</i> | NO <i>Tidak</i> |
|--|---------------|-----------------|

9. Do you agree to share toilet with others during the emergency?  
*Apakah Anda setuju orang lain menggunakan WC Anda selama masa darurat?*

|  |               |                 |
|--|---------------|-----------------|
|  | YES <i>Ya</i> | NO <i>Tidak</i> |
|--|---------------|-----------------|

10. If you have no useable toilet, do you have access to another toilet?  
*Jika tidak ada WC yang bisa dipergunakan, apakah ada WC lain yang bisa Anda pergunakan?*

|  |               |                 |
|--|---------------|-----------------|
|  | YES <i>Ya</i> | NO <i>Tidak</i> |
|--|---------------|-----------------|

- If not, where do you defecate?  
*Jika tidak, dimana Anda buang air besar?*
- |                                              |
|----------------------------------------------|
| BANK OF STREAM / CANAL <i>Pinggir sungai</i> |
| OPEN AREA <i>Area terbuka</i>                |
| OTHER <i>Lainnya</i> _____                   |

11. How many household members have had diarrhea in the past seven days?  
*Berapa orang dalam keluarga Anda yang telah menderita diare dalam 7 hari terakhir?* \_\_\_\_\_ people  
*orang*  
(Diarrhea defined as 3 watery stools within a 24-hour period)  
*(Dinyatakan Diare bilamana mengalami 3x buang air besar (mencret) dalam waktu 24 jam)*

12. When do you normally wash your hands?  
*Kapan biasanya Anda mencuci tangan?*

|                                                         |
|---------------------------------------------------------|
| BEFORE EATING <i>Sebelum makan</i>                      |
| AFTER DEFECATING <i>Setelah buang air besar</i>         |
| BEFORE PREPARING FOOD <i>Sebelum menyiapkan makanan</i> |

13. How many people in your household currently have broken bones caused by the earthquake?  
*Berapa jumlah orang dalam keluarga Anda yang mengalami patah tulang yang disebabkan oleh gempa bumi?*  
\_\_\_\_\_ people *orang*

14. Since the earthquake, are there any household members who are not eating, not sleeping or are constantly sad or crying?  
*Sejak terjadi gempa bumi, apakah ada orang dalam keluarga Anda yang tidak mau makan, tidur atau terus menerus sedih atau menangis?*  
\_\_\_\_\_ people *orang*

15. General observations of the compound: *Pengamatan secara keseluruhan terhadap tempat tinggal:*

- |                                                                                                                 |               |                 |
|-----------------------------------------------------------------------------------------------------------------|---------------|-----------------|
| Are human feces present? <i>Apakah ditemukan kotoran manusia?</i>                                               | YES <i>Ya</i> | NO <i>Tidak</i> |
| Are animal feces present? <i>Apakah ditemukan kotoran hewan?</i>                                                | YES <i>Ya</i> | NO <i>Tidak</i> |
| Is there standing water present? <i>Apakah ada air tersedia?</i>                                                | YES <i>Ya</i> | NO <i>Tidak</i> |
| Are animals untied and roaming around freely?<br><i>Apakah hewan tidak diikat dan berkeliaran dengan bebas?</i> | YES <i>Ya</i> | NO <i>Tidak</i> |

16. What was your primary source of income prior to the earthquake?  
*Apa sumber penghasilan utama anda sebelum terjadi gempa bumi?*

- |                                                |
|------------------------------------------------|
| AGRICULTURE <i>Petani/Peternak</i>             |
| CIVIL SERVANT <i>Pegawai Negeri</i>            |
| SHOP KEEPER <i>Penjaga Toko</i>                |
| HOUSE KEEPER <i>Penjaga Rumah</i>              |
| SMALL INDUSTRY <i>Kerajinan/Industri Kecil</i> |
| OTHER _____                                    |

17. Has the earthquake prevented you from continuing to earn an income?  
*Apakah akibat dari gempa menghalangi anda untuk tetap mendapatkan penghasilan anda?*

|  |               |                 |
|--|---------------|-----------------|
|  | YES <i>Ya</i> | NO <i>Tidak</i> |
|--|---------------|-----------------|

## STAFFING CHANGES



*Christophe Nouvet*

It is with mixed feelings that we bid farewell to Christophe Nouvet. He will be leaving IRC's Environmental Health Technical Unit on August 25<sup>th</sup>. Christophe first joined the IRC in August of 2004, wearing the dual hats of Regional Technical Advisor and Emergency Response EH Coordinator. Most notably, Christophe led the EH team deployed in Aceh, Indonesia for the Tsunami relief effort and in Menshera, Pakistan for the earthquake response. Also, for the past 8 months Christophe stepped in after Frank Broadhurst's departure and has done an excellent job as Acting Senior Technical Advisor. In his two years as part of the EH Team- Christophe has been an extremely hard-working and dedicated individual- as all he has worked with can attest! Luckily, Christophe is staying in the IRC family as he has accepted the position of Senior Construction Coordinator in DR Congo as part of the new World

Bank grant. While he will still be reachable, we will miss his professionalism and keen sense of humor. In the meantime, Rick Brennan, Director of the Health Unit, is finalizing Christophe's replacement- so please be on the lookout for an email introducing the new EH Team Member.

We are extremely excited to announce that starting mid-August, Frank Broadhurst will be returning back to the EH Technical Team! Frank will assume the role of Technical Advisor, working for the IRC on a part-time basis. He will cover 3 countries and we are in the final stages of determining which those will be, and of course will send out an email as soon as that happens. We are absolutely elated to have Frank and his outstanding work ethic and fun personality back with the IRC!



*Frank Broadhurst*

## \* Environmental Health Conference \*

Mombassa, Kenya  
November 6-10

The 5<sup>th</sup> Annual EH Conference will be held **November 6-10** this year in **Mombassa, Kenya**. The theme of the conference is **"Towards Durable Solutions"**. The conference will be held at the Sun N Sand Resort and we will send out more detailed information in the future, but in the meantime you can check it out at <http://www.sunnsand.co.ke>. Be on the lookout for the agenda and conference participation form! Can't wait to see you all soon and get together for a fruitful and fun conference. If you have any questions, please do not hesitate to contact Anne Abbott at 212-551-2731 or [anne.abbott@theirc.org](mailto:anne.abbott@theirc.org).

*Photos from the 2005 EH Conference  
Jinja, Uganda*

*EH Conference participants doing practical water exercises*

