



MICRODIS



**MICRODIS: Integrated Health, Social and Economic Impacts of
Extreme Events: Evidence, Methods and Tools**

Survey site report: Hanoi's historic flood study

Hanoi school of Public Health (HSPH)

1. Introduction

Recently, long and heavy rains with high intensity and large magnitude in Hanoi in the last days of October and the first week of November 2008 resulted in a historic flood in the area of old Hanoi in 35 years (ever since 1973). Heavy rain in the inner part of Hanoi on the 31st of October caused 90 points inundated locally with average depth of 0.3 m to 0.8 m. Particularly, there were points inundated with the depth up to 1.2 m such as in Thai Ha, Truong Chinh, Giap Bat, and from 1.0 to 2.5 m such as in Tan Mai, Dinh Cong. Up to the 3rd of November, there were still 44 traffic points and residential points inundated.

According to a primary evaluation of the 10 days of heavy rains and flooding (from 31st October to the 9th of November, 2008), there were 22 people died, 3 injured and material loss could go up to 3,000 billion VND (approximately US\$ 160 millions). This was not including the long term health, social and economic losses. Heavy rains on a large scale resulted in serious loss in agricultural production, 60,960 hectares of winter plants and vegetables and flowers; 2,684 hectares of winter crops that were not harvested; 11,498 hectares of aqua-cultural production; 1,367 hectares of farmhouse in the area of Hanoi were flooded and consequently seriously damaged. About 149,184 livestock and poultry of farmer households died; 87 houses and 14,300 meters of wall of private houses, shops, and offices were collapsed. Many assets of citizen at the 90 flooded points in street routes and residential areas were damaged due to inundation.

About a month after those heavy rains in Hanoi, still some areas in the new area of Hanoi were still deeply inundated. The above mentioned damages of the historic flood in Hanoi recently were just very preliminary. Its long-term impacts on the economic, social, environmental and health aspects of people living in Hanoi are anticipated enormously. And to our knowledge, up to now there has not any scientific research done to evaluate those impacts on Hanoians' lives. Therefore, we propose to carry out a research to evaluate the social, economic and health impacts of the historic flood in Hanoi.

2. Objectives

1. To evaluate the health, social, and economic impacts of the historic flood in Hanoi on Hanoians.
2. To identify the differences in selected social-economic indicators between flood affected and non-affected households in Hanoi after the historic flood.
3. Identify the differences in mortality and morbidity patterns (injury, chronic and infectious diseases including dengue, diarrhea, respiratory diseases, malnutrition, and red eye diseases, and skin diseases) between flood affected and non-affected households in Hanoi after the historic flood.
4. Identify the relationships between social-economic factors and health related problems among flood affected and non-affected households in Hanoi after the historic flood.

3. Methodology

3.1. Study design: Cross-sectional study with control group (non/less severely affected population is used as control)

In addition to quantitative household survey, health system survey collecting secondary data and conducting in-depth interviews with key informants will be employed to give more comprehensive picture and insights to the social, economic and health impacts of the historic flood in Hanoi.

3.2. Study site:

Hoang Mai District and Huong My District were chosen as study sites to evaluate the social, economic and health impacts of the Hanoi flood because these districts were seriously damaged by the heavy rains and historic flood in Hanoi during in the last days of October and the first week of November 2008.

Hoang Mai district: urban district of Hanoi

Thinh Liet Precinct: severely flooded precinct

Thanh Tri Precinct: less severely flooded precinct

Huong My District: rural district of Hanoi

Nam Phuong Tien commune: severely flooded precinct

Dong Son commune: less severely flooded commune

3.3. Study sample and sampling:

Since Hanoi capital was expanded recently, in this study we selected one district from the old area of Hanoi and one district from the new area of Hanoi. The expected sample for one district is 400 households (200 flooded households and 200 non-flooded households).

Total sample size is 800 households.

4. Pretest of questionnaire

After spending weeks translating the MICRODIS Integrated questionnaire into the Vietnamese and tried to Vietnamese its contents by circulating it among research team. The HSPH team piloted the questionnaires in both Thua Thien Hue province and Hanoi capital.

At the beginning of the project the HSPH had planned to select Thua Thien Hue province to be the field site because almost every communes of Thua Thien – Hue province experienced floods every year. However, the year 2008 was exceptional, there was

almost no flooding in Thua Thien Hue instead heavy rains in Hanoi capital caused the most terrible flood for people in Hanoi in 35 years. Therefore, with the approval from the MICRODIS coordination team in Brussels, the HSPH changed the study site from Thua Thien Hue Province to Hanoi Capital. The MICRODIS integrated questionnaire first tested in Quang Dien District and Hue City, Thua Thien Hue Province and later in Huong My District, Hanoi.

4.1. Pretest of questionnaire: First time in Thua Thien Hue

The main objective of this pilot study was to test the questionnaire tool in households within the affected area of the 2007 floods in Thua Thien Hue. By administering the questionnaires on households, which were in the affected areas directly affected or not directly affected, the HSPH MICRODIS team could get a good idea of the impacts of the disaster in Thua Thien Hue. Interviewers thus made observations on respondents reactions to questions, refusals, general understanding of questions, availability of details given in specific questions, and issues arose that were not included in the questionnaires.

There were 6 interviewers. Of those 5 have really known the integrated questionnaire since they all worked on MICRODIS project participated in translating the MICRODIS Core and Thematic Core questionnaires into Vietnamese (4 from the HSPH team and Dr. Tuan from Hue university of economics). There was only one from Hue Medical University, Faculty of Preventive Medicine who was new to the integrated questionnaire but was sent questionnaire for reviewed via email two days before the day of pretesting. We also had planned to invited students from Hue Medical University, faculty of preventive medicine to be interviewers for the later phase of data collection.

The MICRODIS team piloted the MICRODIS integrated questionnaire in two days from the 10-11 of October 2008 in Thua Thien Hue province. Dr. Tuan helped with organizing this pilot, contacting with local authorities in Quang Dien District and Hue city to have approval to do test the questionnaire, arranging local guiders to households.

On the first day, we pretested the questionnaire in a severely flooded commune in Quang Dien District, about 20 km of the Hue city. The interviewers went in group of two and managed to cover only one family each in the first morning, then in the afternoon interviewers worked independently to interview one or two more families each. Each interview took about 1.30 to 2 hours to complete. In the evening after returning from field, interviewers met to give feedback. This was a very rewarding process, as it helped the team to get a larger perspective of the respondents outside of their own interviews. This was the first step in identifying common feedback about the tools used and on how people in the community were affected.

On the second day, the questionnaire was pretested in a severely flooded precinct in Hue city. For the second day interviewers went to interview independently and managed to cover only two families each in the morning. In the afternoon all interviewers sit together to review questions by questions, with special address to the economic part, taking into account the presence of Dr. Tuan, an economic expert from the Economic group of the

MICRODIS project. In the evening the HSPH team was back to Hanoi and then the questionnaire was reviewed and edited.

In sum, 10 families in a severely flooded commune in Quang Dien District were visited. Ten families in a severely flooded precinct in Hue City were interviewed.

In general each interview took about two hours, the longest one took 3 hours and half to complete. In most cases, the respondents complained about the length of the interview, the repetition of some of the questions so the respondents lost interest and felt tired. They said that the economic questions were too detailed. Respondents mentioned that the economic core questions were too detailed and very difficult for them to give good estimate. In general they just give a lump sum. For the social core parts, our participants were not familiar with this kind of questions and they said that the questions were very general and not related to themselves therefore it was very difficult for them to give an answers to the questions. The majority of respondents felt uncomfortable answering this or did not know how to respond. For the health part – most questions were understood well. However the injured or dead person tables were all skipped because these were not frequent experiences for our respondents.

The key respondent was expected to be head of the household but in some cases the head of household was not available at home so his or her partner was chosen to provide information. Women seemed to be more patient in answering the questions.

Finally the enumerators suggested that the length of the questionnaires should be shorter to be administered maximum with in 1 ½ hours so that quality of the interview will not be compromised.

4.2. Pretest of questionnaire: Second time in Ha Noi

The field site was changed from Thua Thien Hue province (the central part of Vietnam) to Hanoi capital city (in the north) therefore it was important to pilot the questionnaire again since the two field sites are quite different in terms of socio-economics and culture. The main objective of this second pilot was similar to the first pretest that was to test the questionnaire tool in households in the affected area of the 2008 heavy rains in Hanoi during the last day of Oct. and first week of Nov. 2008. By administering the questionnaires on households, which were in the affected areas directly affected or not directly affected, the HSPH MICRODIS team could also get a good idea of the impacts of the heavy rain and the historic flood in Hanoi. Interviewers made observations on Hanoi's respondents reactions to questions, refusals, general understanding of questions, availability of details given in specific questions, and issues arose which were not included in the questionnaires.

The second pilot team included 6 people, two MICRODIS team members (Ha and Quang) and four students of the HSPH and 2 local guiders. We did the second pilot of the questionnaire in two days from the 10-11 of Jan. 2009 in a hamlet named Hanh Con of Nam Phuong Tine commune, Huong My district. The team also divided in two groups: each with a MICRODIS team member, two students and one local guider.

Similar method to the first pretest in Hue, the interviewers went in group of 3 and managed to cover only one family each in the first morning, then in the afternoon interviewers worked independently to interview one or two more families each. In the evening after returning from field, interviewers met to give feedback. On the second day interviewers went to interview independently and managed to cover only two families each in the morning. In the afternoon all interviewers sit together to review questions by questions and discuss about general feeling of the respondents reactions.

In sum, 18 families in Hanh Con hamlet, Nam Phuong Tien commune were visited. This hamlet was chosen to pilot the questionnaire because it has both flood affected households and non-flooded households. Ten families in severely flooded households were interviewed and 8 households in non-flooded households were interviewed.

In general each interview with the flooded household took about one hour and a half to complete and the interview with the non-flooded household took about 45 minutes to complete. Time issue for interviewed was improved greatly in comparison with the first pretest since the questionnaire had been revised after the first pretest and interviewers were more familiar with the questionnaire. Still, the respondents complained about the length of the interview, the economic questions were too detailed. Respondents mentioned that the economic core questions were too detailed and very difficult for them to give good estimate. For the social core parts, the majority of respondents felt uncomfortable answering this or did not know how to respond. For the health part – most questions were understood well. The injured or dead person tables were also skipped all because these were not frequent experiences for our respondents.

In general respondents were happy that they could talk about their experiences especially with affected household and people reported in very detail losses to their assets and damage to their house.

After discussed questions by questions with all the pilot member team, the questionnaire was then reviewed and edited again.

5. Training of Enumerators

After spending many weeks adapting the MICRODIS Integrated questionnaire into the Vietnam context (specifically in Thua Thien Hue province and Hanoi), the HSPH country team carried out a training workshop for enumerators. The HSPH together with Dr. Tran Huu Tuan, Hue University of Economy, jointly organized an Enumerators' Training-Workshop. The training-workshop was held on January 15, 17 and 18 2009 at the class room 2.3 Hanoi school of public health (January 15 and 18, 2009) and Dong Son commune, Chuong My district, Hanoi (January 17, 2009).

5.1. Training Objectives

The training-workshop was aimed at providing a standard interpretation of survey instruments for enumerators and field teams.

5.2. Agenda

January 14, 2009: At the HSPH, room 2.3

Morning: Overview of the MICRODIS project
 Objectives of the Study, timeline, sampling
 Enumerator's duties and duties
 Discussion of the MICRODIS Instrument
 MICRODIS core
 Health core and health extended
 Social core
 Economic core

Afternoon: Role play
 Question and Answers

January 17, 2009: Field trip to Dong Son commune, Chuong My district, Hanoi
 Leave the HSPH for Dong Son commune, Chuong My district
 Survey team meets with local guiders at commune health center
 Survey team broken in small group to selected households
 Back to commune health center and then Hanoi

January 18, 2009: At the HSPH, room 2.3

Morning: Feedbacks on the process of interview

Afternoon: Finalize the integrated questionnaire
 Finalize the training manual

5.3. Team composition

The HSPH team, which participated in the interviewer training workshop

1. Le Thi Thanh Ha, MICRODIS Team Researcher
2. Tran Thi Duc Hanh, MICRODIS Team Researcher
3. La Ngoc Quang, Microdis Team Coordinator

Also helping with the interviewer training workshop was Tran Huu Tuan, PhD Hue University of Economics

Interviewers: 18 third year students of the HSPH those who already have experienced in collecting data for a number of studies of the school (actually we need 14 enumerators but trained 18 in case of need)

5.4. Training of the enumerators



On the first day at the HSPH, interviewers were given background information on the MICRODIS Project and the Hanoi historic heavy rain and flood during last day of Oct. and first week of Nov. 2008, study's objectives, timeline and sampling followed by a roles and duties of enumerators.

The roles and duties of enumerators were as follows

- Together with the help of a local guider, enumerator locates the correct sampled household
- Identification of eligible respondent in the household and asking for consent before starting the interview.
- Conducting the interview
- Revisit the household in case respondent was not present during the first visit.
- Before leaving the household, check if all questions have been asked or not.
- Handing in all the interviewed questionnaires to the field supervisor in the next day after ensuring that all questionnaires are completely filled and properly coded.
- Inform field supervisor about households that they were unable to trace or collaborate to provide information.

After that a full review of the integrated questionnaire were presented by the MICRODIS team. The integrated questionnaire was broken into 4 parts to discuss in details, each part led by a MICRODIS member. Comments and questions were taken throughout the detailed overview of the questionnaires. Interview manual for interviewers during fieldwork as a reference document was given to the enumerators. Interview materials were given to the interviewers (pens, pencils, erasers, pencil sharpeners, questionnaires, folders, etc.)

The introductory process was explained: Interviewers were to give an introduction of themselves and the study (presenting student ID), then ask for consent to do the questionnaire. Afterwards, the consent form was to be explained and signed by the participant, then conducting the interview.

Part 1: Core module, led by Ha Le

Part 2: Health Core and health extended led by Quang La

Part 3: Social core, led by Hanh Tran

Part 4: Economic core, led by Tuan Tran



In the afternoon, enumerators worked in groups of two to practice asking and filling questions in the integrated questionnaire. Each took role of the enumerator and respondent. This task was monitored by the HSPH team and doubts were cleared regarding each question, if they had any. The enumerators were then met in a large group to have a close look at the questionnaire before going to the field on Saturday January 17, 2009.

The Second day of the training, MICRODIS team together with enumerators and supervisors went to the field.



A hamlet - Hanh con in Nam Phuong Tien Commune, Chuong My District, which was not severely flooded, was selected for the preliminary test administration of the questionnaire. This exercise was done to make enumerators more familiar with the questions in the questionnaire, how to introduce themselves to the households, asking for permission to conduct interview. This will help them ready for finally administering the questionnaire on the actual sample.

The group arrived at the Nam Phuong Tien commune health center, and with the help of health collaborators, they went in group of three (one local guider and three interviewers) to the household. All together six groups went to the households and each group was required to interview 3 questionnaires. In each group, interviewers took turn to interview and the rest took notes and observed

The Third day of the training

In the morning: Full review of the questionnaire, questions and comments

In the afternoon: HSPH MICRODIS team worked to finalize the integrated questionnaire and training manual.

6. Data collection

Name of district	Name of commune	Time	Number of Interviewers	Number of supervisors
Chuong My	Nam Phuong Tine (flooded commune)	19-23 Jan. 2009	8	5
	Dong Son (non-flooded commune)	19-23 Jan. 2009	6	4
Hoang Mai	Thanh Tri (non-flooded commune)	21-23 Feb. 2009	10	5
	Thinh Liet (flooded commune)	28 Feb – 2 March 2009	12	5

Total we interviewed: 909 households

Hoang Mai District:

- Thanh Tri : 249
- Thinh Liet : 238

Chuong My District:

- Nam Phuong tien : 216
- Dong Son : 206

7. Data entry and analysis

Data were entered using epidata 3.0 software and then analyzed by SPSS.