# MICRODIS FIELD STUDY: Hanoi, Vietnam

## Lead Institution: Hanoi School of Public Health

## Partner Institution(s): Hue University

### When and Why?

- **WHEN?**
  - 31/10/08 to 7/11/08 (some areas flooded for 1 month)

- **WHY?**
  - Heavy rain started at evening 30/10/2008 to 2/11/08, up to 81mm
  - Incorrect weather forecast
  - Reduced areas of dyke, natural lakes, increased pavement and controlled areas
  - Rapidly increased population: 40 times in the last 100 years while drainage system is not much improved.
  - Rapid urbanization without appropriate planning...

### Study Objectives

1. Identify differences in selected social-economic indicators between flood affected and non-affected households in Hanoi.
2. Identify the differences in morbidity patterns (dengue, diarrhoea, red eye diseases, and skin diseases) between flood affected and non-affected households in Hanoi.
3. Identify the relationships between social-economic factors and health related problems among flood affected and non-affected households in Hanoi.

### Methodology 1

1. **Study design:** cross-sectional study with control group (non/less severely affected population is used as control)
2. **Study size and sample size:** 817 households
   - Hoang Mai district: urban district of Hanoi
     - Thinh Liet precinct: severely flooded precinct: 222 HH
     - Thanh Tri precinct: less severely flooded precinct: 250 HH
   - Chuong My district: rural district of Hanoi
     - Nam Phuong Tien precinct: severely flooded precinct: 205 HH
     - Dong Son precinct: less severely flooded precinct: 194 HH

### Methodology 2

1. **Pretest:** 2 times
   - Quang Dien district, Thua Thien Hue province
   - Chuong My district, Hanoi capital city
2. **Training of numerators**
   - 3 days
   - 4 trainees, 24 numerators

### Preliminary Data Analysis

<table>
<thead>
<tr>
<th>Area of Hanoi</th>
<th>Real area of Hanoi</th>
<th>Urban area of Hanoi</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dong Son</td>
<td>154</td>
<td>265</td>
<td>419</td>
</tr>
<tr>
<td>Thinh Liet</td>
<td>1113</td>
<td>213</td>
<td>1326</td>
</tr>
<tr>
<td>Thanh Tri</td>
<td>1122</td>
<td>256</td>
<td>1378</td>
</tr>
<tr>
<td>Nam Phuong T.</td>
<td>1111</td>
<td>213</td>
<td>1324</td>
</tr>
<tr>
<td>Rural area of Hanoi</td>
<td>583.820</td>
<td>50.610</td>
<td>634.430</td>
</tr>
<tr>
<td>Urban area of Hanoi</td>
<td>462.130</td>
<td>30.100</td>
<td>492.230</td>
</tr>
<tr>
<td>Total</td>
<td>562.650</td>
<td>81.710</td>
<td>644.360</td>
</tr>
</tbody>
</table>

### Other Findings

- **Lack of preparedness of health system/weak of Surveillance system**
- **Difficult in implementation of vertical health programs**
- Environmental condition: water and sanitation, damage to environment
- **Access to health services: difficult for management of chronic conditions**
- **Problems on early warning for disasters**
- **Lack of awareness/preparedness of people of disaster**
- **Increase household/individual expenditures for health**