

Health Research Center for Crisis and Disaster University of Indonesia

Principal Investigator Contact:
Dr. Mondastri K Sudaryo, MS, DSc
Department of Epidemiology
Faculty of Public Health
Building A, 1st floor, University of Indonesia Campus
Depok, West Java, Indonesia
Phone/Fax: +6221 78849031/78849032
Email: maqo1@ui.edu; maqo19@gmail.com

Survey Site: Bojonegoro, Indonesia

Background of the Study

One important determinant of the 2007 flood in Bojonegoro is the essential role of the great river Bengawan Solo—the longest river in Java Island flowing across Central Java and East Java Provinces. The Bojonegoro district was the worst flood-affected area with more than half of the regency inundated with about 3 meter high flood waters within the sixteen sub-districts. Flood had caused 30 deaths, 24,573 houses have been affected, 229.000 displaced people were occupying temporary shelters while others have been forced to stay near their devastated homes because the access to exit their villages were cut off by the flood waters. Moreover, the accessibility to the hospital was also obstructed, because it was flooded and surrounded by flooded areas.

Summary Statistics

The Bojonegoro Districts consist of 435 villages, among which 167 villages were flooded during December 2007. Using probability proportional to size approach, we had randomly selected 25 for each group with total of 245 and 244 respondents representing 1016 and 1021 of household members in flooded and non flooded population respectively.

A street in Kanor village, one month after the flood; sacks of sand were piled up to block water away from the residential area.



Photo: HRCCD FPH Uol, Jan. 2008

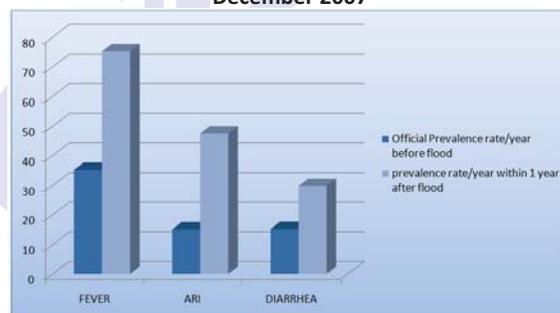
In health impact, the occurrence of Bojonegoro flood might have increased the prevalence of major infectious diseases in Bojonegoro population. Prevalence rates of dermatitis, ARI, GE and DHF one month after the flood were higher than official rates before flood. Prevalence rates of dermatitis, ARI, and GE one month after the flood, were also significantly higher than rates one year later.

Figure 1: Estimated Prevalence Rate of Acute Illness in Bojonegoro, December 2007



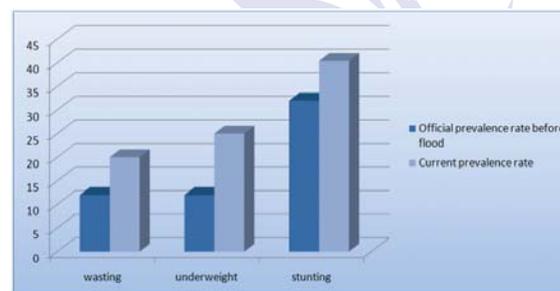
Among under-five children, major illnesses since flood till current were fever (prevalence rate of year: 75%), ARI (45.5%), diarrhea (29.7%) and dermatitis (15.9%). Prevalence rates of these illnesses among flooded-household children were much higher than the estimated rates before flood.

Figure 2: Estimated Prevalence Rate/Year of Acute Illnesses Among Under-Five Children in Bojonegoro, December 2007



Among under-five children, the prevalence rates of underweight (29%), wasting (20%) and stunting (41%) within one month before interview were much higher than official rates before flood, reflecting acute and chronic malnutrition problems exist among flooded population.

Figure 3: Estimated Prevalence Rates of Under-Five Child Malnutrition in Bojonegoro



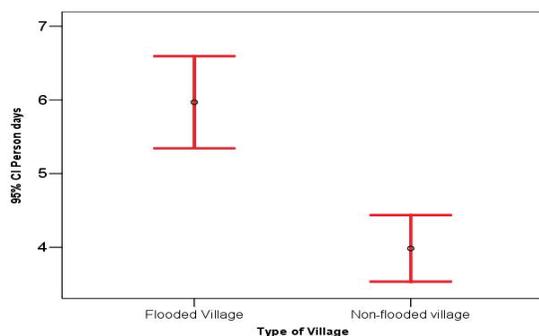
In economic impact, the majority of flooded households reported significant economic loss (comprising income loss, production loss, repairing cost of properties, or increasing monthly expenditure) as much as € 240 per household on average, an amount which was more than 5 months of average household expenditure.

Health Research Center for Crisis and Disaster University of Indonesia

Principal Investigator Contact:
 Dr. Mondastri K Sudaryo, MS, DSc
 Department of Epidemiology
 Faculty of Public Health
 Building A, 1st floor, University of Indonesia Campus
 Depok, West Java, Indonesia
 Phone/Fax: +6221 78849031/78849032
 Email: maqo1@ui.edu; maqo19@gmail.com

Most of households (79%) showed their willingness to participate on the future government program to prevent flood impact. The flooded households were willing to provide a significantly higher amount of person-days to support the future program as compared to non flooded households.

Figure 4: Willingness to participate in gov't. flood prevention programs



The whole aspects of social support for flood affected households showed quite low scores. The source showing the higher score of social support were from family, children, and friends, while the lowest scores of social support were supports from government and NGOs.

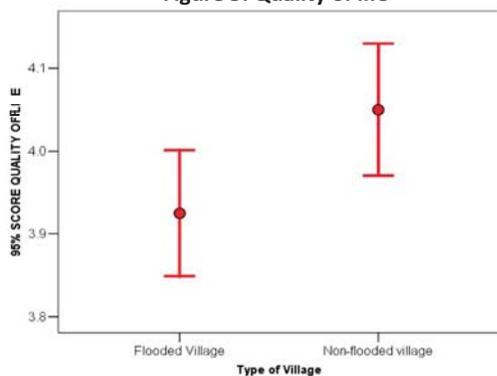
Table 1: Sources of Social Support

Aspects of Social Support	Flooded HH n=245		
	Mean (SD)	Median	Range [†]
Emotional support	1.6 (2.1)	1.0	0–10
Esteem support	2.4 (2.3)	2.0	0–10
Material support	1.6 (1.7)	1.0	0–10
Information/advice support	1.1 (1.7)	0.0	0–9

† 0=None 5= moderate, 10=much

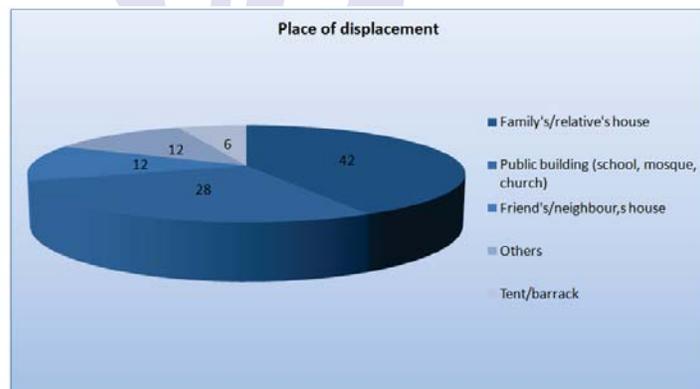
The quality of life of flooded household members was in general lower than non-flooded household members, although the difference was not statistically significant.

Figure 5: Quality of life



Relative/ neighbor's houses and public buildings were the main shelters for internally displaced household members.

Figure 6: Place of Displacement



Majority of household members received early warning from the head of sub-village and local government authorities.

Figure 7: Who gave the early warning

