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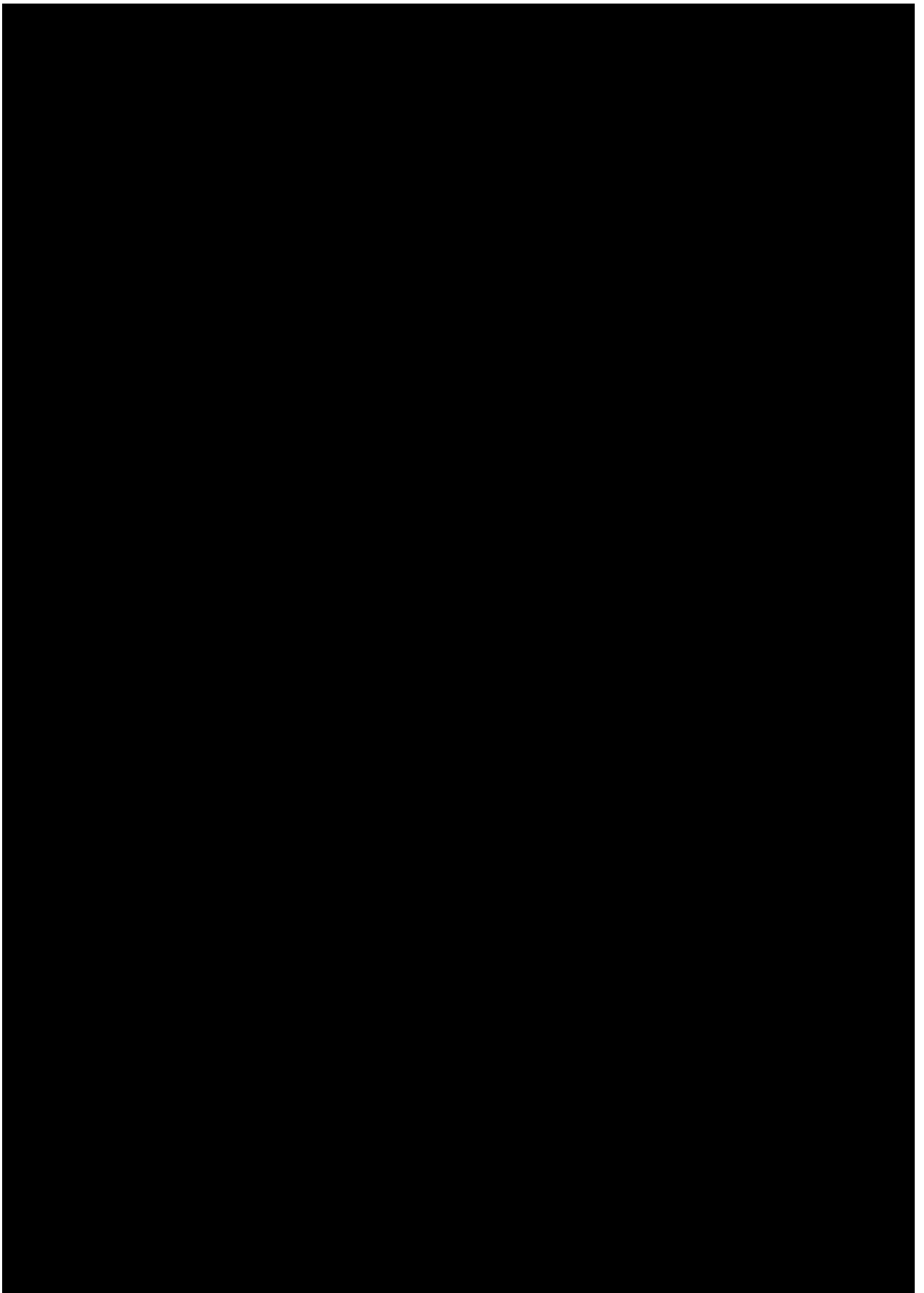
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# Needs assessments for international humanitarian health assistance in disasters

Johan von Schreeb



**Karolinska  
Institutet**



NEEDS ASSESSMENTS FOR INTERNATIONAL  
HUMANITARIAN HEALTH ASSISTANCE IN DISASTERS



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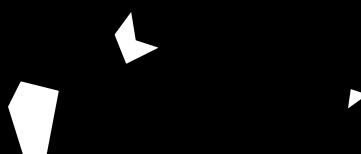
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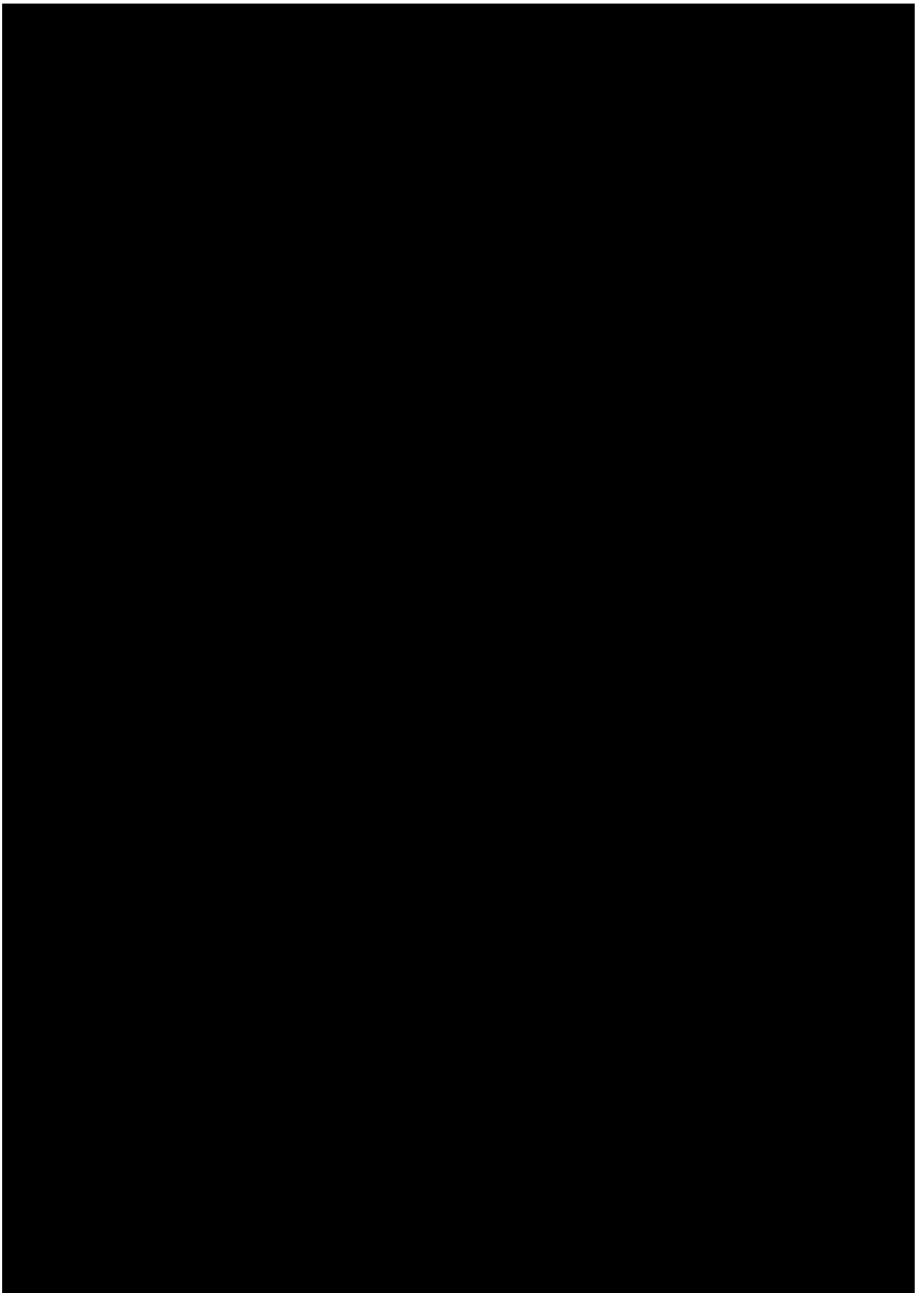
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To whom it may concern

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NEEDS ASSESSMENTS FOR INTERNATIONAL  
HUMANITARIAN HEALTH ASSISTANCE IN  
DISASTERS



FOR EVERY COMPLEX PROBLEM  
THERE IS A SOLUTION THAT IS  
SIMPLE, NEAT AND WRONG

*H. L. Mencken*

# ABSTRACT





**Background:** Natural and man-made disasters overwhelmingly affect people in low and middle-income countries. In that socio-economic context both the immediate and long-term needs of those affected often exceed national resources. Therefore some form of needs assessments are required to guide the volume and composition of international humanitarian assistance. How such needs assessments serve their purpose has rarely been researched.

**Objective:** To explore contextual and conceptual aspects of needs assessments and how their results may influence the international humanitarian health assistance response in disaster situations.

**Methods and Results:** The five sub-studies used mixtures of secondary literature review (I-V), direct observations (II-IV), semi-structured interviews (II-IV), focus group discussions (I-II) and a quantitative interview survey (V). Study I assessed the extent to which Sida had access to and used needs assessment information when deciding to fund health related humanitarian projects in 2003. Data on the size of the target population was only available in 37% of the applications and reference to any quantified health needs was made in less than 20% of the decisions. Study II assessed the health needs of the Palestinian population in the occupied territories during the low-intense conflict in 2002. Restriction of movement was the main health threat, while health facilities had sufficient staff and equipment. Study III assessed the need for international medical assistance following the terrorist attack in the Beslan School. The medical care provided by 500 local medical doctors and the other local and national resources was adequate to care for emergency medical trauma needs. International health assistance was not required. Study IV explored if assistance by Foreign Field Hospitals (FFH) in four recent Sudden Impact Disasters were appropriate. None of 43 FFH were operational within the 48h limit to save lives of acute trauma cases. Study V explored the feasibility of interviewing a selection of visitors to health facilities regarding needs of their households following the earthquake in Kashmir. The results from the sample were geographically representative and compared well with those of a later house-to-house survey.

**Conclusions:** There is a clear discrepancy between the donor policy of funding humanitarian health projects based on needs assessment results and donor practice, which may be due to an insufficiently defined policy rather than bad practice (I). Needs assessment results cannot be correctly interpreted without information on the socio-economic context in the affected area and country (II, III). There exists considerable capacities in middle-income countries to handle disaster situations that must be accounted for when designing international humanitarian health assistance (II, III, IV). No Foreign Field Hospital deployed in four recent Sudden Impact Disasters arrived in time to provide lifesaving trauma care (IV). It is feasible to quickly get geographically representative information from the affected population using a Clinic Entrance Interview survey in a post earthquake context (V).

**Keywords:** Needs Assessment, Disaster, Relief, Humanitarian Assistance, Donor Allocations, Foreign Field Hospitals

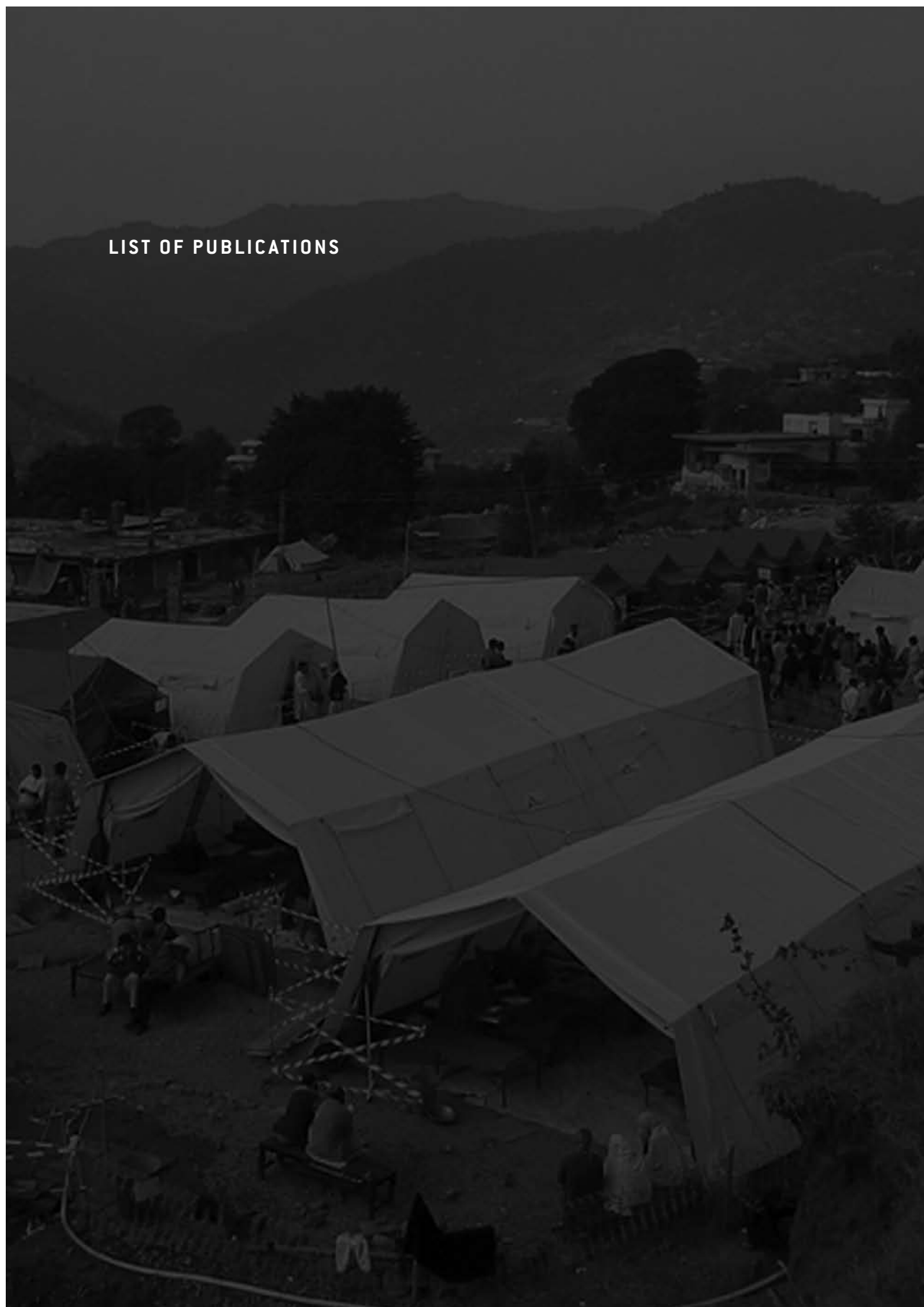
## LIST OF ABBREVIATIONS

CDR	Crude Death Rate
DRC	Democratic Republic of Congo
FFH	Foreign Field Hospitals
GNI	Gross National Income
ICRC	The International Committee of the Red Cross
IFRC	International Federation of Red Cross/Crescent Societies
INGO	International Non Governmental Organisations
MERLIN	Medical Emergency Relief International
MSEK	Million Swedish kronor
MSF	Médecins Sans Frontières
NA	Needs Assessment
NGO	Non Governmental Organisations
OCHA	The UN Organisation for the Coordination of Humanitarian Assistance
ODI	Overseas Development Institute
RMA	Rapid Magnitude Assessment
SID	Sudden Impact Disaster
SIDA	Swedish international development cooperation agency
U5DR	Under-Five Death Rate
U5MR	Under-Five Mortality Rate
WHO	World Health Organisation

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## LIST OF PUBLICATIONS



*This thesis is based on the following papers:*

***I. Are donor allocations for humanitarian health assistance based on needs assesment data?***

von Schreeb J, Unge C, Brittain-Long R, Rosling H.  
Global Public Health, in press 2007.

***II. Health needs of Palestinians.***

von Schreeb J.  
The Lancet, 2002;31:723.

***III. Emergency care following the terrorist attack in Beslan, North Ossetia, Russian Federation 2004.***

von Schreeb J, Kalmykov A, Riddez L, Rosling H.  
International Journal of Disaster Medicine 2004;2:41-47.

***IV. Foreign Field Hospitals in the recent Sudden Impact Disasters in Iran, Haiti, Indonesia and Pakistan.***

von Schreeb J, Riddez L, Samnegård H, Rosling H.  
Prehospital and Disaster Medicine, accepted 2007.

***V. "Clinic Entrance Interviews" a new method to assess needs following a Sudden Impact Disaster.***

von Schreeb J, Karlsson N, Rosling H.  
Open Medicine 2007;1(3):153-159.

*The papers will be referred to by their Roman numerals I-V.*

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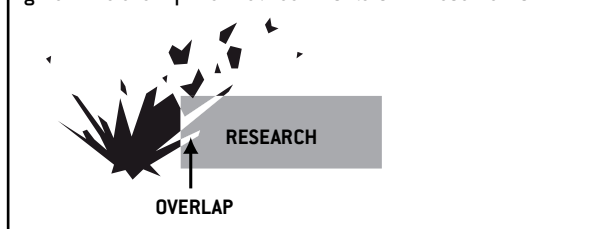
## PREFACE

**MY FIRST EXPERIENCE** of humanitarian assistance was gained in Afghanistan. Between February and June 1989 my wife Susanne and I worked as medical doctors for Médecins Sans Frontières (MSF) in Zendajan, a small city located in Herat Province in the north-western part of the country. This intense experience stimulated me to be one of the founders of the Swedish MSF section in 1992. Since 2002 I work at Karolinska Institutet on a project studying needs assessments and evaluations of international humanitarian health assistance. This project is part of a national network studying disaster medicine (Kunskapscentrum för Katastrofmedicin) supported by the Swedish National Board of Health and Welfare (Socialstyrelsen).

During the first project years the study focus was to develop new methods for needs assessment by combining desk research with field studies. Three needs assessments were done in Sierra Leone, Southern Sudan and the Democratic Republic of Congo (DRC). These assignments revealed several conceptual challenges when trying to describe the needs of a disaster-affected population in a war-torn low-income country. The conclusions of my studies in these very challenging complex emergencies were that the needs were overwhelming. As expressed by one person in DRC: “You will find a need under each and every rock you turn in this country”. It was not possible to separate the overwhelming poverty from the direct and in-direct effects of the war. The results of the studies from these low-income countries did not allow for any deeper analyses on needs assessment in disaster situations. We decided to change the study context of the thesis, from Complex Emergencies in the poorest low-income countries, to more Sudden Impact Disasters in mainly middle-income countries. We also decided to study more general aspects of needs assessments.

But still major challenges remained as the current research methods, traditions and practices are ill-adapted to the disaster context. (Figure 1).

Figure 1 The overlap area between disasters and research is minimal!



BACKGROUND





**DISASTER AND EMERGENCY** are terms that capture the context of the studies in this thesis. These terms describe a human predicament that has deviated negatively from some sort of normality because of one or several causes. The terms are often used more or less synonymously. There are no commonly accepted definitions and these key-terms are interchangeable and overlap. In this thesis, the term disaster is used to describe a context that due to some triggering event has evolved into a situation where the vital needs of the population cannot be met by the resources available while emergency is used as a more general description of a difficult situation not closely associated with a particular event (Textbox 1).

**Textbox 1 Disaster, Emergency and Complex emergency definitions**

**Disasters** are the result of a vast ecological breakdown in the relationships between man and his environment, a serious and sudden (or slow, as in drought) disruption on such a scale that the stricken community needs extraordinary efforts to cope with it, often with outside help or international aid (World Health Organisation 2003)

**Emergency** is a situation that is out of control and requires immediate attention (Sundnes and Birnbaum 2003).

**Complex emergencies** are conflict-generated emergencies caused by the breakdown of the State and its replacement by a political culture which reinforces and condone the use of violence to secure and maintain power (Unicef, State of the World's Children 2003).

## **DISASTER CONTEXT**

Disasters may be categorised by the type of triggering event. A distinction is made between *natural* causes such as earthquakes and *man-made* causes such as inter-human conflicts and technological causes. Some disasters develop due to a mixture of both natural and man-made causes. Disasters may also be classified by the onset speed of the triggering event. Sudden Impact Disasters (SID) entail a rapid onset, and include events such as earthquakes, tidal waves, tropical storms, volcanic eruptions, and landslides. Slow Onset Disasters are characterised by a combination of causes and a gradually increasing impact on the population. A classification of different disaster risks are found in Textbox 2.

**Textbox 2. Modified Utstein classification of known risks and categorisation of the five studies**

**1. NATURAL**

- a. Seismic
  - i. **Earthquake (study IV, V)**
  - ii. Volcanic eruption
  - iii. **Tsunami (study IV)**
  - iv. Celestial collision
- b. Climatic: Meteorological
  - i. High winds (study IV)
  - ii. Precipitation
  - iii. Lightning
  - iv. Temperature extremes
  - v. Erosion
  - vi. Drought
  - vii. Dessertification
  - viii. Floods
  - ix. Avalanches

**2. MIXED: NATURAL+HUMAN CAUSED**

- a. Drought
- b. Dessertification
- c. Floods
- d. Erosion
- e. Landslides/mudslides
- f. Fire
- g. Health-related epidemics

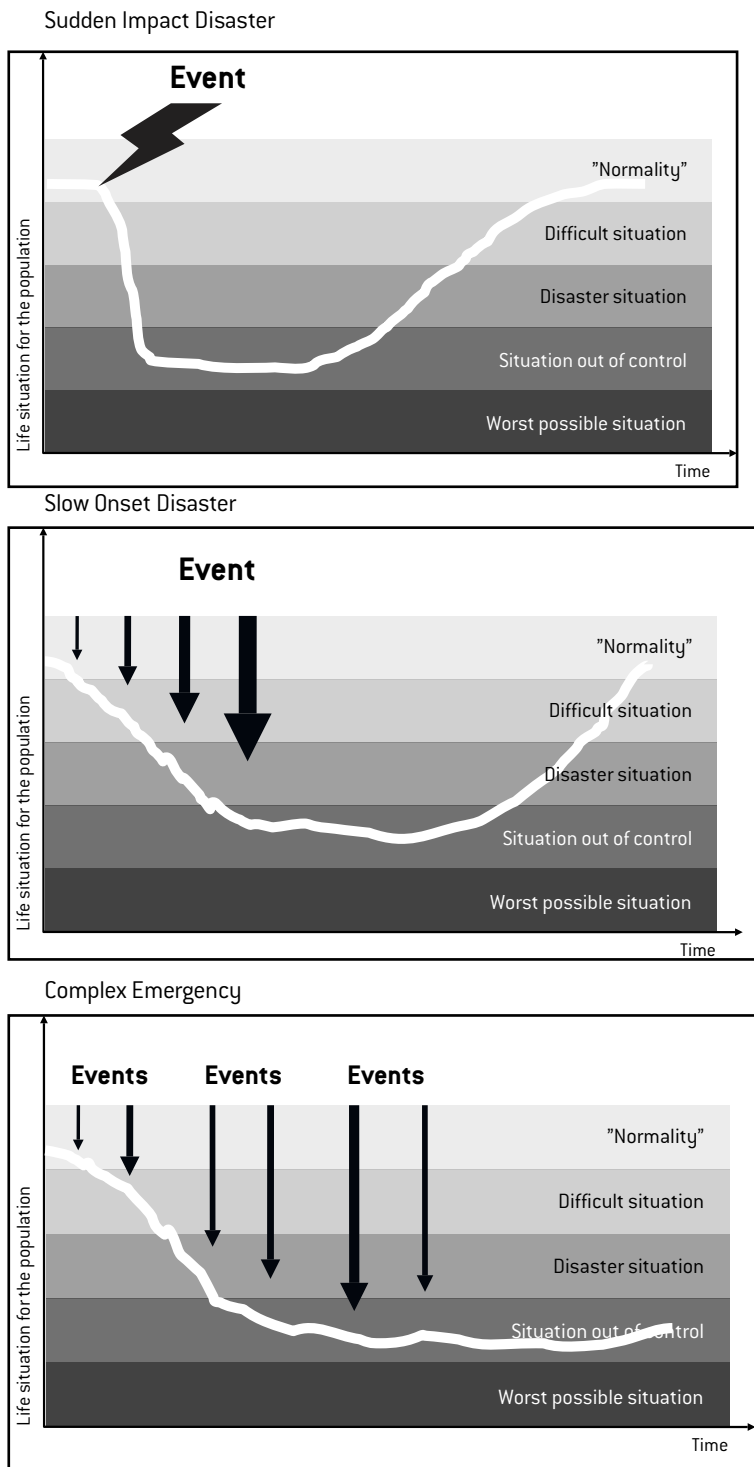
**3. MAN-MADE**

- a. Technological
- b. Conflict (interhuman)
  - i. Armed conflict
    - 1. Conventional war
    - 2. Armed conflict, Civil strife (study II)**
    - 3. Complex human emergency
    - 4. Terrorism (study III)**
  - ii. Unarmed conflict
    - 1. Sanctions

Due to complicating factors such as poverty, population displacement and political instability, the life situation following a disaster, may not return to pre-disaster “normality”. The disaster situation becomes permanent and develops into what is known as a Complex Emergency (Textbox 1) that is characterised by high death rates and a disrupted society. The lack of governance and collapse of authorities usually precede this development. The situation in Somalia, DR Congo, and Darfur can be characterised as Complex Emergencies. Figure 2 illustrates how the human life situation is affected over time by a Sudden Impact and Slow Onset Disaster and a Complex Emergency.

One widely accepted way of determining whether a situation within a defined population has developed into an emergency situation is to estimate the Crude Death Rate per 10 000 persons and day (CDR) (Toole and Waldman 1990; Noji and Toole 1997). The baseline CDR in most low-income countries is around 0.5 deaths per 10 000 persons per day (Table 1) (The Sphere project 2004). If in this context the CDR doubles to more than 1.0, the situation is considered to be an emergency and if it is above 2.0, the situation is judged as an extreme emergency that is out of control (Médecins Sans Frontières 1997; Salama, Spiegel et al. 2004; The Sphere project 2004). It is worth noting that in the North African context a doubling of the baseline CDR from 0.16 to 0.32/10 000 persons per day is equal to an emergency, which is less than a

Figure 2. Conceptual model of a Sudden Impact Disaster, Slow Onset Disaster and Complex Emergency.



third of the emergency threshold CDR in Sub-Saharan Africa and even below the base-line CDR.

The broad variations of baseline CDR are caused by differences in life expectancy due to varying socio-economic situations and different age compositions of the populations respectively. Baseline death rates among children under five do not vary due to age compositions and yet the level in a middle-income country like Kosovo is one-sixth of the equivalent child death rates in most low-income countries (Table 1).

**Table 1. Baseline Crude Death Rates (CDR), Under-Five Death Rate (U5DR) and emergency threshold per 10 000 persons and day by regions. [Data source: Unicef, State of the World's Children 2003]**

REGION	BASELINE CDR	THRESHOLD CDR	BASELINE U5DR	THRESHOLD U5DR
Sub-Saharan Africa	0.44	1	1.14	2.3
Middle East & North Africa	0.16	0.3	0.36	0.7
South Asia	0.25	0.5	0.59	1.2
East Asia & Pacific	0.19	0.4	0.24	0.5
Latin America & Caribbean	0.16	0.3	0.19	0.4
Central & Eastern Europe	0.3	0.6	0.2	0.4
High-income countries	0.25	0.5	0.04	0.1
Middle-income countries	0.25	0.5	0.53	1.1
Low-Income Countries	0.38	0.8	1.03	2.1
World	0.25	0.5	0.48	1.0

## DISASTER CONCEPTS

There are several factors apart from the triggering event that have an impact on the development of a disaster (Wisner 2004). *The Utstein Style guidelines for research into and the evaluation of disasters* (Sundnes and Birnbaum 2003) is a framework to define and describe the different factors involved in the development of a disaster and how they interrelate. In this thesis a simplified version of this model is presented in Figure 3.

This figure illustrates that the *Vulnerability* and *Resilience* (definition in Annex 1) of a society influence the disaster development. The Socio-economic situation influences the level to which a society is exposed to *Risk*. The risks may generate a *Disaster Event* that has a magnitude, intensity and length of durability. The

disaster event cause some type of *Impact And Damage* . The level of damage caused, is determined by the geography of the affected area, the size and composition of the affected population and the proportion of inhabitants affected in relation to the whole population and the health effects on the population as well as their vulnerability and resilience. Depending on the magnitude of damage and level of assistance this process may develop to a *Disaster*.

The level of vulnerability and resilience is closely associated with the socio-economic situation of the community and country. The low-income context is defined by high levels of vulnerability which is clearly illustrated in the World Development Chart 2007 (Figure 4) that shows the close relationship between child mortality and the Gross National Income (GNI) per capita at country level. The socio-economic disparity among the world's countries is 100-fold between the worst off and best off countries, respectively, for both Under-Five Mortality Rate (U5MR) and economic level. The U5MR per 1 000 live born varies between 300 and 3 and the GNI per capita varies from USD 300 to 30 000. In Annex 1 the difference between the U5MR and Under-Five Death Rate is explained.

Figure 3. Conceptual model of factors leading to the development of a disaster.

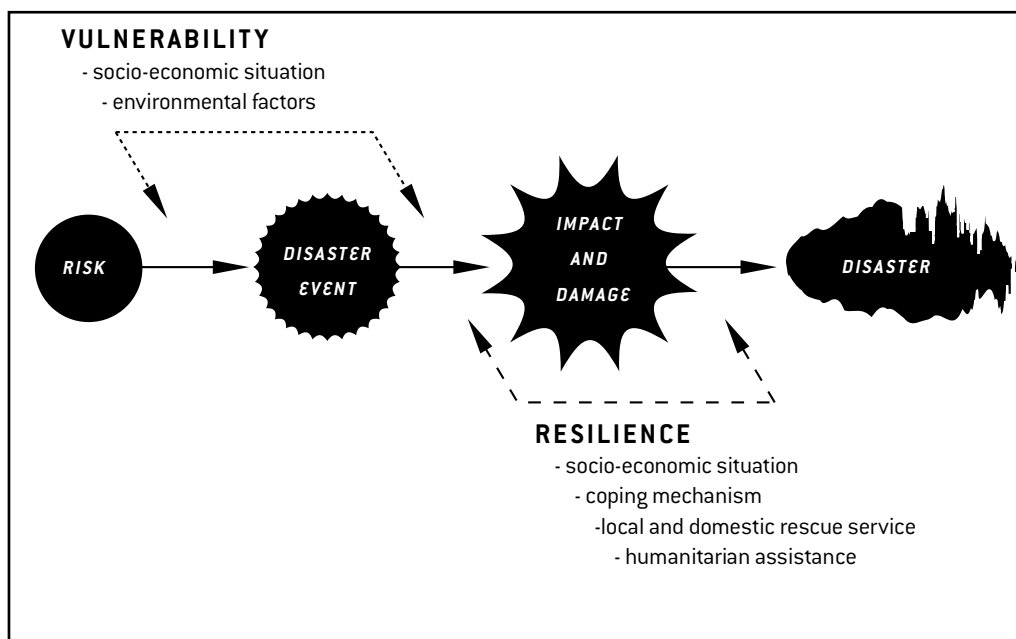
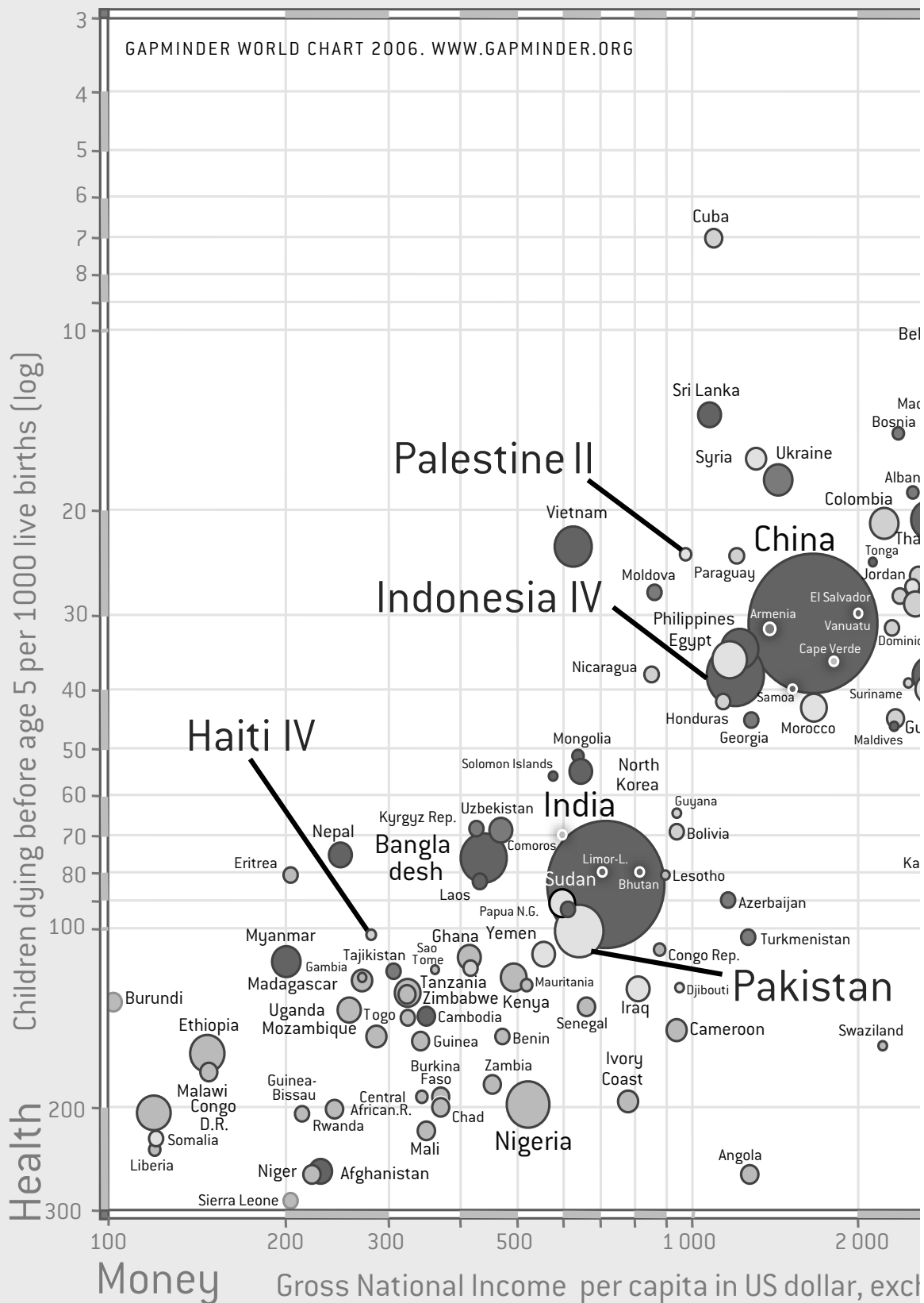
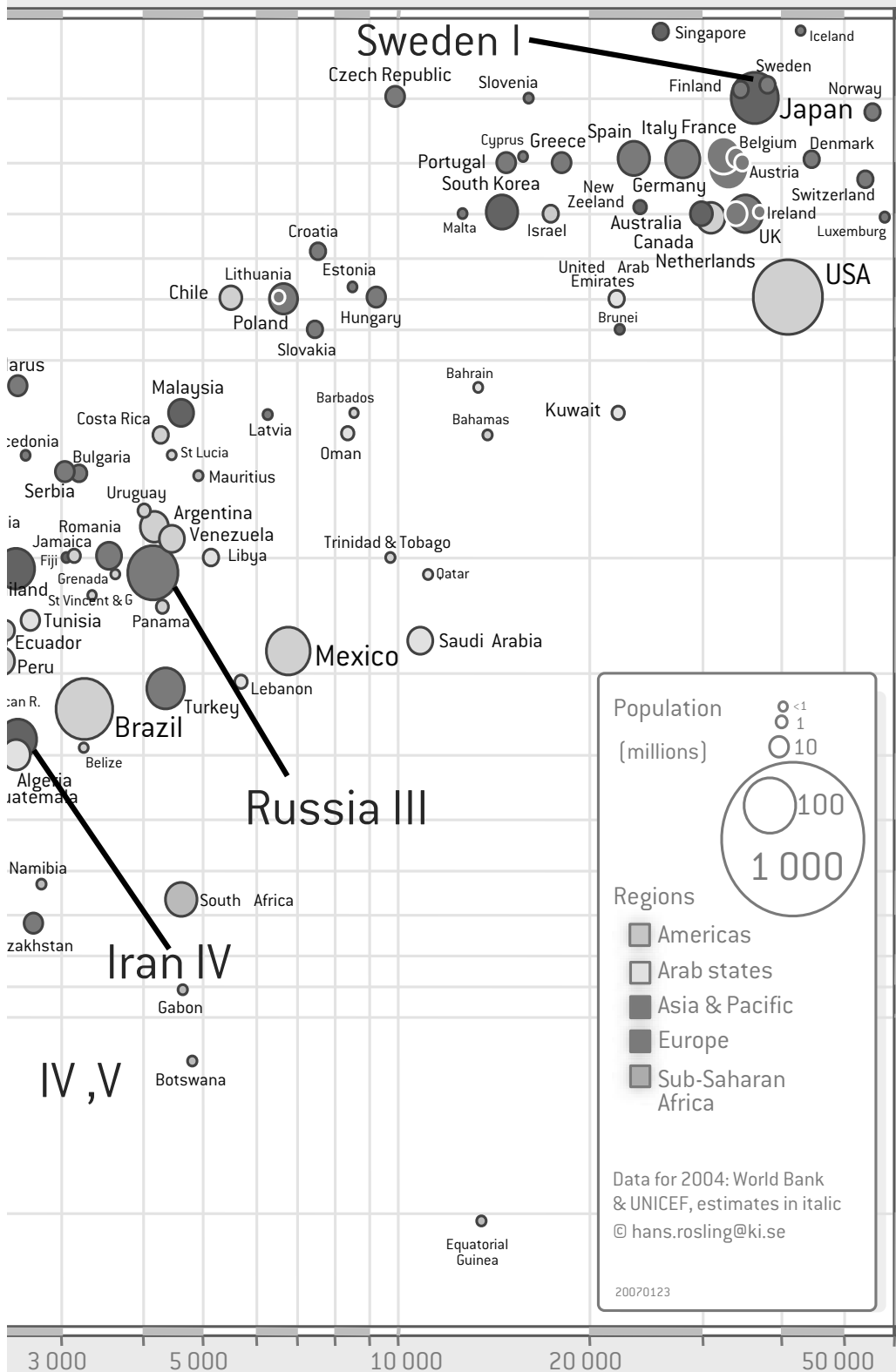


Figure 4. World Development Chart 2006 and countries of the studies.





change rate (log)

Resilience includes the capacities of existing local and national rescue systems as well as the general coping capabilities of the affected population. These capabilities are the combination of all the strengths and resources available to the population in a particular location that are useful for the solving, handling, or managing of a problem. Resilience augments with increased socio-economic status but may also be formed by other means. Through regular exposure to risks and hazards the population may build up resilience with coping mechanisms that help them manage in difficult situations, such as during the seasonal hunger gap or famines (De Waal 1989).

Several studies have documented that an SID in a low or middle-income country kill more people compared to an identical SID in a high-income country (UNDP 2004; Dilley et al 2005; Kahn 2005). The human toll of a similar SID is proportionately hundredfold higher in a low-income country than in a high-income country. A high socio-economic level provides inherent protection against the impact of the shock of nature.

### **Disaster impact**

Quantitative estimates of the impact of the world's natural and man-made disasters are extremely difficult to estimate. The International Disaster Database (EM-DAT) maintained by the Centre for Research on the Epidemiology of Disasters (CRED), includes quantitative information on over 12 800 natural disasters, technological disasters and complex emergencies that have occurred in the world from 1900 to the present (CRED 2005). The cumulative number of people affected by natural disasters reported to this database during the last 30 years is around 5 billion (including those affected more than once) and the human death toll reportedly amounts to around 2 million lives (Guha-Sapir, Hargitt et al. 2004). This corresponds to about an average of 70 000 deaths per year. Despite the scarcity and uncertainty of the data it has been estimated that man-made disasters kill at least three times as many people as natural disasters (Marshall 2002). It must be stressed that the number of deaths alone represents the tip of the iceberg in terms of all the human suffering caused by disasters

Sudden Impact Disasters differ by their degree of impact in terms of deaths, injuries and the destruction of infrastructure. In 2005, the number of deaths due to the Pakistan earthquake accounted for 83% of all natural disaster related mortality that year. However, this earthquake in a poor part of Pakistan only accounted for 3% of the total economic damages caused by disasters in 2005. In contrast, Hurricane Katrina in the USA that same year accounted for only 1,5% of all the natural disaster deaths in 2005 but caused 78% of the total economic damage caused by natural disasters in the world that year (CRED 2006). The



economic cost of disasters proportionally affects the richest countries more than the poor countries. According to reports, between 1993 and 2003 a natural disaster caused an average damage amounting to an estimated US\$67 billion per year, with a maximum of US\$230 billion and a minimum of US\$28 billion (Guha-Sapir, Hargitt et al. 2004).

Despite being dramatic, the impact of an SID on the health situation is usually soon over. The long-term consequences are mostly the economic effects and other problems associated with the collapsed infrastructure. The 2004 Asian Tsunami is an example of this. A mortality study among 859 households in 13 camps for displaced persons in Sri Lanka showed that 99% of the deaths during a time period of 80 days occurred within three days after the tsunami (Nishikiori, Abe et al. 2006).

The number of reported casualties due to natural disasters in the world are decreasing while the number of affected are steadily increasing (Guha-Sapir, Hargitt et al. 2004). However, recent predictions indicate that climatic changes are likely to increase the number of extreme natural events such as flooding and droughts. The growth of populations and urban slums adds to vulnerability and it is likely that there will be more people affected by natural disasters and environmental emergencies in the coming decades.

The impact of man-made disasters is more challenging to estimate. The worst effects of war, forced migration and other typical man-made disasters are seen in the world's poorest countries where quantitative information is limited. It is in these contexts that the effect of a conflict may develop into a complex emergency. In contrast to the situation following a natural disaster, the direct effects of war and violence in low-income countries are only responsible for a minor part of the excess mortality. Instead indirect causes, such as the lack of safe water, food, sanitation and health care are the main causes of the increased mortality (Van Herp, Parque et al. 2003; Coghlan, Brennan et al. 2006). A study on mortality in wars in low-income countries found that battle deaths as a percentage of total war deaths were highest in Somalia (19-27%) and Mozambique (15-29 %), while in the Democratic Republic of Congo (DRC) only 6 % of all deaths were estimated to be battle deaths (Human Security Centre 2005).

Since the beginning of 1990 the number of armed conflicts in the world has declined from 52 to 32 ongoing conflicts (Uppsala University Conflict Database 2007). The number of international crises, mainly due to war declined by over 70% between 1981 and 2001 (Mack 2005). In 2005 the number of refugees in the world was about 9 million, the lowest figure in the last 30 years. Since then the number of refugees has increased by more than one million due to the deteriorating security situation in Iraq. The number of people displaced within

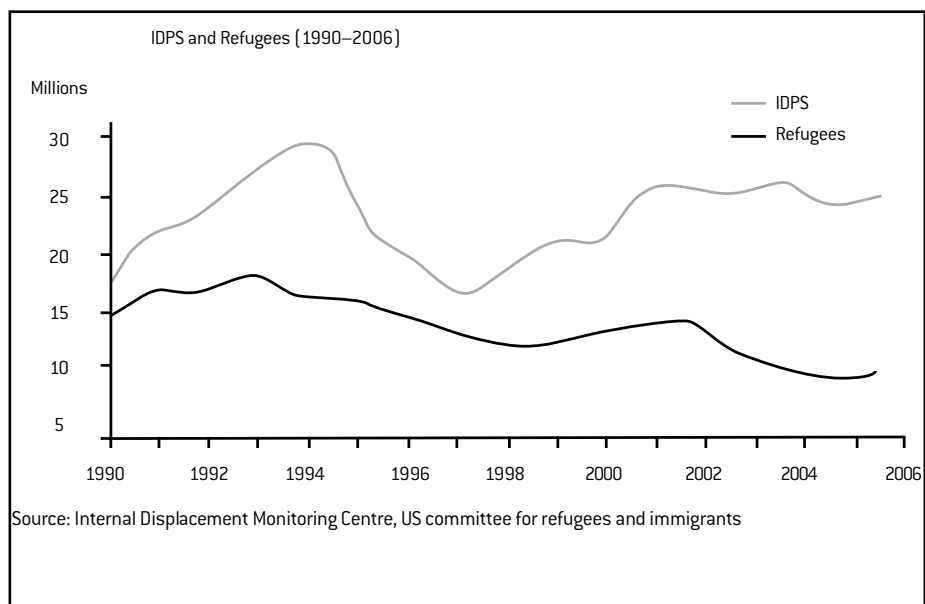
their home country has remained constant at around 25 million since 2001 (Internal Displacement Monitoring Centre 2006). Figure 5 shows the number of refugees and internally displaced in the world from 1990 to 2006. These groups of people are particularly vulnerable.

### Perceptions and myths

The perception of the general public in high-income countries of a disaster in a low or middle-income country is largely influenced by media images. Whether the media reports about a disaster depends on if the disaster fits the media format or not; i.e. provides sufficiently powerful and easily interpreted images and stories. Natural disasters in countries with a higher socio-economic level seem to fit this format better than the more complex and slow impact disasters in low-income countries do (Olsen, Carstensen et al. 2003; Loewenberg 2005; Sondorp and Bornemisza 2005).

There are a number of myths that reappear in the media following each new major SID. Although they have been corrected for more than 30 years the myths tend to reappear in the media (Lechat 1976).

Figure 5. Moving estimate of the number of internally displaced and refugees in the world.



The first myth is that foreign medical volunteers are needed instantaneously along with all kinds of medicines and equipment. Another prominent myth is that dead bodies constitute a major risk with regard to the transmission of infectious diseases (de Goyet 2000; Morgan 2004; Oliver Morgan and de Goyet 2005). Yet another myth is that there is a major risk of epidemics in the aftermath of any SID (Floret, Viel et al. 2006). The latter message was propagated in an alarmist way by UN agencies following the 2004 Tsunami. Press statements claimed, “More people will die from outbreaks than from the tsunami itself”. There was no reported excess deaths due to epidemics.

### **Relief in disasters**

The most important initial assistance following a disaster is provided by the local population and local rescue services. They will save lives and rescue people during the first few minutes, hours and days before any form of outside assistance arrives (IFRC 2004). With growing wealth the risk of disasters decreases while the ability of the state to organise the rescue services and provide relief increases. When disaster events occur in high and upper middle-income countries, sufficient assistance will in most cases be provided by the local and national rescue services and if necessary by complementary actions implemented by the national military, police and health service as well as by national voluntary rescue services. In high-income countries and upper-middle income countries the discipline of disaster medicine is well developed, despite low disaster risks. The focus of disaster medicine in resource rich contexts is on site care, pre-disaster planning and the rapid transportation of those injured to hospitals. The most important dimension of disaster medicine is disaster preparedness which involves the planning of the swift reallocation of resources following a disaster event. It requires regular exercises involving large parts of the health service system. The group of professionals involved in disaster medicine goes beyond the emergency room doctors, traumatologists and anaesthesiologists. It includes fire fighters, ambulance drivers, administrators, and logistics and transport officers as well as professional categories caring for the psychological, social and spiritual needs. In lower and low-middle income countries there is less capacity for governmental agencies to be disaster prepared although disasters occur more often. In low-income countries in particular, the resources to adequately and sufficiently provide relief in a disaster may be insufficient or even non-existent. However, when the coastal communities in southern India were affected by the 2004 tsunami the government immediately announced that there was no need for emergency humanitarian assistance from International NGOs and international donors. Sufficiently sized countries

are able in spite of a relatively low GNI/capita to handle local disasters using national resources. The massive impact of the 2005 earthquake in Kashmir, however, made the Pakistani government request international assistance, although a considerable amount of national resources, both military and civilian, had first been made available for the relief work.

## **INTERNATIONAL HUMANITARIAN HEALTH ASSISTANCE**

International humanitarian assistance is based on the humanitarian imperative, an unselfish and ethical obligation to assist people in need with the aim of protecting lives and alleviating suffering (Slim 2002). The term is widely used but rarely defined. It refers to the provision of resources and/or expertise to save lives and relieve human suffering in populations that have been overwhelmed by a disaster. Humanitarian assistance is also labelled humanitarian action or humanitarian response. Textbox 3 lists the objectives and definitions of humanitarian action as defined by the main governmental donors that started the Good Humanitarian Donorship initiative (GHD 2003). Humanitarian health assistance is one part of this assistance and involves public health interventions related to health problems associated with disrupted societies, collapsed infrastructure and displacement of population. This distinguishes it from disaster medicine that is a part of clinical medicine. In the disaster context, humanitarian health assistance is therefore closely related to assistance focused on the non medical vital needs.

Human survival depends on the availability of the five main groups of health determinants; (1) water & sanitation, (2) food, (3) shelter, (4) health care and (5) protection/security (Toole and Waldman 1990; Toole and Malkki 1992; Banatvala and Zwi 2000; Lindstrand 2006). The operational focus of humanitarian assistance is to ensure that the affected population has access to all these five groups of vital needs. There are now international humanitarian organisations specialising in each need and their knowledge and quality of work has improved significantly during the last 20 years. The evidence of best humanitarian assistance practice is based on empirical experiences from refugee camps in mainly Sub-Saharan Africa during the 1980s and 1990s (Toole and Waldman 1990; CDC 1992; Toole 1994; Médecins Sans Frontières 1997; Toole and Waldman 1997; Brown, Jacquier et al. 2001; Bradt and Drummond 2003). It has been documented that initial crude mortality rates among refugee populations was ten to twentyfold higher than mortality rates in their country of origin (Noji and Toole 1997). The initial phase of a refugee crisis is often chaotic with a large number of people arriving in a short period of time. The

1994 exodus from Rwanda of mainly the Hutu ethnic group to refugee camps around the border town Goma in Zaire challenged the humanitarian relief system. The excess death rate during the first month was extremely high due to outbreaks of cholera and dysentery (Roberts and Toole 1995; Toole 1995). The peak of the measured CDR was 35 deaths/10 000 inhabitants/day, an extremely high rate (Toole 1995).

The refugee camp setting is a very special context where the beneficiaries of the assistance are virtually “naked” almost without any belongings. They depend entirely on external assistance and a limited number of coping capacities. In large refugee camps in low-income countries international humanitarian assistance needs to ensure the provision of services and materials to cover almost all vital needs. The local host communities and the host country have very limited resources to assist the refugees. At present the refugee camp setting is less common in Africa than a decade ago. Today the “affected” reside instead either in various settings, integrated with the host population or remain in the close vicinity of their home. This has changed the scene for international humanitarian assistance and consequently more attention must be paid to the capacities and coping mechanisms of those receiving the assistance.

**Textbox 3. Objectives and definitions of humanitarian assistance as defined by the Good Humanitarian Donorship initiative**

1. The objectives of humanitarian action are to save lives, alleviate suffering and maintain human dignity during and in the aftermath of man-made crises and natural disasters, as well as to prevent and strengthen preparedness for the occurrence of such situations.
2. Humanitarian action should be guided by the humanitarian principles of humanity, meaning the centrality of saving human lives and alleviating suffering wherever it is found; impartiality, meaning the implementation of actions solely on the basis of need, without discrimination between or within affected populations; neutrality, meaning that humanitarian action must not favour any side in an armed conflict or other dispute where such action is carried out; and independence, meaning the autonomy of humanitarian objectives from the political, economic, military or other objectives that any actor may hold with regard to areas where humanitarian action is being implemented.
3. Humanitarian action includes the protection of civilians and those no longer taking part in hostilities, and the provision of food, water and sanitation, shelter, health services and other items of assistance, undertaken for the benefit of affected people and to facilitate the return to normal lives and livelihoods.

## Actors

Before the Red Cross movement was formed in 1863 no organisational framework existed for international humanitarian assistance. With few exceptions humanitarian assistance was limited to actions within a country's own territories and sometimes in its colonies (Destexhe 1996). During the first half of the 20<sup>th</sup> century relief was provided by the international community to the victims of famines and wars in Europe. In the second half of the century humanitarian organisations started to work in the former colonial territories, the so-called "Third World". Since the beginning of the 1970s the number of organisations providing humanitarian assistance has increased. International humanitarian assistance has developed from largely charity driven aid activities to a profession employing and engaging thousands of trained people in hundreds of organisations with a multitude of mandates.

The architecture of humanitarian assistance will vary from disaster to disaster depending on factors such as security, geopolitical interest, media coverage and the availability of funds. The main *UN organisations* with a humanitarian mandate include the World Health Organisation (WHO), UNICEF, World Food Program (WFP), United Nations High Commissioner for Refugees (UNHCR) and the Organisation for the Coordination of Humanitarian Assistance (OCHA). A large proportion of international humanitarian assistance is delivered by a group of international organisations referred to as *Non Governmental Organisations* (NGO). A key aspect that separates the different actors is their different mandates. While the UN and the Red Cross/Crescent organisations have a legally defined mandate, the NGOs define their own mandate. The number of NGOs active in humanitarian disasters have increased substantially in the last 20 years (Stoddard 2003). Following the 2004 Tsunami more than 300 international NGOs were active in Aceh province (Canny 2005). *Government agencies* including the military in high and middle-income countries are also increasingly becoming active in the delivery of assistance in disasters.

## Funding

Funding for international humanitarian assistance comes from a number of different sources. The total level of funding is likely to have more than doubled every decade since 1975, and in the year 2005 an estimated USD 18 billion was provided worldwide (Development Initiatives 2006). About half of this sum is from governmental sources in OECD countries, i.e. tax money. Voluntary and often spontaneous private donations to INGOs amount to approximately 6 billion. The remaining USD 3 billion originate from various sources, including governments in middle-income countries. A total of 77 of the 99 governments

that responded to the 2004 tsunami were non-OECD members, mainly middle-income countries (Development Initiatives 2006).

### **Accountability**

Accountability may be defined as the documentation of performance in the light of agreed expectations. There are no international laws that regulate or control the quality of humanitarian assistance. This is largely left to the humanitarian agencies themselves. In order to compensate for the lack of accepted international standards and quality benchmarks a number of quality processes has been initiated to increase accountability. These include the Active Learning Network for Accountability and Performance in Humanitarian Action (ALNAP), the Good Humanitarian Donorship, the Code of Conduct and People in Aid. During the last 25 years humanitarian assistance has improved in terms of management and design while documentation on the ability of humanitarian assistance to limit mortality still remains limited (Roberts and Hofmann 2004). In response to the criticism of the humanitarian assistance provided to the Rwandan refugees in Goma, Zaire in 1994, “the Sphere project, humanitarian charter and minimum standards in disaster response” was created by a group of humanitarian agencies in 1997. The aim of this project is to improve the quality and accountability of humanitarian assistance by establishing minimum standards for good practice in the humanitarian field (The Sphere project 2004). By adhering to the standards, agencies ensure that the assistance delivered reaches a defined minimum standard level in five key sectors; water supply & sanitation, nutrition, food aid, shelter and health services. However, minimal standards can cause ethical problems, especially in contexts where trade-offs are needed to maximise the use of limited resources and where the lives of the refugees’ host population do not meet these basic needs (Griekspoor and Collins 2001).

### **NEEDS ASSESSMENT**

A Needs Assessment (NA) is a broad term that is not well-defined. It refers to the systematic collection of information that describes the severity of a disaster and the human needs that require immediate action. There are several acronyms such as a Rapid Health Assessment, Rapid Epidemiological Assessment, Rapid Initial Assessment and Rapid Needs Assessment which are conceptually the same but will be utilised differently depending on the operational focus of the agency conducting the assessment. The term rapid implies on the one hand that the collection of information and its interpretation is carried out rapidly

but also that the assessment is conducted rapidly after the disaster event. The different content and type of assessment are illustrated in Table 2. In the thesis NA are broadly referred to as the initial and rapid procedure that is used to gain information on a disaster affected population to guide the initial humanitarian health assistance. Specifying a needs assessment in any more detail has not been found to be useful.

**Table 2. Methods, source, type and time frame of information for needs assessment**

<b>Method</b>	<b>Source of information</b>	<b>Type of information</b>	<b>Time frame</b>
Internet web, news, Blog and literature search for secondary and primary information	Published web reports, information from agencies and UN, etc	Maps and background of demography and health status, disease pattern, vaccination coverage, type of disaster and impact estimated number and proportion of affected/dead/injured. Size and geography of affected area. Access to and gaps of vital needs	Hours-days
Key informant interviews	Decision makers, health care staff, health care consumer	Cultural issues, food habits, health seeking, Water and food availability, capacities and vulnerabilities Assistance planned	Hours-days
Focus Group interviews	Target population	Ranking and perception of needs. Behaviour, cultural specificities, capacities and vulnerabilities	Days
Systematic Observation - with checklists	Affected area	Overview, immediate needs, shelter, water and food availability, Funeral sites	Days
Quantitative sample surveys	Target population	Nutritional status, Population size, Quality of water	Weeks
Remote image techniques	Technical expertise	Size of target population. Damage assessment, Mapping	Days-weeks

When reviewing the literature three main roles for NA evolve: 1) to provide information that will determine whether outside assistance is required and to define the quantity and type of assistance required in a way that serves an operational purpose 2) To provide information to donors that will allow them to allocate funds based on the needs of the affected population and 3) to provide information on the situation that can serve as baseline data. (Malilay 2000; Darcy and Hofmann 2003; GHD 2003; WHO and IFRC 2006; Spiegel 2007) The operational importance of NA is highlighted by humanitarian agencies. In the widely used MSF book “Refugee health, an approach to emergency situations”(Médecins Sans Frontières 1997), NA are highlighted as the



first activity of the top ten priorities that are essential in the initial phase of delivering humanitarian assistance. NA is thus an integrated core part of humanitarian assistance that is considered as the first part of the project cycle. For operational purposes needs assessments following disasters should at least provide information on 1) The size of the affected population and its geographical distribution. 2) The pre-disaster and post-disaster context and impact of the disaster. 3) A description and quantification of the vital needs regarding water & sanitation, shelter, food, health care and protection/security. 4) Local and other capacities, coping resources and the special vulnerabilities of the affected population.

The main donors of humanitarian assistance have clearly stated that the needs of disaster affected populations should guide the allocation of resources and that such needs should be determined through needs assessments results (GHD 2003). In a main report on NA and decision-making, it says: “Needs assessments are a necessary condition for effective prioritisation and appropriate response”(Darcy and Hofmann 2003). The use of NA information as baseline data is important if the effect of humanitarian assistance is to be studied and compared between other disasters.

## **Concepts**

The theoretical and ethical aspects of NA, to let information on the needs of a disaster-affected population decide and guide the type and quantity of assistance is easily understood. However, in actual fact NA are conceptually more complex to grasp and practically very difficult to perform in reality (Table 3). It is therefore not surprising that the results and use of need assessments for international humanitarian health assistance has not been systematically studied.

A main challenge to a coherent approach to NA is the lack of international consensus on the type and definition of indicators that capture the vital needs. The SMART initiative (SMART 2002) has brought together organisations (within the health sector) to establish a comprehensive and collaborative system to ensure that reliable data is used for decision-making and reporting. It aims to provide a standardized methodology for assessing needs that will in turn provide comparable data between countries and emergencies to prioritize resource allocations. However, the implementation of this initiative has been slow. Currently a variety of indicators and methodologies are being used without a common definition and agreement on procedures. For example, the most impor-

tant information that must be collected during an assessment is the size of the affected population, that is the denominator used for most other measurements. The term “affected population” continues to be used in an unspecific and subjective manner. Anyone in or in the close vicinity of a disaster area will somehow be affected, even if their house has not suffered any direct impact.

Studies on the quality of NA in disaster and emergency settings and how their results are disseminated and used are few. In fact, no comprehensive study has been found. A study of eight initial assessments conducted by CDC following natural disasters, mainly in the USA found that all but one assessment had been carried out too late to guide initial emergency relief (Malilay 2000). One unpublished study severely criticises the way rapid needs assessments were carried out by humanitarian organisations following the 2003 Iraq invasion. Observations noted that the assessments were focused on needs rather than on local capacities and resources and that inappropriate methods were used for the Iraq context (Colombo 2003). There are a number of studies on nutritional assessments that share many of the conceptual and contextual challenges of NA. One study reviewed 125 nutritional assessments during the 1999 and 2000 hunger crises in Ethiopia and found that only half of the assessments were carried out using a sample that was representative of the studied population. The study concluded that NGO workers are unprepared to conduct quantitative assessments and that most surveys were of such poor quality as to be unhelpful for the making of sound policy decisions (Spiegel, Salama et al. 2004). Similar findings were reported from the assessment of nutritional surveys in Somalia 1991-93 (Boss, Toole et al. 1994). In a recent study of 368 nutritional surveys and 158 mortality surveys from humanitarian emergencies between 1993 and 2004, 35% of the nutritional surveys met the basic quality criteria defined in the study while only 3% of the mortality surveys did so (Prudhon and Spiegel 2007).

Criticism on how needs assessments were carried out and results utilised following the 2004 tsunami was highlighted in an evaluation report (de Ville de Goyet 2006). It concluded that the “decision for deploying international humanitarian assistance did not wait for the results of formal needs assessments. Results from the slow moving needs assessments did not drive the initial humanitarian response rather it was the availability of enormous amount of USD that was the driving force. There is a considerable gap between the conceptual efforts at headquar-

ters to develop detailed manuals for needs assessments and the reality in the field. Most of the needs assessments were one-time exercises without monitoring or follow up. Needs assessment results from the UN and national authorities were spread while NGO/Red Cross assessment results were kept for internal use only”.

**Table 3 Major dimensions and categories for description of the type of disaster and context in which needs assessment will be done.**

<b>Dimension</b>	<b>Category</b>
National GNI context	High
	Upper-middle
	Lower-middle
	Low
	Collapsed nation
Security/access	Safe access
	Partly unsafe
	Unsafe with limited access
	No access
Disaster type	Natural
	Man made
	Man made + natural
Onset	Rapid
	Slow
	Mixed
Settlement pattern	Non displaced
	Scattered
	In camp
	Integrated with local population
Delay in conducting RNA after onset	Days
	Weeks
	Months
	Reassessment
Sectors assessed	Water & sanitation
	Health
	Nutrition
	Security, Social, human rights
% of Area assessed	In %
Population size and composition	Vulnerable groups

## Assessors

There is not one type of international institution or organisation that conducts assessments following disasters. Consequently, there is no coordinated approach to assessments. Most needs assessments are carried out by implementing organisations of humanitarian assistance, i.e. humanitarian NGOs and UN agencies and the result is mainly used for internal program purposes. Most agencies use their own developed needs assessment manual (von Schreeb 2003).

The United Nations Disaster Assessment and Coordination mechanism (UNDAC) managed by OCHA is designated to coordinate humanitarian assistance and conduct assessments following natural disasters<sup>1</sup>. The Rapid Assessment Process is an OCHA developed initiative to encourage humanitarian agencies to supply assessment information in a common format. The result is shared through the Humanitarian Information Centre which is established on the ground and on the Internet following main humanitarian disasters<sup>2</sup>.

## Methods

Due to the varying situations and challenging contexts where humanitarian assistance is required there is no standard methodology that may be used for needs assessment. The choice of methodology will depend on a number of issues; 1) the type of disaster 2) the type of information, precision and accuracy wanted in relation to the purpose 3) the timing of the assessment 4) resources, time and competence available, 5) the context and security. The methodologies must be adapted to the special disaster context and the limited time available which will exclude most forms of representative sampling. Validity precision and accuracy will in most real life situations be sacrificed for the sake of speed, simplicity and cost (Anker 1991; MacIntyre 1999; Colombo 2002). Needs assessments depend more on assumptions, estimates and predictions than they do on systematically collected facts (Darcy and Hofmann 2003).

The types of methods proposed in the literature include a secondary literature review and combinations of qualitative methods such as Rapid Rural Appraisal (RRA) and Rapid Assessment Procedures (RAP). These methods were originally developed for anthropological and sociological research and to evaluate health and other programs in rural low-income countries (Melville 1993). They consist of a variety of techniques including semi-structured interviews, focus group discussions and direct transect observation

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1 <http://ochaonline.un.org/Coordination/FieldCoordinationSupportSection/UNDACSystem/Missions/tabid/1425/Default.aspx>

2. <http://www.humanitarianinfo.org/>

(Scrimshaw 1992). These methods have in fact been used for many decades if not centuries in combination with classical descriptive epidemiology when conducting outbreak investigations. Critics of RAP highlight the lack of a formal sampling frame at household level which introduces selection bias (MacIntyre 1999). Quantitative methods, based on probability sampling are therefore preferred by epidemiologists. A commonly used rapid sampling method is the random cluster sampling which was developed to estimate vaccination coverage (Hendersson 1982). It is particularly useful in settings where sampling frames at individual or household level are unavailable. The random sample survey has been compared with national census surveys and the results were close to similar while this sampling was three times as cost-effective (MacIntyre 1999).

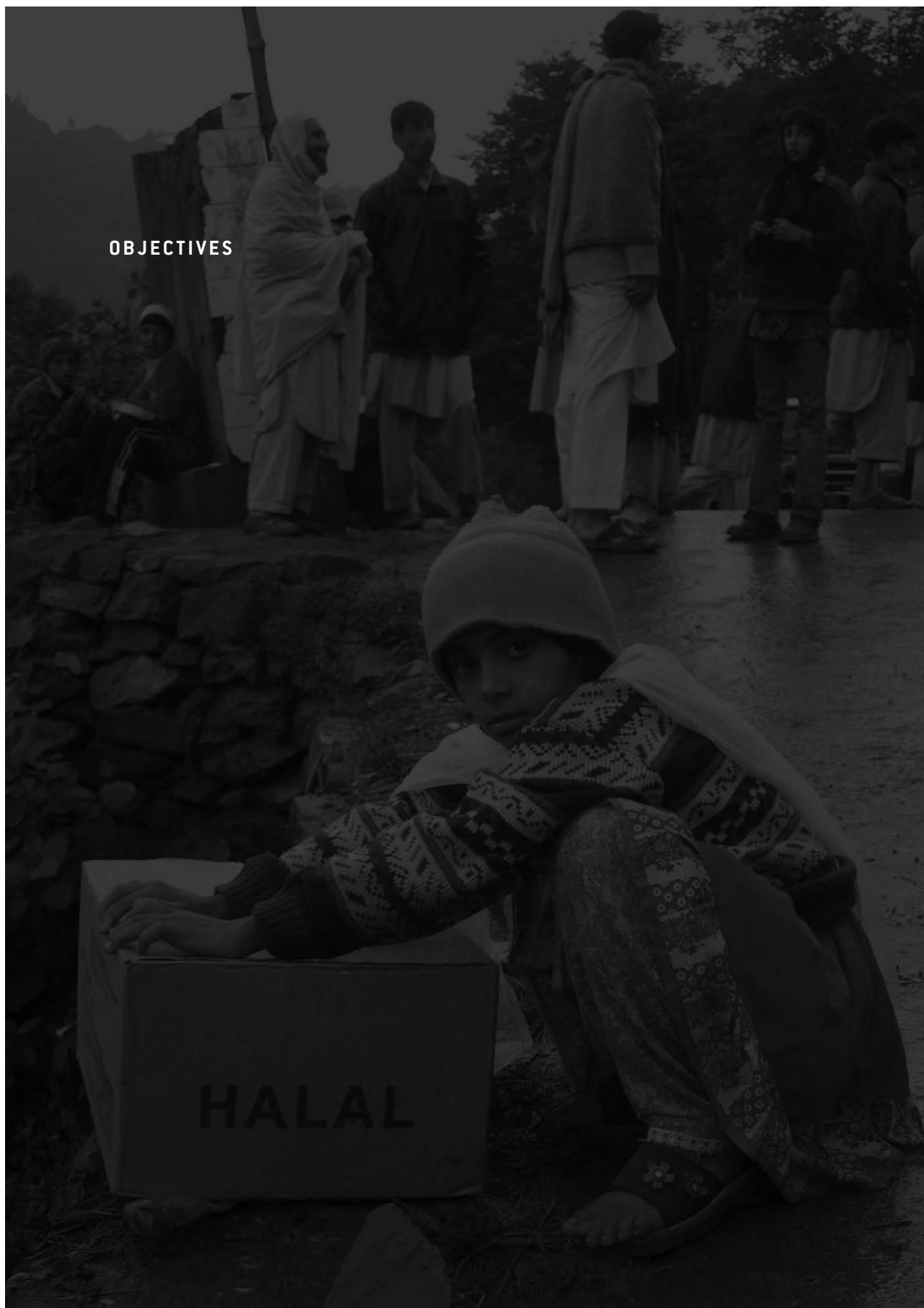
The qualitative and quantitative research methods complement each other; the first characterizes and describes the various needs of the population, while the other will quantify the proportions of the population that have each defined types of needs. The methods proposed are listed in Table 2. Different manuals exist and approaches to carrying out needs assessments in resource constrained settings have been described in detail (Smith 1989; Guha-Sapir 1991; Perrin 1996; Smith and Morrow 1996; John Hopkins and International Federation of Red Cross and Red Crescent Societies 2000; Malilay 2000; Médecins Sans Frontières 2002; Skinnider and Blok 2002; von Schreeb 2003; Redmond 2005; USAID 2005). Most of the assessment manuals propose the use of a combination of quantitative methods, including surveys with random sample and qualitative methods that can be rapidly applied (Weiss, Bolton et al.). One article proposes a minimum essential data set for NA (Bradt and Drummond 2003).

## **Problem statement**

International humanitarian health assistance provided for victims of natural and man-made disasters is increasing in terms of funding, volume and frequency. Needs assessments are therefore required 1) to define the dimension and composition of humanitarian health assistance, 2) for needs-based funding and 3) as baseline data for monitoring. However, they are presently neither regularly conducted nor are their results shared.

The motives behind conducting the studies in this thesis was to explore the real-life challenges of conducting needs assessments for humanitarian health assistance in disaster situations and to study whether and how such assessments are used when the provision of international humanitarian health assistance is being decided.

## OBJECTIVES

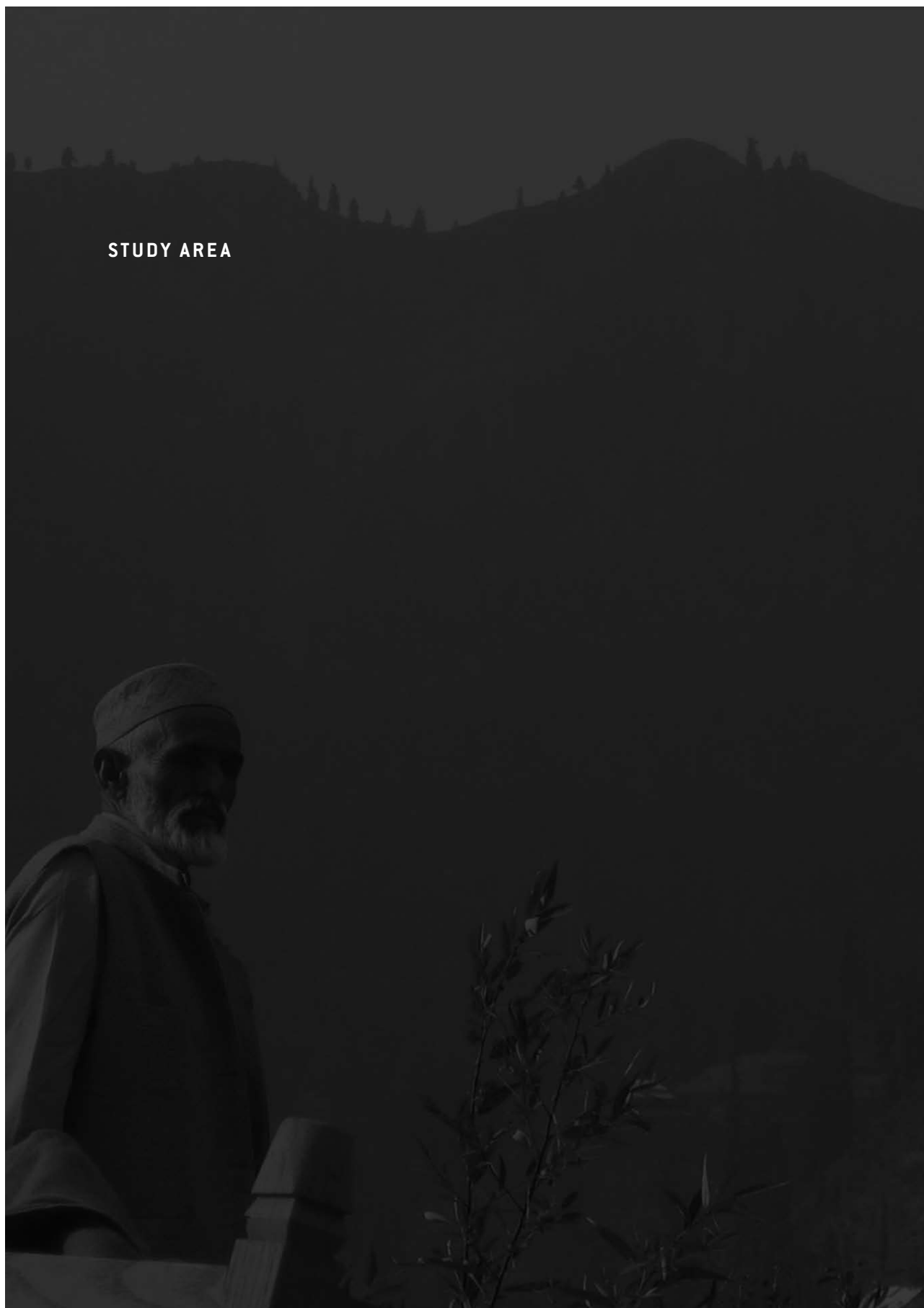


**THE OVERALL OBJECTIVE** is to explore contextual and conceptual aspects of needs assessments and how their results may influence the international humanitarian health assistance response in disaster situations

*The specific objectives of the five studies were;*

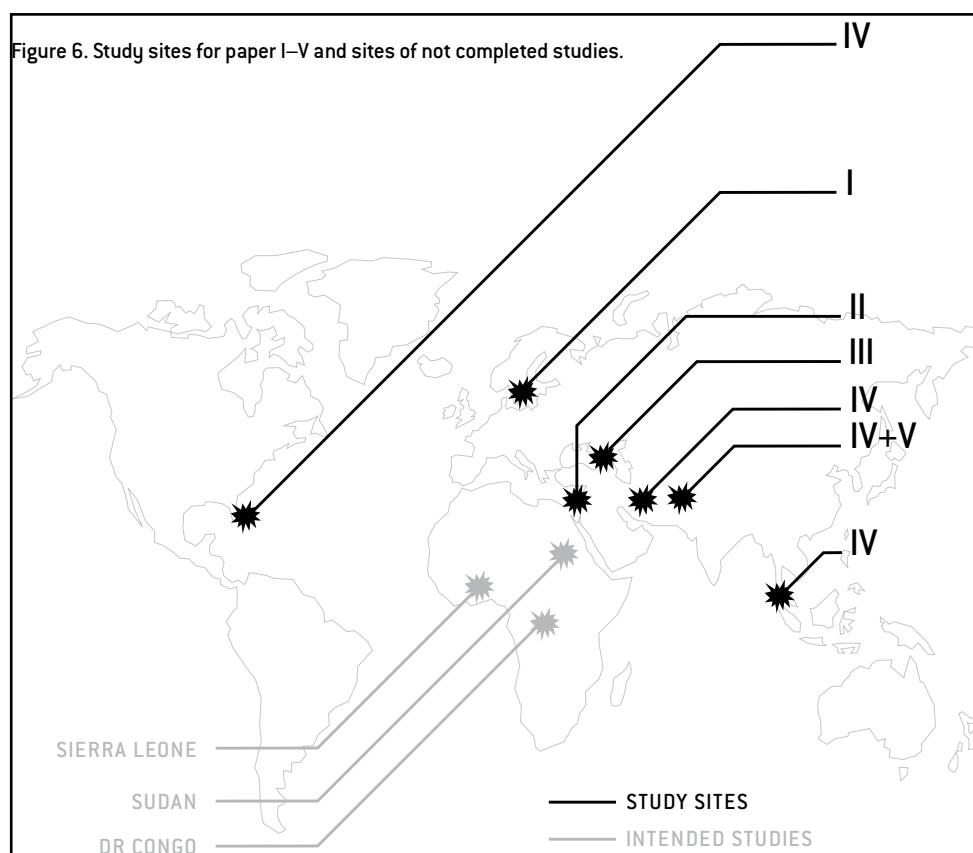
- I. To study if a major donor agency had access to and used needs assessment data for funding decisions of humanitarian health projects.*
- II. To assess the health care needs of Palestinians affected by the 2002 low intense conflict.*
- III. To assess the need for urgent international medical assistance following the 2004 terrorist attack in Beslan.*
- IV. To determine whether Foreign Field Hospitals were deployed according to the health needs following four recent Sudden Impact Disasters.*
- V. To test the feasibility and validity of a needs assessment interview survey of persons selected when entering clinics following the 2005 Kashmir earthquake.*

STUDY AREA





**THE GEOGRAPHICAL LOCATION** of paper I–V and the location of the intended studies in low-income countries that could not be completed are shown in Figure 6. The pre-disaster socio-economic situation of the countries where studies I–V were carried out are marked in Figure 4. The different types of disaster-events of studies II–V are classified in Textbox 2.



### Paper I, the Sida study

In 2003 large governmental donors for humanitarian assistance decided to allocate funding on the needs of the affected population and on the basis of needs assessment results (GHD 2003). In order to study the extent to which this policy was adhered to at the time of this declaration, all funded humanitarian project

applications to a large donor made in 2003 along with the funding decision were studied. The donor studied was the Swedish International Development Cooperation Agency (Sida). The study was conducted in the fall of 2004, at Sida's Division of Humanitarian Assistance and Conflict Prevention. In 2003 this division allocated SEK 1.6 billion (about USD 230 million) to humanitarian agencies running projects in different parts of the world.

### **Paper II, the health needs of Palestinians**

In early 2002 the security situation in the West Bank and Gaza deteriorated. By the middle of March incursions into the area by the Israeli Defence Forces (IDF) were occurring on a regular basis. By March 29 the IDF initiated "Operation Defensive Shield" following a suicide bombing that killed several Israeli civilians. This was the largest deployment of Israeli armed forces into the West Bank since June 1967. The re-occupation of many Palestinian cities resulted in the destruction of infrastructure and a curfew that lasted a number of weeks. Movement in the Palestine territories became extremely limited and problematic due to hundreds of IDF checkpoints and roadblocks. International media coverage was intense, especially of the IDF attacks in the town of Jenin. The media images called for action in terms of humanitarian assistance. I participated in a health needs assessment survey of parts of the West Bank and Gaza on behalf of Merlin, a medical humanitarian NGO. The study was conducted between April 28 and May 12, 2002. The area assessed included the cities of Jerusalem, Jenin, Bethlehem, Gaza, Ramallah, Hebron and Nablus and 11 rural locations including four refugee camps. The Palestinian territory constitutes a middle-income setting and the context at the time of the study was dominated by the increased militarization of the conflict between Israeli and Palestinian forces. The low intensity conflict reportedly yielded relatively few casualties but its possible effects on the general health system and health status was unclear.

### **Paper III, the Beslan assessment**

On September 1, 2004 a group of terrorists occupied a school in Beslan, North Ossetia, in the Russian Federation. They took more than 1 300 children and adults hostage. Two days later the occupation ended in extreme violence resulting in hundreds of fatalities and injured. On September 5, Sweden received an official appeal for assistance with material and medicines. I travelled to Beslan on behalf of the Swedish National Board of Health and Welfare to assess the emergency medical care provided in order to determine whether Swedish assistance was needed. The study was carried out between September 9 to 11 at the district

hospital in Beslan and the three hospitals in the capital city of Vladikavkaz in the republic of North Ossetia. Follow-up data was collected during the following month. The Russian Federation is an upper middle-income country and the republic that was studied has a population of 700 000.

#### **Paper IV, the use of Foreign Field Hospitals**

In 2003, 2004 and 2005, a large number of Foreign Field Hospitals (FFH) were deployed in four major Sudden Impact Disasters. However, it has been noted that the FFH arrived too late to provide life saving emergency trauma care although staff and equipment are focused on trauma care. Trauma conditions instantaneously become the dominating hospital care need following most SID. However, within a few days the main hospital care needs will shift back to the disease pattern that was most common before the SID. To assess the use of FFH in four Sudden Impact Disasters; the 2003 earthquake in Bam Iran, the 2003 tropical storm in Haiti, the 2004 tsunami in Aceh Indonesia and the 2005 earthquake in Kashmir Pakistan were studied. The economic development in Indonesia and Iran are at a lower middle-income level whereas Pakistan and Haiti are low-income countries. The security situation in Iran is stable while the other three locations have experienced sporadic conflicts in the last few years. It is estimated that 25 000 and 80 000 people were killed in the earthquakes in Bam and Kashmir respectively. The tsunami in Aceh claimed more than 170 000 lives. In Haiti about 2 000 were killed by the tropical storm.

#### **Paper V, the Clinical Entrance Interview**

On September 8, 2005 an earthquake struck the northern part of Pakistan and India, affecting 3 million people. The medical oriented NGO, Médecins Sans Frontières (MSF) quickly started providing medical relief in the mountainous Bagh district in the province of Muzzafarabad in the independent state of Azad Jammu & Kashmir, Pakistan. In order to direct and focus the assistance, a needs assessment was conducted by interviewing selected visitors to health facilities supported by MSF about the needs of their households. The study was made in the Bagh sub-district (Tehsil), with a population of about 230 000. It is mainly inhabited by subsistent farmers and is among the poorest parts of the low-income country Pakistan. The context at the time of the study was influenced both by the earthquake that struck two weeks before the start of the study and by the long-standing insecurity due to border disputes with India.

## METHODS AND MATERIALS



**THE OBJECTIVES** of all five studies are primarily descriptive and only to a limited extent analytical; hence the methods used do not involve any advanced statistical or epidemiological analyses. The descriptive methods used include a mixture of quantitative and qualitative methods.

An overview of the methods used is found in Table 4. Only for the two retrospective studies was there time to prepare a detailed study protocol and formulate a specific research objective prior to the collection of data (paper I, IV). The study in Palestine and Kashmir (paper II, V) was initiated with a few days notice, while the Beslan assessment (paper III) was started within a day. The study protocols for study II, III, V were developed on site.

Table 4 Summary of methods used in the papers.

Paper	I. Sida	II. Palestine	III. Beslan	IV. Field hospital	V. Kashmir
Secondary literature review	+	+	+	+	+
Direct observations		+	+	+	
Semi-structured/ key informants interviews		+	+	+	
Focus group discussions	+	+			
Quantitative interview survey					+

**Secondary literature review** (paper I-V). In these studies a systematic search using the Internet and other sources was carried out to identify specific information using different keywords. For paper II-V the information search focused on the pre-event context and the impact of the disaster. This was done by using a specifically developed checklist focusing on information concerning the sector assessed.

**Semi-structured interviews of key informants** (paper II-IV). This method was applied using a pre-developed questionnaire, based on the MSF assesment manual (Skinnider and Blok 2002) that focused on collecting information on the pre-disaster situation, vulnerabilities and coping capacities of the affected population. Those interviewed were key informants in the study area

representing different major groups of the population, different authorities and agencies that had specific information about the current situation and the pre-disaster situation. The method involves considerable risks of bias, which can be reduced by triangulation, i.e. exploring the same issues with different people and groups from the same community and through other information sources.

**Focus group discussions FGD** (paper I-II) were used to explore vulnerabilities, capacities, opinions, beliefs, experiences with groups of the affected population with similar backgrounds. This method may be used to explore a specific topic decided by the researcher (Bertrand, Brown et al. 1992; Dawson, Manderson et al. 1993; Kitzinger 1995). Planning, conducting and analyzing the result of a focus group discussion is a lengthy process that requires time and expertise. To use FGD as a rapid assessment method requires significant modifications and shortcuts, especially in the outcome analysis of the discussions. In emergencies there is no time for regular in-depth analyses such as manifest and latent content analyses, sorting and coding, even if this would be desirable. In the studies the discussion outcome was rapidly summarised after the interview by the assessment team based on the notes and recordings made. These shortcuts limit the validity of the method. Care must be taken when interpreting the results and triangulation must be used to increase the validity.

**Direct observations** (paper II-IV) consist of systematic observations on site of the general situation and behaviours using a predefined checklist. Observations provide information on what people do and on the situation surrounding the disaster. For each of the studies, a specific checklist was developed based on the checklist in the MSF needs assessment manual (Skinnider and Blok 2002).

**Survey** (paper V) is the term used for the collection of quantitative information from a representative sample of a selected subgroup of a population. Structured questionnaires and/or measurements are collected from the sampled group lead to calculations of prevalence, risks, rates etc. The main difficulty regarding surveys in disaster situations is to ensure that the sampled group is representative of a defined affected population to which the results can be generalised. Due to the considerable mobility of populations, information from a pre-disaster census can often not be used as sample framework. Surveys will therefore require considerable planning, resources, specific knowledge and experience. It is not common that good representative surveys can be performed within the first weeks of a disaster. However, without representative samples it is impossible to estimate the scale and proportion of the needs. In paper V a simplified sampling method was explored based on a selection of visitors to a health facility.

**Triangulation** (paper I-V). It may be argued that this is not a method but a procedure to ensure validity in qualitative research. This technique has been

used in nursing research for many years to confirm or complete information obtained using key informants or focus group interviews (Dootson 1995; Begley 1996; Foss and Ellefsen 2002). It is used to improve validity by combining various methods that may be both qualitative and quantitative.

### **The material and method in each study**

**Paper I is a retrospective study of Sida** regarding the extent to which this major financier of international humanitarian assistance had access to and used needs assessment information when deciding to fund health related humanitarian projects in 2003. After reviewing the applications, the project contexts were classified as war, protracted complex emergency or natural disaster. For the year 2003, all funded health related project applications and their funding decision documents were read in search of quantified health related needs assessment information. Documents were reviewed using a pre-developed and tested five-page form for the registration of needs assessment data. (Annex 2) The main indicators searched for were rates of measles vaccination coverage, under-five malnutrition rate and child mortality estimates. In addition we searched for quantifiable indicators on water regarding quality and quantity as well as data on nutritional status and food security. The identified data was fed into Epidata, analysed in Excel and cross tabulated for frequencies. In addition two focus group discussions were held with Sida staff on the findings of the study. A semi-structured checklist was used during these focus group discussions that aimed at identifying their additional formal and informal ways of obtaining data and information for decision-making. The discussions made reference to Sida's well-defined policy for the allocation of funds for humanitarian assistance. We also explored procedures and criteria used when deciding on resource allocations in 2003. The focus group discussions were voice recorded. Three of four authors took part in the discussions. They met directly after the discussions and summarized the results based on individual notes taken and the voice recording. The qualitative information from the discussions was fed into the analysis of the quantitative data obtained from the document assessment.

**Paper II is a cross-sectional study on the health needs of the Palestinian population** in the Palestinian occupied territories. The needs assessment was based on four main methodologies; secondary data review, direct observations, semi-structured interviews with key informants and focus group discussions. The assessment team consisted of one medical doctor (JvS), one expatriate political scientist and two Palestinian female interpreters. The team had access to cars and could travel all over the studied area. Secondary information was retrieved

by searching the Internet. The ten reports containing background data on the health status and healthcare system that were retrieved from the homepages of WHO, Unicef and the World Bank were read. An additional 35 publications posted on Reliefweb hosted by the Organisation for the Coordination of Humanitarian Assistance (OCHA) in the month prior to the assessment were read in search of information on health related needs. A total of 15 reports were obtained on site from national and international NGOs. All reports were systematically reviewed for health related data, for information on the pre-crisis situation, to see the extent to which morbidity and mortality had changed since the beginning of the crisis (March 29) and to see how access to and availability of healthcare was affected.

Systematic observations were made throughout the study period but particularly at seven health centres, three hospitals and six pharmacies and other central locations in both rural villages and towns in and around the West Bank and Gaza. A predetermined checklist based on a MSF manual (Skinnder 2002) was used to systematically note observations. The checklist focused on the availability of and access to basic services and observations on the general life situation of the affected population. The activities and availability of drugs and material at pharmacies and the health facilities visited were also observed and noted. A total of 15 checklists from different locations were filled. The results were compiled and fed into the overall analyses. A total of 45 semi-structured key informant interviews were conducted with national doctors at public and private hospitals and health centres, Ministry of Health policy and decision makers, local NGO representatives, international experts and representatives of international NGOs. Interviews were conducted using a pre-developed two-page questionnaire focusing on quantified health needs assessment data on morbidity and mortality and on whether the health needs had changed and if availability of and access to service had been affected. The MSF manual was used in the design of the questionnaires. Those interviewed were asked to prioritise the importance of how they perceived the main health needs of the Palestinians. A total of 8 semi-structured focus group discussions were held with the local populations in eight different rural locations. Participants were selected either from visitors to the health facility or haphazardly by the female interpreter. The size of the discussion groups varied from 6 to 12 participants, four of the discussions were with women only. The issues explored were related to health seeking behaviour, costing and access to healthcare and to how the group members had been affected by the recent changes in the security situation and discussions also explored coping mechanisms. The moderator was an Arabic speaking female interpreter. The transcripts of the discussions



were made by a male Arabic interpreter. The author was present during all the discussions. Once the session was over the three in the assessment team discussed the outcome together and extracted the main results with regard to the topics addressed.

The outcome of each day's work was discussed by the study team every evening and results were noted and utilised to direct the assessment. At the end of the assessment, all the information obtained was compiled and triangulated to find obvious errors and compared for consistency. Reports containing a clear political message and/or speculations were excluded. Key informant interview results with obvious biases were also excluded.

**Paper III is a descriptive study assessing the need for international humanitarian health care assistance following the terrorist attack in the Beslan school.** The study design was developed within a day with the aim of getting as much information as possible about the medical situation and the treatment provided to the injured in order to determine if outside health assistance was needed. The methodology used was the opportunistic use of as many different sources of information as possible. The assessment team consisted of JvS and a Russian speaking female university professor who served as interpreter. The material was collected during an initial period of four days. Additional secondary data that was retrieved by the second author, the local WHO representative, was added later. Secondary data on the number of injured, type of injury, treatment provided and mortality was retrieved from the four hospitals that provided initial trauma care. Structured observations were made for three days at the four hospitals using a checklist that focused on getting an overview of the general situation, the treatment provided, materials and medicines available. Semi-structured interviews were conducted with 13 hospital directors, doctors and nurses at the four hospitals using a pre-developed questionnaire. The questions focused on information on type of treatment provided, experience of the health care providers and on determining whether there were medical needs that were not met. The results were compiled and triangulated, and compared with experiences from similar events. The second author controlled the consistence of the study results by six weeks after the event presenting them to four doctors involved in the response at two hospitals and with two representatives from the local Ministry of Health that had not previously been interviewed. Additional information was retrieved after this manuscript was published. The second author identified new general media publications that included citation of forensic reports. These reports were all in Russian. They were read using the translation program Babelfish.

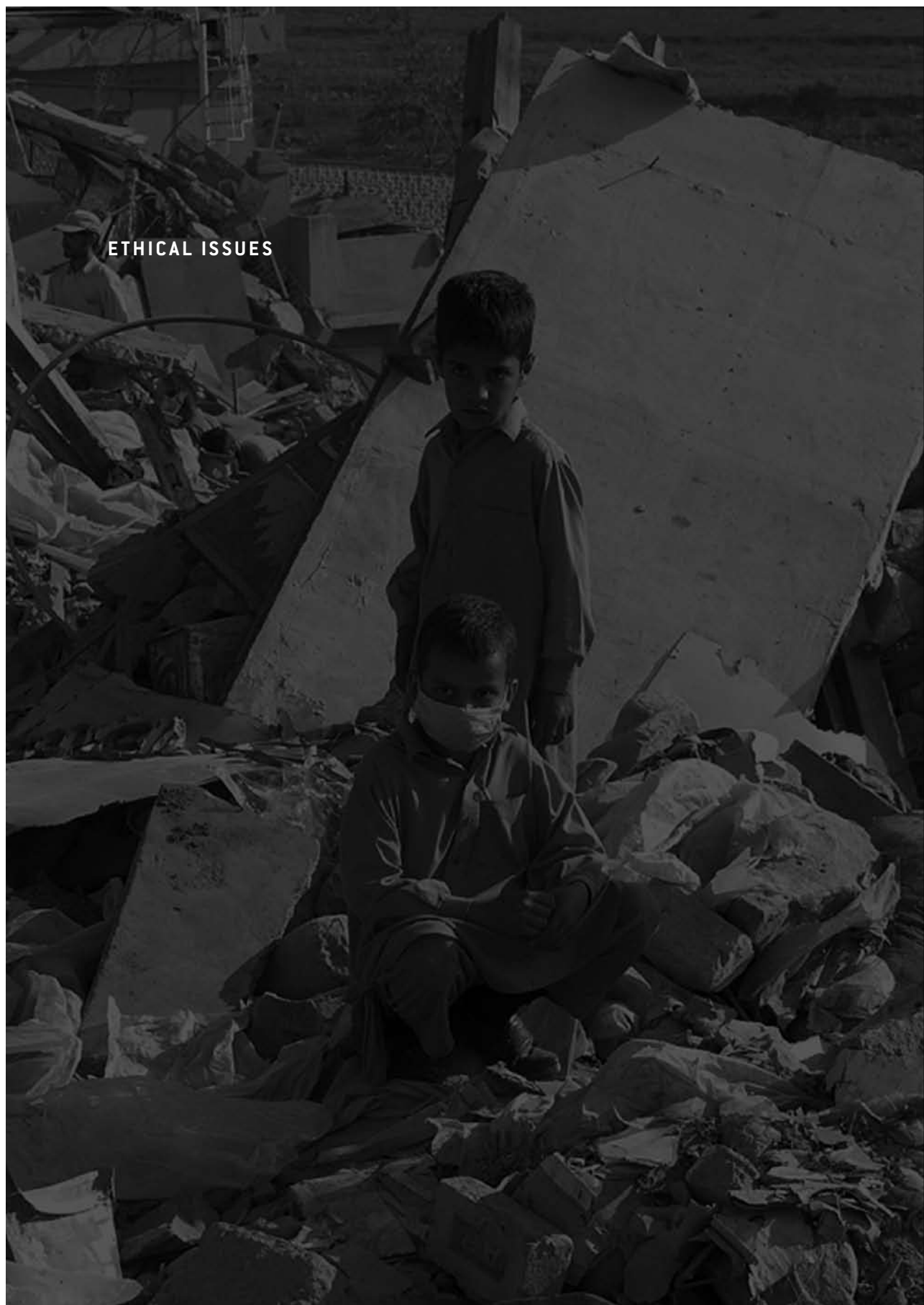
**Paper IV is a retrospective study of Foreign Field Hospitals (FFH) in four selected recent and main Sudden Impact Disasters (SID):** the 2003 earthquake in Bam Iran, the 2004 tropical storm in Haiti, the 2004 Tsunami in Aceh, Indonesia and the 2005 earthquake in Kashmir, Pakistan. Search engines on the Internet were used to identify and retrieve secondary information on each country context, the number of affected, fatalities and injured in each SID respectively. In addition information on the number, time of arrival and departure, capacity cost and country of origin of each FFH deployed in each of the SID was retrieved. Observations and key informant interviews were made in three of the studied SID providing information on the context and changes in medical needs in the different phases following the SID and also an overview of the type of services provided at the different FFH. The information was compiled and plotted on a graph for each SID illustrating the number of FFH, time of arrival, length of stay and bed capacity. The result was compared with a developed conceptual model on the assumed hospital needs in the different phases following an SID. In addition information on cost and activities at the FFH were compiled and listed. Results were compared with WHO/PAHO essential criteria for deployment if 1. Emergency Medical Trauma Care or 2. Follow up Medical Treatment is the aim of the deployment.

**Paper V is a pilot test of clinic Entrance Interviews (CEI), a cross-sectional needs assessment study.** A one-page questionnaire focusing on how the household of the interviewee was affected by the earthquake, and the type and character of vital needs required. During a three-week period consecutive visitors were selected for Clinic Entrance Interviews (CEI) at the gate of either the three health centres or the district hospital supported by MSF. The location of the daily interview was chosen based on transport availability. The interviews were conducted by a locally hired lawyer. He was given detailed instructions on how to sample and ask the questions. The completed questionnaires were entered into EpiData version 3.1 and exported to EpiData Analysis version 1.1 (EpiData Association, Odense Denmark) for cross-tabulation and a chi-square analysis. The geographical representativity of the sample was controlled by comparing the household location with census data. The result on mortality and injuries was compared with results on mortality and injuries from a later comprehensive survey conducted by the Pakistani Army.

YOUR STRENGTH IS JUST AN  
ACCIDENT ARISING FROM THE  
WEAKNESSES OF OTHERS

*Joseph Conrad, "Heart of Darkness"*

ETHICAL ISSUES

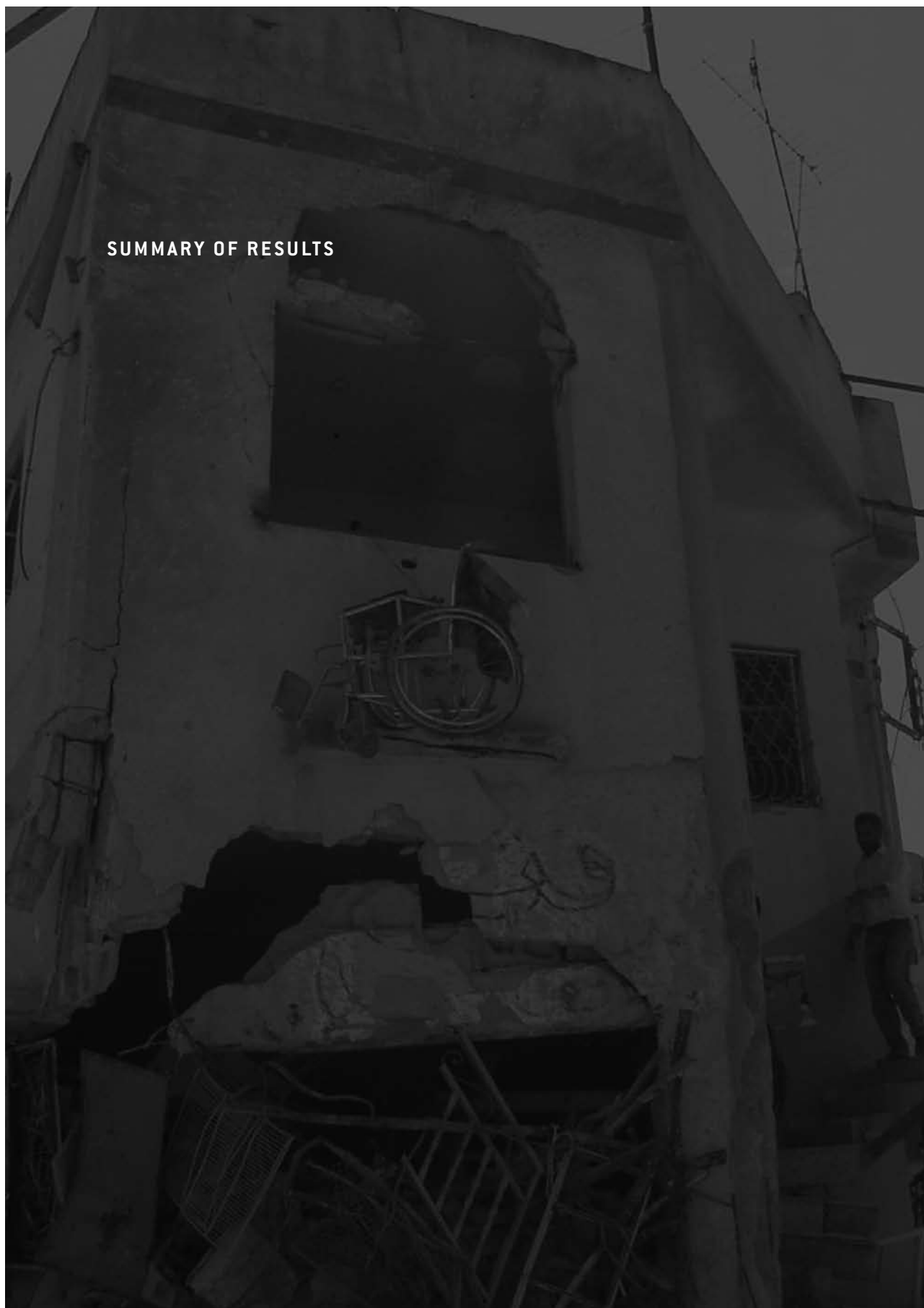


**AN OVERALL ISSUE** is whether it is necessary to study needs assessments for humanitarian health assistance in disaster situations. It may be argued that the good intentions of this assistance are enough to justify it and that the often very difficult contexts are beyond the scope of research and any form of systematic criteria for outcome and cost-effective evaluations. If research and evaluations find that the assistance is badly performed and has a low effect, financing may decrease and ultimately less humanitarian assistance provided to those in need. Such a scenario can be interpreted as a threat to actions of international solidarity. However, the author is convinced that more knowledge is an important tool in the process of improving humanitarian assistance. This assumption is in line with current discussions on how to improve humanitarian assistance (Hilhorst 2002)

It must also be considered whether it is ethically acceptable to in the midst of a disaster conduct studies that will not be of immediate benefit to the affected population of that disaster. This consideration severely limits the scope for research during disasters. However, the universities have a unique role to play through their independence, but most collaborate with agencies to get access to the affected area. The studies II, III and V are a first attempts of such collaboration.

The unpredictable nature of disasters and their often rapid onset inhibits normal study design and application to ethical committees. A report of the ethical challenges entailed showed that the ethical committees at Swedish universities do not have a clear framework for how studies in disaster situations, and more general outbreak epidemiological studies, should be ethically assessed (Unge 2004). This report states that it remains unclear how ethical permission should be requested for studies in disasters. It is surprising that the Swedish research organisation has failed to establish such rules. The only study in the thesis that the author, supervisor, co-supervisor and half-time seminar committee have judged to contain information that requires ethical considerations is study V. In this study consent was obtained by asking the person selected for interview whether he/she accepted to be interviewed regarding the situation for their household. It was orally explained that he/she could end the interview at any stage. There was no time to wait for ethical clearance from the authorities in Pakistan providing ethical permits. Ethical permission for data analyses was obtained from Regionala Etikprövningsnämnden (the local ethical vetting board) in Stockholm (D-nr 2007/666- 31)

## SUMMARY OF RESULTS



### **Paper I, the Sida study**

In 2003 the Division of Humanitarian Assistance and Conflict Prevention at Sida received 215 project applications out of which 11 were rejected. The sum of MSEK 1 546 was allocated to the 204 funded projects. Among these, 59 were non-health related projects that received MSEK 436. A total of MSEK 489 was allocated to 20 UN consolidated appeal applications. The International Committee of the Red Cross (ICRC) and the International Federation of the Red Cross/Crescent (IFRC) received MSEK 325 as part of a framework agreement with Sida that allows the organisations to have funds available in order to be able to rapidly send assistance without a lengthy application process. The sum of MSEK 38 were for 82 minor projects.

A total of MSEK 258 was allocated to 38 humanitarian health projects. A compilation of the key results can be found in Table 5. The project context of the 38 projects was classified as war in 8% of the projects, complex emergency in 47% and natural disasters in 10%, while for 35% of the 38 projects the context did not fit any of the context criteria used. Interviews with decision makers at Sida revealed that knowledge of needs assessments and the interpretation of their results was poor, and that, in contrast to stated policy and guidelines, quantified needs assessment data rarely influenced the decision to fund. Other factors such as the implementing capacity of the applying agency were of great importance.

Table 5 Summary of availability and use of needs assessment data in 38 project funding decisions by Sida in 2003

<b>Indicator and type of project</b>	<b>Applications with data</b>	<b>Decisions with data</b>
<b>Population size (all projects)</b>	14/38 (37%)	11/38 (29%)
<b>Mortality ( Health care projects)</b>	6/27 (22%)	1/27 (4%)
<b>Malnutrition (Food and nutrition Projects)</b>	10/27 (37%)	3/27 (11%)
<b>Water availability (Water and sanitation projects)</b>	3/19 (16%)	3/19 (16%)

Table 6 Summary on type of movement restrictions, health effects and coping mechanism of the Palestinians.

<b>Movement restriction</b>	<b>Area</b>	<b>Direct effect</b>	<b>Indirect effect</b>	<b>Type of health care effect</b>	<b>Coping mechanism</b>
<b>Curfew</b>	Major towns and cities	"House arrest" Lifted a few hours per week	Psychological trauma. Uncertainty	No emergency health service accessible	Home delivery, stocks of medicine, telephone advice
<b>Military Checkpoint</b>	All over in at least 96 locations on the West Bank.	Random passage of Palestinians with "right" ID card.	Travel to work cost more and take longer	Delayed care that affect mainly acute illness and deliveries	Increase in local private providers and pharmacies.
<b>Road blocks</b>	All over, especially in and around cities	Preventing movement in and out of cities	Problems for supplies of medicines and staff	Delayed care that affect mainly acute illness and deliveries	Adapt transportation Identify new paths
<b>Flying check-points</b>	All over	Can stop any vehicle at any time	Uncertainty, security concern	Delayed care that affect mainly acute illness and deliveries	Travel hours in advance

## Paper II, the health needs of Palestinians

At the time of the study, May 2002, the following results were documented. The U5MR of 26 deaths per 1 000 live-born (World Bank 1999) compared well with neighbouring countries. The health system was well developed and in Gaza alone there were 3 000 doctors, 400 of whom were unemployed. In total there were 9.7 doctors per 10 000 population (WHO 2002). The Palestine population had, in spite of years of low-intense conflict, managed to gain a relatively good health status. However, the escalating violence had without doubt affected the life of the population. A total of 303 deaths and 884 injuries were reported by the UN between the most violent periods, between March 29 and April 23, 2002, most being direct trauma casualties. The study was unable to document any increase in mortality or morbidity rates associated with indirect conflict causes. The main problems affecting the 3.5 million people living in the area were those associated with restrictions of movements. Table 6 summarises different types of movement restrictions and their potential impact on health. A majority of those interviewed were only able to reach work after several hours of travel, limiting their working time to a few hours per day. The Ministry of Health reported that 40% of their



staff had severe difficulties in reaching their work place. People in need of elective health care had to plan days in advance before seeking care. Ambulances were systematically stopped at checkpoints and there were anecdotal reports of women giving birth at checkpoints. Observations and interviews could not identify any significant lack of medicines or material at the health facilities and pharmacies visited. There were stocks of medicines and materials available at the central level. Despite the difficult situation the assessment found no major impact on the health status of the population. A reason for this may be the extremely well developed coping mechanism of the Palestinian population.

### **Paper III, the Beslan assessment.**

The four hospitals within a 20-minute drive from the Beslan School employed 900 doctors before the incident (Table 7). The two days of the hostage crisis enabled the hospitals to make preparations for staff and equipment. They managed to make 1 000 hospital beds available including 100 ICU beds. In addition a military field hospital with an unknown number of beds and staff was erected close to the school. At the time of the violent end to the hostage crises more than 500 doctors were on stand-by ready to care for the injured. More than half of the injured were transported to the hospitals in private vehicles rather than ambulances. A large number of the surgeons had previous experience of war surgery. A total of 329 people were reported to have died (54% children) at the school, and 8 were dead upon arrival at hospital. The district hospital in Beslan received more than 600 patients in varying conditions within the first six hours. In all 661 people were admitted to the four hospitals, 110 of whom required ICU and 17 were in need of ventilators. A total of 20 died in hospital, 12 of them during the first 48 hrs (2% mortality). Initial surgical care was provided rapidly and the patients were stabilised. By day five, 190 of the most severely injured patients had been transferred to specialised hospitals in Moscow and Rostock. The injury pattern of those transferred corresponded to injuries seen in conventional wars. Massive amounts of relief goods and expatriate staff were sent to assist but according to reports a large proportion of this assistance was never used. Financial assistance to the affected was at least USD 32 million (USD 50 000 /person) and came to a large extent from domestic sources in Russia. The findings of the reports and publications that were retrieved after our Beslan article was published did not significantly alter our initial findings. Ambulances brought in 55% of the injured the rest came by primarily private cars. At the Beslan district hospital eight died within minutes of arrival, primarily due to head injuries. A total of five people were reported to have died in the hospital during the first day. Within the first six hours

32 operations were carried out in general anaesthesia (Slepushkin 2004). A forensic investigation reported that 46% of the casualties were adults (15% Men, 31% Women) and 54% were children (22% Boys, 32% Girls) and that the causes of death were burn injuries in 35 and shrapnel in 30% out of the 329 reported deaths (Gutsayev 2005). An additional 6 million USD had by the end of 2004 been collected for the victims. (Pravda 2004).

**Table 7** Number of persons hospitalized and number of deaths in the first 48h following the Beslan attack.

<b>Hospital</b>	<b>Operation theatres</b>	<b>Beds</b>	<b>Doctors</b>	<b>ICU beds</b>	<b>Nr. hospitalized</b>	<b>There of in ICU</b>	<b>Nr. of deaths &lt;48hrs</b>
Beslan District Hospital	5	215	160	50	130	56	4
Republican Children Clinical Hospital	5	710	160	18	271	28	3
Republican Clinical Hospital	5	820	316	16	41	16	0
Republican Hospital of Emergency	17	720	248	12	219	10	5
<b>Total</b>	<b>32</b>	<b>2 465</b>	<b>884</b>	<b>96</b>	<b>661</b>	<b>110</b>	<b>12</b>

#### **Paper IV, the use of Foreign Field Hospitals.**

A striking observation was the scarcity of detailed information, especially numerical data for FFH input, output and cost. Such information was only obtained for 7% of all identified FFH. Agencies sending FFH were reluctant to share any type of information. The SID context and pre-SID infrastructure in each affected area varied considerably. In both Bam and Kashmir the domestic relief capacities were impressive and mass evacuations were initiated quickly. Data on the length of stay and number of beds were identified for 43 FFH in the four disasters. This data was found through secondary literature reviews of documents identified through Internet searches and key informant interviews. A summary of the key results can be found in Table 8. None of the 43 identified FFH arrived early enough (within 48hrs) to provide lifesaving emergency trauma care. The first FFH was operational on day three in Bam and Kashmir, and on day eight in Aceh. The first FFH to be operational were from the Armies of neighbouring countries. The daily cost of a bed was estimated to be at least USD 2 000. The bed occupancy rate was generally less than 50%. None of the FFH adhered to the WHO/PAHO first essential requirement when emergency

medical care is the aim of deployment. None of the FFH in Aceh and Haiti, 9% in Bam and 23% in Kashmir adhered to the first essential requirement if follow-up trauma and medical care is the aim of deployment.

**Table 8 Result on SID impact, FFH deployment and fulfilment of WHO essential requirements if Emergency Trauma care and Follow up Hospital care is the aim of deployment.**

Country	Iran	Haiti	Indonesia	Pakistan
Location	Bam	Guanavaca	Aceh	Kashmir
Population in affected area	200 000	300 000	2 000 000	4 000 000
Homeless (%)	80 000 (45)	200 000 (90)	500 000 (25)	3 000 000 (85)
Dead (%)	27 000 (14)	3 000 (1)	160 000 (6)	61 000 (2)
Injured (%)	30 000 (15)	1 500 (0.5)	75 000 (2)	60 000 (1.5)
Hospitals destroyed Remaining capacity in (%)	2 (40)	2 (10)	6 (35)	23 (30)
FFH on site <48hrs of all	0	0	0	0
FFH on site < 5 days/of all	2	0	0	5
Total number of FFH	11	1	9	22
Remaining after 3/12 months	1/1	0/0	1/0	11/1
Districts with FFH	1	1	4	7
USD cost per day per bed	1 700	450	1 500	2 000
Fulfilment of 1 <sup>st</sup> /2 <sup>nd</sup> WHO requirment* (%)	0/1 (0/9)	0/0 (0/0)	0/0 (0/0)	0/5 (0/23)

\* If Emergency Medical Trauma care or /Follow-up Trauma and Medical care is the aim of deployment

### **Paper V, the Clinic Entrance Interview.**

A total of 196 adult respondents (42% women) from an equal number of households were interviewed in Bagh Tehsil between October 29 and November 19, 2005. Those interviewed represented 1 847 pre-earthquake household members of whom 3.8% reportedly died within the first three days of the earthquake while 3.7% were severely injured requiring hospitalisation. The number of interviewees/administrative sub-unit inhabitants ranged from 0.5 to 1.4 per 1 000 with a median proportion of 0.8/ 1 000 for all 11 administrative sub-units. The mortality and injury rates corresponded well with those found in a house-to-house survey in Bagh district conducted at a later stage by the Pakistani Army.

The most frequently expressed need was the requirement for shelter. A total of 93% of the respondents were unable to sleep inside their houses. Of these, 58% slept in tents, 21% under plastic sheeting, 6% in sheds, 4% had no shelter at all and 11 % used unspecified shelters. Only 8% of those interviewed had access to any form of heating system while 40% reported not having any blankets in the household. While household access to latrines had been drastically reduced from 75% to 5% after the earthquake, this was not highlighted as a main concern by those interviewed. A total of 90% the households reported having enough food stocks for an average of 9 days. The households had access to enough safe water.

THE EVIL THAT IS IN THIS WORLD  
COMES OUT OF IGNORANCE, AND  
GOOD INTENTIONS MAY DO AS  
MUCH HARM AS MALEVOLENCE,  
IF THEY LACK UNDERSTANDING.

*Albert Camus, "The Plague"*

## DISCUSSIONS



**FOLLOWING THE INITIAL DISCUSSION** of the main findings in the five papers, the second half of this section discusses needs assessments for international humanitarian health assistance in a much broader perspective.

## **MAIN FINDINGS**

### **Paper I, the Sida study**

Our findings suggest that needs assessment data played a very limited role in the decision by Sida to fund humanitarian health assistance projects in the year 2003. Other factors such as the implementing capacity of the applying organisation were considered more important. An interesting finding was that 204 out of 215 project applications were funded. This was found to be due to an informal pre-application selection, procedure consisting mostly of telephone conversations with organisations that planned to submit an application. It appears that Sida's general knowledge and perception regarding the implementing capacity of organisations in different contexts was used as the desk officer's main criteria for funding and it seems that this criteria was being informally implemented already before the applications were submitted.

This study was limited. It only assessed one donor, one humanitarian sector and one year. However, to our knowledge there has been no major policy or routine change in the way that humanitarian needs assessment data is used in the allocation of funds by Sida in other sectors in recent years. The scarcity of needs assessment data in project applications cannot be explained by a lack of well-described and accepted methodologies for health needs assessment (von Schreeb 2003). Our findings may, however, indicate that these methodologies have limited applicability in reality. We did not find any reason to believe that the limited use of needs assessment data was due to management or organisational deficiencies at the Division studied at Sida. In contrast, we found the documentation to be in meticulous order and the staff to be motivated, experienced and very open to our investigation. Therefore the results from our limited study raise questions regarding whether funding for humanitarian assistance based on needs assessment data is a realistic policy at project level. It seems more relevant that if international donors are committed to the principle of allocating funds based on needs, they should develop a joint

mechanism ensuring that needs are met at the macro level in each disaster context. The macro needs assessment should be based on information such as the socio-economic status of the area, size of affected population, geography, type of emergency and the total sum of contributions from international and national actors.

The interpretation above highlights that the three objectives of needs assessments (operational guidance, needs-based funding and the provision of baseline data for monitoring) are conceptually very different. Since the completion of the Paper, the issue of a framework for needs-based assessment allocations has been further discussed within the Good Humanitarian Donorship Group and their conclusions go in the same direction. Needs assessments at a macro level by the international community are of greater importance than trying to have the contribution of each “sub-project” defined as a “sub-need”. Two recent reports suggest that donors should develop a framework to analyse humanitarian crises including indexes of severity. It is further being proposed that the donors should, based on available evidence and according to guiding principles, ensure that a more effective and comprehensive operational needs assessment is undertaken by the implementing agencies (GHD meeting 2007; Willitts-King 2007).

## **Paper II, the health needs of Palestinians**

The low intensity conflict in the Palestine territory was not characterised as a health disaster at the time of the assessment in 2002. A sufficient number of doctors and medical services were available and the services had access to relevant materials and medicines. The study was able to document that two weeks after the attack on Jenin, the intensive care unit at Jenin General Hospital had admitted two patients. Both suffered from cardiac infarction and were adequately treated with thrombolytic therapy. Surprisingly we found no indications of any large-scale impact on the general health situation, while there were 303 documented violent deaths and anecdotal reports of individuals that had died because of a delay in obtaining medical care. A major factor contributing to the limited impact on the general health status was the well-adapted coping mechanisms of the Palestinians, who managed to find ways of transporting people in need of care to medical services in spite of numerous obstacles. However, their coping mechanisms were stretched to the limit. The lack of freedom of movement caused by road blocks, checkpoints and curfews consistently stood out as the greatest threat to the health of the Palestinian population and to their access to medical care. It is likely that the health situation would have returned to normal within days had the Israeli



Defence Forces occupation come to an end. If the situation concerning the restriction of movement persisted it was likely to increase the vulnerability of the population by leading to increased unemployment and poverty, and to reduced access to healthcare and other vital needs.

This assessment had limitations. It was conducted during a short period and covered parts of the affected territory that were not randomly selected. The results were based on information obtained haphazardly using mainly qualitative methods and the attempt to generalise to the whole Palestinian territory could not be validated. In spite of this it was as well-performed as most needs assessments for possible humanitarian health assistance. Furthermore, the methodological weaknesses did not appear to be the main limitation. In a complex and highly political environment the main challenge to those conducting a needs assessment and to the interpretation of its result is to make independent judgements based on peoples needs rather than on political considerations. The 2002 situation in the Palestine territories created heated debates and different representatives of the international medical community interpreted the health situation differently (Blachar 2002; Bradley 2002; Lauer 2002; Yagel 2002). The assessment of the excess mortality due to violence in Iraq in recent years is another example. Political intentions tend to blur the discussion about possible methodological shortcomings (Burnham, Lafta et al. 2006; Burnham, Lafta et al. 2007; von Schreeb, Rosling et al. 2007).

In 2002 many Humanitarian Organisations wanted to assist the Palestinians through the provision of expatriate health staff and supplies. However, to the external needs assessors, it seemed irrational to try to alleviate the threats to the health of the Palestinians in 2002 by providing more external medical staff and supplies. Instead it seemed better to assist the Palestinian population in need of medical services to gain swift and safe passage through checkpoints since the lack of freedom of movement was the main problem. At the time of the study, expatriate staff could by conducting transportation of medical supplies, health staff and patients facilitate safe passage through checkpoints. For the conflict in the Palestinian territories in 2002 it may be argued that expatriate drivers that facilitated the passage through checkpoints met the humanitarian health needs much better than expatriate doctors and equipment have done. There were enough skilled and motivated Palestinians doctors and health staff to care for the population. To design and direct international humanitarian health assistance in a cost-effective way it is necessary to have information from a needs assessment that includes an analysis of the contextual situation and the expressed needs and coping strategies of the affected population in each specific context.

### **Paper III, the Beslan assessment**

The results of the Beslan assessment indicate that the life saving trauma care provided to the injured by the local hospitals was of adequate quantity and quality. The results indicates that the injured had been swiftly treated in line with the evidence-based principles of war-surgery. The evacuation of the most severely injured, within a couple of days of the initial life saving treatment, to give them more advanced care at major hospitals in larger cities was also judged to be appropriate and within good time. There are no findings that indicate that in-hospital mortality would have been different had the incident occurred in a suburban area of Stockholm, Sweden.

The limitations of the study include the difficulty of both acutely and retrospectively assessing an extremely tragic and highly political event that received massive media coverage. While the study revealed a high competence in disaster surgery in Russia, it remains unclear why the Russian authorities requested international assistance when there was enough qualified staff and domestic resources, a fact that must have been known to the authorities. The horrible outcome of the terrorist attack upset the whole world but the mass media did not convey the capacity of the local medical assistance. It seemed as if the international media was more focused on the international response that included medical goods, medicines and expatriate staff. However, a great deal of these medicines were never used for the victims (Tokhsyrov 2004) nor did international staff make any substantial contribution to the care. The magnitude of needs should be assessed before sending international relief goods and expatriate staff and the response adapted to the context, otherwise there is a risk that much of this type of aid is unnecessary or inappropriate. At worst incoming resources may negatively interfere with a local functioning response. The international community needs to find ways of expressing their compassion for victims of disasters that are compatible with the needs of those victims rather than letting preconceived ideas about the needs among far away populations guide the response. Sometimes, but far from always, should compassion be expressed by swiftly sending medical staff and equipment. The alternative use of international resources for long-term cultural and social exchange may serve the survivors of the horror of the Beslan School better.

### **Paper IV, the use of foreign field hospitals**

None of the 43 FFH studied was operational in time to provide life-saving trauma care, i.e. within 24-48 hours following the event. In the first hours and days following a severe SID, health care needs are dominated by life-saving treatment of injuries. However, only within a few days the dominating need for

hospital services changes to that required for the ordinary disease panorama. An SID has two distinct effects on the need for hospital services of the affected population. First, the occurrence of a number of severely injured people that need immediate medical trauma care. Second, the destruction of hospitals and hospital staff being killed leave the population without a service for ordinary life-saving hospital care, such as surgery for incarcerated hernias and caesarean sections due to obstructed labour. Our study indicates that a majority of the FFH arrived in time to meet the second need while they were primarily staffed and equipped to meet the first need.

After the 1995 Kobe earthquake, 94% of all the earthquake related deaths occurred within the first 24 hours (Aoki, Nishimura et al. 2004). Therefore in order to save lives, trauma care is required immediately up to 48 hours (Schultz, Koenig et al. 1996). However, an FFH may arrive some days after an SID as an adequate substitute for collapsed hospitals, in which case the FFH must provide multidisciplinary staff and equipment rather than be trauma oriented. Four days after an earthquake it should not come as a surprise that the severely injured have died but that pregnant women, infected children and sick elderly people need the hospital services they used to get from the facility that was destroyed in the earthquake. However, since most FFH do not report their service output openly it seems that the same mistakes are being repeated over and over again (Schultz, Koenig et al. 1996; de Ville de Goyet 2007). It is especially important that FFH are adequately staffed and supplied as they are quite costly.

This study has several weaknesses. Most of the information was retrieved from non peer-reviewed sources on the Internet and from WHO and OCHA situation reports. Some FFH activities may have been missed and the exact timing of when each FFH started and ended its services may in reality have deviated slightly from our results. The main reason being that FFH agencies were surprisingly unwilling to share their output results. Nevertheless, our findings strongly indicate that it is in most cases an illusion that intercontinental FFH can arrive in time to provide life-saving emergency trauma care. Our findings indicate that none of the 43 FFH studied adhered to the first WHO guideline criterion if Emergency Trauma Care was the aim. It seems as if such trauma care must be provided by resources from the affected country possibly with assistance from neighbouring countries (Schultz, Koenig et al. 1996; de Ville de Goyet 2007). In the middle-income country Iran adequate domestic resources for trauma care were swiftly made available while this was not the case in the low-income country Haiti despite the fact that the Haiti SID caused less destruction, fewer deaths and less injuries. Different socio-economic levels and the pre-disaster availability of medical resources

are the important determinants as to whether such capacities will be made available or not.

In the Kashmir context the FFH were needed during a much longer period due to the large area affected and the massive destruction of hospitals and infrastructure in that area. This raises questions regarding the relevance of WHO guideline criteria for Follow-up Trauma and Medical Care that state that an FFH must arrive within a week of the SID and stay on site for 15 days. In spite of national resources being swiftly made available the international support was needed in the low-income context of Kashmir. Based on the Kashmir experience the WHO guideline should probably be revised. Agencies sending FFH need to know the pre-SID context regarding the existing health service and health staff capacities and understand how the medical needs change in the different phases following an SID. In Kashmir a specially designed Cuban assistance programme provided primary health care but also set up between 30 to 40 low-tech FFH in remote areas (de Ville de Goyet 2007). Half of the medical staff and doctors were women. As only anecdotal information was available regarding the Cuban “multiple small unit FFH” approach it was not possible to assess how adequate this approach was independently. However, the Cuban support was highly praised by the Pakistani authorities and no identified report or observation has contradicted this view.

An international response must be more diversified than the reflex action -in any SID send our FFH. Although field hospitals are strong political symbols of compassion and excellent spots for media coverage of case stories, their financiers and managers should be demanded to provide transparent output data that enable this strong symbol to also deliver services that meet real needs. If service output data is being made available, it may become possible to study how to best meet varying hospital care needs in the different phases following an SID. It would not come as a surprise if such studies would show that it is regional assistance between neighbouring countries that best saves those in need of acute trauma care and that intercontinental assistance from far away, when needed, should focus on replacing the general services that used to be offered by destroyed health facilities. An independent evaluation of the promising Cuban type of international disaster is much required.

#### **Paper V, the Clinical Entrance Interview**

The main finding was that the Clinical Entrance Interview survey yielded results on mortality and injury that corresponded well with those obtained from a later performed house-to-house survey by the Army in the same area. This fact, together with the surprising geographical representativeness of the

sample of people interviewed indicates that the consecutive selection of the next person arriving at the entrance of a health facility may provide the fastest fairly representative population sample in many SID contexts. Only one article has been identified that uses a similar form of such “systematic convenience sampling”(Rose, Raymond et al. 2006). Following the earthquake in Pakistan the overwhelming priority expressed by those interviewed was the need for shelter. This finding was of direct importance for the medically oriented MSF. It influenced MSF in scaling up its interventions with the provision of construction materials.

The strength of the proposed sample and interview methodology is that it is swift, flexible and very cost-effective. It can provide semi-quantitative needs estimates within hours and days. However, it is questionable if the representativeness in each context is sufficient even if the geographical composition of those interviewed may be compared with the pre-SID population distribution in the area. The earthquake damage in Kashmir was far from evenly distributed; there were examples of pockets with large-scale destruction while other smaller areas experienced only a limited impact.

Our way of verifying representativeness had its weaknesses. It was only possible to validate mortality and severe injury rates but not the real aim of the survey, i.e. the level and type of vital needs. This type of sampling of a vaguely defined group of visitors should not be considered as an alternative to an established representative sample of the population living in a defined area but as a quantitative complement to initial information from key informants and through qualitative methods. However, in an SID context when needs assessment data is required quickly and the resources are limited, the proposed methodology appears to provide a valuable operational guiding tool for the first couple of weeks before results from studies based on representative sampling are available.

To optimally prioritise relief activities, it is obviously relevant to ask a representative group of the affected population to prioritise their needs. The fact that it took over two months for relief organisations working in Bagh district to obtain detailed maps and population census data, suggests that such vital information should be continuously made available on the Internet. Likewise, information on the positions of functioning health facilities and schools should be continuously brought up-to-date through the modern Internet technologies. The availability of pre-SID political administrative divisions, the population distribution across these divisions and the location of major social facilities will greatly facilitate validation of fast surveys.

The study also highlighted the difficulty in conducting research in the midst of a disaster, the priority in terms of time, energy and resources will and should

always be directed towards the relief work. To further improve needs assessments and increase the use of assessment results it would be advisable that additional resources in the form of especially assigned assessors are provided to conduct needs assessments and that the results are made available to all actors involved in providing relief to the population in the whole affected area.

## GENERAL DISCUSSION

The general discussion deals first with the three different objectives for needs assessments and finally with the use of results from NA to guide the international humanitarian response concerning health assistance.

Both implementers and funders state that needs assessments are central for humanitarian assistance (Médecins Sans Frontières 1997; GHD 2003) and good manuals are available on how to conduct such assessments (von Schreeb 2003). Yet NA are far from being systematically conducted (Darcy and Hofmann 2003; de Ville de Goyet 2006) and even when they are the results are not used and shared in optimal ways (de Ville de Goyet 2006). The stark contrast between the stated policy and observed practice stands out as the main observation in this thesis. The discrepancy is probably due to several reasons. A pragmatic explanation is given in a recent report titled “According to Needs” (Darcy and Hofmann 2003). It states that NA are not part of the humanitarian assistance culture. Humanitarian agencies continue to act according to their collective experience from responses to disasters. Estimates on needs will be produced only within the specialized area of each agency, and needs will largely be defined according to the capacity to respond and the funding expected to be available to each agency. Agencies will plan to do what they are capable of doing based on their staff and organisational capacities rather than the estimated needs of a defined population. This highlights the character of the mandates. International humanitarian assistance following disasters does not yet constitute a globally coordinated rescue service that is organised to correspond to the right of people to get decent assistance in their moment of greatest need. The mandate is currently to do as much as possible or even as good as possible without defining the number to be assisted.

There is agreement (Malilay 2000; Darcy and Hofmann 2003; GHD 2003; WHO and IFRC 2006; Spiegel 2007) that NA results following disasters should serve three purposes. First to provide *operational guidance*, i.e. information on whether outside assistance is needed and specify type and quantity of such assistance. Second, to provide the evidence base for *needs based funding* by government donors, that are expected to allocate their resources based on the

needs. Third, to provide the *baseline data* to be used for the monitoring and evaluation of the output and impact of the assistance. These three objectives are conceptually different and should be met in different time periods following the disaster event. It appears to be the failure to distinguish between how these three purposes should be met that constitute the challenge when trying to apply NA in practice. The emerging conclusion from this thesis is that these three purposes should not be met by the same need assessment procedure. The need to distinguish between how the three objectives can be met in three different phases by quite different assessment procedures is discussed further below.

### **A. The first objective, operational guidance.**

This objective has been divided between the two distinctively different situations of Sudden Impact and Slow Onset Disasters.

#### ***Sudden Impact Disasters***

Following an SID the information on the pre-disaster context, the severity of the disaster and the number of people that probably have been affected by the event is needed within hours in order to decide whether outside assistance should be deployed. Such results cannot be provided by an expatriate assessor that will travel to the affected area. The NA for this purpose must be carried out immediately using different remote procedures and contacts with informants in or from the affected area. During the course of the studies in this thesis I have been involved in the development of concepts and procedures for remote assessments procedures. I suggest that the term Rapid Magnitude Assessment (RMA) is used for the systematic procedures that today to a large extent can be carried out at intercontinental distance. RMAs provide the results within hours to guide the initial operational decisions. Immediately at the first notice of a possible SID event, the pre-disaster context is compiled. It will consist of geographical information on the limits of the affected area with census data for the different administrative areas and geo-data on transport and service infrastructure in the area as well as the relevant information on the socio-economic level, labour and production pattern as well as political and cultural issues of relevance. A large part of the required pre-disaster information can already be found using the Internet and available key informants. This is of course what has always been done by the concerned agencies but the new Internet and telecom technologies make it more productive and requires a more systematic approach. Rough estimates on the impact of the disaster may be swiftly generated by emerging information using Blog searches. Information is today quickly posted on Blogs by people in the area and by the diasporas

around the world that have contact with people in the affected area. Some of these Internet sources are today already faster than major news agencies and media that also can be more swiftly accessed by Internet News searches for added information by the minute.

This information should be systematically compiled and the results continuously interpreted and probed by a small group of experts with extensive experience of assessments and working in disaster situations. The suggested type of RMA is applicable following SID in areas that in the pre-disaster situation form part of the Internet and cell phone connected world and where such connections have not been completely destroyed. Complex emergencies in low-income countries continue to require presence on the ground or among the refugees coming out of the affected areas. How RMA fits with other information collection procedure in different time periods following an SID, is illustrated in table 9, and in figure 7 the RMA is related to other NA procedures following SID and the different conceptual domains of each procedure is highlighted. The RMA was pilot-tested following a recent earthquake that triggered a tsunami warning (Textbox 4). When the RMA indicates that outside assistance is needed, an assessment team should be rapidly deployed as part of the first group sent. A special, but relevant, example of the missed remote magnitude assessment was the way Sweden responded to the emergency situation of Swedish citizens in Thailand in 2004. The impact of the Tsunami on the beaches could be assessed within an hour using available resources on the Internet, and verifying information regarding the needs of thousands of Swedes in Thailand was available through cell phones but no organisations or professionals in Sweden were unable to put a summary of the situation in front of the politicians and media within the 2-3 hours that would have been required.

The potential for RMA in low and middle-income countries can swiftly increase if available new Internet technologies are used systematically to provide information on size and composition of population in local administrative areas as well as position and function of health and education facilities, and roads. Studies II and III of this thesis revealed sufficient availability of medical and other health staff in Palestinian territories and in the Republic of North Ossetia. This information was available long before the emergencies started in the two areas and it does not require an urgent need assessment to know that the medical staff and services in those territories are highly qualified.

More detailed and quantified operational guidance NA results are quickly needed following an SID to provide the agencies with more information on the type, size and geographical distributions of the needs of the affected population. To target the main part of the international assistance the Rapid initial NA

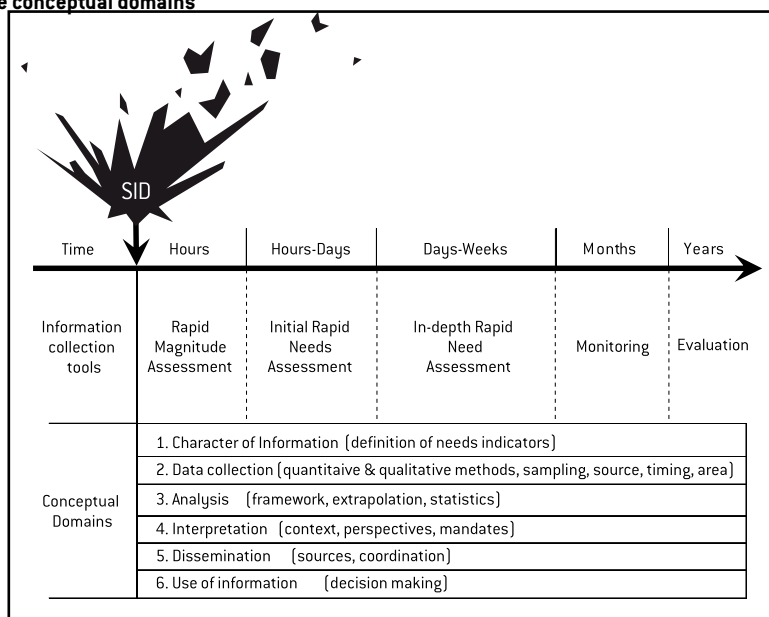


must be performed within the first 1-2 days on site. The assessment should therefore start in parallel to the relief work by a specially assigned and trained group of experienced NA staff. Within the first week this group of assessors should be able to provide reasonable in-depth needs assessment results on the size of the affected population, its needs and capacities and geographical distribution. The immediate sharing of such data between local, national and international assessors appears to be the area in which RNA results can be fastest improved.

Table 9. Procedures, source and use of information in different phases following a Sudden Impact Disaster.

<b>Time after SID</b>	<b>Procedure</b>	<b>Type of information</b>	<b>Source</b>	<b>Use</b>
Hours	Rapid Magnitude Assessment	Pre-disaster context, population size, maps, geography, context information, type of disaster event and impact	Secondary data from the Internet, Blog searches, telephone and other opportunistic sources	Decide if outside assistance is needed and contingency planning
Hours-days	Initial Rapid Needs Assessment	Verify RMA results and provide more information on type of needs and capacities as well as other type of assistance available	Secondary data from the Internet, key informants, observations	Decide on type and size of external action & assistance
Weeks	In-depth Rapid Needs Assessment	More detailed information on prioritisation on the perceived vital needs. Detailed information on population capacities, other assistance available	Key informants, observation, Semi quantitative estimates Data from health facilities and relief teams Population sample with unclear or limited representativity	Focus intervention and request of additional resources Further geographical and activity focus of available resources
Months	Monitoring/ Surveillance	Representative estimates of vital needs	Representative sampling	Managerial adaptation and resource request
Years	Evaluation	Depending on sector	Several sources	Assess outcome

**Figure 7 Information collection for action following sudden impact disasters in different time periods and the conceptual domains**



#### **Textbox 4. Testing Remote Magnitude Assessment via web, news and Blog search.**

The RMA was tested on September 12, 2007. At 08.47 local time, a 7.9 Richter scale earthquake struck the ocean bottom, 150 km on the southern coastline of the Indonesian island Sumatra. Within two hours I received information about the earthquake and the tsunami warning that had been issued by the Pacific Tsunami Warning Centre within the first hour of the earthquake. For one and a half hours a small group at Karolinska Institutet used Blogs and news searches of the Internet and followed updates on the homepages of the main institutions providing information on earthquakes and potential tsunamis. News updates on the homepages of Reuter, BBC, CNN were also monitored. We searched for report on any significant tsunami, and estimated the potential size of area affected and number of people potentially dead or injured. Pre-context information on population size and geographic features of the areas where the potential tsunami would hit was also investigated. Within two hours based on this systematic data collection we were able to conclude that there was no tsunami and that the earthquake damage was limited, not requiring any major international humanitarian health assistance.

### ***Slow Onset Disasters & Complex Emergencies***

Operational NA guiding humanitarian assistance in *Slow Onset Disasters and Complex Emergencies* are different. There is less urgency to conduct the NA and planning is possible. In this context there is time to collate the NA results with monitoring data to allow trend analyses and include local capacities. Slow

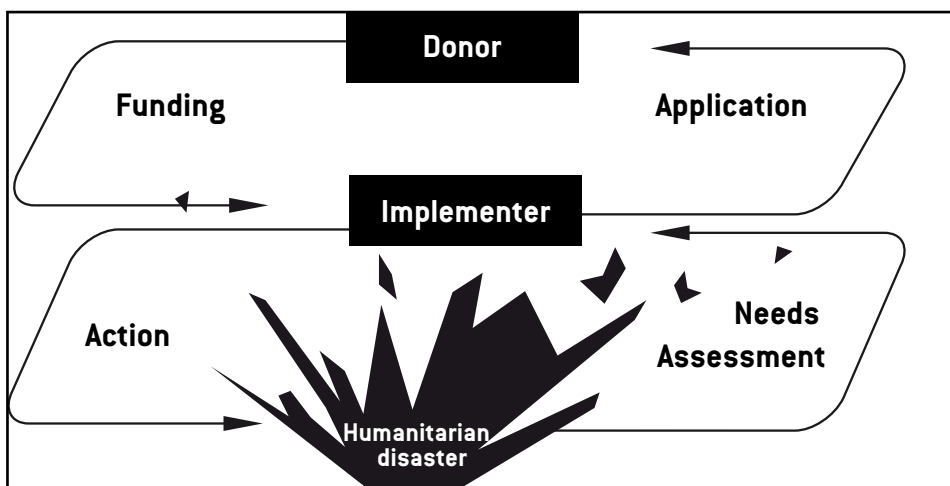
Onset Disasters may due to their slow impact be difficult to capture. To only use a one-off needs assessment, based on mainly qualitative methods to determine the severity of a situation is dangerous. Several publications highlight the risk with of extrapolating results to larger geographical areas based on assessments of smaller groups and areas with questionable or without representative samples (Zaidi and Fawzi 1995; Zaidi 1997). Collins revealed a delayed donor response to a famine situation in southern Sudan 2001 due to the excessive reliance on results from a flawed needs assessment study, despite the availability of reliable monitoring data (Collins 2001). However, nor do large representative surveys guarantee that the relevant needs are captured, especially when needs are not evenly distributed and when the population has moved due to the emergency. In Slow Onset Disasters and Complex Emergencies it seems wiser to rely on several small targeted surveys rather than one large cross-sectional survey where pockets of famine end up being hidden in the overall picture (Van Damme 1998). The balance between using qualitative and representative quantitative methods is a constant challenge, and assessors of emergencies must always convey the uncertainties of their results.

A number of UN initiatives currently aim at improving NA. To address the patchy and incomplete needs assessment data WHO is setting up a system-wide Health and Nutritional Tracking Service (WHO-Health Action in Crises 2006) in disasters that could be useful for the collection and dissemination of operational needs assessment results. Another UN initiative to improve operational needs assessments and to increase its use is the attempts to conduct sector-wide assessments and evaluations, involving organisations representing different needs areas. (Inter-Agency Health Evaluations in Humanitarian Crisis). On the response side the UN has set up the Health Cluster approach to be applied in major crisis countries. This initiative identifies one large and capable organization as the coordinator per vital needs sector.

## **B.The second objective, needs-based funding**

The second objective of needs assessments, needs-based funding is different from above as it is intended for another player. The donor agencies and implementing agencies are actors in international humanitarian assistance with largely different roles (Figure 8). The result of study I suggests that it may be unrealistic to let NA results guide funding. Following an SID, agencies cannot wait for donors decisions, emergency assistance must start immediately. To allow funding for international assistance following an SID, donors should make funds available to capable implementers at the start of each year and let the implementing agencies that have proved to be capable and efficient

Figure 8. Roles of and relations between the actors in needs assessments for humanitarian assistance.



decide themselves whether assistance is needed or not. Sida already has such “framework agreements” with the major humanitarian organisations such as ICRC, IFRC and MSF.

A parallel funding mechanism is the new Central Emergency Response Fund (CERF) a fund managed by OCHA at the United Nations. This fund will provide OCHA with money which will enable them to act immediately without having to wait for funding decisions by the donors. In contrast, in a disaster with a less dramatic onset, donors have time to jointly assess the macro situation, based on needs assessments covering context issues such as, the socio-economic status of the affected population, size and composition of the affected population, geography, type of emergency and other actors. Based on such information an analysis of overall needs can be made and compared between other emergencies. One interesting initiative in line with this is the Global Index for Humanitarian Needs Assessment that has been developed by ECHO, the Humanitarian aid office of the European Union (ECHO 2004). This index ranks countries based on well established indicators such as Human Development Index, poverty level, under-five year mortality rates, prevalence of malnutrition, number of internally displaced in the particular country.

If donors want to improve the use of operational NA, separate funding for this activity is needed. One way forward could be to develop international trainings on NA and set up an accreditation system for needs assessors.

### **C. The third objective, baseline data**

The third objective, baseline data, is focused on documenting the impact of the disaster event, the baseline from which humanitarian assistance starts its activities. There are international initiatives that aim at defining the indicators that should be systematically measured in different disaster settings (SMART 2002). Such clearly defined indicators are most useful if they allow a comparison between disasters and different socio-economic contexts and are thereby appropriate for evaluations on the outcome of humanitarian assistance. The WHO and IFRC led initiative The Tsunami Recovery Impact Assessment and Monitoring System (TRIAMS) is an example of an international systematic initiative to try to document impact and recovery in areas affected by the 2004 Tsunami (WHO and IFRC 2006) by collecting impact indicators and comparing them over time with routine surveillance data. This project aims at identifying areas that managed to recover better than others and analyse what made the difference.

### **Response to disasters**

The results of this thesis indicate that needs assessment often do not significantly influence the international humanitarian health response following an SID (studies I, III or IV).

Studies II, III and IV showed that the domestic capacity in middle-income countries cover almost all health needs in disasters. In contrast the health needs of disaster-affected populations in most low-income countries must be provided for by international assistance. However, such assistance must be cost effective and focus on the vital needs and available capacities.

An important observation noted throughout the studies in this thesis is that disaster-affected people are rarely passive victims. Most are very capable and well aware of what they need most for their survival. To guide humanitarian health assistance, needs assessments should focus on documenting the perceived needs of the affected population. The main part of the assistance is to meet these needs in combination with empirical knowledge of best practices (Toole and Waldman 1990; Toole and Malkki 1992; Waldman 2001) depending on the context. Assistance should not be designed based on preconceived expatriate opinions, which seemed to have been the case when some West European sent assistance to Beslan and the ill-adapted FFH were studied (studies III, IV).

An important new approach to disaster relief, especially following sharply geographically localised an SID, is to provide cash to compensate the loss of assets by the affected population and thereby help them to meet their vital needs in a self-determined way (Harvey 2005; Harvey 2007). Following the

Kashmir earthquake the Pakistani government quickly decided to economically compensate the affected population. For each house destroyed the equivalent of USD 3 100 was paid, while the loss of a family member was compensated with USD 1 700 and the injured received between USD 250-800 depending on the severity (International Refugees 2005). It may be assumed that a cash transfer will increase the risk of corruption, but that is not necessarily the case. International provisions of bulky building material and other material goods may be more prone to corruption in harbours and airports as well as during transportation, storage and distribution. Direct cash transfers are a promising new approach to assisting SID affected people (Harvey 2007).

Information in the early period following an SID will to a large extent be provided by the media (de Ville de Goyet 2006). However, the media is often focused on stereotype compelling stories of victims which may reinforce conventional practices. Decision makers may feel obliged to respond to such simplified descriptions by rapidly sending any goods to show compassion. It remains a professional challenge to assess the needs following a disaster in a better way than the media does and to adapt the assistance accordingly. The humanitarian impulse, to assist people in need is a fundamental part of mankind, but this strong compassionate feeling needs to be directed. The compassion of a warm heart needs to be accompanied by the knowledge and experience of a cold brain (Figure 9). The experience gained from conducting this research indicates that systematic studies of the professional experience of humanitarian assistance work is probably as important as conventional published research. The humble final conclusion is that the main added value of university-based research in the area of needs assessments for humanitarian health assistance is the independence from the actors which may allow critical analysis.

Figure 9 Illustration "Warm and Cold" by Mattias Larson



## CONCLUSIONS





- *There is a clear discrepancy between the donor policy of funding humanitarian health projects based on needs assessment results and donor practice, which may be due to an insufficiently defined policy rather than bad practice (I).*
- *Needs assessment results cannot be correctly interpreted without information on the socio-economic context in the affected area and country (II, III).*
- *There exists considerable capacities in middle-income countries to handle disaster situations, that must be accounted for, when designing international humanitarian health assistance (II, III, IV).*
- *No Foreign Field Hospital deployed in four recent Sudden Impact Disasters arrived in time to provide lifesaving trauma care (IV).*
- *It is feasible to quickly get geographically representative information from the affected population using a Clinic Entrance Survey interview survey in a post earthquake context (V).*

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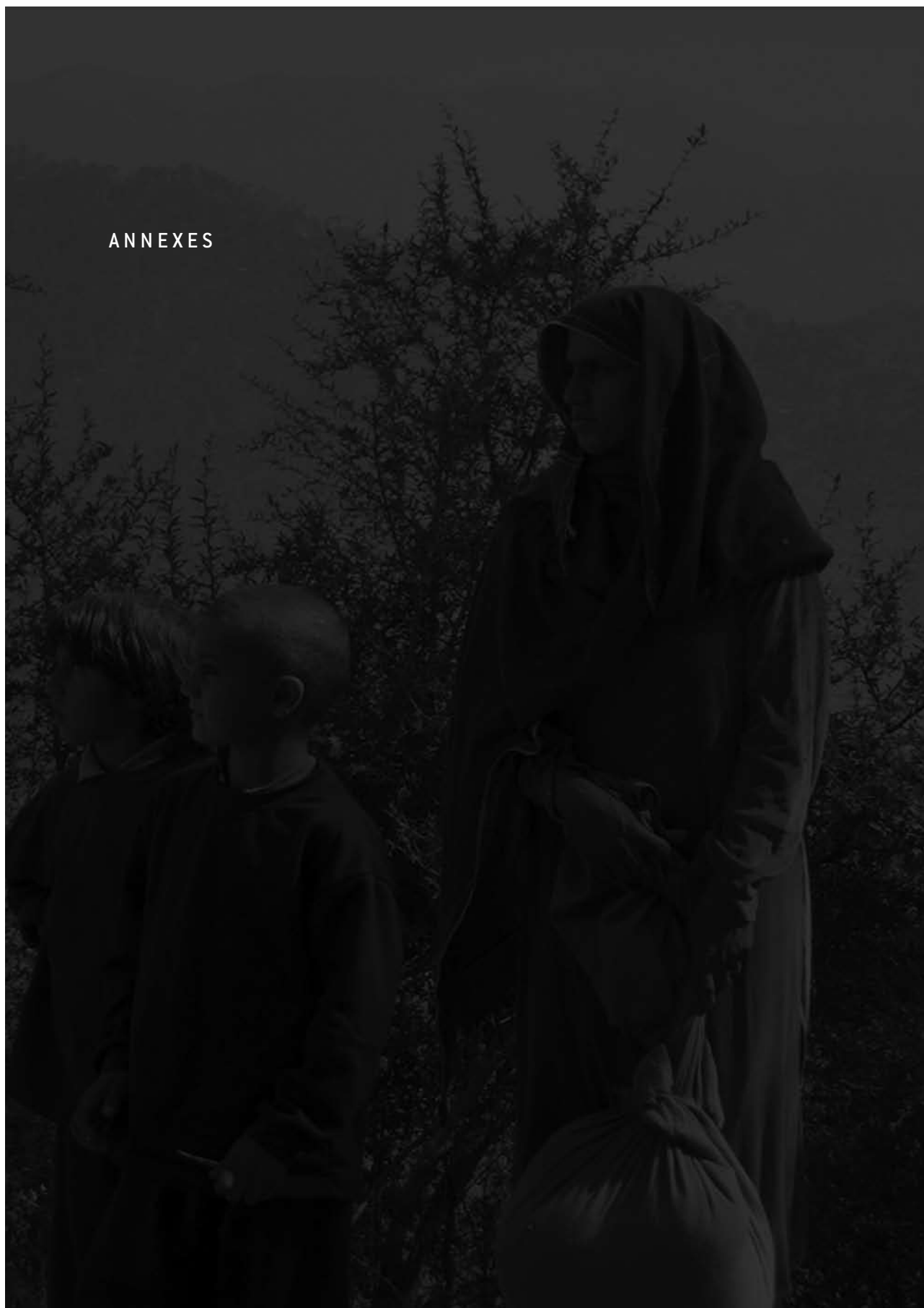
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## ANNEXES





## Annex 1. Definitions

**Coping** — the manner in which people and organizations act, using existing resources within a range of expectations of a situation, to achieve various ends. In general, this involves managing resources, both in normal times, as well as during unusual, abnormal, and adverse conditions of a disaster event or process<sup>1</sup>.

**Crude Death Rate** — The crude death rate is the number of deaths occurring among the population of a given geographical area during a given year, per 1 000 mid-year total population of the given geographical area during the same year<sup>2</sup>.

**Gross Domestic Income** — The market value of all final goods and services produced within a country in a given period of time. GDP can be expressed by the current exchange rate method or the Purchasing Power Parity (PPP) method<sup>3</sup>.

**Resilience** — The pliability, flexibility, or elasticity of the population/environment to absorb, buffer, and/or manage the event/damage<sup>1</sup>.

**Under-Five Death Rate** — Annual number of under five year deaths per 1 000 children aged 0 and exactly five years of age<sup>2</sup>.

**Under-Five Mortality Rate** — is the probability (expressed as a rate per 1,000 live births) of a child born in a specified year dying before reaching the age of five if subject to current age-specific mortality rates<sup>4</sup>.

**Vulnerability** — the susceptibility of the population and environment to the nature of an event; the susceptibility of an individual or population to injury or contagion, the degree of possible/potential loss to a given element at risk resulting from a given hazard at a given intensity<sup>4</sup>.

1. Health Disaster Management Guidelines for Evaluation and Research in the Utstein Style Glossary of Terms, 2003

2. OECD, Glossary of Statistical Terms, 2006

3. World Bank, World Development Report, 2005

4. UNDP, Human Development Report, 2006

## Annex 2. Economic classification in GDI /capita

High-income countries > USD 11 116

Upper middle-income countries USD 3 596-11 115

Lower middle-income countries USD 906- 3 595

Low-income countries < USD 905

[World bank, Atlas method July 2007]

### Annex 3. Registration form for needs assessment data (Study I)

- a3 Application nr  
a4 Health care sector included in project  
a5 Food security/ nutrition sector included in project  
a6 Water sanitation sector included in project  
a7 Education sector included in project  
a8 Security related sector included in project  
a9 Mine-related sector included in project  
a10 Other main project  
a11 Specify if other main project  
a12 Total project cost in millions SEK  
a13 If other currency, specify amount  
a14 Amount in million SEK applied from Sida  
a15 If other currency, specify amount  
a16 Health care part specified in budget  
a17 If yes specify in millions SEK  
a18 If other currency, specify amount  
a19 Project qualifies in study  
a20 Project country as defined by postal code if region put RE  
a21 If regional project, define region  
a22 Applying organization  
1 UN  
2 NGO  
3 Other  
a23 Specify if other  
a24 Total project months  
a25 Arrival date of application to Sida
- NEEDS ASSESSMENT IN APPLICATION
- b1 Project area defined for the total project  
b2 Data on number of population in project assessed?  
b3 Size in thousand  
b4 Data on number of population specifically in health care sector?  
b5 Size in thousand  
b6 Data on target population size in health care sector ?  
b7 Size in thousand  
b8 Data on number of expected direct beneficiaries in health care vtsector?  
b9 Size in thousand  
b10 Context defined as mainly  
War 1  
Protracted Complex Emergency 2  
Natural disaster 3  
Other 4
- b11 Specify above if other  
b12 Security assessed  
b13 Specified security Source  
b14 Assessed population sample defined for health care sector  
b15 Size in thousands  
b16 Source specified  
b17 Method specified  
b18 Local capacities assessed for health care sector  
b19 Coordination addressed at national level  
b20 Coordination addressed at international level  
b21 Information on other actors' projects  
b22 Data on water quality  
b23 Source defined  
b24 Method defined  
b25 Data on water quantity  
b26 Source defined  
b27 Method defined  
b28 Data on Malnutrition  
b29 If yes, variable used  
b30 Age group defined  
b31 Source defined  
b32 Method defined  
b33 Malnutrition rate  
b34 Source defined?  
b35 Method defined  
b36 Data on food security  
b37 Source defined  
b38 Method defined  
b39 Data on Mortality  
b40 If yes, specify variable  
b41 Source defined  
b42 Method defined  
b43 CMR/10.000/day  
b44 source defined  
b45 Method defined  
b46 Data on Measles vaccination coverage  
b47 If yes, specify % of children vaccinated  
b48 Other data on morbidity defined
- SIDA FUNDING DECISION PART
- c1 Decision date  
c2 Amount allocated for tot project in million SEK  
c3 Thereof to be spent 2003  
c4 Thereof to be spent 2004  
c5 Thereof to be spent 2005  
c6 Amount allocated for health care specified

- c7 If yes specify in millions SEK
- c8 Project time in months
- c9 Decisions based on the suggestion in "decision document"

#### SIDA DECISION DOCUMENT

- d1 Are quantified needs used as reference for funding the project
- d2 Is mortality referred to
- d3 If yes, specify type of mortality
- d4 Is malnutrition data referred to
- d5 If yes, type of malnutrition
- d6 Is access to or quality or quantity of water referred to
- d7 If yes, specify
- d8 Is access to health care referred to
- d9 If yes, specify
- d10 Other needs indicators mentioned
- d11 If yes specify
- d12 Is source of information for defining needs specified
- d13 Is the needs assessment in project proposal referred to
- d14 Other source for needs information mentioned
- d15 If yes specify
- d16 Are needs based on data from country level
- d17 Are needs based on data from project area
- d18 Are needs based on information from other area
- d19 If yes specify area
- d20 Is there data on the number of population in project area?
- d21 If yes, size in thousand
- d22 Data on Target population size?
- d23 If yes, size in thousand
- d24 Data on number of expected direct beneficiaries d25 If yes size in thousand
- d26 Is cost per capita calculate

POPULÄRVETENSKAPLIG SAMMANFATTNING PÅ SVENSKA



## Bakgrund

En katastrof kan definieras som en plötslig eller långsamt insättande händelse som påverkar det drabbade området så allvarligt att hjälp behövs utifrån. Katastrofer kan vara orsakade av naturen eller av människan eller är en kombination av de båda. I vilken grad katastrofen skördar människoliv beror på en mängd faktorer såsom: katastrofens typ och intensitet, antal drabbade människor, platsens geografiska beskaffenhet och sårbarhetsfaktorer hos befolkningen samt i miljön, men beror även av områdets och människornas kapacitet i att hantera katastrofen. Den viktigaste faktor som avgör sårbarhet och kapacitet är det drabbade landets socioekonomiska situation. Dödligheten till följd av snabbt insättande katastrofer är kring 100 gånger högre i låginkomst- jämfört med i höginkomstländer. Sårbarheten i låginkomstländer är betydligt högre på grund av resursbrist medan kapaciteten att reducera skada är låg. Katastrofer drabbar låg och medelinkomst länder i högre grad än höginkomstländer. Antalet människor som drabbas av naturkatastrofer har under de senaste 30-åren successivt ökat men trots detta minskar antalet dödsfall.

De viktigaste omedelbara livräddande insatserna efter en katastrof ges av lokalbefolkningen. Hjälpinsatser vid de få katastrofer som drabbar höginkomstländer sker via räddningstjänsten medan myndigheter i fattiga länder till stor del saknar sådana resurser. Det krävs då internationella humanitära insatser för att förse de drabbade med de primära behoven: vatten & sanitet, mat, tak över huvudet, hälsovård och säkerhet. Under 2005 avsattes det internationellt motsvarande 125 miljarder SEK för humanitära insatser. Denna summa har ökat betydligt under de senaste 20 åren. Internationell humanitär hjälp ges framför allt av FN organisationer och internationella frivilligorganisationer men även via utländsk militär och räddningstjänst.

Behovsbedömningar är ett svårdefinierat begrepp som innefattar att samla information om vitala behov hos den drabbade befolkningen som underlag för hjälpinsatser. Resultat av initiala behovsbedömningar behövs för att definiera typ och kvantitet av katastrofinsatser, men även för att styra resursallokering samt för att utgöra en bas för senare utvärdering av insatser. Det finns välbeskrivna metoder för behovsbedömningar och hjälporganisationer har egna manualer för detta. Det saknas emellertid studier på hur pass effektiva behovsbedömningar är att kartlägga graden av hjälpbehov. Vid en genomgång

av hur behovsbedömningar användes efter tsunamin 2004 konstaterades det att det var media rapporteringen och den stora tillgången till pengar som styrde hjälpinsatserna snarare än behovsbedömnings resultat

**Avhandlingens syfte är att utforska behovsbedömningar och studera hur dessa påverkar internationella humanitära hälsoinsatser**

**Studie I**

Internationella givare har gemensamt deklarerat att humanitär hjälp skall ges baserat på behov och på basis av behovsbedömnings resultat.

*Syftet* var att kvantifiera i vilken grad en stor humanitär bidragsgivare hade tillgång och tog hänsyn till behovsbedömningsresultat vid resursallokering.

*Metoder* Samtliga hälsoprojektansökningar Sidas humanitära avdelning år 2003 studerade i detalj och deras beslut med avseende på tillgång till basal hälso information. Grupp diskussioner om resultaten fördes med berörd personal på Sidas humanitära avdelningen

*Resultat och diskussion* Sidas humanitära avdelning fördelade år 2003 sammanlagt 1 546 millioner SEK till 204 projekt ansökningar. Av dessa ansökningar var 38 hälsoprojekt och de beviljades sammanlagt 258 miljoner SEK. Endast 37% av dessa projektansökningarna innehöll information om projektets befolkningsstorlek medan 30% av tagna beslut innehöll information om detta. Personalen på Sidas humanitära avdelning uppgav sig sakna kunskap om hur man tolkar behovsbedömnings resultat. De påpekade att hjälporganisationernas förmåga att genomföra arbetet var en viktigare faktor för att bevilja finansiering Vi tolkade detta dels som att behovsbedömnings resultat ej är viktig i beslutsprocessen, samt att det krävs ett ramverk för hur hälsobehov skall tolkas om resursallokering skall ske på basis av behov.

**Studie II**

Den intensifierade konflikten mellan Israel och det ockuperade palestinska territoriet under våren 2002 ledde till ökad media bevakning och internationellt engagemang. Många humanitära organisationer var redo att skicka humanitär hjälp.

*Syftet* med studien var att bedöma och karakterisera hälsobehoven hos den palestinska befolkningen som under 2002 utsatts för en lågintensiv konflikt.

*Metoder* Rapporter insamlades och lästes. Observationer i och runt Jenin, Ramallah, Nablus, Hebron, Bethlehem och Gaza, på sju vårdcentraler samt tre sjukhus genomfördes. Intervjuer med nyckelinformatörer och fokusgruppdiskussioner med kvinnliga vårdsökande utfördes.

*Resultat och diskussion* Ingen nämnvärd hälsopåverkan av konflikten kunde dokumenteras hos befolkningen. Svårigheterna att fritt röra sig ökade dock sårbarheten och gjorde det svårt för befolkningen att nå sjukvård. Inga fynd tydde dock på att det saknades vare sig material eller sjukvårdspersonal. Detta tolkades som att internationella humanitära hälsoinsatser i denna konflikt bör koncentras på att minska sårbarheten i den utsatta befolkningen snarare än att skicka mediciner, material och sjukvårdspersonal

### **Studie III**

Den 1:a september 2004 tog terrorister mer än 1 300 barn och vuxna som gisslan i en skola i Beslan, Nord Ossetien, Ryssland. Två dygn senare fick dramat en våldsam krigslig upplösning. Sverige fick förfrågan om att bistå med material och mediciner. JvS åkte dit på uppdrag av Socialstyrelsen för att bedöma hjälpbehoven.

*Syftet* med studien var att kartlägga behovet av internationella hälsoinsatser.

*Metoder* Intervjuer genomfördes med nyckelinformatörer, observationer gjordes på fyra sjukhus, en psykologinrättning samt på skolan i Beslan. Ytterligare sekundärdata insamlades och lästes.

*Resultat och diskussion* På de fyra sjukhusen som låg inom 20 minuters bilväg från skolan fanns det innan gisslandramat 2 500 sängplatser och 900 läkare, Nord Ossetien har 70 % fler läkare per person än Sverige. Den krigskirurgiska kompetensen var god.

Sammanlagt dog 348 människor och sjukhusen fick under de första timmarna efter gisslandramats upplösning motta 661 skadade, varav 7 dog det första dygnet. En vecka senare hade alla 110 intensivvårdskrävande patienter blivit skickade för mer avancerad vård till andra delar av Ryssland. Resultatet tolkades som att det inte behövdes internationella medicinska hjälpinsatser. Det primära medicinska omhändertagandet var adekvat och slutresultatet avseende sjukhusdödlighet hade sannolikt inte ha blivit annorlunda om ett liknande drama drabbat en förort till Stockholm.

### **Studie IV**

Efter plötsligt insättande naturkatastrofer skickas internationella fältsjukhus (IFS) för att rädda liv. Många har kritiserat IFS för att etableras för sent och primärt vara fokuserade på livräddande skadebehandling. Det saknas studier om behovet av IFS vid naturkatastrofer. WHO har etablerat riktlinjer för IFS.

*Syftet* var att bedöma om användandet av IFS vid fyra naturkatastrofer (Bam, Iran 2003, Haiti, 2004, Aceh, Indonesien 2004 samt Kashmir, Pakistan 2005), var anpassat till rådande behov.

*Metoder* Data samlades in via Internet, genom observationer på plats i tre av de fyra katastroferna samt via intervjuer. Resultatet sammanställdes med avseende på antal IFS, ursprungsland, ankomsttid och tid på plats, antal sängplatser, aktivitet och kostnad. Resultatet jämfördes med WHO riktlinjer.

*Resultat och diskussion* Sammanlagt 43 IFS insatser identifierades. Bristen på detaljerad information var påtaglig. Inget IFS anlände inom 48 timmar, då liv anses kunna räddas. Fältsjukhusen var inriktade på livräddande traumavård snarare än på de behov som efter några dagar dominerar, nämligen vanliga sjukhusvårdsbehov. Kostnaden per sjukhussäng var runt 2 000 USD per dag. Inget IFS följde WHO:s riktlinjer för livräddande vård. Detta tolkades som att det är en illusion att IFS kan vara på plats för att rädda liv annat än om de kommer från grannländerna. IFS som anländer senare än 48h skall vara personal och materialmässigt utrustade för att sköta de vanliga sjukhusbehoven när befintliga sjukhus har förstörts.

## **Studie V**

En kraftig jordbävning drabbade Kashmir i norra Pakistan den 8 oktober 2005 Uppskattningsvis 3 miljoner blev hemlösa. Det saknades initialt kartor och information om de drabbades behov.

*Syftet* med studien var att testa en ny befolkningsbaserad metod för snabb behovsbedömning i Bagh sub-distrikt, Kashmir.

*Metoder* Ett formulär konstruerades fokuserat på hur de drabbade prioriterade sina behov samt i vilken grad de drabbats av jordbävningen. Ett slumpmässigt urval för intervju gjordes bland patienter och anhöriga som anlände till endera av de tre vårdcentraler och sjukhuset i Bagh sub-distrikt där Läkare Utan Gränser (MSF) arbetade.

*Resultat och diskussion* Sammanlagt intervjuades 196 personer representerandes 1 847 hushållsmedlemmar. De intervjuade representerade proportionellt samtliga delar av det studerade området. Av samtliga hushållsmedlemmar uppgavs det att 3,8% dött, och att 3,7% skadades svårt till följd av jordbävningen. Det dominerade behovet var brist på tak över huvudet vilket uttrycktes av 99% av de intervjuade. En majoritet uppgav tillgång till mat, vatten & sanitet och att dessa behov inte uppfattades som akuta. Resultaten av dödlighet och antal skadade stämde väl överens med en senare studie av hela befolkningen som genomförde av den pakistanska armén. Vi tolkar detta som att intervjuer av besökare till hälsoinrättningar i detta fall gav ett tillräckligt representivt urval. Fynden hjälpte MSF att anpassa hjälpen till de behov som den drabbade befolkningen prioriterade. Den använda metoden är enkel och snabb och verkar passa för initial behovsbedömning efter jordbävningar.



## Slutsatser

- Givarnas riktlinjer, att basera katastrofbistånd på behovsbedömningsresultat, efterföljs inte. Detta beror sannolikt på dåligt anpassade riktlinjer snarare än på felaktig finansiering av katastrofbistånd (I).
- Behovsbedömningsresultat kan inte tolkas utan tillgång till information om den socioekonomiska situationen i det drabbade området (II, III).
- Det finns betydande katastrofhanterings resurser i medelinkomst länder som måste beaktas vid planering av internationell katastrofhjälp (II,III, IV).
- Inget internationellt fältsjukhus som skickades till fyra stora naturkatastrofer anlände i tid för att hinna rädda de svårt skadade (IV).
- Det går att snabbt få fram representativ information om de jordbävningsdrabbades behov genom att systematiskt välja ut för intervju bland dem som anländer till hälsoinrättningar i det studerade området (V).