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Monographic issue

Disasters in North Kivu Province, Democratic Republic of Congo

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Letter from the editors

The *Emergency and Disaster Reports* is a journal edited by the Unit for Research in Emergency and Disaster of the Department of Medicine of the University of Oviedo aimed to introduce research papers, monographic reviews and technical reports related to the fields of Medicine and Public Health in the contexts of emergency and disaster. Both situations are events that can deeply affect the health, the economy, the environment and the development of the affected populations.

The topics covered by the journal include a wide range of issues related to the different dimensions of the phenomena of emergency and disaster, ranging from the study of the risk factors, patterns of frequency and distribution, characteristics, impacts, prevention, preparedness, mitigation, response, humanitarian aid, standards of intervention, operative research, recovery, rehabilitation, resilience and policies, strategies and actions to address these phenomena from a risk reduction approach. In the last thirty years has been substantial progress in all the above mentioned areas, in part thanks to a better scientific knowledge of the subject. The aim of the journal is to contribute to this progress facilitating the dissemination of the results of research in this field.

This issue covers the long-lasting conflict in North Kivu (Democratic Republic of Congo) a small province but with strategic importance due to its location on the border with Rwanda and Uganda. It is a densely populated area, rich in natural resources. It hosts close to a million internally displaced persons in 2013, a phenomenon that was already present due to inter-ethnic conflict since the beginning of the 1990s.

Displacement has reached huge proportions during the war that began in 1998, and which has been going on with varying intensity ever since. North Kivu is also a region prone to natural disasters, specifically related to seismic and volcanic activity.

This report reviews the consequences of the conflict and other disasters affecting the area and its population, as well as their particularities in this complex emergency situation; strategies of different actors regarding these disasters; and the relation between the conflict and the country's development as a key issue in all government and donor policies.

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1 INTRODUCTION

In his speech at the Global Platform of Disaster Risk Reduction in May 2013, the representative of the Democratic Republic of Congo (DRC) raised the issue of the Hyogo framework concentrating only on prevention and risk reduction of natural disasters, while armed conflict is also an important cause of mortality, suffering and loss. If the aim of the framework is to reduce mortality, all countries should be involved also in promoting resilience against conflicts. (1)

According to the United Nations International Strategy for Disaster Risk Reduction (UNISDR) terminology, a disaster is "A serious disruption of the functioning of a community or a society involving widespread human, material, economic or environmental losses and impacts, which exceeds the ability of the affected community or society to cope using its own resources." (2) Natural disasters receive a lot of attention and media coverage, while long-lasting conflicts are forgotten by the public. At the same time, the humanitarian situation in the conflict-affected area usually only continues to get worse. DRC is a huge country, so I chose to concentrate on one of the areas the most affected by the conflict. Having worked in eastern DRC, I also have a personal interest in the area: I have heard many say that it is one of the most beautiful but also the most terrible places in the world.

North Kivu is a province with strategic importance due to its location on the border with Rwanda and Uganda. There are several ethnic groups and one source of conflicts is the forced displacement of people of Rwandan origin to North Kivu by the colonial administration for agricultural and mining purposes already in the first half of the 20th century.

In the beginning of the 1990s, there was already large-scale displacement (several hundreds of thousands of people) due to inter-ethnic conflict. This was however small in scale compared to the war that began in 1998 and has been going on with varying intensity ever since. The current conflict is fuelled by the exploitation of national resources by foreign powers and characterized by their strong involvement. (3) The surface of DRC is 2,345,408 square kilometres and the capital Kinshasa is situated in the far west of the country. North Kivu has an area of 59,631 square kilometres and the estimated population in 2005 was 4,8 million. The biggest city is Goma, with several hundred thousand inhabitants. (4)

In addition to this, North Kivu is a region prone to natural disasters, specifically related to seismic and volcanic activity. Their consequences however have been relatively small compared to the effects of the conflict in terms of mortality, morbidity, development,

health and education. The conflict can have an effect on the response to a natural disaster for security and access reasons, but it also hinders the development of prevention and mitigation strategies. (5) In some cases, a natural disaster may actually have had a positive impact on the health of the population due to improved services during the response phase. (6)

Figure 1: Map of the Democratic Republic of Congo

It is difficult to collect reliable data on the humanitarian situation in DRC, especially from areas affected by armed conflict. This is due to weakness of state institutions as well as limited access to certain zones. Population movements are continuous and thus difficult to monitor. For example, the United Nations Office for Coordination of Humanitarian Affairs' (OCHA) monthly analyses are based on reports from different humanitarian actors.

Most numbers for numerous indicators provided in different reports are estimates. But in any case, DRC occupied the last place (187/187) in the Human Development Index list in 2011. (7) Due to difficulties related to lacking data and verifying of different information, the disasters mentioned in this paper are not an exhaustive list, according to Centre for Research on the Epidemiology of Disasters (CRED) criteria (8), but examples of the situations the population of North Kivu is facing continuously.

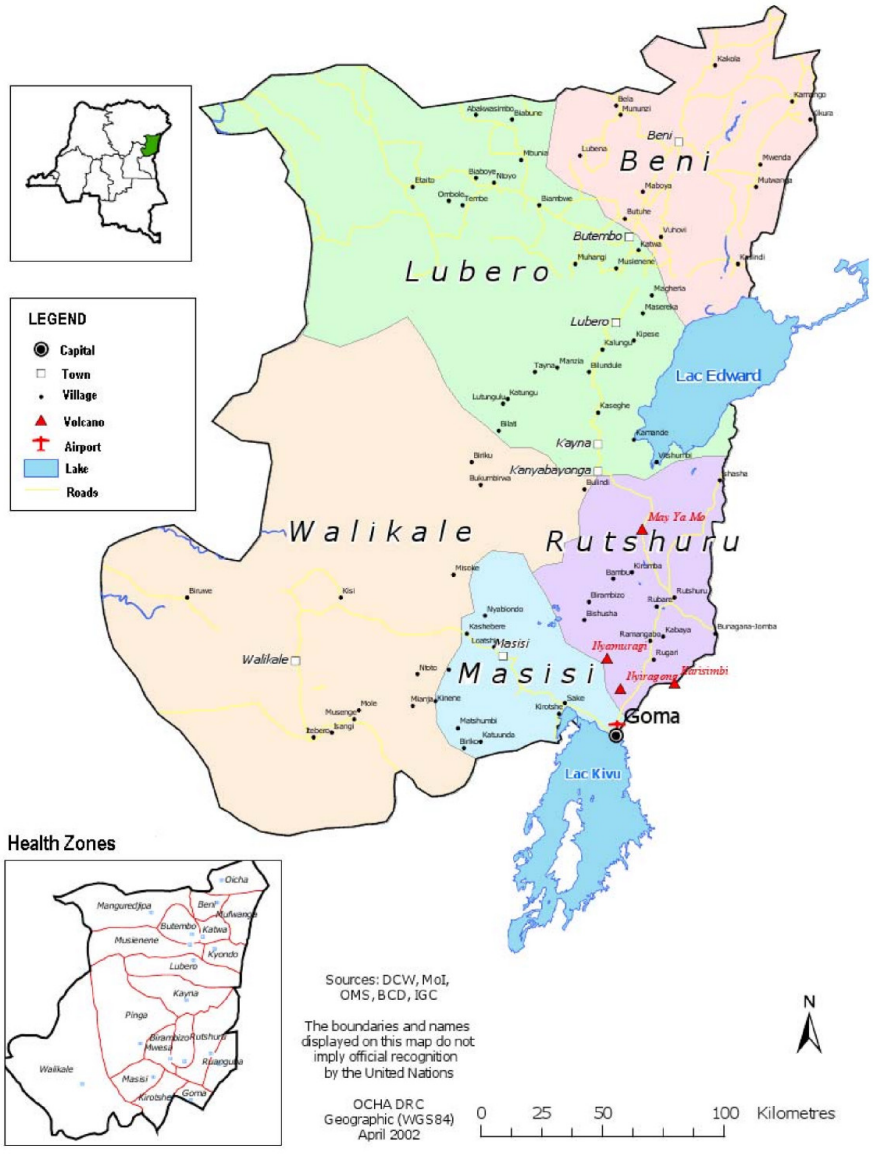

Figure 2: Map of North Kivu

2 THE CONFLICT

2.1 Short summary of times before independence

The country was first used during the colonial period by Belgium's King Leopold II to augment his own personal wealth. From 1885 to 1908, the Congo Free State (CFS), a country of over two million square kilometres, was under his direct governance and not that of the Belgian government. King Leopold's primary interest was in the ivory trade and the Congo River provided a route for transporting the merchandise from central Africa. The region was also rich in mineral resources as well as rubber.

The conference of Berlin (1884-1885), which had finalized the division of the African continent between the colonial powers, had also set terms related to the suppression of slave trade, free trade inside the colony and the promotion of humanitarian policies. King Leopold abolished these principles with a series of decrees, reducing for example the right of the Congolese to their native lands, which remains a major factor in the fuelling of the conflict still today (9) and establishing an internal army, the *Force Publique*, to protect his interests and supress uprisings in CFS. (10)

At the end of the 19th century, the demand for rubber increased dramatically due to new inventions in Europe. King Leopold issued decrees that obliged the native people to harvest rubber for him for free. If someone did not fill their rubber quota, his wife or children could be tortured or murdered, his hands cut off or a whole village could be burned. Rebellions against this regime were brutally crushed by the *Force Publique*.

It is estimated that the population of CFS decreased during this period between ten and thirteen million people due to starvation, disease, murder, exhaustion due to forced labour, etc. Eventually the tales of these violent human rights abuses became so known in Europe that the British government launched an official investigation. The report of the British diplomat sent for the investigation was truthful and clear and caused enough international pressure for the Belgian parliament to take over the CFS from King Leopold in 1908, naming it the Belgian Congo. No formal inquiry was done about the king's actions and unfortunately the enslavement and inhumane treatment of the Congolese people continued also under this regime for the extraction of natural resources. The country gained its independence from Belgium on June 30th 1960 and became the Democratic Republic of the Congo. (10)

King Leopold, and the Belgian government after him, gave the responsibility of education of the Congolese people to (mostly Catholic) missionaries, who only educated a small fraction of the population. The education was very religious-oriented, and higher education was reserved only for those intending to become priests.

In 1960, the new independent nation had only 16 university graduates of a population of over 13 million. Also, in many other newly founded African states, a more uniform and centralized educational system had helped establish a feeling of national unity and identity in states whose artificially drawn boundaries had not respected the multiple ethnic divisions. In the Congo, this was lacking, as well as educated individuals who would be able to step up and take responsibility in the governance of the new nation. (11)

2.2 Fifty years of independence

The Belgians left the country quite abruptly, no plans were made to help the country move gradually towards independence and due to the lack of education the newly founded republic lacked people with administrative skills. Patrice Lumumba, a nationalist whose goal was to reduce ethnic rivalries, was the head of state as prime minister and he faced immense challenges immediately: the officers of the *Force Publique* were all white while the soldiers had been recruited on the spot. The army mutinied against their leaders, who fled the country and left a group of 25 000 armed men (*Armée Nationale Congolaise*) without any control. In addition to this, two big provinces of the new country aspired for independence. Lubumba asked for the help of the UN to subdue these aspirations and a UN mission (ONUC) was established. Lubumba was not satisfied with the UN's help and asked the Soviet Union for military assistance. This caused the United States via the CIA to increase their support towards the Chief of the Staff of the Army, Joseph Mobutu. Patrice Lumumba was removed from his position, placed under house arrest and later assassinated by army forces. (12)

After several years of changing governments, Joseph Mobutu seized power in 1965 and ruled the country (which he later renamed Zaire) with western support until 1997. His reign was characterized by corruption. Much of the revenues of state-owned companies exploiting the country's natural resources went directly to his personal accounts and he did little to improve the situation of the population living in huge poverty. The country was in a state of lawlessness, local governors and military leaders taking over public land as they wished: they felt that with no support from the central government they were justified in doing so and the poor had no legal protection against this. (9) The Western governments knew about these abuses but continued to back him up, since his alliance was considered strategically important while some big African states such as Angola were under Soviet influence. The country's debt is 12 billion dollars, while Mobutu's personal fortune acquired at its expense is with his heirs. At the end of the Cold War, the political interest of the US faded. (3)

In the aftermath of the Rwandan genocide in 1994, an estimated one to two million Rwandan Hutus fled over the border to Zaire. The strong presence of Hutu militias in DRC and Rwanda's involvement in the conflict claiming to want to wipe them out is an important factor in the dynamic of the war still almost two decades later. (13) In 1996, Rwandan government forces together with Laurent Kabila-led *Alliance des Forces Démocratiques pour la Libération du Congo-Zaire* (AFDL) invaded the Kivus in order to eliminate suspected bases of Hutu rebels. They massacred tens of thousands of unarmed Hutu refugees and Congolese civilians and forced hundreds of thousands of refugees to return to Rwanda. Kabila obtained power in May 1997. (3)

The new regime was soon at war again against armed forces originating from Uganda (*Mouvement pour la Libération du Congo* - MLC) and Rwanda (*Rassemblement congolais pour la démocratie* - RCD). This conflict, the Second Congo War, also involved troops from Angola, Zimbabwe and Namibia as well as Mai-Mai rebels on Kabila's side. In 1999, a preliminary ceasefire agreement placed a UN peacekeeping mission in DRC (MONUC). However, violence escalated again between different parties. Laurent Kabila was assassinated and his son Joseph took over. In 2002, Rwanda and Uganda withdrew their troops and a peace agreement was signed in 2003. (14) After the elections in 2006, fighting started again in the east and has continued since then with different levels of intensity. (15) MONUC became a stabilizing mission in 2010 (MONUSCO) and is still present in the eastern part of the country, where the government armed forces, *Forces armées de la République Démocratique du Congo* (FARDC) are fighting against several rebel groups, among which the rebel Tutsi forces (the situation of ethnic Tutsis has been difficult for a long time, them being considered outsiders despite their citizenship) of Laurent Nkunda's National Congress for the Defence of the People (CNDP) and the Lord's Resistance Army (LRA) from Uganda. Many groups are also simply profiting from the general unrest to attack civilians and using the conflict for their own interests. (14) A peace agreement ending the CNDP conflict was signed in March 2009 but fighting recurred in 2012 with the group M23 not being satisfied with its implementation. (15)

Economic interests are one of the biggest reasons for the continuation of the conflict still today: DRC is a country with huge amounts of natural resources including water, coltan, diamonds, gold, copper and other minerals. Neighbouring countries Rwanda, Uganda and Burundi as well as some multinational corporations are profiting from the conflict. Even more companies are indirectly profiting from the situation, by for example getting contracts on better terms than in more stable areas. Corporations and Western countries are aware of the origin of the coltan and that aid from western donors is used for military purposes. The exploitation of natural resources enabled Rwanda to continue financing the war: it is estimated that Rwanda made 250 million dollars from coltan over a period of 18 months. (16) The armed groups will not allow Congolese themselves to sell the minerals; if they attempt to do so, they are often attacked on the road and civilian flights that people previously used to go and sell the minerals are stopped. The transport of the resources is often organised as big military

operations. (17) The big coltan boom is over in North Kivu but the mining of that and of other minerals, rocks and precious metals continues. (18)

2.3 Consequences of the conflict

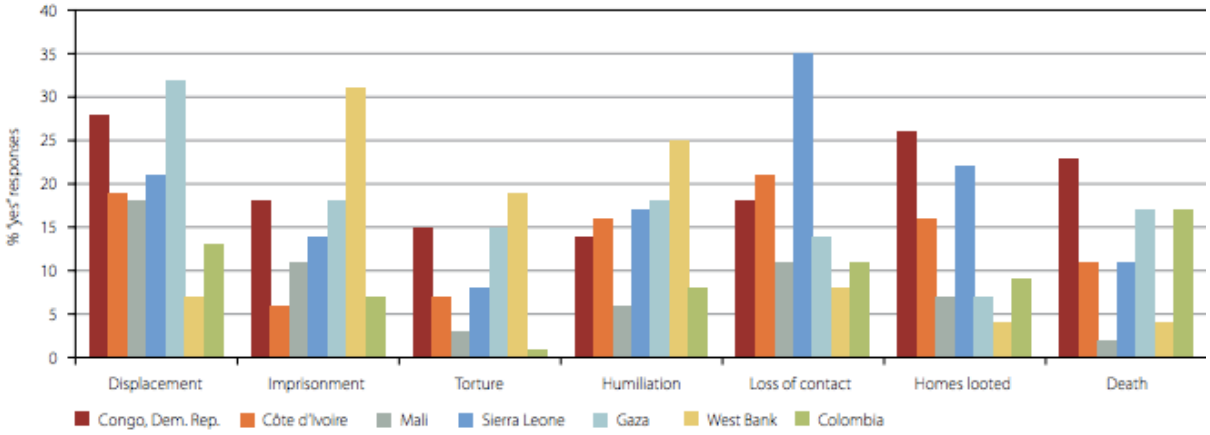

Figure 3: Different consequences of conflict

2.3.1 Excess mortality

The International Rescue Committee (IRC) has done five surveys on mortality in DRC together with several prominent partners. They estimate the excess mortality due to conflict to 5.4 million people from 1998 to 2007 (4.6 million in the eastern provinces). The deaths directly related to violence account for only 0.4-8% of the total, and 47% of the mortality is children of under five (while their proportion of the population as about 19%). The reasons for excessive mortality in insecure areas include displacement (lack of shelter, food and health care in the bush; bad conditions in overcrowded camps), disruption of normal social and economical activity (agriculture, trade, deterioration of water sources), disruption of health care services (looting of clinics, poor management of facilities, limited access to services, targeting of humanitarian aid). (19)

The Human Security Report in 2009 widely challenges the methods and findings of the IRC survey, not suggesting that indirect mortality would not be bigger than direct war-related injuries but claiming for example that the low baseline mortality data used caused inflated figures. According to the report, excess mortality is extremely difficult

to measure as contexts vary so much and countries strongly affected by war have weak health care and reporting systems. (20)

The Crude Mortality Rate (CMR), 2.2/1000/month, is 57% higher than the sub-Saharan average and 80% higher than the United Nations Children's Fund (UNICEF) estimate for before the war. The CMR for the eastern provinces is 2.6, 85% over the average. The latest survey in 2006-2007 was done by conducting household interviews: main causes of death were fever/malaria, diarrhoea, respiratory infections, tuberculosis and neonatal causes, which together account for 55% of deaths. In the east, measles is a significant cause of mortality, accounting for 9.9% of under-five deaths. (21)

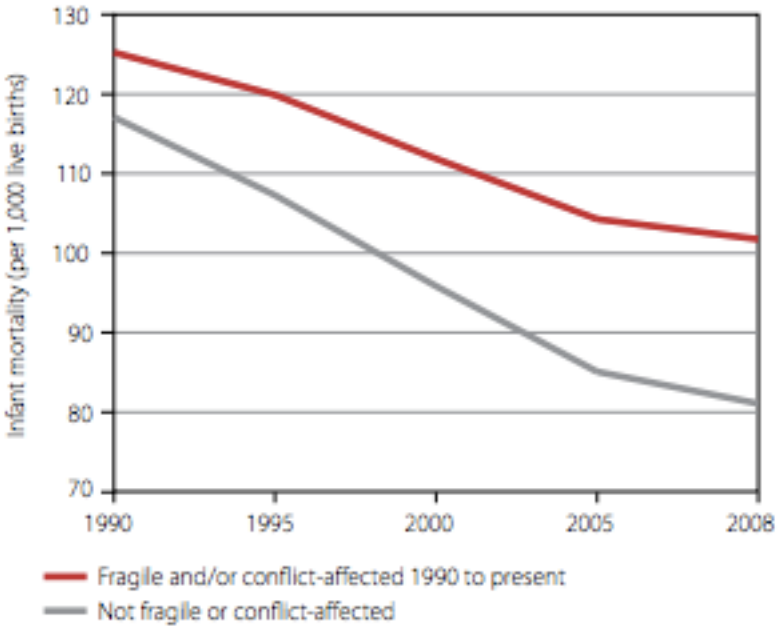

Figure 4: The widening gap in infant mortality

In a report by CRED, the data shows a decrease in CMR during the last decade in Masisi, North Kivu, with a rate of 0.7/10,000/day in 2010. In other eastern regions, the CMR had deteriorated, so there is a big probability of bias due to lack of access. Child mortality has been studied in eastern DRC mostly in the resident population. In Masisi, it was 1.8/10,000/day in 2010, an increase from 0.7 in 2007. (14) In data compiled also by CRED in November 2012 but dating mostly from 2010, the CMR for resident populations in North Kivu is 0.31 and the under-five mortality 0.52, so well below emergency levels. However, data for the region is scarce and probably does not reflect the real situation especially with the escalating violence. (22) According to a household

survey in 2010, the CMR for the eastern regions was 1.8. (23) DRC is third in the world after India and Nigeria when looking at under-five mortality, and the estimate for under-five mortality rate is 168/1000 live births in 2011. (24)

Though direct deaths due to violence are a small portion of the excess mortality, they are extremely harmful to the functioning of the society. Massive human rights abuses and infractions have been reported. Thousands of civilians have been killed and tortured to be able to gain access to the mineral-rich lands. Neighbouring countries are promoting mass killings to secure mining areas. (17) For example, a UN report shows the arbitrary killing of at least 264 civilians, including 83 children in Masisi, North Kivu by armed groups in a series of attacks between April and September 2012. (25) In North Kivu, 48% of protection-related infractions on the civilian population (including murders, inhuman treatment, destruction of shelter and property, kidnappings and forced recruitment) have been attributed to armed groups in the first half of 2012. (7)

A household survey was done in May 2009 in three areas of North Kivu (Kabizo, Masisi, Kitchanga) on residents and internally displaced persons (IDP), who are mostly living in camps. The international aid organization Médecins Sans Frontières (MSF) provides health care in these areas in collaboration with the Ministry of Health. The recall period was from September 2008 to May 2009. In Kitchanga, the under-five mortality rate exceeded the emergency threshold for this age group. In both Masisi and Kitchanga, the most commonly reported cause of death was violence. This was more frequent for adults but also reported in the under-five group in both areas.

The results suggest that between 650 and 1030 violent deaths occurred in these three areas during the eight-month recall period, mostly in Masisi and Kitchanga. The proportion of violent deaths in these two sites is high, 30% for the global population and 58% and 71% for over-five population. The CMRs were lower than a study done in camps in Ituri (another province of eastern DRC) but similar to a nationwide survey in 2006-2007. However, the proportion of deaths reported as violent was similar to the Ituri survey, but much higher than the 0.6% of the nationwide survey. These results may also under-represent deaths due to violence, since some areas were not assessed due to security reasons and road infrastructure limitations. In these areas it is likely that there are displaced people moving constantly with little access to services.

In previous surveys, mortality linked to disease has been much higher, while in this survey it was mostly well below emergency thresholds. However, these three areas are not representative of the whole of North Kivu, since these populations have had access to humanitarian aid for at least a year. The medical care was comprehensive and free and the access to care was good. Water and hygiene activities (by several actors) were also in place in all sites. (26)

2.3.2 Sexual violence in North Kivu

Events are not systematically documented and data is not fully available for several reasons including fear of social stigma, unavailability of health services and fear of retribution. According to a survey by Oxfam, sexual violence increased dramatically in 2009, when the offensive against the Democratic Forces for the Liberation of Rwanda (FDLR) began. (3) For example in Walikale from July 30th to August 2nd 2010 MONUSCO reports a mass rape of 303 men, women and children. From January to September 2009 the total number of reported sexual violence cases was 8,300 for both Kivus, double than the year before. (27) According to a nationwide study with data from 2007, the highest rate of lifetime rape in reproductive women was in North Kivu, as well as the highest rate in the last 12 months. It shows that previous estimates based on the number of people seeking medical care and police reports have been underestimating the phenomenon. This study also focused only on women between 15-49 years, where as a previous study in South Kivu shows that 6% of women are under 16 years old and 10% are older than 65 years. (28)

A study with data gathered in eastern DRC in March 2010 by a household survey show a rate of sexual violence of 39.7% for women and 23.6% for men (for adults over 18 years of age). Of this sexual violence, 74.3% of women and 64.5% of men reported the violence to be conflict-associated. Based on population estimates, this would mean that 1.31 million women and 0.76 million men are survivors of sexual violence and that most of it is conflict-related. Perpetrators are also often women (41.1%), which is quite a new finding. (23) The official UN figures have risen from 4989 cases of sexual violence in 2011 to 7075 in 2012. Many are adolescents and even children less than 10 years old. Rape seemed to have started as a weapon of war by mostly Hutu militias who fled to DRC after the Rwandan genocide but has become so common that many now see it as an inevitable fact of life. (29)

The consequences can be severe, even deadly injuries, especially in the case of young victims, gang raping and rape with foreign objects. Many arrive for treatment with broken bones and burned flesh. Many suffer permanent damage to their genitals and may develop rectovaginal or vesicovaginal fistulas, which can result in chronic incontinence and infections. Rapes also contribute to the transmission of Human Immunodeficiency Virus (the prevalence of HIV rose from 5% in 1997 to 20% in 2002 in the eastern region) and other sexually transmitted diseases. Girls and women may become pregnant and fistulas will increase problems during pregnancy, and obstructed labour is common with young girls. (29) Victims often suffer from post-traumatic stress disorder (PTSD), depression and can even commit suicide. Professional help for mental health problems is not available for most of the victims. (30)

Rape victims can be rejected by their families or societies, especially if they become pregnant as a result. Girls can also be rejected by their fiancés and have trouble finding a husband. If they are rejected, they will be even more vulnerable to further abuse. Many girls drop out of school due to pregnancy or stigmatization. (29)

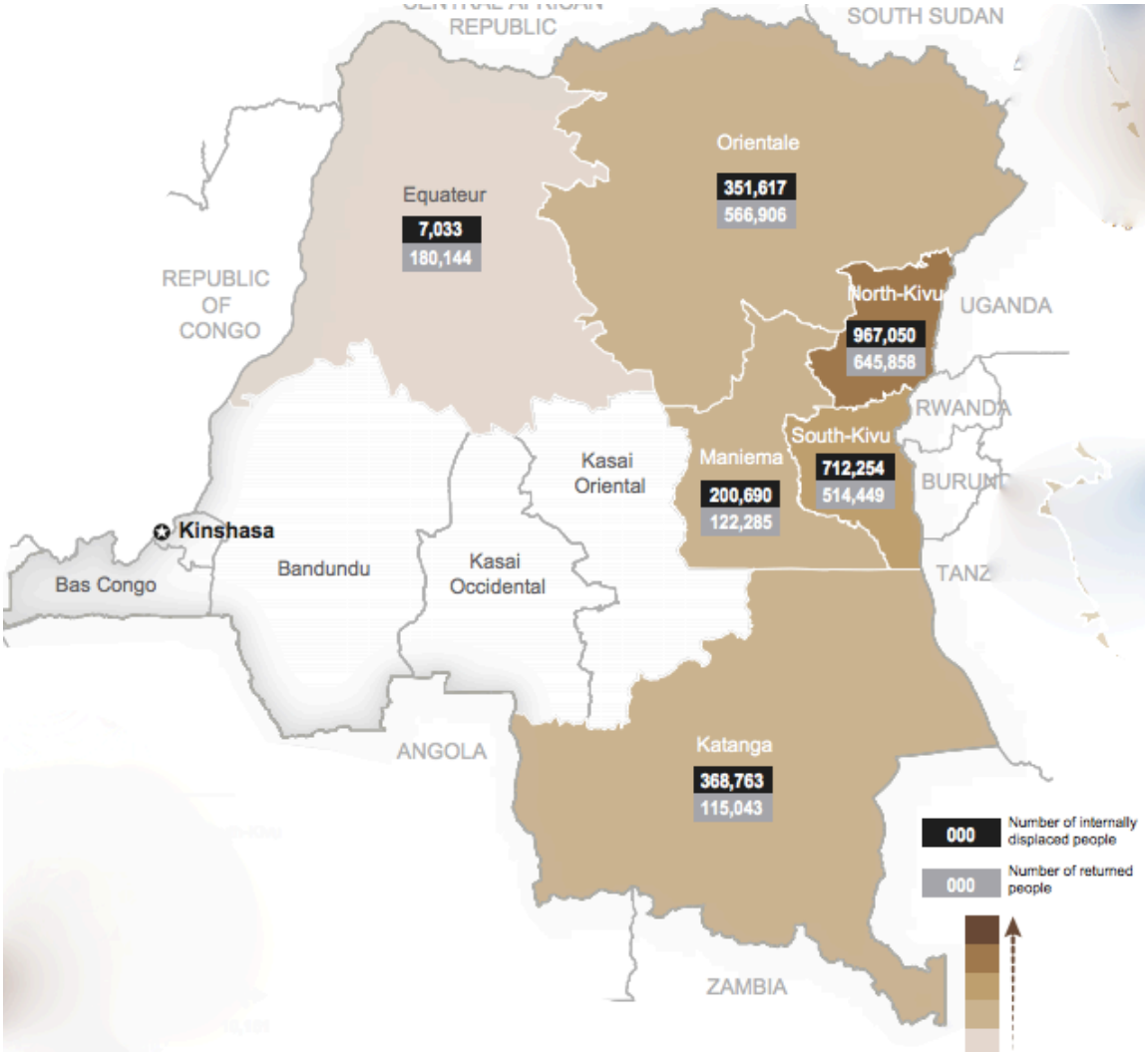

Figure 5: IDPs in DRC in July 2013 by OCHA

2.3.3 Displacement due to conflict, loss of livelihoods and forced labour

The number of internally displaced people in DRC was highest in 2003: 3.4 million. In December 2010, OCHAs estimate was 1.68 million IDPs (out of which almost 590,000 in

North Kivu and 676,000 in South Kivu). 16% of IDPs live in formal camps managed by non-governmental organizations (NGO) under the coordination of the United Nations High Commissioner for Refugees (UNHCR), the rest live with host families or in the bush. In rural communities, the host villages accommodate them. In urban areas, people move in with family or friends or squat where they can. As the resources are already scarce, the strain of hosting IDPs is huge for the communities and tensions build up as the situation continues. Then the IDPs are forced to move into makeshift or organized camps: attacks on formal and informal camps are frequent. When displaced, people have several patterns of action, but many prefer to stay close to their homes to be able to monitor crops and return as soon as it is possible. The most vulnerable group is those who live in the forest, often for years, and move continuously between sites: they are the most difficult to assist, they do not have access to health care and have difficulties finding food. (3)

In January 2013, due to escalating violence in the east since the beginning of 2012, the number of IDPs has augmented to almost 2.7 million and over 500,000 are refugees in neighbouring countries according to UNHCR. (31) North Kivu had the highest number of displaced people in DRC in November 2012. (32) In July 2013, the estimate of UNHCR was 967,000. (33) In the household survey done in May 2009 in three areas of North Kivu (Masisi, Kibozo and Kitchanga) including residents and IDPs who are mostly living in camps, representative of an estimated population of 200,000, the majority of households reported being displaced at least once during the last eight months and some had been displaced several times. The most commonly reported reason for displacement was direct attack on their village (60.7%-81.3%). Most had been walking less than two days before settling. Many also report theft and destruction of major items by armed groups: 96% in Masisi, 87.7% in Kabizo and 57.4% in Kitchanga, and access to fields was not possible or limited for 55.4% in Kabizo, 41.3% in Masisi and 79.7% in Kitchanga. (26)

If natural resources are found in an agricultural area, the people may be forced by armed groups to give up their land. Often they (even young children) are also forced to work in mines to extract the mineral. The group in control fixes prices that individual miners can ask for the minerals. Forced labour is also used in security patrols and forced recruitment to armed groups is common, also as child soldiers. (17) In the study mentioned above, forced labour was the most commonly reported type of violence against civilians in Masisi and Kitchanga, around 50%. Civilians, usually men, are forced to carry materials for armed groups, often for long distances and are threatened by violence if they don't comply. (26)

2.3.4 Food security

The conflict has significantly reduced food production, and food must be imported from neighbouring countries at a high cost. Agricultural harvests have been targeted, fertile soil is not used for food production but for mining, labour has shifted from agriculture towards the mining industry and the attacks on civilians affect all normal activity. Food aid is stolen in planned military operations. The displacement and lack of humanitarian aid together with these factors contribute to high rates of malnutrition. (17) In entrapment conditions, food insecurity may evolve slowly, and the nutritional status gradually weakens. This usually affects a large population, meaning that even if indicators remain below emergency levels, the indirect effect of malnutrition in morbidity and mortality is huge. In mass displacement situations malnutrition can rise very fast, if the population arrives in unknown territory and has limited food supplies. (34) Acute malnutrition, despite the progress that has happened in some areas of the country, also worsened in some areas in 2011. (35) According to the Humanitarian Action Plan (HAP) 2013, 11.5% of children under five suffered from acute malnutrition in 2010 in DRC. (7)

The armed conflict and the displacement it causes have been identified by OCHA as the main reasons for food insecurity in the eastern part of the country. Access to potable water is also extremely limited. (3) According to the CRED report of 2011, the majority of nutrition surveys in DRC have been done on resident populations, and lack of data on IDPs makes the evaluation of the situation very difficult. Some surveys have been done in North Kivu on mixed populations, where it can be clearly observed that the situation is clearly better for residents than IDPs. In Masisi health zone, global acute malnutrition (GAM) rates went from 4.2% in 2007 to 7.1% in 2010. (14) In November 2012, median values for resident populations in North Kivu are 5.5% GAM and 0.25% severe acute malnutrition (SAM) but due to the increased violence, most of the data used is from 2010. (22)

2.3.5 Health

A household survey was done in May 2009 in three areas of North Kivu (Kabizo, Masisi, Kitchanga) on residents and IDPs, who are mostly living in camps. The international aid organization Médecins Sans Frontières (MSF) provides health care in these areas in collaboration with the Ministry of Health. The recall period was from September 2008 to May 2009. At all sites, 70% of households reported having at least one member fall ill and require care at a health care facility during the last two weeks. Access to health care was good: received care 94.8% in Kabizo, 81.7% in Masisi and 89.8% in Kitchanga. It is to be noted that these areas are not representative of the province, since an international NGO is providing free care in these specific places. (26)

The lack of infrastructure and its bad condition prevents many of having access to health care. The state is not capable of providing basic services such as health care, education and infrastructure. The minimum package of basic health care offered is not complete and the minimum package of sexual and reproductive services is rarely available (as defined by the World Health Organization - WHO). The access to health care is a great concern: in some health zones of North Kivu, the population has no access to some basic services, for example primary health care and emergency obstetric and neonatal care. This situation is due to armed conflict causing massive population displacement. In several health zones, the lack in management of pregnancy- and delivery-related complications is an important issue. (35) A continued conflict with population displacements leads to a deterioration of Extended Programme on Immunization (EPI) vaccination services. Even if before the crisis the vaccination coverage was sufficient, the lack of services or lack of access to them will result in a gradually growing number of non-vaccinated children and the herd immunity effect will no longer exist. Data on use of health services including EPI by IDPs residing in host communities is not available. (34)

Civil wars deplete the human and fixed capital of the health care system. (20) (35) Health facilities are targeted, medical equipment is stolen, and armed groups force people, including staff, out of hospitals. (36) There are a few government-owned health centres but the lack of drugs and other equipment is so huge that they are unable to provide services. (37) Health care professionals are not being paid, and treatment prices are so high they are unaffordable to most of the population. Humanitarian agencies have been prohibited to deliver assistance, as well as being themselves directly targeted by armed groups. (17) In 2010, there were 105 reported attacks on humanitarian agencies working in the country, most of which took place in the east. (27) NGOs have become essential in the provision of health care: MSF operated four reference hospitals, 12 health centres and four health posts in May 2013 in North Kivu. (38)

Communicable disease control is severely compromised in conflict-affected areas: vector-control programs are difficult to implement and sustain. In DRC in 2001, after the interruption of the control program since several decades, the number of cases of trypanosomiasis was estimated to 40,000 with a prevalence of 70% in certain villages. Conflict also hampers eradication programs of certain diseases. However, sometimes this knowledge will lead to increased efforts and thus results. Programs for diseases such as tuberculosis, which require long periods of treatment, are difficult to sustain, but efforts have been successful in certain areas. 30% of malaria deaths in Africa take place in conflict-affected countries. (39) Since 2009, there has been a sharp increase in malaria cases treated in MSF facilities in six provinces of DRC, where malaria is the leading cause of death with 300,000 under-five deaths a day. In conflict areas, mosquito nets are distributed but they are left behind when people flee. (40) In 2010, DRC and Nigeria account for over 40% of malaria deaths worldwide while DRC, Nigeria

and India account for 40% of malaria cases worldwide. These numbers are estimates, and there is not enough data available for DRC to assess trends or make analyses of potential causes to the increase in number of cases. Malaria is strongly related to poverty. (41)

There are several aspects involving health problems related to displacement due to violence. The magnitude of the health effects due to displacement is related to the health status of the population prior to displacement. Risk factors related to displacement are: overcrowding; inadequate shelter; insufficient food intake; poor water, sanitation and hygiene conditions; changed exposure to disease vectors; poor vaccination coverage; lack of or delay in treatment and direct violence against civilians. Just the stress and burden of travel can also have a big effect, especially for vulnerable groups. Displacement is always a big burden also for the receiving community. (34) Surveys done on mixed populations in North Kivu show that displaced people fare worse than the resident population when measuring malnutrition, mortality and vaccination coverage. (22)

Displacement and other traumatic experiences very often have adverse effects on mental health. Many live in continuous fear for their safety and mental trauma from experiencing or witnessing brutal acts related to the conflict is very common. Also insecurity about the future and struggling for every-day needs can feel overwhelming. (42) Mental illness is a leading cause of disability worldwide and its prevalence is consistently more elevated in crises. Studies have shown elevated rates of anxiety disorders (up to 20-30% for PTSD alone), and depression symptoms in refugees and returnees. The more violent the trauma, the higher the risk of mental illness. These conditions may occur with a long delay, even only after return to their community. Mental health affects strongly the overall health of an individual and can cause disregard of family members and suicide. Mental health problems are difficult to evaluate due to lack of appropriate questionnaires for most conflict settings and coping mechanisms vary widely between groups. (34)

2.3.6 Development, economy, education and the vicious cycle

DRC occupied the 187th (the last) place in the country classification by Human Development Index in 2011. (7) Violence and economy are interlinked. Slow-developing low-income countries rich in natural resources, such as DRC, will be more prone to conflict (10 times more than others). Revenue from the natural resources also enables armed groups to continue the war. There has been a tendency in the development community to believe that countries eventually progress from violence and war to peace and stability, and that repeated violence is the exception. But we see today that almost all civil wars are new surges of previous violence in the same areas, despite

recent political settlements and apparently successful peace agreements. The costs of violence for citizens, communities, countries and the world are enormous, in terms of human suffering and social and economic consequences. The costs are both direct (loss of life, disability and destruction) and indirect (prevention, instability, displacement). Some losses are directly measurable, whereas others are difficult to quantify in economic terms (trauma, loss of social capital, loss in foreign investments). There is a clear link between poverty and human suffering in conflicts, since money will enable some people to move safely to another area and continue their life, whereas the most vulnerable do not have that option. (43)

Poverty reduction in countries affected by violence is considerably slower in all sectors (education, health care, poverty, mortality) than in peaceful countries, and the gap continues to grow. (43) 70% of the population of DRC was living in poverty in 2011. (7) Men suffer more of the direct consequences but women and children from the indirect ones; children having suffered or witnessed violence are more likely to perpetrate it later. Displacement due to violence disrupts the whole functioning of a community and the massive human rights abuses against civilians that are characteristic of today's wars (including in DRC) close to arrests social development. According to the World Development Report of 2011, violence is the main constraint in meeting the Millennium Development Goals. One reason for the persistence of low growth in conflict-affected countries is the difficulty of reassuring both domestic and foreign investors. Increase in a government's military spending usually reduces the amount of money available for other sectors. Trade is difficult, both inside and out of the country. (43)

Some countries are more vulnerable to violence than others. A government is confronted with numerous stresses and a country with weak governance is not able to cope with these; thus the violence continues or reoccurs. When violence is present, reform of the governance and the creation of stronger institutions are difficult, and the result is often a vicious cycle of violence and weak institutions. Stresses include: security (legacies of violence and trauma, invasion, support of rebel groups by other countries, cross-border conflict spill overs), economic (low income, youth unemployment, natural resource wealth, severe corruption) and justice such as human rights abuses and ethnic tensions or discrimination. New research suggests that there would be several joint underlying factors: a country's characteristics that determine both its capacity to address violence and the level of governance it needs for economic growth. Accountability is also an extremely important factor. All countries are subjected to stresses, but if this leads to repeated violence depends much on the state. (43)

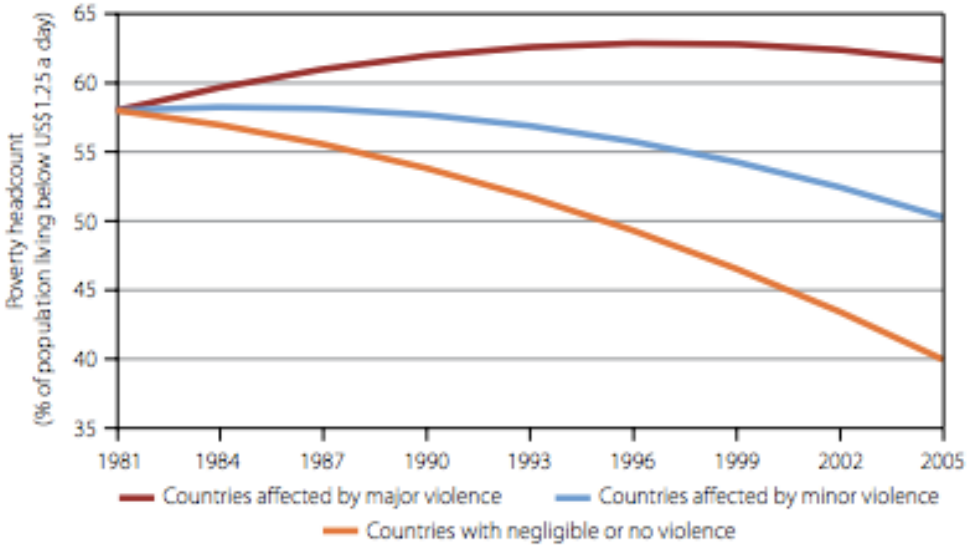

Figure 6: Violence and poverty reduction

It is very difficult for a state to prepare strategies and commit to them especially in "internationalized" civil wars such as the one in DRC, because the involvement of other countries is very hard to predict. Some argue that a major factor in subduing violence is the capacity of the state to punish the perpetrators. The state might also not be willing to interfere with the conflict, if prominent members are profiting from the natural resource transactions. In low-income countries, the decision of an individual to engage in organized violence is often strongly economic-related: there might be no other livelihood available for a large part of the population. But it is not always just the economic aspect: it can be a matter of status and other issues linked to any job. There is a strong relationship between low income and risk of civil conflict (while there is also of course a strong correlation between low income and low institutional capacity). Economic factors are important in the dynamics of conflict but the other factors should not be disregarded (justice, human rights). (43)

The Congolese state is considered weak and it has not shown interest in committing to address the humanitarian crisis in the Kivus, which has now lasted for two decades. Traditional leaders appear to have control over land use regulations and the state is not willing to involve itself in disputes where land is distributed in an arbitrary way, affecting both resident and displaced populations. Armed groups are also using land for their own purposes; including the national armed forces, which complain of not being paid by the government. Armed conflict affects every aspect of life in society for both residents and IDPs: due to insecurity, lack of access to land and forced labour, families cannot farm and we see an increase in malnutrition. They have no way to earn money, and thus cannot pay for education or health care (since the government is not paying

providers of basic public services, their functioning is based on the use of fees). Displaced populations and the constant emergency situation has led international actors to focus on emergency aid, while it should actually concentrate also on strengthening governance and addressing longer-term development issues, including accountability. It also gives the government the possibility of distancing itself and relaying the responsibility to other organizations, and thus no sustainable solution to the situation is obtained. (44)

In 2003, with the government not having control over large territories in the east, armed forces (like RCD-Goma, who had self-proclaimed itself as the political authority in large areas of North Kivu) were lifting huge amounts in "taxes" from the local population, including for vehicles, the passage of roadblocks etc. In this case it cannot be considered as a legitimate role of an armed group performing functions usually attributed to the government, such as collecting taxes for public services, since the money is used to fund military operations and not to develop infrastructure or services. Local authorities were also lifting taxes that were not being used for improving public services. Foreign powers were exporting resources from the country without paying any tax to the government. (17)

Already the Mobutu regime introduced the concept of substituting government duties to humanitarian and charitable organizations in providing public services. The Congolese administration based in Kinshasa has chosen to continue on this path. (37) The humanitarian sector in North Kivu has largely taken over the provision of education, health care and even road rehabilitation as well as urban decision-making: to the point that even development is seen by the population to be the responsibility of the aid sector. Rebels controlled the economy for a long time, and now it is the NGOs, with little will from the government to participate in the process. (45) Many see the local police as the most concrete representation of the government in eastern DRC but even they fail to protect citizens because they are not being paid. (37)

For the city of Goma, the huge presence of international NGOs since more than 15 years in 2013 has a significant impact on the socioeconomic realities of the city. The effects on local political economy, local power and authority structures, socioeconomic strategies of local inhabitants and issues of redistribution and access to vital resources have not been addressed. The humanitarian sector is mostly concerned about the effects of their programmes on the population and not the indirect impacts, which might in fact be partly responsible in fuelling the conflict. The first big wave of NGOs was in 1994 due to the Rwandan refugee crisis. Between 1998 and 2002, when the RCD rebel movement was based in Goma, NGOs began to provide for a lot of basic urban social services such as health and education. The Nyrangongo volcano eruption in 2002 brought more NGOs and the last wave was in August 2007, when the war intensified: the number of humanitarian organizations doubled (including a considerable increase in UN staff), with new programs more focused also on long-term development. (45)

The most direct and obvious impact of the huge humanitarian sector present in Goma is the transformation of the local job market. NGOs account for a considerable share of the local labour market, and connections to the NGO network are a big individual asset. Following the lead of international organizations, local NGOs are numerous and have replaced the state in the provision of many public services. The growing policy of purchasing all possible goods locally changes the local economy: local traders have adapted their merchandise to the needs of expatriate staff. Local markets have changed and expensive supermarkets have emerged. Another booming sector is real estate linked to specific housing needs and the creation of luxurious hotels, bars, restaurants and nightclubs meant almost exclusively for the international clients. (45)

Thus the growing of the humanitarian sector has provided some new business opportunities but in most cases they have been reserved for a limited elite. The arrival of so many with huge purchasing power has led to inflation of rents, increasing prices of houses and land and thus inequality in the urban infrastructure: for normal habitants, it has become impossible to live in the expensive areas in the city, those where there is also access to public services. At the same time, massive influxes of IDPs have resulted in large settlements on the outskirts of town where little or no services were available: the gap between rich and poor areas is only increasing. (45)

Conflict-affected states in Sub-Saharan Africa have some of the world's worst indicators for education. Government spending for education in DRC even declined during the first decade of the century. International aid oriented towards education has dropped considerably since 2008. The diversion of national resources into military action and the loss of government revenue shifts responsibility for education financing from the government to households. In DRC, households pay fees not only for the schools but also for the administration and management of the whole system. (46) As economic activities decrease during conflict, it becomes difficult for parents to provide education for their children. (47) Humanitarian organizations have not been oriented towards providing education in unstable areas due to doubts about the sustainability and as they are not considering it a life-saving activity. However, it is of big value to provide education even for shorter periods of time also for displaced children as it helps in creating some sense of normality. In comparison with the national average, adolescents and young adults living in North Kivu are twice as likely to have less than two years in school, three times as likely for poor females. Only 66% of young people and 55% of adults in conflict-affected countries of Sub-Saharan Africa are literate. (46) In 2011, 33% of children in DRC are not attending school. (7)

Displacement also prevents many from attending school. (42) According to UNICEF, over 600 schools were looted or damaged in North Kivu in 2012. At least 240,000 students missed weeks of school due to the conflict since the rising of violence in April 2012. Schools are being used as a refuge by displaced people or for storage and sleeping by armed groups. In almost all the schools of conflict-affected areas, school

furniture has been partially or totally destroyed. Textbooks and school benches have been used for firewood. Access to education is extremely difficult in many areas, while children that go to school are less likely to be exploited or recruited. (47) In 2007, MONUC reported that hundreds of children were serving in the front lines of the conflict in North Kivu. Many were forcibly recruited from classrooms, which led to closure of some schools. Insecurity and fear of sexual violence prevents particularly young girls from attending school. In the area around Goma, UN peacekeeping forces have been used to ensure the safety of the students on their way to school. Lack of education favours the continuation of the conflict: the recruitment of armed militia is made easier by the lack of other possibilities of employment and thus survival. If conflict is fuelled by ethnic rivalries, education can be used to as a means to advocate for peace; unfortunately sometimes the effect can be adverse, especially of education is very unequal between population groups. (46)

2.3.7 The Great Lakes refugee crisis and the situation in Goma

Already during colonial times ethnicity was an important determinant in Rwanda. The Belgian colonial administration considered the Tutsis superior to the Hutu majority. The Tutsis thus enjoyed better education and jobs than the Hutus. After independence in 1962, the Hutus took their place in the government and had a strong hold of the country until the beginning of the 1990s. That is when a rebel movement constituted of a group of Tutsi refugees in Rwanda led by Paul Kagame, the Rwandan Patriotic Front (RPF), wanted to remove the current president from power and return to their homeland. This resulted in several years of unrest and when the plane carrying the president was shot down on the 6th of April 1994, it provided an opportunity for the Hutu extremists to execute their plan of wiping out the entire Tutsi population. In the following 100 days, 800,000 Tutsis (perhaps as many as three quarters of the Tutsi population) as well as thousands of moderate Hutus opposed to the genocide were murdered out of a total population of seven million. It is estimated that about 200,000 people were perpetrators in the massacre: the military, the police and an unofficial militia group (the Interahamwe) started the killings, but soon encouraged civilians to participate.

The international community did not try and stop the killings, the UN withdrawing its troops in the very beginning. Finally in July, the RPF took over the capital Kigali. The government collapsed and realizing their defeat, an estimated two million Hutus fled to neighbouring countries (most of them to Zaire), among them government forces and many perpetrators of the massacres. (13) (48)

In just five days, between the 14th and 18th of July 1994, approximately 850,000 Rwandan refugees arrived to camps in North Kivu, and concentrated mostly around Goma in five huge camps. (48) The existing actors were not able to respond quickly and well enough and almost 50,000 refugees died during the first month, an average CMR of 25-30/10,000/day. The cholera outbreak in the very beginning of the crisis was one of the deadliest in the last hundred years: 70,000 cases and 12,000 deaths (6), and the overall case fatality rate in treatment centres was nearly 15%. (49) In the initial stage, only 1 l of purified water per person was available so most drank from the pathogen-infested Lake Kivu. (34)

Due to the volcanic soil, latrine construction and burial of the dead was difficult. (50) By the first week of August, the cholera cases were declining but the dysentery cases were rising and resulted in several outbreaks (15,000 symptomatic cases with an antibiotic-resistant strain). (49) Another major contributor to the high mortality was acute malnutrition, under-five GAM rates being 18-23% after 3-4 weeks. The camps were massively overcrowded and health care vastly insufficient. Mortality rates from Goma remain the highest ever recorded. (34) However, given the rapidity of the influx, a large amount of deaths was expected and the quick response of the existing actors prevented an even bigger death toll. (48)

In the second month, death rates decreased dramatically (5-8/10,000/day) as a more needs adapted and well-funded relief operation was put in place. (51) Almost 150 humanitarian organizations arrived in Goma for a massive relief operation. This relief effort received a lot of criticism, as aid was being militarized by former Hutu militias and served the interests of the local politico-economic elites who manipulated the aid to serve their own interests. (45) In November 1994, 16 international NGOs providing services in the camps issued a joint press release stating that the security situation was deteriorating to such an extent that the agencies would be forced to withdraw if there would be no improvement. Humanitarian aid workers were threatened; camp leaders were stopping refugees from returning to Rwanda; militia groups were openly inciting people to violence and human rights abuses were carried out openly, even in health structures.

Humanitarian aid such as food distribution was diverted by the militia, registration card frauds were common. Perpetrators of the genocide were openly planning new attacks from within the camps, and not enough was done to bring them to justice. The power structures within the camps were similar to those preceding the genocide and the camps provided the militia with resources and protection. In March 1995, the World Food Programme (WFP) was even forced to reduce food distribution due to lack of funding, as some donor countries seemed to believe decreasing rations would encourage repatriation. (52) Mobutu had been supporting and aiding the Hutu militias in providing them with arms, and their hold of the territory increased gradually. Rwanda was afraid of new attacks, so in 1996 fighting between the AFDL (allied with

the Rwandan RPF and backed by the US) and the Hutu militias escalated. An attack on the camp of Mugunga (the biggest refugee camp in the world at the time) resulted in the return of hundreds of thousands of refugees to Rwanda and the closure or destruction of the camps. Tens of thousands trapped further from the border died in the forests. (53)

A multinational, multi-donor evaluation was carried out by a group of professionals from various research institutions. A committee composed of Organization for Economic Cooperation and Development (OECD) countries, members of the Development Assistance Committee secretariat of the OECD, UN bodies and several international NGOs as well as a management group were named to supervise the activity. While the focus of the study was more on the response to the Rwandan conflict itself, it was also one of the first evaluations on the delivery of humanitarian aid in complex emergencies. An important point related to this particular conflict is that even though an estimated 80,000 to 100,000 people died in a displacement situation either inside or outside Rwanda in the months following the genocide, it is still a small number compared to the victims of direct violence.

The report highlights that though lives could have been saved if the humanitarian response would have been more effective, the biggest lack was still in the political, diplomatic and military domains regarding the response to the conflict itself (both before and during the genocide). Humanitarian response during the conflict was very difficult in most areas of Rwanda, but some organizations such as the UN Advance Humanitarian Team and International Committee of the Red Cross (ICRC) were able to operate to a limited extent. (48)

UNHCR in Goma had drafted a North Kivu Contingency Plan for the arrival of refugees, but due to lack of information systems the estimated number it prepared for was only 50,000. A big part of the staff had been deployed to the already on-going crisis in Tanzania, so the plan was not complete at the time of the influx. In June, it also already became clear that the expected number would be well over 50,000, but due to a lack of cooperation between the United Nations Rwanda Emergency Office (UNREO), UNHCR and other agencies, the plan was not changed. The scale of the response was huge, including not only the usual UN agencies and NGOs but also civil defence and disaster response agencies from donor countries, military providing support to the humanitarian effort as well as many quite inexperienced NGOs. Overall, the results can be considered as impressive in terms of speed of improvement of water supply, food distribution and health care. (48)

However, there were also many aspects that were not of very high quality. For example the management of the airfield (the transport of cargo), the mismatch of the supplies and the needs in the field and the slow arrival of the equipment necessary to dig latrines were major obstacles for the relief effort. Lack of coordination and

miscommunication between agencies as well as the under-performance of certain NGOs also led to gaps in provided services. The level of violence in the camps was extremely high, and an approximate 4,000 died due to violence by the militia, Zairian soldiers or other refugees. The violence also affected the effectiveness of the response, as most foreign workers were unable to stay in the camps overnight and medical personnel struggled to provide care at night-time. The Western military present in the camp to assist in humanitarian efforts were not mandated to intervene in security issues. UNHCR informed the UN already in the summer of 1994 about the security problems in the refugee camps. The Security Council was unwilling to interfere, so the security situation improved only in March 1995, when UNHCR implemented some reasonably effective security measures in the camps but which were still insufficient to address the broader problem of militarized groups in exile in North Kivu. (48)

According to the report, there is a clear contradiction between the willingness of some countries to provide funds for humanitarian assistance as opposed to their engagement in trying to find political solutions to the crisis. The prolongation of the crisis caused huge amounts of human suffering and showed the need for better cooperation at many levels in complex emergencies. After the peak of the emergency, the decrease in funds was dramatic and a better preparedness would have made the response much more cost-effective.

The use of the military helping in the humanitarian response is a delicate question: while in some cases they can be an asset for example regarding logistics, the advantage compared to the problems it might entail is usually quite limited. Their ability to collaborate with different actors limits their use and confusion of mandates may create tension. The relief operation did not pay enough attention to the impact of the crisis on the host population in the proximity of the camps. Services provided to refugees often exceeded those offered to the host population and compensation for detrimental effects on livelihoods and environment was too little and too slow. The accountability towards the population was poor, agencies rarely asking for the views of the beneficiaries regarding the response. (48)

3 EPIDEMICS

In the case of epidemics, the capacity of responding to it largely defines whether it will become a disaster or not. Due to this, there is considerable overlap between complex emergencies and large-scale epidemics. The probability of an epidemic is much bigger during or after a complex emergency than a natural disaster, which is of course also linked to the longer duration of complex emergencies. Early warning signs related to epidemics can be very difficult to implement in a conflict-affected setting, so

preparation and planning is essential during complex emergencies: the material for responding to an epidemic should be available at all times. (5) Displacement is a big risk factor for outbreaks of communicable diseases, such as cholera and measles. (54) Four of the five main health priorities that WHO has defined for DRC for 2013 were related to communicable disease control. (55)

There are a variety of communicable diseases that produce epidemics in DRC in addition to cholera and measles (including monkey pox, Ebola, Marburg, plague, typhoid fever and yellow fever) but most of these reported outbreaks have not recently affected North Kivu. (56)

3.1 Cholera

Eastern DRC has been one of the most cholera-affected regions of Africa since the refugee crisis of 1994 with continuous outbreaks. (6) In a nation-wide study, it was seen that the incidence of cholera during 2000-2011 was highest in the eastern regions bordering the Great Lakes and epidemics primarily originated from there. The lake regions were hyper endemic and accounted for the majority of the cases in the country. Cholera epidemics are seasonal with a low incidence between May and July. At that time they are mostly concentrated in lake areas, which suggests that the lakes are a reservoir for the vibrio. Goma is one of the seven cities identified as a source for epidemics, and could be a reservoir. (57) Cholera cases increased again in North Kivu after July 2012 especially in regions largely affected by fighting. The creation of new IDP camps or the expanding of previous camps is also linked to an increase in cases, as there is lack of sanitation and water supply in the camps. (55)

A survey on cholera was done with data from January 2000 to December 2007 in Goma and Lake Kivu regions (North and South Kivu). A total of 73 605 cases and 1 612 deaths (lethality 2.2%) were reported. Both regions experienced at least one outbreak of cholera per year, with peaks ranging from 130 to more than 700 cases per week. In North Kivu, no seasonality could be observed, but there was a clear geographical concentration of cases in certain cities bordering Lakes Kivu and Tanganyika including Goma. (6)

Complex emergencies were not systematically followed by cholera epidemics but some enabled cholera spreading. Out of the 12 large-scale population displacements not occurring during an already on-going epidemic, four were followed by an epidemic in the following 12 weeks. Two of these epidemics occurred in IDP camps. This number of reactivations is however no higher than could be expected in a non-conflict situation. Several conditions need to be met before a complex emergency triggers an outbreak: for example, some of the IPDs need to be already carriers and/or they need to move

into an area where cholera is already present. The effectiveness of humanitarian response (if there is any) is crucial. In 2008, several cholera outbreaks occurred in North Kivu originating from IDPs fleeing violence from areas north of Goma. At the same time, there was a decrease in the action of NGOs in the area due to security reasons, so the spread of the epidemic was not contained well. (6)

3.2 Measles

According to WHO, the measles vaccination coverage in 2012 in DRC may be as low as 10% in some areas, specifically the ones affected by conflict, with a national estimated coverage at 64%. In 2011, several measles epidemics occurred, including in North Kivu. (35) 800,000 children in DRC did not receive the first routine measles vaccination in 2011. Data on measles cases is not very well available, and the numbers on deaths due to measles even less. "A measles-associated death is defined as any death in the four to six weeks after rash onset that is not clearly due to other causes (e.g. trauma)". While cases are easily diagnosed, the death of a child several weeks later is often not associated with the disease and thus will not be recorded. DRC was the country the most affected by large outbreaks during 2011-2012 (73,794 cases). (58) Due to the outbreaks, that are still continuing, massive vaccination campaigns were carried out by several actors: for example UNICEF reports over one million children being vaccinated in North Kivu in one week in January 2013. The number of measles cases reported in North Kivu in 2012 (when the violence increased) was six times higher than in 2011. (59)

According to CRED, most surveys done in DRC in 2009-2010 showed the measles vaccination coverage to be over the WHO recommended 80%. One fourth of the surveys, all in the east, found lower coverage. Few surveys were done on IDPs, but the vaccination coverage for them is systematically lower than for residents. In Masisi it was 86.6% in 2010. (14) In Masisi, MSF has been involved in providing free health care since at least 2007. (26) In displacement situations resulting in overcrowding, measles vaccination is one of the first public health priorities and the coverage needs to be well over the recommended 80% considered as adequate in a normal setting. Measles can easily lead to malnutrition, especially in situations where food security is already not sufficient. (34) In displacement situations where access to care is difficult and other risk factors such as malnutrition are present, the case fatality rate of measles can be as high as 33%. (39) Most deaths associated with measles are due to pneumonia. (60)

4 OTHER DISASTERS

The response to natural disasters is different from the approach to complex emergencies. However, there is considerable overlap between these phenomenon, as natural disasters frequently occur in complex emergency situations. Early warning systems for complex emergencies are under development but the complexity of the situation makes their effectiveness questionable and their implementation has proven difficult. The situation is the same for mitigation strategies. (5) Natural disasters are not usually associated with vaccine-preventable disease epidemics unless there is mass displacement into camps as EPI activities are usually resumed quite quickly (provided EPI was on going before the disaster). (34) North Kivu is a highly volcanic region, and most of the natural disasters in the region are related to volcanic and seismic activity. (61) The region is also prone to occasional flooding, (62) but I was not able to find specific information regarding them.

4.1 Volcanic and seismic activity

The Nyrangongo volcano is an active one. It erupted on 10th of January 1977 and killed 60-300 people due to the rapid lava flow. The lava flowed partly into inhabited areas, which was the reason for the limited amount of casualties. (63) The lava flow of the latest big eruption on January 17th 2002 destroyed 15% of the city of Goma and 4,500 buildings, including two of the four hospitals of the city, three health centres, a part of the airport and a business centre. 147 people were killed due to CO2 emission, collapsing buildings and the explosion of a fuel tank on January 18th; 12,000-15,000 homes were destroyed and 400,000 people were evacuated, mostly into Rwanda. The eruption lasted for one day. There had been increasing seismic and volcanic activity for months, and the local population living on the flanks of the volcano noticed a clear change in temperature prior to the eruption. The amount of economic and human losses would have been significantly lower if the evacuation would have been done earlier and in a controlled manner. (64)

The response of the international community was rapid, including the provision of safe drinking water. The humanitarian response also improved access to health care during a 12-week period following the disaster. Only 140 cases of cholera were reported during that period, with no deaths. This is lower than the average of 29 cases/week usually reported around Goma. The low number of cases can be explained by the emergency response but it could also be due to changes in water sources and usage patterns. This is in line with earlier studies that geophysical disasters are not usually

followed by epidemics, even in areas prone to them and in favourable conditions (here the rainy season and destroyed pipelines). (6)

An earthquake on 20th of March 1966 with its' epicentre in Uganda also caused damages in Beni, North Kivu: 90 dead, 23 injured and 916 houses and huts destroyed, mainly results of the main shock (impact or suffocation as well as miscarriages). Casualties were due to collapsing buildings, which were not at all resistant to earthquakes. (65)

4.2 *Mazuku*

Every year, tens of people are killed by *mazuku* ("evil wind" in Swahili), especially in Goma and the surrounding areas. Exact numbers of fatalities are not known. Lake Kivu continually releases pockets of carbon dioxide: since this gas is heavier than air, it accumulates in high (often lethal) concentrations. This happens mostly at the foot of lava flows and cracks in tunnels. The risks associated to *mazuku* are increasing due to the unrest in the area and the urban growth of Goma. It is considered as the most important natural hazard in the area in terms of human loss. Further research is needed, also to define appropriate risk management procedures. (61)

4.3 Other natural disasters

In 1987, a landslide killed 22 people in Muhanga in Masisi. (62) On 26th of December 2001, a landslide killed 12 people, including a whole family of five in Mushanga village. (66) On the 16th of May 2010, the village of Kibiriga was affected by a mudslide. On 18th of May, OCHA reports 19 dead, 47 missing, 232 destroyed houses and 7 hectares of destroyed fields. (67) The final fatality count is approximately 50 people. (61) It happened at great speed (estimated at 50km/h) and at night, so people had no chance of escaping.

The households affected lost all their belongings, including school material of the children. The disaster does not seem to have an effect on access to water, since people in the region are used to drinking rainwater. The affected are using the latrines of the host population and have also been accommodated. Some are without shelter. The nutrition situation was considered stable. A temporary delocalisation of the village of Kibiriga was considered, since the landslide could have been an early sign of the activity of the volcanoes Mikeno and Karisimbi. (67) The latest landslide reported in North Kivu was on the 13th of May 2013. 47 people were reported dead. The local authorities

denied reports that the accident was caused by the collapse of a mine, linking the landslide to deforestation of the region. (68)

The drought of 1984 affected also the Kivu province of Zaire, specifically in Rutshuru area. Exact data is not available, but though few people died of the direct effects, it caused widespread hunger and impoverishment. (69) On 8th of March 2006 a tornado-like storm ravaged Oicha, an area north of Beni in North Kivu. There were already several IDP camps in the area. There was considerable damage and in total 75,000 people (including 58,000 IDPs) were affected: 3 deaths, 66 wounded (3 critically) and others were displaced due to damage on buildings. More than 1,000 houses, 39 schools (children did not attend school for several weeks), 15 churches, 62 commercial buildings and 6 IDP camps in the region suffered damage; approximately 1/3 of Oicha's buildings were damaged, including several health centres and the hospital.

Medicines were also destroyed as well as a WFP warehouse with food of a feeding program. 3,611 IDP shelters and 240 latrines in the camps were destroyed. The response was coordinated by OCHA and included distribution of plastic sheeting for the most vulnerable families, food distribution and planning for the rehabilitation of destroyed buildings. The construction of new latrines was seen as a priority since epidemics are a big threat during the rainy season. The local population started the reconstruction independently right after the disaster. (70)

4.4 Technological disasters

In March 2001, several dozens of miners were buried in a coltan mine in Kibabi. (71) In January 2002, at least 30 people were killed when a landslide caused the collapse of a coltan mine in Masisi. 1,000 people were left homeless. (72) The big coltan boom is over in North Kivu but the hazards of mining continue to persist with mining operations continuing. (18)

The European Union (EU) has placed all DRC companies on the list of banned airlines due to frequent aviation accidents. On April 15th 2008, a plane crashed into a residential and market area of Goma right after take-off from Goma airport. 47 were killed and 80 injured, mostly on the ground. 15 people were still missing three days after the crash. The runway had not been rehabilitated since its partial destruction by lava in January 2002. (73)

5 RISK PROFILE

5.1 Conflict

According to the Humanitarian Action Plan 2013 for DRC, the new government gives hope of addressing strongly the security and socio-economic problems of the country. However, this will probably not lead to an amelioration of the humanitarian situation during 2013; on the contrary, it is expected to get worse, especially in the east. (7) According to the mid-term revue of the HAP, the peace negotiations between the national army (FARDC) and the armed group *le Mouvement du 23 Mars* (M23) led to a calmer period in the first half of the year in North Kivu. However, in the end of May, new clashes led to the displacement of 120,000 people, bringing the number of displaced to almost half a million in this province. In addition, a large number of the people already displaced were displaced again. (74)

Linked to the international commitment in the peace agreement of February 2013, the UN decided to change the mandate of MONUSCO and to deploy an intervention brigade with offensive capacity within this operation, as well as moving troops to the east from other parts of the country. This brigade is now fully operational. (75) However, in order to obtain sustainable peace in the region, profound changes will be needed in the approach: changes in local power structures, impartial land management and local solutions to the conflict. (76)

The International Peace Information Service has recently started a project based on conflict mapping as a tool for objective conflict analysis. Its most recent analysis on the North Kivu conflict is about the M23 movement that emerged in May 2012 and which has expanded rapidly. After taking over Goma, the commanders announced that they would advance to other cities, including the capital Kinshasa. It is extremely unlikely that this group could have grown this strong in such a short time without external support; experts conclude that it is coming from the government of Rwanda. There is a clear tendency from M23 to establish political control over the area and challenge the authority of the Kinshasa government. (77) In the last week of August, battles between M23 and government troops backed by MONUSCO increased significantly in the Kivu region, and the tensions regarding neighbouring Rwanda were mounting.

In September however, M23 was obliged to retreat from Goma. By mid-September, the M23, who had suffered significant losses of territory, was ready to resume peace talks. The decrease in the conflict in October suggests that the new intervention brigade might already have an effect on the military capabilities of the FARDC and MONUSCO. Despite the positive development of resumed peace talks, several recent incidents

continue to demonstrate that "both sub-national violence and inter-state tensions constitute significant threats to security and stability across the country". (78)

5.2 Epidemics

Displacement is a big risk factor for outbreaks of communicable diseases, such as cholera and measles. (54) Eastern DRC has been one of the most cholera-affected regions of Africa since the refugee crisis of 1994 with continuous outbreaks. (6) In North Kivu, a study showed a clear geographical concentration of cholera cases in certain cities bordering Lakes Kivu and Tanganyika, including Goma. (6) According to WHO, the measles vaccination coverage in 2012 in DRC may be as low as 10% in some areas, specifically the ones affected by conflict, with a national estimated coverage at 64%. In 2011, several measles epidemics occurred, including in North Kivu. (35)

5.3 Other disasters

The most comprehensive document on analysis of natural disasters of the government dates back to 1994. It states that a natural hazard is much more likely to cause a disaster in the east of the country due to the density of the population. Due to lack of data, it is very difficult to produce a risk assessment. (62) No risk mapping has been done. (79) While natural disasters of smaller scale such as floods and landslides occur frequently, they usually affect limited areas. However, there is constant awareness of the possibility of a major natural disaster, specifically a new eruption of Nyirangongo, a gas explosion from Lake Kivu or a severe earthquake. (7)

5.3.1 Volcanic and seismic activity

Nyirangongo lava flows are extremely rapid and present a great risk for the people living at the foot of the volcano. The gas plume from the volcano creates acid rain, which has en effect on the environment, crops and human health. Monitoring systems have been put in place since the 2002 eruption. (64) However, the fissures originating from that eruption are very close to Goma city, which increases the likelihood of new lava flows in that direction. Activity has increased in the volcano since January 2009. (63) Nyamulgira presents less direct risks from lava flow as it is located in a national park, but it is the world's largest source of volcanogenic sulphur dioxide: every two to

four years it erupts and releases a huge ash and gas plume, which affects crops and livestock in addition to water quality and potentially human health. These effects are currently under study to establish the relevance of appropriate measures to be taken. (61)

The region has a lot of seismic activity. South Kivu experienced an earthquake of moderate magnitude in February 2008 with 38 casualties. Stronger earthquakes have occurred in the region previously: if this was to happen again, the amount of casualties could be huge due to the current greater number of population. (61)

5.3.2 Lake Kivu overturn

Lake Kivu is one of the three lakes in the world that are known to have high concentrations of dissolved gas in stratified waters in the bottom of the lake. Lake Kivu has both carbon dioxide and methane. The abrupt release of these gases is rare; however, the two other lakes have done it and killed nearly 1,800 people. The first, in 1984, is believed to be caused by lake overturn, which was triggered by an earthquake and a landslide. The second, in 1986, caused over 1,700 fatalities by asphyxiation due to a massive release of carbon dioxide. There seemed to be no volcanic activity involved. For Lake Kivu, the proximity the active volcanoes Nyirangongo and Nyamulgira presents a considerable risk for a limnic eruption and due to their activity, the amount of gases in the lake continues to grow. Two million people are living in the Kivu basin, so the effects of an overturn could be catastrophic. (80) Rwanda has begun to extract gases from the lake in 2010, as they can be used as an energy source. At the same time, if the work is done safely, the decrease of the amount of gases is a good thing in terms of reducing risk but it can also have adverse consequences that are currently being studied. (81)

5.3.3 Mudslides and technological disasters

The mudslide of May 2010 in Kibiriga caught local authorities and actors by surprise: it is the first lethal one reported in the region. There is a clear connection between the event and demographic and urban growth associated to wild deforestation. (61) The risk of mining accidents and aviation accidents resulting in large numbers of casualties is known for certain areas, for example due to the construction of houses too close to the airport in Goma. (79)

6 STRATEGIES

6.1 Strategies related to the conflict and its causes

The government program of DRC 2012-2016 states that since the beginning of the previous program in 2001, peace has been restored to the whole territory and that the State's authority has grown in all provinces. There is no mention of specific strategies related to conflict resolution or peace-building, though objectives do include reinforcement of human capital and state institutions: objectives related for example to the amelioration of the justice system, the promotion of human rights and the battle against corruption. In the section on international cooperation, there is mention of the objective of signing accords of non-aggression with neighbouring countries. (82)

In the government's strategic plan for the battle against sexual and gender-based violence (SGBV) from 2009, it is acknowledged that conflict is on-going in certain parts of the country but the objectives listed are related to SGBV and not the conflict itself. (83) The government system is very fragmented, and the division of responsibilities between the ministries is not clear regarding issues related to conflict prevention and peace building. (84) Obtaining peace for eastern DRC will of course also require negotiations with several other countries in the region, foremost with Rwanda. (85)

According to an OECD report from 2011, STAREC, the government stabilisation and reconstruction plan for war-affected areas, was launched in 2009 to establish a strategic framework to address the main obstacles to peace in the east and to consolidate the peace process with new initiatives. It states three main priorities: security and restoration of the state, humanitarian assistance and social service delivery and economic recovery. The plan is managed by the government and funded by donors. To support this plan, the UN and its key partners also produced a revised strategy. However, these joint strategies did not receive much attention or adequate funding from donors. (84)

Despite differences in views on the dynamics of the conflict in DRC, there is a general consensus on its indirect causes: ethnic rivalries, weak state institutions and elite power struggles, conflict over resources (land and natural resources) and impact of neighbouring countries' political strategies. Many contextual analyses have been done, but funding is not in line with their findings: instead of allocating funds to land problem management for example, funding is easily given to the humanitarian aid agencies that have already proven to be able to carry out certain types of projects. And many humanitarian aid agencies, though often achieving good results, do not examine their possible impact on the dynamics of the conflict or state capacity building. Humanitarian

action concentrates on response and not on helping the state to address chronic vulnerability. (84)

There is no strategic framework in place regarding conflict prevention and peace building: projects follow each other but the links between them are weak and programming is very shortsighted. Support for capacity building of the government and local authorities is seriously lacking. While donors continuously stress the importance of partnership with the government, they are avoiding giving it funds. They consider that the government is too corrupt and that in such a fragile state a project-based approach is the only option, considering NGOs the most convenient actors for funding. The government in its turn sees the donor policies as non-transparent and not in line with public policy: funding for state capacity building is not available, donors do not give an example of transparent funding (while at the same time complaining of corruption), and decisions are done in a centralized manner with no feedback mechanisms from local level. (84)

The justice system of DRC is also in a very poor state. However, a good justice system and the people's confidence in it is one of the main components in preventing human rights violations and revenge. Local leaders are often distributing land in an arbitrary way and no real mechanism exists to seek legal compensation. Though conflicts related to land use and ownership are essentially a problem in rural areas, all decision-making is centralized in the capital and local capacity and engagement is not taken into consideration when implementing programs. There have been several large-scale projects targeting the reform of the justice system implemented with various degrees of success. Even within the efforts to reform the justice sector, there is often a bias to concentrate on specific issues (for example SGBV), while the need is for a functioning system for all sectors. International donors and aid agencies have taken the lead in the reform due to ineffective government involvement. (84)

The humanitarian community has done a synchronized interprovincial contingency plan to prepare for new trends of population movements (specifically across national borders) related to the deployment of the MONUSCO intervention brigade. (74) But changes need to be done in strategies related to security issues. The poor management of the national armed forces has led to looting and other criminal behaviour. Several initiatives have been undertaken, involving for example reintegration of ex-combatants and reform of the army, most of which succeeded quite well. However, most of the interventions have been emergency responses and had only short-term objectives, thus not assuring sustainability. On the other hand, strategies from the donor side regarding the mining sector are very consistent and this has led to coherence also within government institutions. True support to government capacity building in this matter is a good step forward, but it is important to continue providing support for a sufficient amount of time. (84)

A report from Open Society Foundations on the relations between the EU and DRC emphasises that donor strategies have until now been focusing on addressing the consequences of the conflict and not the dynamics behind it. Recommendations for EU involvement are linked to a better engagement in the justice sector, reform of the army, battle against corruption by the establishment of an independent monitoring system, and diversification of the economy to prevent dependence on natural resources. (86) A 2012 report from International Alert highlights that the assumption that the Congolese state is weak might a misperception, since it is currently using very efficient mechanisms to ensure continuance in power. So it's not only about the strength of the state but how its actions are oriented: the state needs to start engaging into political discussions with the agencies as well as technical ones. Local governance and locally based programs as opposed to centralized ones are key in promoting peace. They suggest a bottom-up approach involving the government, international partners and citizens into a common dialogue. (87)

6.2 Strategies related to natural disasters

The problems stated in the government document of 1994 related to prevention and mitigation of natural disasters in DRC are multiple. One is the attitude of the population: it sees natural disasters in a fatalistic way and is not very eager to contribute to prevention activities. The population is also not aware of the true risks related to natural disasters.

The data available on past disasters is incomplete and insufficient, particularly related to economic losses. In high-risk areas, no alert or early warning systems are in place. In case of a disaster, the needs of the population are not assessed correctly and the response is uncoordinated and ineffective. Resources for intervention are few. Thus, the government stated as objectives for the International Decade for Natural Disaster Reduction (IDNDR) to organize a national committee for prevention and response related to natural disasters; to do a systematic assessment of risk zones; start a systematic database on natural disasters; educate the population in high risk areas and install in all risk areas appropriate warning and alert systems. The steps and measures planned to achieve these objectives include for example site planning, appropriate construction techniques and education of the public. (62)

A government document from 2005 states the existence of a legislation and national strategies related to natural disaster prevention and response and the existence of a National Crisis Committee whose function is the prevention of and response to natural disasters (constituted of members of the government, UN agencies, some bilateral donor countries, multilateral partners and international and national NGOs). It is also

mentioned that though there are local plans for improvement of the general health status of the population and poverty reduction, issues related to natural disasters are not particularly highlighted. Difficulties related to this are: the priority given to the management of the conflict, the lack of motivated and trained human resources, the lack of financial and material resources and weak intersectional coordination. The reduction of risk of natural disasters is not formally integrated into national plans related to the millennium goals, poverty reduction or sustainable development. Norms concerning site planning and construction related to natural hazards are in place but their implementation is not well done due to weaknesses in local administration. Regulations in prevention plans are not respected. (79)

As of 2005, the country has not yet done a risk mapping or a vulnerability and capacity assessment. Certain surveillance mechanisms exist but they are inefficient. The impact and losses are usually documented but not analysed. Some early warning systems are in place but its functioning is dependent on many variables: for example, the increase in volcanic activity of Nyirangongo was communicated by the observatory well before the eruption to the local authorities, but they were reluctant to take measures, fearing possible impacts for the security situation. A centralized system for management of information exists but it is not coordinated. There is no relation between the national disaster management institution and its academic counterpart (the Public Health department of the University of Kinshasa has created a disaster management sector but it is not functional yet).

The public education system does have specific programmes on risk reduction of natural disasters. UN bodies and NGOs are doing some training for disaster management but it is usually targeting their own personnel and is not following the priorities of the country. Education of the population is done in crisis situations but not in a systematic way. Emergency plans exist for certain scenarios, including a volcanic eruption of Nyirangongo. Emergency funds exist but their use in an emergency situation is difficult due to political reasons. Emergency stocks are not adequate or don't exist on a national or community level; some NGOs and UN bodies dispose of supplies. (79)

The national crisis committee is theoretically in charge of coordination in emergency response. Practically it does not have separate funding and members of the ministries involved are working in the committee aside their usual job. Its capacity of coordination is weak and the management of disasters politicised. However, in October 2002, the committee coordinated a good mitigation and response to flooding in the capital Kinshasa. Future priorities include for example the reinforcement of the national crisis committee, training, implementation of plans at a local level and amelioration and testing of contingency plans. (79) A project related to prevention and analysis of risks due to volcanic eruptions in DRC is supported by the United Nations Office for Project Services (UNOPS). A contingency plan was created in 2009 for Goma based on previous

experiences. (88) In the United Nations Development Program (UNDP) strategic plan for 2013-2017, it is mentioned that UNDP will provide support for the establishment of a plan in management of natural disasters (89), which suggests that there is none at the moment.

In his declaration at the Global Platform of Disaster Risk Reduction in May 2013, the DRC representative mentioned that despite the conflict that hinders the work significantly, several improvements have been done concerning the implementation of the Hyogo framework principles into national legislation and planning, and more are in the process (including for example risk mapping and contingency planning). He, however, raises the issue of the Hyogo framework concentrating only on prevention and risk reduction of natural disasters, while armed conflict is also an important cause of mortality, suffering and loss. He proposes that countries should not be grouped together by their geographical position but by the problems they face, and DRC proposes to promote educational activities related to non-violence and conflict resolution: if the aim of the framework is to reduce mortality, all countries should be involved also in promoting resilience against conflicts. There is also a link from the conflict to some natural disasters and other phenomenon that are threats to sustainable development. (1)

6.3 General strategies for humanitarian action

The main strategic objectives for humanitarian assistance for 2013 in DRC have been defined in the Humanitarian Action Plan. Reinforcing the protection of the civilian population in crisis areas; reducing mortality and morbidity within populations affected by crises; amelioration of living conditions, reduction of vulnerability and the preservation of dignity of individuals and communities affected by crises; reinforcing the resilience of communities affected by crises and facilitating the sustainable return of displaced populations. These objectives are complementary and their aim is to respond to humanitarian needs, not to address the causes of these needs. A response strategy has been written based on these objectives.

The transversal factors affecting all areas of response need to be addressed in a common approach, which includes surveillance mechanisms leading to an early alert in case of a humanitarian emergency; a customized response based on thresholds, which are defined for different types of needs; provincial contingency plans, which prepare the humanitarian community and the authorities to intervene in emergencies. Each cluster will define a response plan, which includes a general objective, specific objectives and an operational framework, which cites for each specific objective the

activities involved, the expected results, the indicators being used and the relevant evaluation methods. (7)

The areas affected by violence are characterized by huge humanitarian needs but also by the presence of several actors capable of responding in case of an emergency. For these areas, the provincial contingency plans will focus on actors already present. Due to the constantly changing situation, the plan will need to be adapted during the year. Due to the size of the populations in need of assistance, targeting of aid to vulnerable groups is necessary. But in this complex situation, the targeting of vulnerable groups should not be carried out according to a pre-defined schema but the analysis of the needs should be done separately for each situation when this is possible.

The HAP defines the need to address the situation of displacement into the host community, as the majority of IDPs do not live in camps: response mechanisms concerning both the IDPs and the host communities need to be implemented. The coordination of the response in case of a large population movement into camps or unofficial settlements needs to be better. A Rapid Response to Population Movements (RRPM) programme exists, coordinated by OCHA and involving several NGOs operative in the eastern provinces. Cash transfers, vouchers and other similar strategies are a new tendency in humanitarian aid, but their implementation should be encouraged whenever suitable to the context. Local coordination between different actors is essential and the monitoring and transparency of aid needs attention. (7)

7 CONCLUSIONS

Conflict, displacement and health

The **conflict** in North Kivu has been causing immense mortality and human suffering for almost two decades. The conflict itself, as well as the related human rights violations and displacement, affect every area of life in the society. The reasons for **excessive mortality** in conflict-affected areas include displacement, disruption of normal social and economical activity and disruption of health care services. Due to lack of reliable data, only estimates for excessive mortality are available; however, even the lowest numbers range in the millions (from 1998-), with a huge proportion of the deaths being among the under-five population.

Sexual violence has been used as a weapon of war since the beginning of the conflict. Numbers have been rising dramatically lately but this may also be the result of better reporting. Acts of sexual violence are perpetrated towards women, men and children even younger than 10 years old. Sexual violence and other human rights abuses have a detrimental effect on both physical and mental health.

Displacement has huge impacts on food security, health, education, livelihood and human dignity of the population, including the host community. In North Kivu, there were an estimated almost **one million IDPs in July 2013**; only a small proportion of the IDP population lives in camps, while the rest resides within the host community or in the bush. Many IDPs prefer to stay as close to their homes as possible to be able to return quickly, but the most vulnerable ones are those forced to live in the forest (sometimes for years) with very little access to services or food. Conflict and displacement reduce access to food and under-five **malnutrition rates are high**. Data is often difficult to obtain due to security and access reasons as well as continuous population movements and IDPs living in host communities have been studied very little worldwide.

North Kivu hosted one of the **world's biggest refugee crises** after the Rwandan genocide in 1994, when 800,000 Rwandan refugees arrived across the border in only five days. The humanitarian situation in the camps around Goma during the first few weeks was one of the worst ever recorded in terms of mortality and the relief operation very debated, due for example to the presence of armed militia in the camps, using aid for military purposes.

Conflict breaks the development of society

Conflict has a huge effect on the **social and economic development** of a country, due to both direct and indirect losses. Conflict-affected countries are developing slower than the ones not affected by conflict; recent theories make a **link between recurring violence and weak state institutions**. **Violence is seen as the most important obstacle in meeting the Millennium Development Goals**.

Government **expenditure on education is hugely insufficient** and school fees are too high for many families, especially with the decrease of livelihoods due to the conflict. A huge number of **children are not attending school**, sometimes also due to security: armed forces are kidnapping children from classrooms to serve as child soldiers and sexual violence is common on the road to school. The continuous lack of education is a fuelling factor in the conflict, since the probability of individuals joining armed groups is higher if other employment opportunities are not available.

Conflict reduces capacity to address epidemics and other natural disasters

The scale of an epidemic is strongly related to communicable disease surveillance and quick response to the outbreak, both of which are compromised in conflict situations.

Cholera and measles epidemics are very common in North Kivu, and cholera is endemic in several areas, including Goma. Epidemics can be related to population displacement, but this is not always the case. The measles vaccination coverage is very low and several mass vaccination campaigns have been conducted recently due to outbreaks; a recent rise in reported cases corresponds to an increased level of violence.

North Kivu is prone to natural hazards that will easily result in disasters due to lacking prevention and mitigation strategies. It is a highly volcanic area, and the last deadly eruption happened near Goma in 2002. The zone is also prone to earthquakes and mudslides (which are sometimes a result of mining activities). Lake Kivu contains gases, which present a daily hazard for the population but also has the potential for a large-scale disaster in case of overturn.

The government and other actors

The UN mission in DRC has deployed, in July 2013, an intervention brigade: new troops with an extended mandate to assist more effectively the national armed forces; the M23 movement was in fact obliged to retreat from Goma in October. Strategies regarding **peace building should be implemented using long-term objectives and local decision-making, taking into account all the causes of the conflict**, on which there is a general consensus: ethnic rivalries, weak state institutions and elite power struggles, conflict over resources (land and natural resources) and impact of neighbouring countries' political strategies. The collaboration between the state and donors is far from optimal. Donors are not **investing in capacity building** for fear of corruption and thus major requirements for sustainable peace building, such as a functioning **justice system**, are not in place.

Funding is directed more towards humanitarian action, which concentrates on response in the form of emergency aid and not on helping the state to address chronic vulnerability. Many actors are still not willing to invest in education programs due to sustainability issues. Risk reduction related to natural disasters is not a priority at the moment for most actors, including the government. Due to the big **gaps in the provision of services**, with even the most basic needs not being covered in certain areas, humanitarian organizations have been taking over responsibility from the government in the provision of these services. This may contribute negatively on the dynamics of the conflict and long-term state capacity building: the government has not yet shown efforts to address the problems in the eastern part of the country. Plans related to emergency response in North Kivu are currently relying on the presence and action of the NGOs present in the region.

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