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Geographic Information Systems within the UNHCR for Complex Humanitarian
Emergencies Management:The Kosovo Case Study

Stefania Kalogeridis

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ABSTRACT

Geographic Information Systems within the UNHCR for Complex Humanitarian Emergencies Management: The Kosovo Case Study

Stefania Kalogeridis

This study is an exploration of the recent integration of Geographic Information Systems (GIS) in humanitarian aid activities during the Kosovo Complex Humanitarian Emergency (CHE). Four emergency relief issues are analysed: relief coordination, timely provision of aid, protection of refugees in the camps and the respect of refugees and their cultures. Emphasis is placed on the ability of the GIS to integrate a range of spatially referenced information relevant to humanitarian aid and to disseminate this information to policy-makers, refugee camp managers and the general public. The study ends with a list of policy recommendations in order to further the use of GIS within the UNHCR for a more effective management of CHEs.

Acknowledgments

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Chapter 1: Introduction

Aferdita, Luan and their two children, Arian and Rita have just crossed the border into Macedonia and entered the medical tent. It is Tuesday, 5pm. But the Dushi's story begins on Friday, when they decide to leave and meet Aferdita's brother in Macedonia. They packed water and bread. Aferdita, a doctor, has also packed her medical degree, her birth certificate, the children's birth certificates, her marriage license, the family's savings, a bag of cosmetics, a bar of soap, a tube of hand cream and her official stamp, which says in purple type: "Dr. Aferdita Vuniqi-Dushi, spec. medicus univ." Sunday afternoon: Aferdita saw someone she knew from Pristina. They arrived at the border on Saturday and spent the night under the rain, the field was muddy. On Sunday, they meet some people they know. That night, the Dushis slept in a better place, there was plastic over their heads. There was plastic to sit on. There was plastic to lie down on. On Monday Aferdita approaches a doctor that is walking through the crowd and asks him for help. They arrange to meet again on Tuesday afternoon, when the doctor puts the two kids on stretchers and leads them to the medical tent. (Finkel, 1999).

No one knows what happened to the Dushi family after the difficult five days that they experienced at the Macedonian border. Maybe they reached Aferdita's brother in the Former Yugoslavian Republic of Macedonia (FYR Macedonia) or they benefited from the 'humanitarian evacuation programme' and were sent to any of the twenty eight (28) host countries such as Canada, the United States or Germany that accepted refugees. Their story however is not uncommon. In Kosovo, they were part of the 800,000 Albanians that were forced to flee their homes in search of a safer place to live (UNHCR, 2000a, 234).

There are currently 22 million refugees[1] requiring assistance by national governments, international organisations and non-governmental organisations (UNHCR,

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[1] According to the UN Convention relating to the Status of Refugees, a refugee is an individual who: "Owing to well-founded fear of being persecuted for reasons of race, religion, nationality, membership of a particular group or political opinion, is outside the country of his nationality and is unable or, owing to such fear, is unwilling to avail himself of the protection of that country; or who, not having a nationality and being outside the country of his former habitual residence as a result of such events, is unable or, owing to such fear, is unwilling to return to it" (UNHCR, 2000b).

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2000a). In fact, the Office of the United Nations High Commissioner for Refugees (UNHCR) has identified the protection – physical and legal – of individuals from persecution as one of the leading challenges of the 21st Century.

Complex Humanitarian Emergencies (CHEs) (emergencies requiring an international response that goes beyond the capacity of a single humanitarian aid actor) are perhaps the most serious threat to human security in the present world (Klugman, 1999, vii). Caused by weak economic and social development and poor political leadership, CHEs are the leading causes of the flight of people form their homes. Recent complex emergencies include Rwanda, Afghanistan, Bosnia and Kosovo. In most cases, the international response to complex emergencies involves a number of actors, including UN agencies and international military assistance. At the same time, relief agencies and the international community are having problems with "the much more aggressive, and often uninvited, role required of them to meet the urgent needs of countless threatened groups" (Wood, 1996, 671).

This thesis identifies Complex Humanitarian Emergencies as the emerging concern for the UNHCR, the main agency involved in emergency relief. As civil war displaces people around the globe, the agency has to cope with increasing numbers of refugees and find the most effective ways to help them. Recognising the limitations of the traditional reactive approach to humanitarian emergencies, the UNHCR has adopted a proactive and preventive approach in order to stop a crisis before it reaches the emergency level. However, for cases where this is not possible, and where diplomatic efforts have failed (such as in Kosovo), the agency is looking for new ways to deal with the management of a CHE.

Focusing on one of the consequences of CHEs. the displacement of individuals. Geographic Information Systems (GIS) are presented here as a new tool that can contribute to the better management of emergency assistance. In the past,

> "UNHCR's information technology supported back office data processing. With the advent of personal computing and the tremendous power of the Internet. UNHCR is using information technology to support field operations around the world, often in remote and difficult places" (Former UN High Commissioner for Refugees. Sadako Ogata, in UNHCR. 2000d).

In Kosovo. GIS improved the coordination of aid. encouraged cooperation between agencies. assisted in mapping safe routes for convoys and refugees. analysed refugee flows and to some extent. improved refugee camp management. Overall. this work contributes to a better understanding of the management implications for Complex Humanitarian Emergencies and the role of GIS within this context.

Chapter Two of the thesis begins by defining CHEs and briefly reviews the main causes of the emergencies. as reflected by the ethnic and economic theories. Two definitions are presented. each with a different focus. The first concentrates on the effects of the emergency, such as the displacement of individuals. non-combatant deaths. starvation and disease. The other is based on the international response to the emergency. Although the latter best describes the aim of this thesis. I do not believe that setting aside the causes of a crisis is justified. Discussing international response is only one side of emergency management. The second side deals with crisis prevention. To write about prevention would require another dissertation. but suffice it to say that if the international community is interested in both crisis prevention and management. then a combined

definition is required. We need to take into consideration the loss of life as much as the aid needed to prevent it.

Chapter Three reviews current humanitarian aid practices and uses the Kosovo CHE as the base for the observations. Four challenges to the provision of humanitarian aid are identified: relief coordination, timely provision of aid; protection of refugees in the camps; respect of refugees and their cultures. Relief coordination includes the proper regulation of aid, concerns about standards and the activities of inexperienced organisations, under/over-provision of aid and the coordination of and cooperation between relief agencies. The timely provision of aid focuses on the provision of basic necessities: water, food and shelter. Issues such as how much water each refugee needs for survival and adequate nutritional intakes are addressed. The protection of refugees in the camps is amongst the most important challenges to humanitarian aid. In many cases, including Kosovo, children are recruited from the refugee camps into guerrilla groups, women and young girls are raped, or in other cases, the camps are located too close to the fighting for safety. Finally, the section on respect of the refugees and their cultures focuses first, on the proper registration of the refugees and the importance of identification cards, and secondly on the way camps are arranged. The benefits of a community-based approach focusing on the family and the community are weighted against the disadvantage of easy-to-plan grid lay-outs.

The fourth chapter of this thesis introduces Geographic Information Systems (GIS) as a tool for the better management of CHEs. The Kosovo crisis was the first time where GIS was used in a systematic manner to manage information before, during and after a CHE. The section begins by discussing the technology and its uses and determines

how a spatial database such as GIS is integrated within the UNHCR. The chapter then outlines five current UN and NGO projects that involve GIS or other electronic databases for the purpose of information management. they are: PopMap, HURIDOC, ORCI, ReliefWeb, HCIC and the UNHCR's Geographic/Mapping Unit. The last section describes how the Kosovo GIS database was created and used to improve. or not. the management of the CHE and the refugee camps. Contributions to aid relief include the Rapid Village Assessment (RVA), where GIS was used for an assessment of basic needs and for identifying gaps in aid to damaged communities: GIS analysis of cross border refugee flows: the localisation of dangers such as damaged dwellings and landmines and unexploded ordnance.

1.1 Kosovo Complex Humanitarian Emergency

"Neighbor against neighbor, friend against friend. Can you ever live together again?"
(Ignatieff, 1993, 38)

In the 1990s, the dissolution of political order and the increasing vulnerability of minority groups have made the Balkans one of the most problematic areas in the world. Before the wars of the last decade, Yugoslavia was comprised of the Republics of Slovenia, Croatia, Bosnia and Herzegovina, Serbia and Macedonia, the province of Montenegro and the two autonomous provinces of Kosovo and Vojvodina (see Figure 1). The country now only consists of the former Republic of Serbia and its three provinces: Vojvodina, Kosovo and Montenegro.

In Kosovo, group mobilisation is a result of a combination of factors at the heart of which we find racial discrimination, economic stagnation, population growth and each

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group's ethnic pride. The overall oppression of the Albanian minority by the Milosevic leadership culminated to the 1999 crisis that required the intervention of NATO forces and UN agencies.

Figure 1: Former Yugoslavia Republics

Source: http: www.lib.utexas.edu maps europe former_yugoslavia

1.2 Brief history of Yugoslavia and Kosovo

Kosovo was the centre of the Nemanjid Serbian Empire in the thirteenth and fourteenth centuries. It is also the founding myth for all Serbs, the historic heart of Serbia's glorious medieval kingdom, the religious seat of the Serbian Orthodox Church, and the location of Serbia's oldest and most beautiful monasteries and churches (Zimmermann, 1998. 3). However, Kosovo Albanians also place historic claims on Kosovo that predate the arrival of Serbs in the region (Canadian Immigration and Refugee Board, 1999). The Albanians perceive Kosovo as the cradle of an Albanian re-

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birth, the land where Albanian nationalism was born through the formation of the League of Prizren in 1878 (Judah, 1999).

After the battle of Kosovo in 1389 the Ottoman Empire swept through the Balkans (to eventually stop at the ramparts of Vienna) marking the end of the independent Serbian state. Serbs believe that during the war with the Turks, Albanians sided with the enemy in an attempt to force the Serbs from the region (Canadian Immigration and Refugee Board, 1999). However, this fact is questionable, as some authors such as Zimmermann (1998) argue that Muslim Albanians, Christian Bosnians and Catholic Croats fought on the Serbian side and as the Kosovo epic implies, some Serbs fought with the Turks (see Appendix 1 for a detailed narration of the "Epic of Kosovo"). Nothing however will change the fact that Kosovo fell and remained under Turkish occupation until Serbia got it back following the First Balkan War in 1912. During this war, many acts of violence and ethnic cleansing were reported by a commission of US, French, Russian, Austrian, British and German observers dispatched to the area by the Carnegie Endowment for International Peace (Judah, 1999, 7).

Kosovo became part of Yugoslavia at the end of First World War (Zimmermann, 1998; Judah, 1999). In the inter-war period, all minority rights were taken a way by the Yugoslav state. Albanian language schools in Kosovo, Macedonia and Montenegro were closed and the region's 400,000 ethnic Albanians were denied "nation status" (Canadian Immigration and Refugee Board, 1999). During the Second World War, the region was occupied by Mussolini's Italy. While some Albanians fought the Axis as members of Tito's partisans, many others collaborated with the Italians with the aim of forming a greater Albania (Zimmermann, 1998, 4). A significant number of Albanians moved to

the region during this period and when Kosovo was returned to Serbia in 1944, the majority of its population was Albanian. According to a 1948 census, Kosovo was composed of 172,000 Serbs and 500,000 Albanians (Canadian Immigration and Refugee Board, 1999). Not only were they dominating in population terms but also by proceeding with the Albanisation of the province (Judah, 1999, 8).

Indeed, Josip Broz Tito, the Croat-Slovene-communist, concluded before the Second World War that Yugoslavia could be recreated only on the basis of a weakened and constricted Serbia (Binder, 2001, 16). As the leader of the most liberal communist country in Europe, Tito provided autonomous rights to Kosovo and to Vojvodina, by awarding the provinces seats on the collective Yugoslav presidency, the same allocation as for Serbia and the other republics (Zimmermann, 1998, 4). This meant that Kosovo had its own assembly, police force and local government. "It was a Yugoslav republic in all but name" (Judah, 1999, 8).

Unfortunately, this situation did not last. During the 1970s the economy began to weaken under the weight of foreign debt, high inflation, and inefficient industry. Under increasing pressure from nationalist forces within Yugoslavia, especially Croatian secessionists who threatened to break up the federation, Tito tightened control of intellectual life. After his death in 1980, the ethnic tensions resurfaced, bringing about the eventual violent break-up of the federation in the early 1990s.

When Slobodan Milosevic became Serb President in 1989, he immediately moved to abolish Kosovo's autonomy. Some authors such as Tim Judah (1999, 10) argue that Milosevic's aim was not a nationalistic but rather a personal one, "having no more genuine interest in the Serbs of Kosovo that he would later have for the Serbs of Croatia

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or Bosnia". Binder (2001, 13) adds that Milosevics' goal was to recentralise Yugoslavia under his control, creating a sort of latter-day Titoist Yugoslavia. Others, such as Ignatieff (1993) describe Milosevic as a "warlord", who made his way up the centre of authoritarian power during the communist rule and only appearing as a nation state disintegrated. For this reason Ignatieff (1993, 25) adds that:

> Ethnic difference per se was not responsible for the nationalistic politics that emerged in the Yugoslavia of the 1980s. Consciousness of ethnic difference turned into nationalist hatred only when the surviving Communist elites, beginning with Serbia began manipulating nationalist emotions in order to cling to power.

In June 1987, Slobodan Milosevic told the Central Committee of the Serbian Communist Party that any resurgence of the 'darkest nationalism' would mean the disintegration of Yugoslavia (Judah, 1999, 5). Milosevic's actions throughout the 1990s substantiated his words. He initiated a Kosovo colonisation programme, and began to decrease the powers of Kosovo and Vojvodina, by placing police, judicial and economic planning manners under Serbian direction (Canadian Immigration and Refugee Board, 1999).

From 1989 until the beginning of the Kosovo crisis in 1998, the majority of Kosovo Albanians were living in an apartheid-like situation in which they were denied access to government jobs and services, and were unable to exercise basic rights (UNHCR, 2000a, 233). For example, in July 1990, as discouraged Kosovar Albanians demanded republic status for their province, the Serbian government suspended their parliament and imposed direct rule through its own police (Canadian Immigration and Refugee Board, 1999).

The final upset to the Albanian majority in Kosovo came in 1991 as Serbian became once again Kosovo's official language and Latin alphabet signs and street names were replaced by Cyrillic ones (Ignatieff, 1993). During Milosevic's rule (1989-2000) 350,000 Kosovo Albanians left the province (UNHCR, 2000a, 233). Following these events, the Albanians repeatedly demanded for recognition for their self-declared independence. However, their requests went unanswered by the Sebian authorities who were willing to discuss everything except independence. This political stalemate forced the Kosovo Liberation Army (KLA) to take up arms and start the 1999 civil war. The previously fragile political situation in the Balkans and the recent clashes in the province of Kosovo prompted an international response from NATO and the UN, whose aim was to limit damages and encourage a change of government in Yugoslavia.

The Kosovo CHE was thus caused by a number of inter-related issues – ethnic discrimination, illegitimate government (to the eyes of the minority) and economic stagnation all of which are factors related to Complex Humanitarian Emergencies. The next chapter describes the term and discusses the root causes of CHEs. The multidimensionality of complex emergencies is demonstrated through a series of examples from around the world. There is always more than one reason for a crisis to escalate to the point of a CHE and to prompt action from the international community.

Chapter 2: Complex Humanitarian Emergencies

In the post Cold War era, there are still many threats to human security. Georgia, Nigeria, Ethiopia, Somalia and Yugoslavia are but a few of complex emergencies that the world has witnessed in the last decade. Conflict has also changed. Although civilian populations have been targeted before, modern warfare is distinguished by the weakening of central governments and the proliferation of identity-based conflicts (UNHCR, 2000a, 277). The twentieth century has experienced an increase in the number of Complex Humanitarian Emergencies (CHEs) from an average of 20-25 to about 65-70 a year, while the number of individuals affected has also increased (Klugman, 1999, vii).

This first section presents CHEs as the main cause of displacement of thousand of people world-wide. Among the issues discussed are definitional problems with the term and the causes of the emergencies. Two definitions are offered. The first is based on the four scourges of humanity: war, disease, hunger and displacement. The second definition presents the type of response required to bring to an end the emergency. Finally, the chapter ends by discussing in detail the causes of the emergencies. Understanding why and where the crisis originates, who the principal actors are and who are the victims are at the base of any effort to alleviate or attempt to stop human suffering.

2.1 What are Complex Humanitarian Emergencies?

The literature is not clear regarding how the term came about or who was the first to use it, we do however know that the term was first used in Africa in the 1980s and that since the Gulf War and the establishment of the UN Department of Humanitarian Affairs

(UNDHA)[2]. in 1992. it has become more widely used and accepted by the emergency aid community (Duffield, 1996, 15).

To the UN University and the World Institute for Development Economics Research (UNU/WIDER). CHEs represent "major humanitarian crisis of a multicausal nature, in which large numbers of people die from war, displacement, disease and hunger, owing to man-made disasters, although some may benefit" (Klugman, 1999, 1; Vayrynen, 1996, 19). This definition describes the humanitarian emergency in four aspects – war, displacement, disease and hunger – while the complexity of the emergency emanates from the multidimensionality of the concept as well as the persistence of the crisis. In simple humanitarian emergencies only two of these problems appear (Vayrynen, 1996, 37). In a similar but more comprehensive manner, Weiss and Collins (2000, 4) define CHEs as a combination of "internal conflicts with large-scale displacements of people and fragile or failing economic, political, and social institutions". Again, the authors emphasise the complexity and multidimensionality of the crisis in terms of human suffering and attention is also given to the multicausal nature of CHEs. However, a number of researchers challenge such definitions and present CHEs in terms of international responses to a crisis.

Rosenblatt and Thompson (1995), for example, offer a definition presented along operational lines. According to them, CHEs are any situation in which "political and military conflict helped cause the emergency and complicate relief and protection efforts" (Rosenblatt and Thompson, 1995, 93). Here, the "political and military conflict" is

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[2] In 1992, the UNDHA was created with one aim: the improvement of the coordination of responses to complex humanitarian emergencies. The agency is responsible for coordinating aid within the UN and non-UN bodies. In 1998, the UNDHA was renamed the Office for the Coordination of Humanitarian Affairs (OCHA).

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understood to be the cause of the human suffering. The second part of their definition describes the "complex" international response required to help the victims of war. The UN defines CHEs as a major humanitarian crisis of a multicausal nature that requires an integrated response on behalf of the UN agencies, donor governments and NGOs:

> a humanitarian crisis in a country, region or society where there is a total or considerable breakdown of authority resulting from internal or external conflict, and which requires an international response that goes beyond the mandate or capacity of any single agency and/or the ongoing UN country programme (UNHCR, 2002).

In this definition, as in the others previously mentioned, the consensus is that the term 'complex' in the expression refers to the multidimensionality of the crisis and to its difficult resolution. The UNHCR, for example, considers both the cause of the emergency (total breakdown of authority resulting from conflict) and the result (international response beyond the mandate of any single agency).

The discrepancies in the definitions stem from the different characteristics or symptoms used to describe a complex situation. On one side, the researchers concentrate on the effects of the emergency, such as displacement of individuals, non-combatant deaths, starvation, disease, malnutrition, random violence, lawlessness and infrastructure collapse (Weiss and Collins, 2000, 4). On the other hand, the definition provided by the UNHCR is subjectively defined, less for those whose lives are directly affected and more so for those who must decide whether or not to intervene and under what conditions (Wood, 1996, 674). Duffield (1996, 15) argues against such a focus. According to him, a definition for CHEs should explain more about the concrete emergency situation than the organisational response that 'complex emergencies' represent. Moreover, some specialists such as Frances Stewart (2000) argue that the UNHCR definition ignores those

humanitarian emergencies with smaller or no international response. This argument may be brought further to claim that whether international assistance is provided or not often relies on media coverage and popular opinion – we choose what best fits our purposes.

2.2 The creation of the crisis: colonialism, minorities and illegitimate governments

Disagreements regarding CHEs are not limited to the definition; they also include the identification of factors that cause them. The main variance is between the proponents of the economic model and those of the ethnic model. Both are presented under a common point – the historical legacy of colonisation – but converge in the way they perceive the ensuing conflict. The economic model views ethnic conflict in the context of economic development, structural change or collapse and its accompanying socio-political changes (Nafziger, 1996, 3). The second theory looks at ethnicity, or the "primordial sentiments" of belonging and identifying with one group, as the primary actor (Nafziger, 1996; Holsti, 1997).

2.2.1 The ethnic model

Holsti (1996, 15) argues that security between states in the Third World has become increasingly dependent upon security within those states which is itself dependant on the peaceful cohabitation of ethnic groups. In most parts of the world, the increasing demand for independence from ethnic groups is often an obstruction to peace. Spain has problems with the Basques, Ireland is still struggling to find a peaceful

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solution between Protestants and Catholics, and the unsettled situation in the former Yugoslavia are just a few examples, that are not limited to the LDCs.

The ethnic model is thus based on the fact that boundaries for states and nations or other ethnicities frequently fail to coincide (Handelman, 1996, 50). Indeed, each state includes individuals with all sorts of dynamic identities – cultural, economic, religious, political, gender. The sense of belonging to a particular group often leads to segmentation within the state (Gurr, 1996). According to Handelman (1996, 49) and Gurr (1996, 53) ethnic criteria for group identification need to be considered, because of all the groups that humans attach themselves to, ethnic groups seem to be the most enduring and least understood.

There is an extensive literature on the theme of identity and ethnicity (see Berlin, 1977; Smith, 1986; Armstrong, 1998). For the purposes of this thesis and in order to understand what ethnic identity represents to people around the world I turn to Isaac Berlin (1977, 341), who presents the term as ideologically important and dangerous, or

> the conviction, in the first place that men belong to a particular human group, and that the way of life of the group differs from that of others; that the characters of the individuals who compose the group are shaped by, and cannot be understood apart from, those of the group, defined in terms of common territory, customs, laws, memories, beliefs, language, artistic and religious expression, social institutions, ways of life, to which some add heredity, kinship, racial characteristics: and that it is these factors which shape human beings, their purposes and their values.

As such, the French population in Quebec is claiming to be a nation; East Timor obtained independence from Indonesia; and Kosovo's Albanians are claiming rights to the land under the criteria presented by Berlin (1977).

Colonisation in Africa. Latin America and Asia had negative effects. some of which. still unresolved today. contribute to the instability experienced by many of these LDCs. At the heart of the colonisation problem is the issue of ethnicity and creation of multi-cultural societies (Holsti. 1996. 1997; Nafziger. 1996). The artificial borders created by the Europeans did not respect the existing cultural. demographic and ethnic characteristics of the region. As a consequence. the separation of tribes and communities hindered the local population's ability to organise itself and to keep its identity and traditions (Holsti. 1996). Furthermore. European intervention in every aspect of local life indicates that it was beyond European imagination that these people (the 'natives') ruled themselves for centuries before the arrival of the 'white man' (Holsti. 1996). This type of attitude resulted in limited local participation and the alienation of the indigenous populations from their own political and social affairs.

Also important to point out is that while the Europeans prevented violence between the communities. the void left after their departure resulted in civil unrest and competition between rival tribes for power. Colonial governments do not deliberately divide in order to rule. their presence is sufficient to cause division and conflict (Nafziger. 1996. 25). Since hostility cannot be directed to the powerful foreign oppressor. it is transferred to an indigenous scapegoat (Burton. in Nafziger. 1996). In Burundi and Rwanda. for example. the colonial powers differentiated between the Tutsi (regarded as 'natural aristocrats') and the Hutu ('peasant folk'). thus entrenching historical perceptions of difference even though the two groups share language. religion. dress. diet, housing and territory (Stewart. 2000. 21). Given these facts we also have to keep in mind that colonialism is but one of many factors contributing to ethnic strife. For

example. with the enormous number of ethnic groups in Africa. even if the European powers had exhibited greater ethnic sensibility. some form of multiethnic nations would have developed. The alternative. hundreds of small states. is not an economically viable solution (Handelman. 1996. 51).

Unlike other multiethnic countries such as Canada. where government policies allow immigration and embrace diversity. most developing countries never had this option. Handelman (1996. 51) describes these situations as "unhappy marriages" while Holsti (1996. 79) calls these countries "artificial states". He explains that these states are fundamentally different because most Third World countries. including African states. did not have the time to develop in the same way their Western European counterparts did. which allowed them to build strong national identities. Holsti (1997. 4) adds that if Third World countries were given a chance to develop at their own pace. they would create governments and states that better fit their needs because the Western "territorial state" does not fit the Third World profile (1996. 79).

In terms of socio-economic and political development. this means that developed countries have democratic governments. "responsive to a broad segment of society and must respect the population's fundamental freedoms and rights". while corruption. inefficiency and repression are "endemic" to developing world politics (Handelman. 1996. 8-9). Holsti (1996) describes this as the "weak state syndrome". where a state has all the characteristics of a sovereign country but lacks the internal attributes of sovereignty: a sense of nationality fixed around clans and tribes: a national government preoccupied with urban communities: and a monopoly over the use of force.

In a number of African states and in other parts of the world. ethnic hostilities eventually lead to violence and civil war. Environmental degradation. displacement. and violent acts. such as genocides (Rwanda, Bosnia, Ethiopia). are some consequences of the unsettled environment and friction between the ethnic groups. In opposition to the ethnic model. the economic model argues that humanitarian emergencies are caused by economic factors within the society. Supporters argue that the geopolitical and ethnic approaches to CHEs are incomplete because, in the developing world. it is the economic factors that are pivotal in shaping conflicts that may be triggered by political or ethnic causes (Nafziger, 1996, 4). Differences in conditions with respect to political control and economic position facilitate the development of group identity and mobilisation (Klugman, 1999, 7).

2.2.2 The economic model

The four economic causes of CHEs may be summarised as follows: stagnation and protracted decline in incomes: unequal growth in certain portions of the population or regions of a country: population growth. growing scarcity of non-renewable resources and environmental degradation: large and sudden shifts in the distribution of assets. incomes and government subsidies in the wake of adjustment programmes (Nafziger, 1996, 4-10: Klugman, 1999, 14-15). These four factors are not mutually exclusive. In most cases some of them or even all four work together in creating a Complex Humanitarian Emergency. making the detection and resolution of the problem more difficult.

The first instigator of a humanitarian emergency is economic stagnation and decline in incomes. A low Gross Domestic Product (GDP) per capita and negative

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growth in countries that rely on a subsistence economy are linked to the increase in humanitarian emergencies (Nafziger, 1996, 17). Bartholdy (in Nafziger, 1996, 18) explains for example, that after the collapse of the Soviet Union, all of its former republics experienced income collapse. "Among these were several republics facing humanitarian crises in the 1990s: Russia (with a secessionist conflict in Chechnya), Armenia, Azerbaijan, Georgia and Tajikistan".

Slow economic growth further affects relationships between ruling elites and the number of allies and clients they can afford to support. This undermines the legitimacy of the regime, increasing the likelihood of political instability and humanitarian emergencies (Nafziger, 1996, 16; Nafziger and Auvinen, 2000, 96). Seeing a decline in their supporters and the desire to preserve their status some regimes such as the ones in Nigeria, Sierra Leone, Zaire and Liberia decide to operate on the basis of coercion, material inducement and personality politics. In other cases, in order to maintain incomes, corruption becomes grosser, thereby heightening the population's sense of resentment (Klugman, 1999, 11-12).

The unequal or substantial deprivation of a section of the population constitutes the second aspect of the economic model. This is a situation where the country is experiencing strong economic growth and this wealth is not fairly distributed. The deprivation may be perceived as a social injustice by certain groups based on a "discrepancy between goods and conditions they expect and those they can get or keep" (Nafziger, 1996, 6). However, the situation may also be real. Land, for example, is a very important economic aspect for most families in the LDCs. Inequality in the

distribution of land contributes to low incomes for a portion of the population and is a key dimension of economic differentiation (Klugman, 1999, 10).

There is also the issue of economic fragmentation that is often associated with clan or tribal divisions. Privileged and strong minorities have a preferred social position not only in social terms but also in terms of access to education, wealth, work and government positions. In contrast, the majority of the population remains weak because of differences in incomes and a lack of access to economic opportunities (resulting from the lack of access to education) (Klugman, 1999, 8; Stewart, 2000, 15-17). In Somalia, for example, Siad Barre's authoritarian regime increased relative political and economic deprivation in a society that was already divided by religion, region and dialect (Klugman, 1999, 11).

Population growth, growing scarcity of non-renewable resources and environmental degradation is the third possible instigator of CHEs. Indeed, developing countries experience a more rapid population growth than the rest of the world. In 2000, the LDCs' population was 4.9 billion and is projected to reach 8.2 in 2050, while the developed world was steady at 1.2 billion (UN, 2000). This, coupled with inequality between groups and poverty, places a fair amount of stress on a vulnerable environment that cannot deal with the increasing demands for food production. When food and resources are chronically scarce, "Economic Darwinism" – or the survival of the economically fit portion of the population – tends to become dominant (Nafziger, 1996, 5). This may spur rural-urban migration, increasing urban unemployment, political discontent and eventually create yet another emergency situation (Handelman, 1996; Nafziger, 1996).

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Fourth, large and sudden shifts in the distribution of assets, incomes and government subsidies in the wake of adjustment programs, affect the distribution of power within the country and impose large welfare costs to the country (Handelman, 1996, Nafziger, 1996, Klugman, 1999). In most Developing Countries, including certain former USSR republics facing external debt crises and chronic international balance of goods and services deficits.

> economic policymaking, characterised by structural adjustment, macroeconomic stabilisation, and liberalisation, has been shaped by conditions of IMF/World Bank loans of last resort. These conditions usually required price decontrol, currency depreciation, privatisation, government spending reductions, economic structural changes, and various forms of market liberalisation (Nafziger, 1996, 33).

These programs came at the expense of poverty programs, wages, employment and public services. Another consequence of the adjustment programs include the farming of cash crops which require intensive agricultural techniques instead of food crops which correspond to subsistence agriculture historically practiced in the Third World and the people's need for food.

Yet economic differentiation is not the only determinant of conflict and/or humanitarian emergency. Frances Stewart (2000, 9) explains that if a whole society is uniformly impoverished, there is no motivation for group mobilisation, but if economic differences between groups are coupled with differences in political control or based on ethnic distinctions, there will be conflict. The civil war in Lebanon, for example was a consequence of ethnic tensions reinforced by class antagonisms. The antipathy between Christians and Muslims was fuelled by the Christians' economic superiority (Handelman, 1996, 66). Similarly, in Burundi, Tutsis are over-represented in the public sector and high-level employment, as jobs and the ability to earn rents are heavily biased in favour

of the group in power (Klugman, 1999, 9). Another example that depicts how economic and ethnic factors coincide is offered by Warwick Armstrong (1998, 27-28) who conducted interviews with students at the University of Ljublijana in 1995 regarding the Bosnian war. Although the war was described around the world as one of ethnic conflict, over one-third of the students responding to the question " What sort of conflict is taking place in Bosnia-Herzegovina?" answered 'social' or 'economic', not ethnically-inspired.

Once a complex emergency erupts, there is a problem of effective management and co-ordination of the emergency relief and subsequent rehabilitation efforts (UNDHA, 1998, 11-12). Some authors, such as Duffield (1996, 17) bring the argument further by maintaining that there is a functional ignorance within aid agencies and that "it is increasingly evident that the aid technocracy is structurally incapable of understanding the situations in which it works". Taking to consideration such views, the following chapter reviews the role of the aid agencies and the mandate of the UNHCR and evaluates current humanitarian aid practices.

Chapter 3: Humanitarian Aid

"Today, humanitarian intervention involves multifaceted political, economic and military programs in addition to the traditional relief function of distributing food, water, shelter and medicine" William B. Wood, 1996, 672.

The human and financial costs of war are enormous. Those who pay the price most directly are the refugees themselves. They leave the security of their homes, lose their way of life, their possessions and family members and have to rely on international aid for their everyday needs. At the camp, they become just another unknown face, with a ration card that needs to be provided with food, water and protection. After a while, most refugees, especially those that live in camps for an extended period of time, settle into the "central elements of camp life: boredom, bureaucracy and endless line-ups" (UNHCR, 1993, 93). The routine is like the diet: strange, distasteful and monotonous, but it is enough to sustain life and perhaps, hope of some day returning home safely (UNHCR, 1993, 93). The refugees are however never left alone in their struggle for survival. Aid flows to conflict situations continue to increase as the international community accepts the fact that political instability is an unfortunate reality of the marginal South and has resigned itself to finding ways of working within ongoing crises (Duffield, 1996, 26).

This chapter reviews current humanitarian aid practices and uses the Kosovo crisis as the base for the observations. We begin by examining UNHCR's mandate for two reasons. It is the agency that would benefit the most by the implementation of GIS (which will be further analysed and discussed in the next chapter) and because it is the world's primary aid giver to refugees. This is followed by a section discussing the role of

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the other actors, such as NGOs and governments, involved in emergency aid. It will become clear to the reader that current aid does not only consider the provision of food water and shelter, but also of protection to refugees as well as aid workers, thus creating a complex cooperation between various organisations and the need to change the role of those mostly involved in the protection of displaced individuals and families.

3.1 The UNHCR and its mandate

There are several international bodies involved in procuring refugees with aid. In Kosovo, humanitarian aid was provided by the host governments, the UN, intergovernmental and Red Cross agencies and hundreds of NGOs. All of these groups have established specific aid programmes for refugees (those who fall under the UN definition or not) that deal with their security and health. While many of these organisations are new, small and set up to respond to a single emergency, the UNHCR is the only group with a permanent and unique presence in the field (UNDHA, 1998, 10; Thoolen, 1992, 169). Not taking in consideration the donation of goods such as tents and medicines or assistance with transportation and other services. UNHCR's involvement in humanitarian crises reaches US$1.3 billion – or US$40 to US$50 per year for each person of concern (UNHCR, 2000a, 166-167). This includes the UNHCR's emergency fund (US$10 million per year) and operating budgets per crisis which range the US$500 million (raised through donor governments) (Weiss and Collins, 2000, 60). For example, the operating budget for Rwanda was of US$300 million; US$800 million in the 1999 Kosovo and Timor crises (Weiss and Collins, 2000, 60).

The UNHCR's "primary purpose is to safeguard the rights and well-being of refugees and strives to ensure that everyone can exercise the right to seek asylum and find safe refuge in another state and to return home voluntarily" (UNHCR, 2002, xi). The agency offers protection and assistance to refugees and others in an impartial manner, on the basis of their need and irrespective of their race, religion, political opinion or gender. Here, protection has two dimensions: personal security from physical attack whether from armed forces, death squads, or lone assassins; or keeping people alive through humanitarian assistance (UNHCR, 1993, 5). Furthermore, the UNHCR considers any situation where the life or well being of refugees are threatened unless immediate and appropriate action is taken, and which demands an extraordinary response and exceptional measures, as a refugee emergency (UNHCR, 2002). In undertaking this mandate, the agency uses a number of international instruments, including the UN 1951 Convention and 1967 Protocol relating to the status of refugees and the Convention adopted by the Organisation of African Unity (OAU) (1969) specific to refugee problems in Africa (Chiusiwa, 1999; Hyndman, 2000, 4).

The core principle of these international conventions is that of *non-refoulement*, which prohibits the expulsion or forcible return of refugees to a country where they may have reason to fear persecution or other threats to their lives, liberty or security (UNHCR, 1993, 171). The sum of these legal documents extends the definition and protection of refugees beyond the 1951 Geneva Convention, initially established to protect European refugees. The UNHCR was strictly bound to protect Convention refugees until 1961, when the UN allowed the agency to assist both refugees within its mandate and those for whom it extends its 'good offices' (Halder, 1999, 4). Under the "good offices" the

African peoples, for example, were given resources but no legal protection because they were considered to be too poor, numerous and dispersed to make individual assessments necessary for Convention refugee status, and Europeans considered it difficult to establish a well-founded fear of persecution in Africa compared to Europe (Hyndman, 2000, 11). The 1967 Protocol later brought the 1951 Convention up to date with the new world realities and into line with the universal mandate of the Statute of the UNHCR. The OAU Convention in 1969 offered a significantly broader definition of a refugee, by translating the initial meaning of refugee status into the economic, cultural, political and social profile of the Third World (Halder, 1999; Hyndman, 2000).

It is equally important to point out that the 1951 Geneva Convention set a mandate of three years for the UNHCR – just enough time to deal with the refugees from the Second World War – it has been extended for five-year intervals since that time (Hyndman, 2000, 15). Furthermore, although the agency has an important presence in the field, it was not created for field operations, "but to provide the financial and material assistance necessary to carry out its strategies" (Weiss and Collins, 2000, 60). It is possible to turn UNHCR into an efficient rescue service if the Executive Committee decides that the agency merits an upgrade (Suhrke et al., 2000, xiv). If the UN General Assembly decides to do so, it will become a refugee agency that is quite different from the one established 50 years ago (Suhrke et al., 2000, xiv). For now, it is safe to say that the agency has moved well beyond its initial calling and has made a number of improvements to its mandate.

However, the agency's efficiency and its ability to follow its mandate are often criticised. Jennifer Hyndman (2000) and James Chiusiwa (1999) believe that while the

UNHCR makes great efforts in protecting the refugees, there are cases where effective protection has not been achieved and that the current mandate and institutional practices are questionable. As the Office of the High Commissioner has become more powerful, with the increase in humanitarian crises, it has also become highly politicised. The UNHCR is increasingly funded by donor governments which designate the use and location of their donations, thus providing some direction for humanitarian action, while operating principles remain ill defined (Hyndman, 2000, 5).

Today, the agency's preparedness and effectiveness are two elements that place it first in the middle of a crisis. This means that often, the UNHCR will find itself helping people of "concern" rather than just convention refugees. It is thus protecting individuals such as Internally Displaced Persons (IDPs) who have not crossed an international border, those who suffer from debilitating malnutrition and victims of natural disasters – although, frequently, all or some of these causal factors overlap (Wood, 1996; Halder, 1999; Hyndman 2000). In 1991, for example, the UNHCR was called upon to intervene in Iraq – Operation Provide Comfort – in order to protect the internally displaced Kurd population (Wood, 1996, 677). The agency later provided similar assistance in the former Yugoslavia, in order to avoid international border crossings (Hyndman, 2000, 18).

3.2 Other Humanitarian Aid Groups

Complex Humanitarian Emergencies require the involvement of numerous groups and organisations. The individuals that choose to work for humanitarian agencies do so by putting their own lives at risk. They are dedicated to the humanitarian cause and have the desire to alleviate human suffering. Having established the role of the UNHCR in the

previous section, who are the other aid providers involved in emergency relief? How do they work together? What are their responsibilities?

Many actors arrive in the field with specific missions and work together uneasily as loose coalitions hoping to bring the best aid possible to the population of concern (Wood, 1996, 679). As Weiss and Collins (2000) observe, each actor's interests, resources, organisational structure and functions affect their behaviour and ability to cooperate with others in a CHE. It becomes thus important to understand what each actor's interests are in order to be able to deal with the cooperation problems.

In an example reflecting Duffield's (1996) and the UNHCR's (2002) definition of a CHE - the complexity of the response rather than the emergency itself (see Chapter 1), Van Hear and Harrell-Bond (1991, 62) enumerate all the different agencies and groups involved in the management of the refugee camp.

> Intervention in the refugee health sphere is likely to involve the host country's ministry of health and other arms of government, including the ministry or authority given responsibility for refugees [...]. UNHCR works in collaboration with other UN agencies, notably the World Health Organisation (WHO), the World Food Programme (WFP), and the United Nations Children's Emergency Fund (UNICEF), and the United Nations Development Programme. [...] In terms of personnel, a wide range of professionals are likely to be represented in any refugee emergency. They may include planners, logisticians, water and sewerage specialists, civil engineers, public health specialists, nutritionists [...] and many others.

Similarly, Stephen Green (1977, 30) describes a usual relief operation as:

> a kind of "mass assault" on a disaster-struck country by a number of governments, intergovernmental and non-governmental agencies, each one trying to meet a real or supposed need, by sending personnel, equipment and supplies which do not meet the needs of the disaster victims. The work is done, after a fashion, but at the cost of delays, lack of coordination and efficiency with gaps and duplication of effort, and at high expense – all of which creates justified criticism.

Aside from the UN agencies there is an important presence of NGOs in the field. Although their behaviour is often unpredictable, many have grown considerably in the past twenty years and have an active international presence. Most of these groups are defenders of single purposes such as gender equality, human rights and sustainable development (Weiss and Collins, 2000, 47). They are also non-state, non-profit, private organisations who respond to the civilians in any CHE which makes them easily accessible and often active in areas where UN or government agencies are not involved (Gorman, 1985, 83). These organisations and their members operate from the premise that human suffering should be relieved wherever it is found (Unites States Institute of Peace, 2001).

Many NGOs were established and maintain affiliations with religious organisations, such as the Salvation Army, the Catholic Relief Services and the Lutheran World Federation. These provide the NGOs with a strong institutional support, moral authority and funding (Wood, 1996, 683). There are also many internationally recognised NGOs such as Médecins Sans Frontières and the International Committee of the Red Cross. Both organisations play an important neutral role in their respective field; the protection of civilians for the latter and the provision of medical assistance to victims of war for the former.

Regardless of their missions, NGOs have become indispensable in emergency aid relief (Wood, 1996; Weiss and Collins, 2000). They often work in volatile situations without the benefit of UN peacekeeping forces; many have died while assisting civilians in need. Finally, their greater flexibility and easier access to civilian populations makes them an important partner because along with the UN, "they form the skilled labor pool

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that serves on the intervention front lines" (Wood, 1996, 684). Since the post cold war era, NGOs along with international humanitarian agencies have channelled over $5 billion of emergency assistance, "making these institutions become part of a political solution to complex emergencies" (Albala-Bertrand, 2000).

National governments are another important group involved in emergency relief. There are those that receive the refugees, others that provide funding to NGOs through organisations such as Canada's Canadian International Development Agency (CIDA) or through project specific funding to the UN; and yet others that provide military assistance and protection. The range of involvement for governments is thus substantial. Of the $6 billion spent on humanitarian emergencies in the peak year of 1993, $4.5 billion originated with major donor governments (Weiss and Collins, 2000, 48-9). Yet governments often have political reasons for the intervention. During the Cold War, for example, conflict in Africa was closely monitored by Russia and the US because of the possible effect in the balance of power between East and West. In the post Cold War era, there has been a decline in government interest in regions that are no longer considered important for national interests (Rosenblatt and Thompson, 1995). Albala-Bertrand (2000) also argues that there is a misuse of emergency resources by domestic parties – the host government. Given the institutional change-seeking nature of political conflicts, aid and assistance deliveries often become highly politicised. The host country will attempt to control the food and aid delivery to the camp in exchange for political favours, or even aid to the local population itself.

Military intervention is often necessary during a complex emergency for the protection of civilians and of humanitarian aid staff. Peacekeeping forces are also

providers of much needed logistics support to relief efforts, especially in terms of truck and air transport (OCHA, 2000). Although significant differences exist between the military and humanitarian agencies, strong relationships can and should be developed: "working together, the two sides of the humanitarian coin have the potential to be a very strong and effective team" (Cross, 2001, 1).

In this plethora of individuals and agencies problems abound. Urquhart (1992) and Van Hear and Harrell-Bond (1991) discuss the resistance to co-ordination demonstrated by the aid groups. There are many cases of media publicity contests and backbiting within the humanitarian community. In Urquhart's (1992, 52) terms: "human beings do not necessarily behave as saints even in humanitarian emergencies".

3.3 Kosovo and the problems related to humanitarian aid

Project managers involved in emergency aid have to work with time, resources and fund constraints, often in unsafe environments and most importantly, they have to provide all the basic needs, in a timely fashion, to a highly stressed population. The setting up of field hospitals, proper sanitation, housing units, and the provision of water and food are only a fraction of the interventions that need to be organised and effectively implemented simultaneously (Van Hear and Harrell-Bond, 1991, 61).

As stated earlier however, there are certain problems that need to be addressed. Four of the problems observed by academics and staff in Kosovo are described below and compared with other refugee camps. These will then be linked with the solutions offered by GIS technology in Chapter Four. They are: relief coordination; timely provision of aid; protection of refugees in the camps; respect of refugees and their cultures.

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3.3.1 Relief coordination

"Coordination can be defined as the harmonious and effective working together of people and organisations towards a common goal" (UNHCR, 2002, 58).

In 1977, Stephen Green identified fundamental management problems associated with international disaster relief. Through the 1960s and 1970s as media coverage of human suffering increased, the number of organisations involved in humanitarian relief grew and international observers condemned the "chaos" of international relief and described the system as "complex and chaotic" (Green, 1977, 30-31). Twenty years later, the number of refugees has increased along with the number of humanitarian emergencies. Around 5 million refugees were assisted by the UNHCR in 1977, this number jumps to 27 million refugees in 1995, and stands at a 22 million estimate in 2000 (UNHCR, 1995; 2000). Still, the same problems prevail: the United Nations Department of Humanitarian Affairs (UNDHA, 1998, 10) identified the proper regulation of aid as one of the key problems that need to be resolved in the late 1990s. There are concerns about standards and service of inexperienced organisations and over-provision in particular sectors, as well as difficulties in tracking and coordinating agency activities (UNDHA, 1998, 10). In CHEs particularly, where military forces are added to the regular list of aid providers, organisation and proper communication become key topics in the success of the emergency relief.

Among the steps taken to resolve some of these problems is the creation of the UNDHA – now known as the Office for the Coordination of Humanitarian Affairs (OCHA). Although the UNHCR is the lead agency in most emergency aid cases, the UN decided in 1992 that there was a need to better coordinate its responses to Complex

Humanitarian Emergencies (UNHCR, 1993, 92). The agency has three main functions:
the coordination of humanitarian response, policy development and advocacy on
humanitarian issues (UNHCR, 2002, 59). However, the agency itself realises that it is
not powerful enough to overcome

> separatism and built-in competition that is so pervasive in the UN system
> even in the face of the human desperation of emergencies... UNHCR,
> which was established as a legal protection agency for refugees, is
> nowadays running huge truck and aircraft relief supply operations of all
> kinds. UNICEF also runs supply operations. WFP does the same with
> food aid, often for UNHCR. WHO quite rightly arranges emergency
> medical assistance; but so may UNICEF, sometimes in tandem, often not;
> so may UNHCR, sometimes with the other two, sometimes not. (In
> Rosenblatt and Thompson, 1995, 96)

In a similar statement Wood (1996, 680) explains that, like other UN agencies, the
OCHA lacks the staff and resources to organise "simultaneous relief efforts effectively,
let alone difficult interventions that require a strong peace keeping role" such as CHEs.
Moreover, even if the agency fulfilled its mandate entirely, the UN structural problems
would hinder "effective, forceful action and undermine the UN's potential leadership"
(Wood, 1996, 680). Wood (1996) seems to be right. One gets an idea of the complexity
and the bureaucracy of the UN structure by reading the UNHCR Handbook for
Emergencies (UNHCR, 2002) where a full chapter is dedicated to the coordination of the
UN response to Complex Emergencies. Between sections on the OCHA and UNHCR
responsibilities, the role of the humanitarian coordinators and lead agencies (depending
on the size of the emergency), the reader is soon confused as to whom does what and
what are the responsibilities of each UN organisation.

According to the UNHCR (2002, 58) good coordination results in: maximum
impact for a given level of resources; elimination of gaps and overlaps in services;

appropriate division of responsibilities; and uniform treatment and standards of protection and services for all beneficiaries. Unfortunately, there are many cases where proper coordination was not achieved or maintained. Writing about the Kosovo refugee crisis, Tim Cross (2001, 14) observed that agencies, including the UNHCR required a lengthy time to arrive, establish the camps and become effective. He adds that whereas it took 48 hours for the Kosovo Force (KFOR) to establish camps and become operational, NGOs and UNHCR officials focused on their own administration - finding vehicles, accommodation, etc - and then spent days driving around and observing KFOR's operations. Indeed, staff deployment was generally slow and mid-management level in field operations was lacking. Also wide variations in standards, incomplete coverage and a tendency for the relief process to be supply-driven and dominated by a competitive concern for visibility were noted by the Kosovo Independent Evaluation team (Suhrke et al., 2000, vii).

Borton and Nicholds (1991, 116) observed in 1990 that the number of NGOs involved in CHEs has become so large that problems arise in the coordination of programmes. Ten years later, some 350 NGOs (20% of which were funded by the UNHCR) were active in Kosovo and according to Weiss and Collins (2000) and to the Independent Evaluation (Surkhe et al., 2000), this placed the UNHCR in a minor position which in turn affected the agency's ability to effectively coordinate humanitarian assistance. Also, many of the humanitarian agencies in Albania and Former Yugoslav Republic (FYR) Macedonia were either unaware of UNHCR's mandate to coordinate the CHE relief efforts, or interpreted it in accordance with their own agenda, thus generating a wide range of expectations (Surkhe et al., 2000). Under performance pressure the

UNHCR focused its limited resources on its own operational performance, setting aside its role as lead agency. This has not always been the case. In other complex emergencies, such as Goma in 1994, the UNHCR also funded 22% of the NGOs but was also able to establish credibility and strong coordination mechanisms from the beginning of the emergency.

Holding regular meetings between UNHCR, OCHA, NGOs and other interested parties is one of the solutions offered by the UNHCR's Handbook for Emergencies (2001) for solving coordination issues. Unfortunately, bad communication and competition between the agencies makes this difficult as well. Cross (2001, 17) describes his experience in UN/NGO meetings as follows:

> Any idea of punctuality was a naïve hope on my part, and none thought it in the least bit unusual to take mobile phone calls during a meeting, or to wander in and out at will. I attended many UN/NGO led meetings, and they ran from a mixture of chaos and confusion through to well structured and useful [...] By the middle of the second week in Macedonia, and early on in Albania, I had successfully reached a position where the chair was taken by the senior UNHCR representative, with me beside him and my HQ running the administration!

Among such unsuccessful meetings held during the Kosovo emergency was the Emergency Management Group (EMG): a high-level, policy-making group, composed of Albanian ministries, donors, inter-governmental organisations, UNHCR, WFP and NATO. This was the power base of the response to the emergency, being the main meeting point for the most powerful actors except the NGOs who had no proper information on relevant political realities and operational matters (Suhrke et al, 2000, 76-77).

Still, there were camps with proper cooperation and information exchange mechanisms. The Independent Evaluation (Suhrke et al. 2000) often uses the Kukes camp as an example where UNHCR was able to assert a strong leadership. Among the successes at UNHCR Kukes were the elimination of duplication of services, provision of uniform treatment and appropriate division of responsibilities. All of this was possible by following simple actions described in the UNHCR Handbook for Emergencies (UNHCR, 2002) such as dissuasion of new NGOs from establishing at the camp, by delegating specific roles to UN agencies and experienced NGOs, and by holding regular meetings at policy-government and field-sectoral levels.

3.3.2 Timely provision of aid

A set of internationally recognised basic standards of treatment applicable in refugee emergencies has been agreed by emergency aid agencies. These standards cover all aspects of a refugee's life from physical and mental health to protection of their rights and families, and the respect of their culture. Some examples include: the respect of fundamental civil rights, the provision of basic necessities, the respect of family unity, granting necessary facilities to enable satisfactory situation, location should be determined by their safety and well being, etc. (UNHCR, 2002, 14) (For the complete list please refer to Appendix 2). As such, the timely provision of aid goes beyond the three basic needs of food, water and shelter. For example, children who have experienced violence need proper help and protection from further abuse. Mothers need to be given the chance to bring up their children to the best of their ability and require the resources to do so.

Providing clean water in arid regions can be more complicated than providing food while sanitary disposal of human waste can be problematic in highly congested areas such as refugee camps (Wood. 1996. 688). Van Hear and Harrell-Bond (1991). Young (1992). Kanter (1995) as well as others identify the proper provision of sanitation and health services. as well as food and water to the refugees as a management problem. This includes everything from a lack of control over the transportation of food and medicine to the inefficient organisation of the camp. When basic needs are not met in a timely manner refugees. in need of food and services. find ways to obtain more:

> The branch office [in Kenya] has addressed the intractable problem of discrepancies between feeding figures. registered numbers. and total populations. by camp site as well as by overall caseload and nationality. through physical head counts and registration of refugees in the camps. These discrepancies are due to acts of sabotage: double registration within camps and between camps: and inflation of the number of dependants on ration cards in a bid to maximise their entitlements to food and other relief assistance distributed in the camps. (Hyndman. 2000. 123)

3.3.2.1 Food

Food assessment is one of the most critical points of the international system for caring for refugees. because it determines their food needs (Young. 1992. 330). A Food Assessment Mission (FAM) was established in the 1980s in an effort to properly acknowledge the food requirements of refugees. Efforts are made to provide refugees with familiar foodstuffs and the first concern is always to ensure that energy and protein requirements are met. The daily energy requirement per person per day for a developing country population at the beginning of the emergency is 2100 kcal (UNHCR. 2002. 192).

Another factor to consider (which is often not followed) is to take into account the views of women. and with them. develop a feeding programme fit for their life style and

needs. The refugees are indeed the best information provider and can act as effective monitors of the distribution system. A bottom-up approach is thus considered the best solution for the effective management of the camp and consequently for the timely provision of food (UNHCR. 2002. 60). Many communities have a tradition of community organisation based on the family. or larger units such as clans. These units should be maintained and used not only for the distribution of food but also for the provision of water and other services. This bottom-up approach is also important to consider in Chapter Four in order to determine if a technology such as the Geographic Information System (GIS) has a management application within the refugee camp.

Young (1992. 332-334) is critical of the food shortage situation in Chadian refugee camps in Sudan. Faced with food shortages at the camps. only the resourcefulness of the refugees enabled them to attain self-sufficiency. Five years later. a 1997. report by the Migration World Magazine observes the same problem: 149.000 out of a possible 1 million refugees were receiving food assistance. Indeed. Chadian refugees in Sudan. as well as Sudanese refugees in Ethiopia had relative success in survival because they had access to land and were able to develop livelihoods based on agriculture. Land was acquired through private rental and through government allocations while produce was sold at nearby markets (Young. 1992. 333: Migration World Magazine. 1997).

In his study of refugee camps in Cambodia. Kanter (1995) witnesses similar problems which indicate a lack of short and long term management of the camp. As a consequence. the large size and rapid growth of the refugee population means that needy families did not obtain sufficient supplies. It is the food and nutrition coordinator's

responsibility to establish standard procedures and to evaluate and monitor feeding programmes. This is usually accomplished by acquiring basic information about the refugees and the camp such as demographics, current nutritional status, food availability and ease of access to food supplies, etc (UNHCR, 2002, 189).

According to Weiss and Collins (2000, 99), these guidelines were not observed during the Kosovo crisis. Some examples they offer include the distribution of inappropriate and costly foodstuffs, including potential lethal breast-milk substitutes, a lack of information on the health and nutritional problems of the population and disparities in rations. In contrast, Surhke et al. (2000, 66, 68) report that food for the camps and collective centres met basic standards and that initial distribution problems were dealt with early in the crisis. Food was provided by the World Food Programme (WFP) while joint bakery projects with UNHCR and local procurement of fresh food were undertaken to complement WFP provisions. The WFP supply rate was faster than the UNHCR's thus creating food shortages due to a lack of cooking sets and rendering some WFP food unusable (Suhrke et al., 2000, 79-80). There were also reports of inadequate provision of food to host families. Considerable difficulties were encountered by NGOs and WFP in providing for the host families, dispersed throughout the country, but it was also subsequently adjusted and malnutrition was averted (Surhke et al., 2000, 68).

3.3.2.2 Water

Water is another essential resource in the camps and its use goes beyond its consumption. It is also needed for individual hygiene, in hospitals, for livestock, for construction of camp infrastructure and even for agricultural purposes – where refugees

have access to land where they can grow food. According to the UNHCR Handbook for Emergencies (UNHCR. 2002, 216) a water assessment has to be conducted at the offset of each emergency. The objective of the assessment is to ascertain the availability (in quantity and quality) in relation to demand. Minimum water needs vary, increasing with temperature and physical exercise. A minimum survival allocation is of 7 litres per person per day.

The selection of the camp site takes into consideration water resources, in order to minimise the transportation of water. It is stated in emergency guidelines that if even the minimum amount of water cannot be made available in time from local sources, the refugees should be moved (UNHCR. 2002, 218). Where possible, the maximum distance between any shelter and water distribution point should be no more than 100 m – a few minutes walk (UNHCR. 2002, 143). In Cambodia. Kanter (1995) observed that these guidelines were not followed. Housing units were in need of repair and the camp had no drinking water of its own and because there were too many distribution sites to monitor. the water was often distributed unevenly (Kanter, 1995, 620).

Yet water is not always safe, even if it comes from reliable source, its storage and distribution are critical. As such, clear communication with the refugees and indications of safe ways to acquire and store water are essential parts of the planning process. Furthermore, water contamination by human faeces is a major concern as it is the leading cause of diseases such as diarrhoea, dysentery and infectious hepatitis. The construction of latrines must be localised away from dwellings and water supply (Van Hear and Harrell-Bond, 1991, 64; UNHCR, 2002, 235). In 1990, Somali refugees in Eastern Ethiopia were unfortunately affected by communicable diseases because there was an

inadequate quantity of clean water and improper sanitation. In contrast, water was generally adequate in Kosovo although sanitation remained dangerously inadequate in many camps.

3.3.3 Protection in the camps

According to the 1948 Universal Declaration of Human Rights, all human beings have a right to life, liberty and security of person. This also applies to refugees, whether they are established in a camp or internally displaced. For their protection, refugee camps must be settled at a "reasonable distance from international borders as well as other potentially sensitive areas such as military installations (UNHCR, 2002, 138). In regards to refugee protection and the role of the host state, the Executive Committee of the High Commissioner's Programme (EXCOM) stipulates that:

> In situations of large-scale influx, asylum seekers should be admitted to the State in which they first seek refuge and if that State is unable to admit them on a durable basis, it should always admit them at least on a temporary basis (Suhrke et al, 2000, 90).

Overall, the UNHCR performed well in Kosovo in terms of protection. The agency was able to defend traditional protection norms and produced and distributed extensive sets of protection guidelines which contributed to the promotion of good protection standards (Suhrke et al, 2000, 102). Still there were a few problems that UNHCR had to deal with. For example, the establishment of safe camps was rendered difficult because of FYR Macedonia's reluctance to let the refugees within its borders. As a consequence, refugees were trapped in no-man's-land for an extended period, until UNHCR negotiated their admission into the country. Furthermore, because of inter-ethnic political tensions in FYR Macedonia between the locals and Albanians, many refugees felt intimidated by local authorities (Suhrke et al, 2000, 101). Contrary to

UNHCR's Handbook for Emergencies (UNHCR. 2002) several camps had refugee populations exceeding 20.000, contributing to increasing security risks. Moreover, military forces established camps that were too close to the border, thereby violating international norms for refugee protection.

Another security issue is the protection of refugee women and girls who are confronted with specific protection problems, especially in situations where established social structures and values have broken down (UNHCR, 1995, 59). Kanter (1995, 620) reports the existence of brothels in the refugee camps in Cambodia, maintained by Khmer women, where young girls work for additional rice or goods and in some cases, some of them were taken into Thailand to work as prostitutes. As such, the UNHCR has established general guidelines for organising camps geared towards the protection of the main providers of food and water. For example, location of basic services and facilities such as latrines have to be at a safe distance from where refugee women are housed and the construction of barriers that need to be crossed when refugees must obtain firewood or other items is not encouraged either (Hyndman, 2000, 94; UNHCR, 2002, 142).

The protection of children has always been a particular concern to UNHCR and other humanitarian organisations.

> Children's lives are often disrupted at a crucial stage in their development. Poor hygiene and insufficient food during the period of displacement frequently have a devastating impact on the mortality rates of the very young. Hastily constructed and overcrowded refugee camps present further threats to their health. (UNHCR, 2000a, 138).

The safe storage and delivery of humanitarian aid, is yet another example of the security problems noticed in refugee camps (UN Chronicle, 1995, 10; Kanter 1995, 620). Providing adequate food rations is a way to control security problems within the camps,

but as has already been mentioned. this is often a problem in itself which becomes more serious when food does not reach the camp because the trucks transporting relief aid have been stolen. While this is the case in many camps in Africa there were no reports of theft of relief materials in Kosovo. However, logistical errors made the actual tracking of shipments impossible due to the loss of documents (Suhrke et al. 2000, 54).

There were security issues within the camps in Kosovo as well. First, the proximity to the border increased the possibility of Albanian guerrilla groups using the camps as bases and recruitment pools. Moreover, the camp at Kukes, although well managed, and the camps in northern Albania were close to areas implicated in cross-border military activities (i.e. incursions from Albanian guerrillas and shelling from Yugoslav artillery) (Suhrke et al. 2000, 100). Even with the best efforts by NATO and UNHCR staff, there were reports of incidents involving kidnappings by political activists, civil agitation and riots and alleged abuses relating to the humanitarian evacuations in FYR Macedonia (Suhrke et al. 2000, 101).

Similar situations are reported in other refugee settlements. In camps for Rwandese refugees, for example, former Rwandese leaders and their forces prevented the repatriation of refugees and often controlled the food and water distribution (UN Chronicle, 1995, 10-11). It is reported that military and police from the Democratic Republic of Congo (formerly known as Zaire) are required for the maintenance of law and order within the camps in the Goma, Bukavu and Uvira regions (UN Chronicle, 1995, 10). Kanter (1995, 620-1) also observed a lack of safety in Cambodian camps which forced aid providers to leave the camps before sundown.

3.3.4 Respecting refugees and their cultures

Becoming a refugee is dehumanising. Registration and the issuing of refugee papers or identification cards become the only way of restoring an individual's sense of identity (UNHCR, 2000d). A major problem identified by Mrs. Sadako Ogata (former UN High Commissioner for Refugees) is the proper registration of the refugees. Indeed, registration helps refugees show that they are entitled to certain rights, regularise their stay in host countries, safeguard their right to return, assert property or pension rights and most importantly facilitate family reunification (EXCOM, 1984, in Suhrke et al, 2000, 97-98).

Currently, the registration of refugees is conducted by pencil and paper. This often results in administrative errors and the non-registration of certain individuals. This would not be a problem if refugees spent all their time within the refugee camp. The reality is that refugees often move between camps and even temporarily go into the neighbouring cities. If they are found by local state authorities without proof of refugee status they may be arrested (Harrell-Bond, 1986, 119-220).

In Kosovo, the reported destruction of identity documents placed extra pressure on the proper registration of refugees and UNHCR was given a new tool to complete this task successfully. For the first time, the UNHCR was asked to conduct registration during the crisis in order to trace families and deal with problems related to denial of nationality (Suhrke et al, 2000, 98). Usually, managers start by a population estimation and move on to registration after the refugee movement stabilises and it is normally conducted for provision of assistance, not family re-unification (UNHCR, 2002, 120-130).

Certain private companies, including Microsoft, donated kits and staff to create an electronic database. The kits were designed to record detailed information and to produce a plastic identity card for each refugee complete with photograph (Suhrke et al. 2000, 71). Unfortunately, although this type of registration seems efficient in a computerised world, it had bad results in Kosovo. The objective of providing credible, individual identity cards to all the refugees was beyond normal expectations (Suhrke et al. 2000, 71). Furthermore, while the results

> along with the success of the Optical Marker sheet Reader (OMR), will no
> doubt benefit registration in the future, the wisdom of piloting an entirely
> new technique in the middle of a major emergency is questionable (Suhrke
> et al. 2000, 72).

Finally, camps have to be arranged in way that respects traditional ways of life, in order to encourage refugee self-governance and cooperation. Van Hear and Harrell-Bond (1991, 64) state, for example that grid lay-outs may be the easiest and quickest to organise and build, but they are psychologically debilitating: "they may militate against customary living patterns, remove refugees from any sense of control over their lives, and lower morale and thereby resistance to both physical illness and psycho-social problems" (see Figure 2).
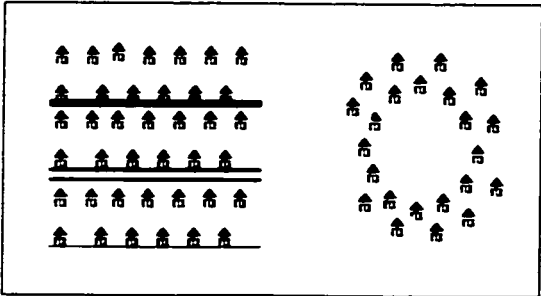

Figure 2: Camp layouts

In accordance with such observations, the <u>UNHCR Handbook for Emergencies</u> (2002, 139) states that the overall physical layout of the site should reflect a decentralised community-based approach focusing on family, village or other social groups. Planning thus starts by considering the needs of individual families, then those of the community, and finally considering the overall site layout. Among the variables that camp managers have to consider are:

- How is the camp or other place of settlement physically organised?

- Is the camp organised in a manner similar to what the refugees are accustomed to in their villages and townships?

- Have refugees been consulted? (according to Hyndman, 2000, 95).

This type of planning follows a bottom-up pattern, rather than a top-down one, and is much easier to manage than taking a big site and cutting it into smaller pieces.

Thus far we have established the role of the various actors active in emergency aid and have also broken down the issues facing refugees and aid workers alike. Although not complete, the report has given an overall description of what is at stake. Whether it is a troubled cooperation between aid agencies, the factors that need to be considered when setting up a refugee camp, or the issues of protection and respect of the refugees, there is indeed a lot more to emergency relief than just the provision of food, water and shelter.

Rosenblatt and Thompson (1995, 91) argue that the international security and relief systems that assist refugees are not designed nor organised to deal with the problem and are now severely tested by the numbers of urgent pleas for food, clothing, shelter,

medicine and security. Their statement is true as long as we look at the problem from a logistical point of view. Knowledge of numbers of refugees, water bottles and sacks of flour and amount of money donated to the UNHCR or other aid agencies will never help to deal with the "technical" problems facing aid workers.

Some of these "technical" issues may be solved by using new technology such as Geographic Information Systems. Although the identification card kits provided by Microsoft were probably not appropriate for a CHE, there technologies such as GIS that merit some attention. The following chapter presents GIS as a possible solution to some of the problems discussed earlier. This does not mean the end to all the issues related to humanitarian aid, but locating the proper site for a refugee camp, the water source and the family shelter may be an answer to problems such as the distribution of aid, protection and respect of the refugees.

Chapter 4: Geographical Information Systems

"In order to make use of the more generous availability of information, we will have to develop reliable indicators on the one hand, and learn to master the universe of available information on the other" (Thoolen, 1992, 170).

The UNDHA (1998) as well as Urquhart (1992), Thoolen (1992) and Dedring (1992), agree that the rapidity and quality of response to humanitarian crises depends greatly on accurate information. Unfortunately, the relief community often has limited knowledge of the area, the number of people involved, their location and condition (Bjorgo, 2000, 77). In this respect the UNDHA (1998, 9) states that the international community must improve the ways in which information and analysis of the causes and effects of instability are transferred from researchers to policy-makers. Urquhart (1992, 53) adds that the UN must equip itself better to meet major humanitarian crises. One proposed way to accomplish this is to provide field workers with practical information such as: maps, population by district, dietary patterns, telecommunications, road and other transportation factors, airports and air strips (Urquhart, 1992, 69).

The Kosovo crisis was the first case where GIS was widely used on a large scale and in a systematic manner to manage information in a major humanitarian crisis. A number of institutions participated in the project, including governments, military and civil agencies, NGOs and international organisations. The technology allowed the integration of various kinds of information, including suspected locations of landmines and unexploded ordnance, reports of atrocities, and destruction of housing and infrastructure (Smith, 2000).

The effort in Kosovo demonstrates the advantages and difficulties involved in using GIS for emergency relief. Problems such as database creation and harmonisation

among data providers and users. for example. had to be solved within a short time (Smith. 2000: Bouchardy. 2000). The case also responds to the needs identified by Urquhart (1992) and the UNDHA (1998) as aid agencies were provided with specific and accurate information before and during the crisis.

This chapter begins by defining GIS and briefly exploring its main uses: the visualisation and analysis of spatial data. The following section explains how new technologies such as GIS are integrated within an organisation. Needs. time and budget are the three key factors that need to be considered. The UN has proven to be eager to use GIS in many of its agencies. including the UNHCR. Programmes such as PopMap and ReliefWeb are reviewed in order to see the extent of the UN's involvement with the technology and to demonstrate that GIS is not "new" to the organisation. nor within the UNHCR. who has been actively working with GIS since 1995. Finally. we will look closely at the Kosovo CHE and discuss how the GIS database was created. implemented and used by the UNHCR and its partners.

The discussion will revolve around two main ideas: geographic scale and time frame. The small scale (1: 100.000) involves coverage on a by country basis and the information is used mostly for monitoring. Programmes such as ReliefWeb have a small scale component because they provide information. maps and other relevant documents by disaster type and country. The medium scale (1:75.000) is concerned with humanitarian aid logistics. It is at this scale that relief staff will determine which routes are safe. where to move supplies and where camps are located. For the actual management of the camps. the UNHCR will work with large scale maps (1: 15.000). Indeed. GIS assists in the accurate mapping of refugee camps by incorporating datasets

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such as environmental change. numbers of people per determined area and location of services. GIS also helps in the organisation and setting-up of the camps by taking into consideration guidelines regarding safe distance from borders, the location of safe drinking water sources. lavatories and aid distribution points.

Each geographic scale is also related to a time frame. Before the CHE, tensions build up. human rights violations are committed. and there is also economic and political instability. These are all related to the small scale or the "overview" of the situation that will determine what action the international community will take. During the humanitarian emergency. the medium and large scales are used because they offer the information needed for the everyday running of the camp and for evaluation of relief aid and of the emergency. Finally, the large scale and in some cases the medium scale will provide valuable input for repatriation and rehabilitation programmes at the end of the CHE. One example of this is how GIS was used to analyse safe routes for the return home and to point out damaged or liveable areas.

4.1 The Geographic Information System

GIS is part of the greater technology area of Geomatics. or the "technology and service sector focusing on the acquisition, storage. analysis, dissemination and management of geographically referenced information for *improved decision-making*" (Geomatics Industry Association of Canada. 2001. italics added). There have been a number of attempts to define "Geographic Information Systems" but each specialist tends to relate the definition to his or her discipline. or focuses on only one aspect of the technology (Chrisman. 1997; Malczewski. 1999). The UN (1997. 17) definition. for example. is based on the technology and problem solving aspects of GIS:

A system of hardware. software and procedures designed to support the capture, management, manipulation, analysis, modeling and display of spatially referenced data for solving complex planning and management problems.

Dueker and Kjerne (in Chrisman, 1997, 5), on the other hand, offer a definition that includes the basic aspects of GIS – a computer database and the analysis and representation of the data – and describes potential users:

a system of hardware, software, data, people, organisations and institutional arrangements for collecting, storing, analysing and disseminating information about areas of the earth.

Overall, GIS is a spatial, geo-referenced, database that stores data and has the capability to perform tasks using both spatial and attribute data. The technology can also integrate other geographical technologies such as remote sensing, global positioning system (GPS) and automated mapping and facilities management (AM FM) and convert its data into information that is useful for decision making (Malczewski, 1999, 15).

Beyond definitional issues lies the most important aspect of GIS, namely: its ability to display a digital map. Of all the disciplines, geography makes the greatest use of this function probably because among social sciences, it has exclusive use of spatial data with the necessity to analyse it (Orford, Harris and Dorling, 1999). Indeed, GIS allows users to see regions, counties, neighbourhoods and the people in them with clarity (Greene, 2000, xi). Adding geographical features such as mountains, roads, lakes, urban areas are what make the illustration of events simple with the geographic systems (Cripps, 1991, 133). As Wood (2000, 24) explains, the premise is simply that natural features and events as well as human activities tend to occur on the earth's surface and can thus be linked by their relative location.

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The main applications of GIS are the storage and retrieval of data from a database. Like many databases. such as in Excel or Access. GIS includes a number of fields (such as street name. postal code. civic number). The distinguishing feature of any GIS is that its database is geo-referenced. i.e. each record is given a coordinate (longitude/latitude or x y) thus locating each feature on a map and is portrayed as a point. line. or polygon. A building. for example is represented by a point. a river by a line and a country by a polygon. The data can then be "layered" to study patterns of human activity. For example. one may create a data set of number of births. deaths. dwellings. persons per dwelling and another dataset comprised of location of hospitals. industry. schools and entertainment services. The technology can thus address various problems and answer questions on location. conditions. trends. routing. patterns and even "what if" scenarios (Garland and Man. 1998).

Originally. the graphical nature of GIS applications and the intensive computational requirements for spatial data manipulation restricted its use to the academic sector and to users in specialised. capital intensive areas (Deichmann. 2000). According to Aronoff (1989. 281). the technology has changed the rate at which geographic information can be produced. updated and disseminated. GIS is now increasingly applied in other fields. It is the technology's general ability to manipulate spatial data into different forms and extract additional meaning that makes it interdisciplinary and widely used (Bailey. 1994. 15). A few examples of areas where GIS is increasingly used include. but are not limited to. facilities management. marketing. social services such as health and safety. population census analysis and environmental impact assessments. The technology is thus suitable for strategic management purposes

at the international or state level, as well as on a smaller scale, such as the neighbourhood. There is clearly a relationship between strategic information and the adequate use of community resources. It is as important to know where services are needed and where resources are spent as to know how much and what (Cripps, 1991, 132). Overall, GIS is becoming a vital tool to help nations understand what resources they have and how best to use them (Gerland and Man, 1998).

As current information and maps are two requirements shared by all actors in a CHE, GIS can serve as the basis for information sharing, advanced planning, operational coordination and evaluation of progress toward common goals (Dziedzic and Wood, 2001). The capacity to combine data sets across functional areas provides an integrated view of the operational environment and a stronger basis for collaboration (Dziedzic and Wood, 2000; 2001).

Advancements in the technology such as higher capability computers and the Internet have increased the generation and sharing of data as well as the use of GIS. The Internet has become an important data source for GIS-based research for students and professionals. Individuals, universities, national agencies and private institutions are among a long list of internet data providers. However, there are concerns over access to digital information. Most mapping agencies around the world have copyright restrictions and cost recovery programs (Chrisman, 1997, 268). In the United States, for example, the government places most of its data in the public domain, meaning that there is no copyright restriction on its use (Chrisman, 1997, 268). There is also the problem of data accuracy and reliability. How was the data gathered, when and by whom? Some governments have not done a census for many years, rendering their databases unreliable

while others manipulate the data, in order to hide the real situation (Thoolen, 1992, 172-3; Ramcharan, 1991). Dedring (1992, 210) explains that

> seeking truthful, precise and reliable information is frequently a dangerous business, because those who harbour ill intention – whether it deals with political power or economic wealth – will want to hide illicit dealings from their rivals and the general public.

Indeed, the wide availability of data and the increase in the sharing of databases have fostered a new era of data standardisation and the generation of metadata (data about data) (Thoolen, 1992, 171; Malczewski, 1999, 21). Along with a fast growing technological sector, standards committees at the national and regional levels and within regional and international professions have also been created. The development of GIS standards follows the "mainstream trends occurring in the standards world, namely the anticipatory development of standards, the increasing participation of users and integration of standards" (UN, 1998, 5). Standards solve problems, such as how to represent data efficiently or manage a communications system, and create benefits that exist only when all the systems do things in the same way (UN, 1998, 12). The most important of these benefits is data exchange. Presumably when everyone within an organisation works with the same databases the exchange and manipulation of data is efficient.

4.2 Integrating GIS

In the previous chapter we briefly discussed the Microsoft registration kit that was used in Kosovo for creating a digital database and issuing identification cards for all refugees. Although the idea had its merits, the end result (time required to produce each card) was impractical. Whenever a new tool is introduced in a project, the question of

whether or not it is appropriate emerges and even more so when the introduction of a new technology is considered. In this case, the Microsoft registration kit was a good idea but was not properly integrated to meet the needs of the UNHCR.

In the context of CHEs is GIS a practical solution? Given the spending and the time needed to setup a GIS, what are the steps that an organisation such as the UNHCR needs to follow in order for its systems to be functional? According to Bouchardy (1995, 2000, 2001) and Wood (2000) GIS is the core system for compiling and analysing information from the field and is uniquely capable of incorporating and displaying multiple types of data in the timely and comprehensive manner required by the UNHCR. Still, unlike the registration kits, in order to be used effectively

> the GIS needs to be placed in an appropriate organisational context. It is simply not sufficient for an organisation to purchase a computer and some software [...] and then to expect instant success. Just as in all organisations dealing with complex products [...] new tools can only be used effectively if they are properly integrated into the whole work process and not tacked on as an afterthought (Yapa, 1991, 46).

Several factors need to be considered when setting up a GIS: standardisation of data formats, size of the database, budget, timetable, spatial referencing system and definitions of spatial data themes and indicators (Crain, 1991; UN, 1997; Gerland and Man, 1998). Indeed, when choosing a GIS, an organisation such as the UNHCR, needs to consider the efficient and transparent link between spatial data and administration databases as fundamental; data updating should be efficient; the network should be able to support a large volume of data flow between centralised data storage sites and the end-users; staff should have proper training and technical support; and the system should be secure (UN, 1998, 84). These are usually planned within four stages, namely: a

functional requirements study, system implementation planning, system evaluation and selection, and system integration (UN, 1997, 2).

The first two stages approach issues such as time and budget requirements: the potential uses of the proposed system: what type of data is required: which software best suits the users' needs: what type of digital databases already exist or need to be created: and the training of the staff that will be directly affected by the integration of the GIS (Chrisman, 1997: UN, 1997). According to Jean-Yves Bouchardy (2001), the Director of the UNHCR mapping unit, in the humanitarian aid field, user's needs depend on the emergency. He adds that depending on the level of decision making, the level of information required will not be the same. For example, we can assume that aid providers in the field need highly detailed information while decision-makers at headquarters require synthetisized documents (Bouchardy, 2001).

Having determined their needs, the project managers then move on to the next stage: the system evaluation and selection. This entails approaching the commercial world for the creation, establishment and assessment of an appropriate software package. If all goes well during the three initial stages, system integration is generally not a problem. However, the system evaluation never ends (Chrisman, 1997: UN, 1997). In fact, as users become more familiar with the technology, and in turn, the technology becomes part of the organisation, requirements will change. Maybe the organisation will need more memory space as it creates bigger databases, or a system upgrade will be necessary as the users outgrow the technology. As such, the initial investment and time requirement (between 18-36 months or more) should not be underestimated as the

development of the database can be a costly and time-consuming process that will pay off only in the long term (UN, 1997, 2-5).

Aronoff (1989) and Crain (1991) argue that the successful implementation of GIS depends as much on the resolution of managerial issues as on technological decisions. Indeed, the relative structural inflexibility of large organisations provides managerial and technical challenges (Crain. 1991. 225). For an agency as big as the UNHCR, which has already been criticised for questionable bureaucratic practices, properly setting-up and integrating a GIS unit with a unique purpose becomes a significant challenge. Chrisman (1997, 265) adds that each organisation should create a network of users which would tie everyone in mutual responsibility, not through top-down control.

The integration of GIS within the hierarchy of the UNHCR requires the data exchange to breach internal segregation and integrate data-sharing across the organisation. The UNHCR has dealt with this issue and successfully established a Geographic Mapping Unit in 1998. The unit's purpose is to support the work of the organisation in areas of contingency planning. emergency response. care and maintenance, and repatriation rehabilitation (Bouchardy, 2000). As such, the mapping unit is a centre for the exchange of information from and to the field as well as from and to decision-makers at head quarters.

Finally, the database creators and the end-users have to agree on what the database will include, for organisational and retrieval purposes. According to King and Dilley (2001), adhering to a proper data collection format makes the information sharable (the metadata mentioned earlier in this chapter). As such CHE-related information should always include:

- Geo-reference or locational information indicating where the data was collected or what location or area it represents;

- A time-stamp indicating when the data was collected and in some cases at what frequency – to determine the currency of the information;

- Information on the data itself. including who collected the information. what standards and indicators were used. and how the data was measured or derived – to evaluate the credibility of the information (King and Dilley. 2001).

4.3 GIS projects within the humanitarian aid community

Urquhart (1992. 52) argues that the rapidity of response to an emergency can only be effective and productive if it is based on the most accurate possible information. Moreover. he explains that an efficient international 'situation report' system. providing donors with consistent data on the use of contributions and further needs must also be of high priority (Urquhart. 1992. 52). Similarly. the US Institute of Peace (2000) encourages "information exchange among and between civilian and military organisations in order to reduce operational risks and avoid the duplication of efforts" and promotes the "development of policies that define the mechanisms and tools by which civilian and military organisations can interact before. during and after CHEs".

Taking such comments into consideration. the United Nations has been extensively involved. since the 1990s. in the creation of electronic databases for environmental. emergency. logistic and planning purposes. Among the efforts relating to GIS. the inter-governmental organisation has created GIS standards (see UN. 1998) and is supporting efforts to further integrate the technology in its operations. Similarly. the

UNHCR's mapping unit has been active since 1994 (then under the flag of the UNHCR Environment unit) in linking GIS to the agency's activities such as: logistics, repatriation emergency or durable solutions (Bouchardy, 1995, 2). The PopMap project is an interactive information GIS which is used as a decision support tool for population activities by developing countries (Castillo et al. 1995).

The next paragraphs describe current UN and NGO projects which involve GIS or electronic databases for the purpose of information sharing and collection. The positive and problematic aspect of each are outlined and compared. All the examples demonstrate the need for information sharing, cooperation and coordination during a CHE. This section ends with a discussion of the Humanitarian Community Information Centre (HCIC) which was established in Kosovo with the purpose of data exchange and gathering and which increased emergency aid effectiveness by encouraging cooperation between agencies.

4.3.1 PopMap

PopMap is a unique software package developed in Viet Nam for use in other developing countries (Gerland and Man, 1998). It is designed for demographers, statisticians, planners and decision makers with little computer background and requires only basic understanding of data retrieval principles (Castillo et al. 1995). The development of PopMap began in 1989 and a first version was released in 1991 (Castillo et al. 1995; Gerland and Man, 1998). The software's goal is to provide developing countries a useful tool for producing geographical databases for country, district and community applications (Gerland and Man, 1998).

PopMap thus demonstrates the ability to work with a range of scales. For example. using this package. Uganda's statistical department created and disseminated a Census Atlas with such data as population density. age groups. marital status. religion. education and household conditions. On a large scale. policy makers in Uganda can analyse population patterns by census. Similarly. Indonesia was able to create a Family Planning Atlas for administrative units and family clinics. The Ugandan Census Atlas can also assist in smaller scale studies. such as country-wide socio-economic development.

PopMap's success stems from the fact that it was specifically created for developing countries. It is user friendly. distributed freely and easily integrated in countries with little technical expertise (Castillo et al. 1995; Gerland and Man. 1998). Furthermore. PopMap's interactivity and concern with LDCs at both national and sub-national levels make it an important source of information for larger GIS projects including the possibility of using PopMap databases for humanitarian aid purposes. Some applications include the creation of operational base maps for CHEs or early-warning programmes. thus taking a large scale based database and using it for smaller scale analysis.

Furthermore. PopMap's setup responds to the operational principles outlined by the Symposium on information exchange (Symposium on Best Practices in Humanitarian Information Exchange: Final Report, 2002. 12-13). The software and the databases created with it are accessible and are relevant to the operational and decision-making needs of the LDCs. PopMap also has an import/export and conversion capability making the system available in formats that can be easily retrieved and shared.

4.3.2 HURIDOC and ORCI

Although not a GIS, the objective of the Human Rights and Documentation Systems International (HURIDOC) and of the UN Office for Research and the Collection of Information (ORCI) is to collect information for early warning purposes. Both databases work with social indicators such as linguistic groups, minorities, violence and the size of security forces in order to establish links with possible human rights violations.

HURIDOC was established in 1982 as a global network of organisations concerned with human rights violations (see www.huridocs.org). Although HURIDOC has not developed its database to be used on a GIS, it is an example of a limited tool and an impractical database. The centre has developed agreed-upon terminology and standards for recording human rights violations based on qualitative information, relevant to CHEs. More specifically, it is a collection of individual narratives of tortures, abuses and displacements. This large scale format is adequate when researching individual cases, but does not have the homogeneous structure required for analysis and monitoring purposes by the users of the database (academics, journalists, NGOs, governments and the UN) (Thoolen, 1992; Meznaric, 2000). As Silva Meznaric (2000) explains, it is not possible to transform the raw material of thousands of detailed narratives into an intelligible and communicable statistical format.

The UN Office for Research and the Collection of Information (ORCI) is an example of a small scale database used for early warning and monitoring purposes. The ORCI was established in 1987 with the mandate to collect and disseminate information

pertaining to the international monitoring and reporting of root causes of CHEs and identifying potential refugee flows. Initially, the ORCI lacked a proper implementation plan. In 1991, the office did not have a suitable computer capacity and its database was inappropriate for its purposes (Gordenker, 2001, 10). The database encompasses demographic, land, economic and social activity indicators (Ramcharan, 1991, 44-45). Standard data on demonstrations, strikes and riots are collected in order to effectively assess the possibility of social unrest and violent disruptions (Dedring, 1992, 205). However, the ORCI's early warning ability is limited because it relies on publicly available data which are not always trustworthy. Furthermore, unlike the HURIDOC documentation network that focuses on individual cases, the ORCI's global scope only "scratches" the surface of the internal conditions that give rise to CHEs (Dedring, 1992, 205).

4.3.3 ReliefWeb

ReliefWeb (www.reliefweb.int) was launched in 1996 and is currently the only website for humanitarian relief efforts worldwide. It organises information from over 300 sources, including the UN, NGOs, academic and research institutions and the media (ReliefWeb, 2002). The web site provides time-critical situation reports and press coverage, donor response information, maps and other relevant documents by country, disaster type and organisational source (US Institute of Peace, 2000). ReliefWeb thus encompasses large, medium and small scale information and provides a much needed time frame to the maps, tables and reports that are posted on the site. Furthermore, the Internet site makes operationally-valuable information, that used to be disseminated only

by facsimile or mail. available and retrievable in the public domain (King and Dilley, 2001). Overall. ReliefWeb exemplifies the possible ways to disseminate free data and to gather a variety of information that meet the needs of those interested in CHEs.

During the humanitarian crisis in Afghanistan in 2002, the reports retrieved from the web site allowed decision makers, aid providers and journalists around the world to closely monitor events by accessing timely information. The data accessed was provided by map specialists, journalists in the field and other information officers who were deployed alongside medical teams and logistic crews (ReliefWeb, 2002). In contrast, before the creation of ReliefWeb. the Rwandan genocide in 1994 was poorly documented. As a consequence, the gravity and urgency of the emergency was not conveyed to aid providers in a timely manner (ReliefWeb, 2002).

4.4 Humanitarian Community Information Centre

Under the supervision of the OCHA, the Humanitarian Community Information Centre was part of an effort to promote and facilitate information exchange among a wide range of humanitarian actors providing assistance to Kosovo. The initial role of passive information exchange evolved to a greater data collection and mapping capacity, encouraging greater participation from the users. Because the HCIC structure encompasses relationships with many agencies and entities, through time, it developed into a supra-structure rather than being useful to only one agency. The centre has also established itself as a transitional tool, linking humanitarian and development activities and actors through its information collection and dissemination systems (UNHCR, 2000e). In order to ensure the legitimacy of the data included in the HCIC's database,

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field liaison units were established, an NGO council information officer provided administrative support and outreach to the international NGO community and the KFOR liaison representative ensured cooperation between military and civilian agencies.

The HCIC is also involved in improving its information gathering, management and dissemination systems in order to develop the centre's model for use in future emergencies. For example, it is evaluating integrated data management software that allows tabular documents and spatial mapping data to be linked for analysis. The software in question

> was designed for use by UN agencies and has been extensively tested in Afghanistan. The Centre is exploring an agreement with the Food and Agricultural Organisation (FAO), the OCHA and the Environmental Systems Research Institute, the software developer, to train users and distribute the software in Kosovo (UNHCR, 2000e).

The GIS unit of the HCIC is the leading agency for the development and promotion of common data standards. For example, m-codes and p-codes - unique codes identifying municipalities and villages - were used in the Kosovo database, instead of place names, thus accommodating differences in spelling and in the names of the municipalities used by Albanians and Serbs (King and Dilley, 2001) (see Appendix 4 for a list of municipalities in Kosovo with their M-codes and Albanian, Serbian and Turkish names). The p-codes became a common platform for linking multiple data sets and integrating map information that would otherwise be difficult to associate (Miner, 1999; Bouchardy, 2000; UNHCR, 2000e).

Beyond organising and disseminating information on humanitarian activities, resources and organisations, HCIC staff also maintains a database of local and international organisations working in Kosovo. They offer practical advice to the

humanitarian community and provide centralised bulletin boards and mailboxes for organisations (US Institute of Peace, 2000). Moreover, in Kosovo, the GIS staff also had a community outreach mandate. HCIC staff was in a position to identify agencies and individuals with specialised skills that can benefit from GIS training and thus establish a local GIS capacity.

Locating possible gaps in aid to damaged communities is an example of HCIC activities. By conducting analysis on small and medium scales and time frame with data regarding food, fuel and shelter distribution, the centre determined which villages were not receiving aid (Miner, 1999) (see Appendix 5: Food aid beneficiaries in the Balkans). Other notable examples of the HCIC efforts in compiling and distributing aid are the Kosovo Encyclopaedia and the weekly travel bulletins. The latter is e-mailed to organisations that request it and includes information such as flight schedules and road conditions. The Kosovo Encyclopaedia consists of reports, spreadsheets, maps, government information, World Bank reports and even a registration database of all the organisations involved in the CHE.

The United States Institute of Peace (2000) supports projects such as the HCIC and has established principles that should be followed in order to ensure the centre's continuity and success. As such, operational organisations in CHEs should:

- Develop an information clearing house that is publicly available, interoperable, comprehensive, trustworthy, donor supported, and is the principal repository for humanitarian activity information;

- Establish a communications system that is rapidly deployable anywhere, anytime;

- Set up common templates and standardised protocols;

- Any information-sharing project should be managed by neutral entities;

- Finally, the system should be sustainable, reliable, unclassified and "do no harm".

These principles are the same as the ones identified by the 2002 Symposium on Best Practices in Humanitarian Information Exchange (Symposium on Best Practices in Humanitarian Information Exchange: Final Report, 2002), where participants representing governments, international organisations and NGOs established operational principles and standards for humanitarian information management and exchange and determined the purpose of information in CHEs namely, "to promote more effective humanitarian action" (Symposium on Best Practices in Humanitarian Information Exchange: Final Report, 2002, 11). Accessibility, relevance, inclusiveness, inter-operability, verifiability and timeliness are among those principles (see Appendix 3 for a complete list and definitions). In short, the report states that humanitarian information should be accessible to all emergency aid staff in an easy-to-use and comprehensive format. Furthermore, "information management and exchange should be based on a system of collaboration, partnership" (Symposium on Best Practices in Humanitarian Information Exchange: Final Report, 2002, 12). Most importantly, humanitarian databases should be: accurate, consistent and based on sound methodologies, practical, flexible, responsive, current and collected and disseminated efficiently.

With these guidelines, supported by the United States Institute of Peace (2000) and the Symposium participants, the humanitarian aid community has moved a step further than the basic GIS integration steps outlined earlier. The international community

has demonstrated interest and the willingness to use new technologies such as GIS and digital databases in order to facilitate humanitarian aid activities.

4.5 UNHCR's Geographic/Mapping Unit

An active member and contributor to the HCIC project is the UNHCR's Geographic/Mapping Unit. As mentioned earlier, the unit has been fully integrated into the agency's activities and is equipped, in terms of technology and training, for effective database management and analysis. The UNHCR Handbook for Emergencies (2002, 122) mentions the use of Geographic Positioning Systems (GPS) and GIS and specifies the role of the UNHCR's Geographic/Mapping unit for the purpose of establishing refugee camps. Some of the activities where the unit is involved are the monitoring of basic needs such as locating clean water sources, sanitation facilities, rudimentary shelters and health clinics to following food convoys (see Appendix 6: Stenkovec I refugee camp layout indicating the location of buildings, tented areas, administrative offices, etc.).

In 1995, the UNHCR environmental unit began developing a database directly linked to the agency's work. The report by Jean Yves Bouchardy (1995) established the requirements for the development of a GIS system for environmental, emergency, logistics and planning purposes. At the time, the UNHCR did not collect information or maintain its databases on a regular basis and the existing information did not have a geographic component (Bouchardy, 1995, 5-6).

The report identifies three time frames for the establishment of the database: crisis, monitoring and rehabilitation. In the first stage, it is important to show decision-makers the possible weak points of the operation. A country wide or area map is the best

way to present a crisis situation to individuals that will decide whether the CHE requires international assistance or not. Second, information needs to be collected on a regular basis (refugee registration and density in camps, pressure on land and local economy). Tools such as GIS and GPS provide UNHCR a clear idea of the geographical components of each emergency situation (Bouchardy, 1995, 3). Third, through close monitoring, specialists can act when they identify problem areas and locate, new settlement and wood collection areas or potential land for agriculture and reforestation.

In the UNHCR <u>Handbook for Emergencies</u> (2002) the agency specifies what information is required in order to effectively manage a refugee camp. For example, the selection of the site is based on a safe distance from the border (away from fighting and guerrilla groups), availability of water, slope of the land and site accessibility (can food convoys reach the camp easily?) (See Appendices 7 and 8: maps locating refugee camps in relation to border crossings, distance from cities, transportation networks, etc.). In a similar task, Bouchardy (1995) established the type of data that needs to be collected in order to have a working GIS. The report reinforces the point that efforts in developing and collecting pertinent information for UNHCR work is a crucial part in the development of UNHCR activities both in the field and at headquarters.

For logistic purposes, for instance, in the case of a repatriation programme the following information is essential in order to have a better overview of the operations within a short time span (Bouchardy, 1995, 5):

- Origin of refugees;
- Potential conflicts with local population;
- Proportion of refugees to the local population;

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- Potential pressure of the refugees on local resources:

- Locate sensitive environmental areas:

- Locate new arable lands (as discussed in the previous chapter. the refugees often grow produce and sell it in near by towns).

Such information offers a basic view of the life conditions of the refugees as well as environmental parameters. all essential to the proper management and monitoring of the camp while the refugees are still there and in order to plan a safe route back to the country of origin.

GIS also assists in maintaining a memory of UNHCR operations and presents on a map the essential information that is collected i.e. location of wells and hospitals. capacity of ports. presence of airports, type of soils. deforestation parameters (Bouchardy. 1995. 2000). Then. management-related questions can be answered:

- Where is the refugee camp located and what is its perimeter?

- What are the natural and environmental components of the refugee camp area?

- What is the density of the population inside the refugee site and what is the pressure in terms of carrying capacity?

- Where the water distribution points located and how many people are served by each point?

- How is the camp organised and divided in socio-economic/ethnic sectors?

- How far are the camps from the nearest airports. cities. hospitals. wells and where are the UNHCR/UN logistics located?

- Where are the main roads and telecommunications networks located?

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- Where are potential land mines and other hazards of war located? (Based on Bouchardy. 1995. 6-7: Wood. 2000. 30-31).

(See Appendices 9 and 10 indicatig services within Kosovo Polje and the layout of a refugee camp with attention given to the location of health services.)

As such, refugee camp managers will operate cautiously if they determine that the refugee camp population density is high, because if it is coupled with a high local population density. there is the potential for conflict and/or environmental degradation. Furthermore. knowing whether or not the camp is accessible (distance from airports. cities, and road conditions) facilitates the distribution of basic supplies. As Wood (2000. 31) explains, during a CHE food can and is used as a weapon of war and a means of controlling populations. Militias hijack relief trucks, kidnap relief workers and steal food (Kanter, 1995: Wood, 1996, 2000). In such cases, GIS can be used to plan safe routes. locate illegal militia checkpoints, determine ceasefire lines, and delineate suspected landmine fields (Wood, 2000, 31). For examples of the maps used for such analysis refer to Appendices 11 and 12. The first is a map of the Kosovo Polje transportation network. that can be used for safe route planning. Appendix 12 reflects the magnitude of the attention given to mine awareness programmes which are divided by the agency responsible for each programme.

The mapping unit also uses satellite imagery to support the protection and assistance initiatives. According to Bouchardy (2001) "space maps". although limited when there is cloud coverage, are useful when there is inadequate information from the field. The UNHCR unit has extensive expertise in the use of satellite imagery and has used data from a variety of satellites, including SPOT. Landsat, IRS-1D. KVR-1000.

Ikonos. Radarsat and ERS 1 and 2 (Bjorgo, 2002, 10). Satellite imagery is yet another tool used to calculate the refugee population of an area and map the camp arrangement. For example, a refugee camp in Nepal was imaged at one-meter resolution using an Ikonos image (see Figure 3 below). At this resolution, the level of detail (individual shelters, narrow streets and paths and small rivers) is useful for camp planning and detailed environmental assessments (Bjorgo, 2002, 9).

Figure 3: Ikonos image of Beldangi refugee camp in Nepal
Source: Bjorgo, 2002, 9

4.6 Kosovo

The Development of a GIS system in UNHCR for environmental, emergency, logistic and planning purposes report (Bouchardy, 1995) emphasises the development of an environmental database as a tool for UNHCR activities in cooperation with other international/national agencies and other partners. Four years after the report was written the UNHCR instituted the idea set out in the report. As we have already seen, the use of GIS is not new to the UN, but it was implemented in an ongoing crisis for the first time in Kosovo. The idea behind the introduction of GIS for humanitarian purposes was the need for an efficient means of organising and sharing information among the various organisations operating in the region. While humanitarian and security agencies were

collecting data for their own purposes. each also had a need to know some of the information collected by the other (Smith, 2000). Its principal use was to support the work of the UNHCR in areas of contingency planning, emergency response, care and maintenance and repatriation/rehabilitation (Bouchardy, 2000).

As widespread violence erupted in Kosovo in 1998 a GIS package was already developed and used by the UNHCR and the Kosovo Verification Mission (KVM) as a means of data sharing (Wood, 2000, 25). KVM employed GIS to map the location of reported landmines, booby traps and checkpoints while the UNHCR surveyed housing damage and the location of internally displaced persons (Dziedzic and Wood, 2000). See Appendix 13 for a map showing the events leading to new population displacements between December 1998 and March 1999.

4.6.1 Creation of the Kosovo database

The geographic database used in Kosovo had two components. One was created before the crisis and the other during the crisis (Bouchardy, 2000; Smith 2000). The first component of the GIS project responds to Urquhart's (1992, 53) argument regarding the need for pre-crisis planning and organisation to avoid the necessity of starting almost from scratch in each new emergency. In most cases, advanced planning is a luxury for NGOs and international organisations which have limited resources and staff, but the early set-up of the GIS in Kosovo allowed the UNHCR to respond effectively to the crisis once the North Atlantic Treaty Organisation (NATO) launched the air strikes on March 24, 1999 (Bouchardy, 2000; US Institute for Peace, 2000).

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The baseline data (topography, roads, place names, administrative units, etc) of Kosovo was developed by the US National Imagery and Mapping Agency (NIMA) and was designed for wide releasability, using a commercial GIS standard (Dziedzic and Wood, 2000; Smith, 2000; Wood, 2000). NIMA's efforts resulted in the creation of an electronic gazetteer of over 1.500 place names in both Serbo-Croatian and Albanian, along with their coordinates (Dziedzic and Wood, 2001). For more information on the Kosovo Gazeteer see Appendix 14. Place-specific data for Albania were also developed with information obtained from various sources including the Geo Comp Company (Bouchardy, 2000).

UNHCR also contributed to the creation of the initial database by including the information at its disposal such as census data, ethnicity breakdowns and other information gathered by various sources such as Former Yugoslavian Republic (FYR) censuses for Kosovo (1981 to 1991) and from local GIS companies (Bouchardy, 2000) (see Appendix 15: ethnicity breakdown around Gnjilane). This survey represented the first attempt of the international community to address and recognise the importance of baseline data in improving its assistance programmes (Bouchardy, 2000).

During the second phase of the crisis, the need for information exchange became critical. Additional baseline data on refugees, Internally Displaced Persons (IDPs), assistance, shelters, etc was gathered by UNHCR partners who were provided with a simple database structure in order to make easier and faster the work of the teams who would be using low-tech means such as clipboards and pens for the data collection (Bouchardy, 2000; Smith, 2000). For example, the form that field teams carried with them was designed to correspond directly to the structure of the relational database into

which the information would be entered for compilation (Smith, 2000). This effort was "nurtured by a multi-agency Geographic Information Support Team (GIST), composed of key UN agencies and the Office of Foreign Disaster Assistance (OFDA)" of the U.S. Agency for International Development (USAID) and served as a precursor to the HCIC (Dziedzic and Wood, 2000).

As the exchange of information was furthered by the efforts of the GIST certain issues appeared. For example, only a few agencies possessed an operational GIS capability; certain UN and volunteer aid workers had to be trained; while some individuals and organisations were not willing to try the new technology (Bouchardy, 2000; Smith, 2000). To add to the problem, these tasks were accomplished at the same time as the mass exodus of the summer of 1999. The establishment of HCIC became critical and fulfilled its role effectively. GIS activity at this time encompassed camp layout and infrastructure planning, as well as database development and population monitoring. The centre also developed as a natural link between the Humanitarian Coordinator's office (the UNHCR) and the humanitarian aid agencies. Furthermore, it supported the coordinator in his role by providing information support and a channel for humanitarian concerns to be raised and addressed (UNHCR, 2000e). Finally, the HCIC database was included in the ReliefWeb site on the internet, allowing decision-makers around the world to follow the crisis.

Another problem that had to be overcome was the creation of a common geocoding system, in order to make the sharing of data possible (Bouchardy, 2000; Smith, 2000). P-codes "became a standard for use by most of the humanitarian actors, permitting datasets with different sectoral information to be easily linked and shared

among the humanitarian community" (King and Dilley, 2001). The first two digits of the code represent a municipality code and the last three are assigned sequentially, based on the number of villages in the municipality (Miner, 1999). In addition, "the p-codes make it possible to integrate and map information that would otherwise be difficult to associate" (Miner, 1999). See Appendices 16 and 17 for an example of a map with P-codes and the associated Serbian and Albanian village names. Appendix 16 also shows how the P-codes were used, with information on the assistance convoys sent to each village and reported housing damage. The efforts in the development of p-codes and standards for the gathering and dissemination of information were also taken into consideration during the Symposium on Best Practices in Humanitarian Information Exchange (Symposium on Best Practices in Humanitarian Information Exchange: Final Report, 2002, 17), where participants noted the efforts of the HCIC in Kosovo. More specifically, the report states that the survey standards developed in Kosovo allowed all agencies involved to use a common template to gather information across a variety of sectors and create supports that were then distributed to the humanitarian community on line and on CD-ROM for use as baseline data.

4.6.2 GIS contribution in Kosovo

"Technology is a means to an end, and not an end itself" (Symposium on Best Practices in Humanitarian Information Exchange: Final Report, 2002).

The previous chapter introduced four problems with current humanitarian aid: relief coordination, timely provision of aid, protection of refugees and the respect of refugees and their cultures. Using the Kosovo Independent Evaluation of UNHCR's

<u>Emergency Preparedness and Response</u> (Suhrke et al. 2000), it was determined that the refugee camps in Kosovo experienced fundamental management problems. The same problems were also observed in other camps around the world, making the search for an effective solution an urgent matter for the OCHA and its partners. Having established how the GIS database for Kosovo was created, this thesis now goes back to the four problems and investigates how GIS contributed to the better management of the CHE and the refugee camps.

4.6.3 Relief Coordination

The Geographic Information Systems' capability for interdisciplinary analysis became its most notable contribution in Kosovo, especially in regards to civil-military cooperation. The two entities usually have different mandates and goals which often make cooperation difficult. In Kosovo, the UNHCR believed that NATO's mission was political and thus chose to lessen cooperation and maintain a neutral role. Also, NATO did not consult with the UNHCR on issues that affected the UNHCR, partly because the agency was not prepared for the crisis and thus had little choice but to accept its limited role in the emergency (Suhrke et al. 2000, 114).

However, both organisations know that "without information sharing civilian and military operations become disjointed and thereby negatively affect the well being and safety of crisis victims" (Wood, 2000, 24). In fact, there is an inducement for collaboration

> because civilian organisations routinely gather and maintain a range of
> vital data while the military contingent is often the most likely source for
> other information essential to security (Dziedzic and Wood, 2001).

While Suhrke et al. (2000) describe civil-military cooperation as problematic others, such as Bouchardy (2000) and Dziedzic and Wood (2000) disagree. In fact, because both agencies use GIS to improve their preparedness and responsiveness to complex emergencies, their close cooperation improved their respective computer-based information management capabilities (Wood, 2000, 29). Furthermore, the coordinated efforts between UNHVR and KVM in 1998 in maintaining public security prove that the two agencies can work together.

It is also important to mention the HCIC's role in furthering cooperation and its contribution to the better organisation of each actor's role in the CHE. Through the centre, NGOs and other groups were able to exchange information as a beginning to better cooperation in the future. Problems such as competition for media attention and funds are not solved with technology – these are ethical and inter-organisational problems. However, the sharing of data and the cooperation demonstrated by all parties in the creation of the Kosovo GIS database is a strong step towards better coordination practices.

Still, the independent evaluation team (Suhrke et al., 2000, 72) disapproves of the UNHCR's performance as the lead agency during the Kosovo CHE. Coordination goes beyond the sharing of databases and requires proper planning, monitoring and allocation of responsibilities. UNHCR had a limited presence, and was not able to supplement the information received from agencies working in the field. This lack of presence also takes away the credibility of the database created because there was a lack of supervision over data gathering activities. Regarding data gathering and data quality, Bouchardy (2000)

observes that during a CHE, the need for information on which responses are organised is not always compatible with the quality of the data.

> However, quality is fundamental if agencies are to have confidence in the information at their disposal. Needless to say, bad or inconsistent data can lead to errors of interpretation and judgment in decision-making. (Bouchardy, 2000)

Furthermore, the duplication of activities, criticised in Kosovo as well as in other CHEs around the world was not solved by the use of GIS. Although the Kosovo Encyclopaedia provided detailed information about each emergency actor's activities, the database was not used effectively. As a result, there are example of duplicate cash projects for host families (from the Swiss and the UNHCR); other cases where three health agencies served one refugee camp of 1500 individuals while other camps lacked health services; and other instances where one donor surveyed a site and rejected it while another, unaware of the rejection, subsequently accepted the same site (Suhrke et al; 2000, 79).

4.6.4 Timely provision of aid

In any case where refugees live in fragile environments, the timely provision of aid includes the anticipation of bad weather. Knowledge of weather patterns such as droughts, heavy rainfall, snow, and warm or cold temperatures becomes critical. In the case of Kosovo, the expectation of a cold winter worried aid providers. GIS was used in order to identify priority areas based on factors such as refugee numbers, access to sites, climate and elevation (Bouchardy, 2000). More specifically, climatic data, obtained by the Albanian government, was used to create a map of temperature and rainfall

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distribution throughout the year. This data was then combined with datasets indicating populated areas and refugee camps (Bouchardy, 2000) (see Appendices 18, 19, 20 and 21 for examples of winterisation scenarios and cost projections). Furthermore, the database of refugee locations became an essential tool for UNHCR's day-to-day activities such as water distribution and waste disposal.

However, UNHCR's contribution to the camps was limited compared to other actors, such as KFOR, that had effective emergency planning. For example, the majority of UNHCR tents did not arrive until July, far too late to be of use in the CHE (Suhrke et al, 2000, 69). On a similar note, while Wood (2000) encourages the use of GIS for logistic purposes (in this case, planning distribution routes), rapid delivery of key items was a problem in Kosovo, with delivery trucks being delayed for more than 2 weeks at the Albanian border (Suhrke et al, 2000, 69). The information included in the Kosovo database - roads, names of villages, location of rivers, relief, location of landmines - offers the possibility of planning the arrival, delivery and distribution of aid.

The Rapid Village Assessment (RVA) was also part of the activities relating to the provision of aid and winter preparations. Here, GIS was used for an assessment of basic needs and identifying gaps in aid to damaged communities (Miner, 1999). Using the p-codes and information provided by field offices across Kosovo, covering 1190 villages by the end of 1999, the UNCHR was able to determine which villages were not receiving aid (Bouchardy, 2000). Among the positive outputs of the RVA programme were the graphic displays of the data presented to the public and to other actors that needed the information to plan for future relief efforts (Smith, 2000).

<u>4.6.5 Protection in the camps</u>

Harrell-Bond (1986, 175) has identified the need for accurate anticipation of each wave of arrivals, for refugee protection purposes as well as for short and long term planning of the camp. The UNHCR specifies in its emergency handbook (2002, 121) that entry or transit points during a refugee influx have to be identified and staff posted in order to count the number of people passing these points on a daily basis. This guideline was followed in Kosovo. GIS analysis of cross border refugee flows assisted decision-makers in documenting a systematic pattern of forcible expulsions of ethnic Albanians from their communities and in identifying potential escape routes and local consequences (Wood, 2000, 27).

Unfortunately, reports on the movement of thousands of refugees did not contribute to an effective preparation to assist them. The camps were located too close to the Kosovo border, putting the refugees' and emergency staffs' lives in danger. Among the risks that refugees faced was the incursion of Kosovo Liberation Army (KLA) fighters for recruitment of new troops. In other cases refugees lived too close to the line of fire between KLA and Serb forces (see Appendix 22: refugee camp locations within Albania). Again, the database had information that could have been used for the protection of refugees.

Protecting refugees is not limited to the refugee camps. Late in the summer of 1999, the UNHCR and NATO had to find safe routes for the 800,000 Albanian refugees that began the process of returning home (Wood, 2000, 27) (see Appendix 23: number of refugees per camp in Albania and Appendix 24: main routes in Albania, used for repatriation scenarios). Going back to the RVA, GIS was used to locate dangers such as

damaged dwellings, abandoned farms and landmine fields. In fact. GIS-based data collection and dissemination on landmines and unexploded ordnance became a priority for repatriation-related activities (Wood. 2000. 27).

4.6.6 Respect of refugees and their cultures

There are no reports concerning the respect of refugees and their cultures in Kosovo. However. Hyndman (2000. 121) believes that the use of technology for the management of refugee camps is probably a useful management and surveillance tool but it does not respect the refugees. In fact technology enacts controversial relations between refugees and humanitarian agencies because the medium does not allow for a close relationship between aid givers and the refugees. While the UNHCR Handbook for Emergencies (2002) encourages refugee participation in the every day running of the camp (bottom-up approach), technologies such as GIS require a top-down approach. Moreover. as Barbara Harrell-Bond (1986) observes. outsiders view refugees as helpless. as needing outsiders to plan for them and take care of them. The greater use of technology such as GIS only affirms these views. If the UNHCR considers Hyndman's comment. the agency should be ready to implement policies directly affecting and limiting the use of GIS and other technologies in the camps.

The integration of GIS in Kosovo represents a positive first effort in partly solving the four humanitarian aid problems identified here. The best results of the HCIC and the GIS programme are at the large and medium scales as well as before the CHE. There were problems with the rapid assessment of the situation but relative success for the coordination of relief activities. The civil-military cooperation between the UNHCR

and KFOR demonstrates that provided with the right tools it is possible for two different agencies to work together towards the same goal: protect the refugees. The GIS programme also encouraged NGOs. the UNHCR and the military to share information in an efficient and effective manner. Indeed through the neutrality of the HCIC. most of the groups involved in the CHE relief efforts had access to valuable information. allowing them to properly and safely complete their activities.

CHAPTER 5: Conclusions and Policy Recommendations

This research has presented Geographic Information Systems as a potential tool within the UNHCR for Complex Humanitarian Emergency planning and management purposes. As the literature reviewed suggests, CHEs are a serious concern to the international aid community and to the UNHCR, which is usually the first to respond to a crisis. Findings have shown that GIS is a useful tool in logistics management, in encouraging cooperation between relief aid agencies and in refugee camp management. The fact that GIS was used in the Kosovo complex emergency suggests that the UNHCR is ready and willing to continue the use of the technology in future CHEs. This is a departure from the agency's traditional field work methodology (pen and paper) and an embrace of a new tool that has also changed the agency's emergency procedures. These are the results of this study.

With respect to CHEs, the potential for further turmoil in many parts of the world is real. As long as the Less Developed Countries experience low economic development, a breakdown of authority, illegitimate governments and unsettled racial differences, complex emergencies will occur. The Kosovo crisis has demonstrated that CHEs are not limited to the Third World and that hostilities between ethnic groups and human rights violations can occur in parts of the developed world as well. In this case, the emergency in Kosovo could have resulted in greater turmoil in a traditionally unsettled part of the globe: the Balkans. Accepting the reality of further political and economic instability and faced with the obligation to provide help to over 22 million children, women and men, the humanitarian aid community is prepared to find new ways of responding to ongoing crises.

At the heart of the CHE definition used by the international aid community lies the idea of "an international response that goes beyond the mandate or capacity of any single agency and/or the ongoing UN country programme". Indeed, the resolution of the crisis is as complex as the emergency itself. Response to complex emergencies requires the involvement of numerous groups and organisations such as local government agencies, the UN, the Red Cross, Médecins Sans Frontières and hundreds of NGOs are active in providing refugees with basic services. As the Dushi family experienced, in this plethora of aid staff, problems abound while refugees are still left with inadequate assistance.

First, there is a substantial lack of relief coordination. There are concerns about standards and the services of inexperienced organisations, as well as difficulties tracking and coordinating agency activities. Competition between agencies for media attention and public funds further complicates the problem because it reduces cooperation between emergency aid providers. In Kosovo, there were reports of uncoordinated meetings, where donors, inter-governmental organisations and UN agencies were unsuccessful in sharing relevant information.

Nevertheless, the UNHCR, along with its partners, including NATO, succeeded in creating a common GIS database and in gathering and incorporating new geospatial information on a regular basis. In fact, this thesis has demonstrated how the HCIC encouraged NGOs and other actors to exchange data through the centre's database and use it to their advantage. There might have been some unsuccessful meetings, but the HCIC was a meeting place for anyone who needed valuable information. Furthermore,

the p-codes developed by the GIS team simplified the exchange of datasets with different sectoral information.

Second, proper food and water needs assessments are key elements for the timely provision of aid. Local resources have to be considered as much as possible in order to provide refugees with familiar foodstuffs. The camp thus needs to be located near arable land (for agriculture), and be accessible by road (for food distribution to the camp). It is equally important for the refugee camp to be located near a fresh water source. Water is not only needed for consumption but also for cleaning, for livestock, for the actual construction of the camp and even for agricultural purposes. When these basic needs are not properly covered, as was the case in Kosovo and in many other refugee camps around the world, refugees are stressed and their well being is in danger.

Unfortunately, although valuable information was accessible GIS did not solve all difficulties related to aid distribution. There was a duplication of activities, resulting in a loss of time, staff and funds that could have been used effectively for other projects. Moreover, logistical problems hampered efforts in providing refugees with basic necessities (food, water, shelter). Most tents arrived towards the end of the conflict, delivery trucks were delayed at border crossings and many IDPs were never reached by aid teams, even though the GIS team had a map of their location and situation.

Third, camp location is important to consider when ensuring the safety of the refugees. Many of them have experienced war first hand, seeing relatives killed or kidnapped. When the refugee camp is located too close to the border where fighting occurs, lives are put at risk. In Kosovo, the establishment of safe camps was rendered difficult by FYR Macedonia's reluctance to let the refugees within its borders. However,

available information was misused in Albania, where camps within were located too close to the fighting. A medium scale map of the border area would have assisted in establishing the camp at an acceptable location by taking into consideration relief, water availability and safe distance from the border.

Respecting refugees and their cultures is the last humanitarian aid issue identified by this thesis. The UNHCR Handbook for Emergencies (2002), encourages camp planners to respect the refugee's cultures and promotes community-based layouts, like the one proposed by this thesis. These layouts provide refugees with a more humane environment, often reflecting their traditional life style, based on the family and close community relations. Furthermore, the grid layouts discourage the participatory approach advocated by Harrell-Bond (1986) and Handelman (1996) which implicates the refugees in the every day running of their camp.

In sum, this thesis has demonstrated that there is a considerable potential for GIS within the world of CHEs. The technology's strongest contribution is in the exchange of information between agencies, UN headquarters, the media, and even the public in general. It is the technology's ability to display a digital map or an image, that can be analysed and its message easily conveyed to decision makers and other interested parties that make GIS an interesting tool for the management of CHEs. There was also success with the large and medium scale maps used for logistic purposes during the crisis and for establishing safe routes during repatriation at the end of the conflict.

Further research is required in order to implement GIS in the everyday operations of the refugee camp. Is a large scale map at 1:10,000 or 1:15,000 scales with its location-specific information is suitable for camp management purposes? Such maps enable camp

administrators to plan the camp lay-out as well as the location of services and distribution points, but is it an effective tool at this scale?

Although GIS is a useful tool it was not used to its maximum capacity in Kosovo. Many NGOs were not involved in the collection and dissemination of the information, while others lacked the training to effectively use the technology. In other instances, having the information or the maps did not mean that it was effectively used. That is the case of the GIS analysis of cross border refugee flows: the aid providers were not ready to help the thousands of refugees that crossed the borders. Furthermore, the camps were located too close to the borders, placing the refugees and staff in a dangerous situation. In sum, having a technology on hand does not mean that all the problems are solved. Taking the findings of this thesis into consideration, here are some policy recommendations.

5.1 Policy Recommendations

In the Kosovo case, the UNHCR and its partners had the advantage of working with a base map that was created before the crisis began. The pre-crisis planning and organisation allowed the agencies to respond to the CHE as soon as NATO launched its air strikes. Information such as the location of landmines, booby traps and checkpoints were immediately included on the base map. The UNHCR also contributed data at its disposal such as population data and ethnicity breakdowns. This information is often a luxury that humanitarian aid organisations do not have. In most cases, they arrive in the field with little or no information on the refugees and the area where they have settled.

Is it possible to have base maps such as the one used in Kosovo produced routinely for all CHEs? The answer to this question is not certain. Kosovo and the Balkans have the advantage of being one of the regions of the world in which the United States and the European Union have political interests. This interest along with the renewed violence in the Balkans in the 1990s supports the idea that the international community was expecting another crisis in the area and were preparing for the next CHE. This is not the case for non-politically strategic areas. If the UNHCR wants to fully implement GIS within its operations, it will have to increase efforts in creating Kosovo-like base maps for the regions of the world that are currently experiencing troubled economic and political situations.

What about sensitive data? And what happens when data is not available? In Chapter Four we briefly discussed the problem of restricted, unreliable or unavailable information. Indeed some governments do not allow access to information that they regard as sensitive, or even manipulate the data in order to hide the real situation. In order to overcome such issues, the UNHCR should increase efforts in setting up programmes such as PopMap and ORCI in order to have ownership of a greater number of useful datasets. The agency also has to establish what price it is willing to pay for the data it requires to complete its projects. Obtaining databases can be and is expensive. Alliances with US government agencies such as those involved in Kosovo become key sources of valuable information and professional assistance. One solution is to encourage more small and medium scale projects in order to minimise reliance on questionable sources.

Moreover. the training of staff is important if the UNHCR and its partners want to further integrate GIS in their activities. Staff needs to learn what GIS is and what type of analysis can be helpful to them. They also have to learn how to properly gather information and how to interpret the maps that they create with GIS. Training of staff and the integration of GIS in relief operations are difficult to accomplish for a number of reasons. In each CHE the UNHCR deals with different groups. Unlike the Red Cross or Médecins Sans Frontières. many NGOs are created to respond to one specific emergency. Training the NGO volunteers would require time and money that the UN does not possess. A centre such as the HCIC would never reach its maximum capacity because there would always be agencies that cannot contribute to or use information that is the raison d'etre of the centre.

Finally. the UNHCR has to establish operational policies. similar to the ones proposed by the Symposium on information exchange and the Unites States Institute for Peace. in order to facilitate future use of GIS technology in the field. Although the UNHCR Geographic/Mapping unit has established a specific role for itself within the UN and during a CHE. specific policies concerning the mapping unit need to be developed. The 1995 report by Bouchardy (1995) is the only one that sets-out a trajectory for the development of the unit. The unit's role in the gathering and disseminating of information as well as in the GIS-based analysis of its databases has to be updated to meet current and future needs. This will allow the Geographic/Mapping unit to further its efforts in developing GIS to meet the purpose and goals of the UNHCR in the management of CHEs. Furthermore. in order to remain competent. the unit requires ongoing training and access to updated GIS software. The use of GIS for early warning

purposes also needs to be considered. Information is being gathered around the world regarding human rights violations, war, disease, hunger, environmental degradation etc. As portrayed by some of the programmes discussed in this thesis, such as HURIDOC and ORCI, there are potentially important databases that should be integrated in spatial databases in order to avert, as much a possible, human suffering.

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APPENDICES

Appendix 1: The Epic of Kosovo

A grey falcon spread its wings and flew from Jerusalem to the field of Kosovo. It carried a book from the Mother of God to Tsar Lazar, who was preparing his army to defend Serbia against attack by the Turks. The falcon dropped the book on the Tsar's knees, and it began to speak by itself:

'Honourable Tsar Lazar, what Kingdom will you embrace now? Is it to be the Kingdom of Heaven or the Kingdom of this world? If you choose the earthly one, saddle your horses, tighten their reins, gird on your swords. Let all your knights rush together among the Turks. All the Turkish invaders will perish by your hands. But if you choose the Kingdom of Heaven, then build a church on the field of Kosovo, not with marble but with pure silk and brocades, and let your knights take Holy Communion in it. For they shall die, and you, Prince, will die with them.'

When the Tsar read these words, he beseeched God for advice: 'O Almighty Lord, what Kingdom shall I choose? Shall I choose a heavenly kingdom, or shall I choose an earthly kingdom? If I choose an earthly kingdom, it will last only for a short time, but a heavenly kingdom will last through eternity.' So the Tsar chose a heavenly kingdom. He built the church in Kosovo of silk and brocades, and summoned the Serbian Patriarch and his twelve bishops to come. Then he gave his soldiers the Eucharist and their battle orders. In the same hour the Turks attacked Kosovo.

Tsar Lazar rushed among the Turks with his seventy-seven thousand men, and chased across the vast field of Kosovo. They were so fiery and brave that it seemed as if

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they would carry the day. And so they would have, but for Vuk Brankovic, the Tsar's son-in-law, who betrayed him and joined the Turkish side. So the Tsar perished, and with him all his soldiers, the seventy-seven thousand Serbs. All was holy, all was honourable, and the goodness of God was fulfilled.

Source: Zimmermann, 1998, 3

Appendix 2: Basic Refugee Standards

A) Refugees and asylum seekers should not be penalised or exposed to any unfavourable treatment solely on the ground that their presence in the country is considered unlawful: they should not be subjected to restrictions on their movements other than those which are necessary in the interest of public health and public order:

B) They should enjoy the fundamental civil rights internationally recognised, in particular those set out in the Universal Declaration of Human Rights:

C) They should receive all necessary assistance and be provided with the basic necessities of life including food, shelter and basic sanitary and health facilities: in this respect the international community should conform with the principles of international solidarity and burden-sharing.

D) They should be treated as persons whose tragic plight requires special understanding and sympathy. They should not be subjected to cruel, inhuman or degrading treatment:

E) There should be no discrimination on the grounds of race, religion, political opinion, nationality, country of origin or physical incapacity;

F) They are to be considered as persons before the law, enjoying free access to courts of law and other competent administrative authorities:

G) The location of asylum seekers should be determined by their safety and well-being as well as by the security needs of the receiving State. Asylum seekers should, as far as possible, be located at a reasonable distance from the frontier of their country of origin. They should not become involved in subversive activities

against their country of origin or any other State;

H) Family unity should be respected;

I) All possible assistance should be given for the tracing of relatives;

J) Adequate provision should be made for the protection of minors and unaccompanied children;

K) The sending and receiving of mail should be allowed;

L) Material assistance from friends or relatives should be permitted;

M) Appropriate arrangements should be made, where possible, for the registration of births, deaths, marriages;

N) They should be granted all the necessary facilities to enable them to obtain a satisfactory durable solution;

O) They should be permitted to transfer assets which they have brought into a territory to the country where the durable solution is obtained; and

P) All steps should be taken to facilitate voluntary repatriation.

Source: UNHCR, 2002, 14

Appendix 3: Operational Principles for Humanitarian Information Exchange

Accessibility: Humanitarian information and data should be made accessible to all humanitarian actors by applying easy-to-use formats and by translating information into common or local languages when necessary. Information and data for humanitarian purposes should be made widely available through a variety of online and offline distribution channels, including the media.

Inclusiveness: Information management and exchange should be based on a system of collaboration, partnership and sharing with a high degree of participation and ownership by multiple stakeholders, especially representatives of the affected population.

Inter-operability: All sharable data and information should be made available in formats that can be easily retrieved, shared and used by humanitarian organisations.

Accountability: Users must be able to evaluate the reliability and credibility of data and information by knowing its source. Information providers should be responsible to their partners and stakeholders for the content they publish and disseminate.

Verifiability: Information should be accurate, consistent and based on sound methodologies, validated by external sources and analysed within the proper contextual framework.

Relevance: Information should be practical, flexible, responsive, and driven by operational and decision-making needs throughout all phases of a crisis.

Objectivity: Information managers should consult a variety of sources when collecting and analysing information so as to provide varied and balanced perspectives for addressing problems and recommending solutions.

Humanity: Information should never be used to distort, to mislead or cause harm to affected or at-risk populations and should respect the dignity of victims.

Timeliness: Humanitarian information must be kept current and should be collected, analysed and disseminated efficiently.

Sustainability: Humanitarian information and data should be preserved, catalogued and archived so that it can be retrieved for future use, such as for preparedness, analysis, lessons learned and evaluation.

Source: Symposium on best practices in humanitarian information

Exchange: Final report, 2002, 12-13.

Appendix 4: Municipalities in Kosovo

Appendix 5: Food Aid Beneficiaries in the Balkans

Appendix 6: Stenkovec I (Brazda) Site Plan
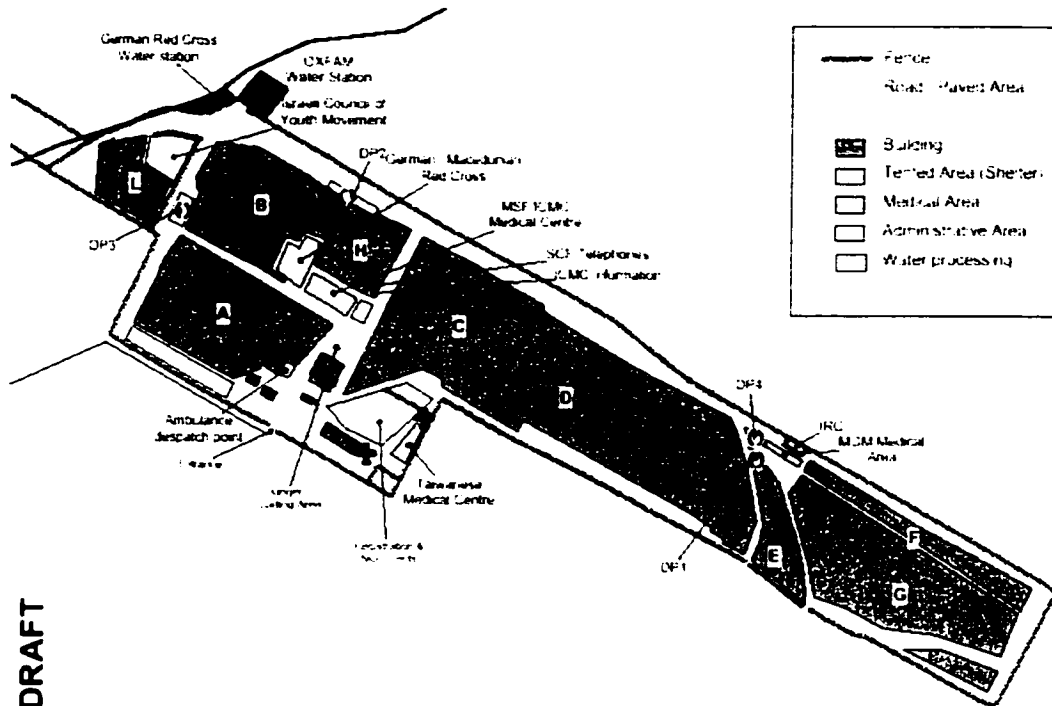
DRAFT

Source: http://www.reliefweb.int/hcic

Appendix 7: FR Yugoslavia (Kosovo) Border Area
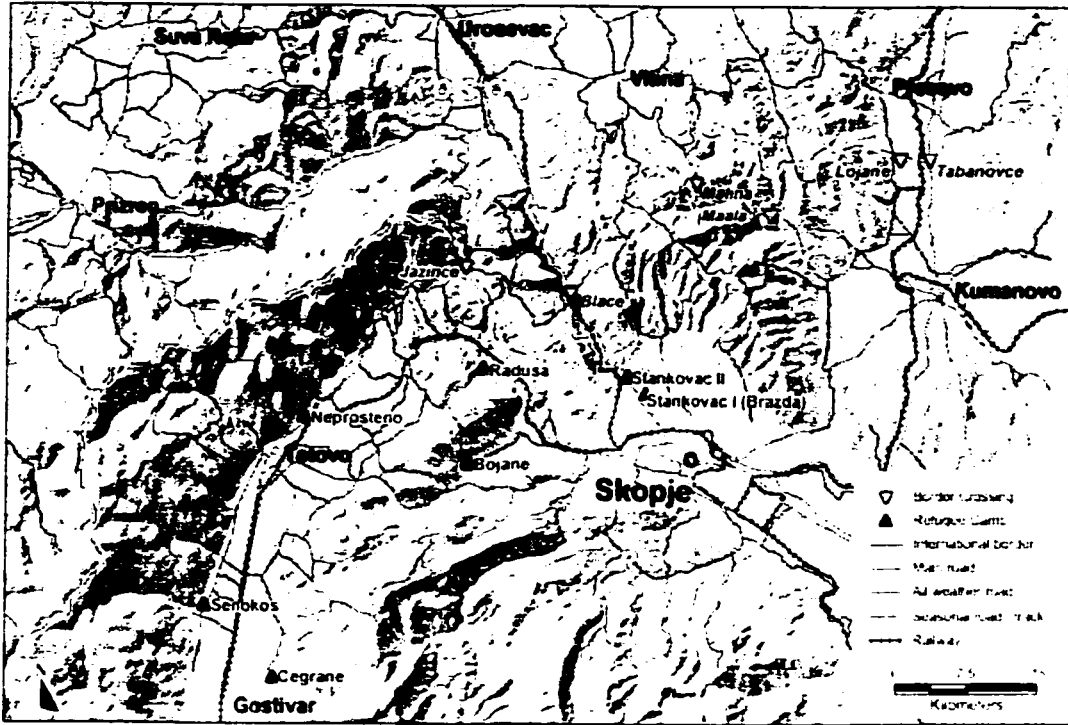
Source: http: www.reliefweb.int here

Appendix 8: Stankovac I & II: Camp Locations
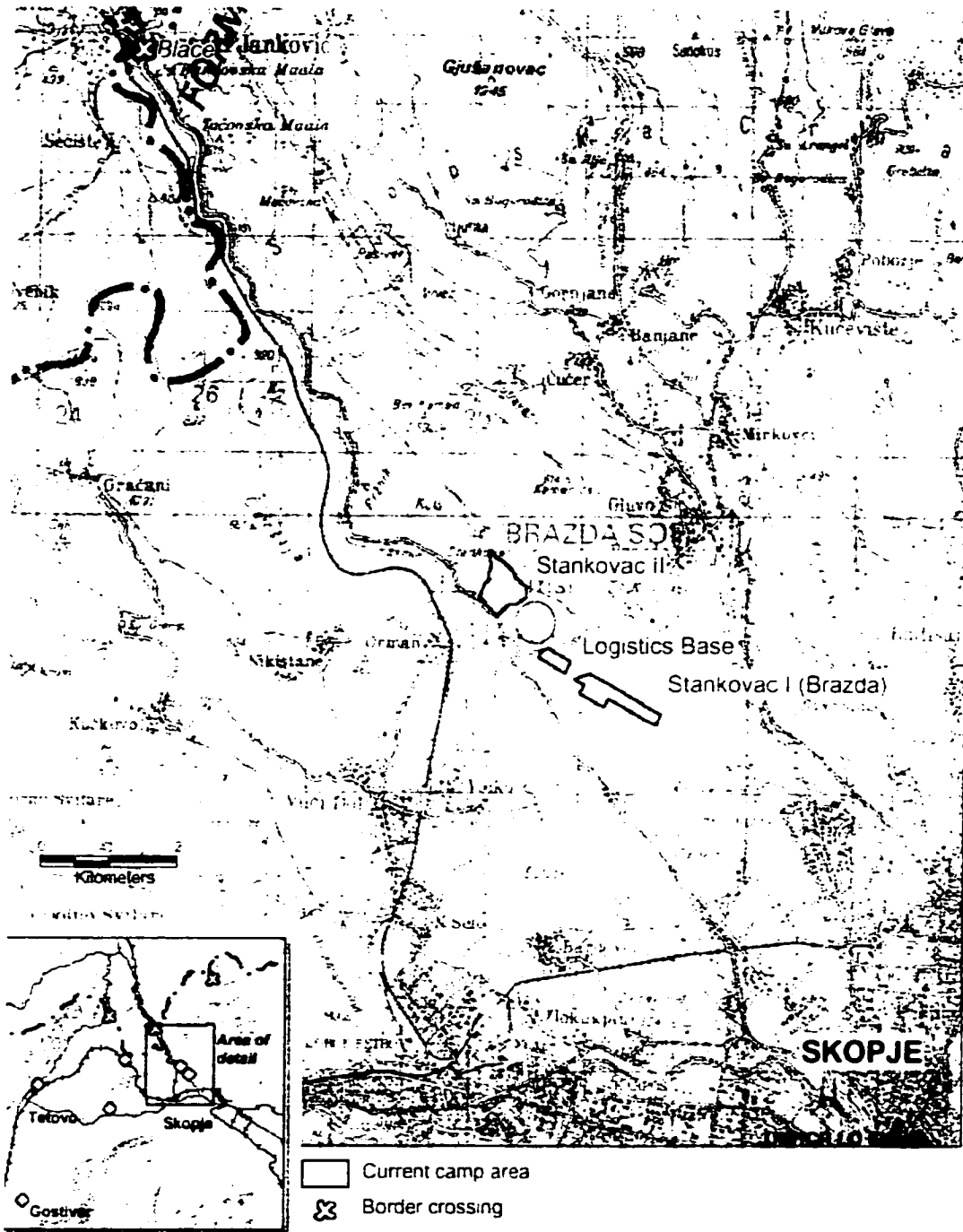
UNHCR GIS Unit Skopje
18 April 1999 • Stankovac Location

Source: http: www.reliefweb.int hcic

Appendix 9: Kosovo Polje

Source: http: www.reliefweb.int hcic

Appendix 10: Stankovac II Site Plan
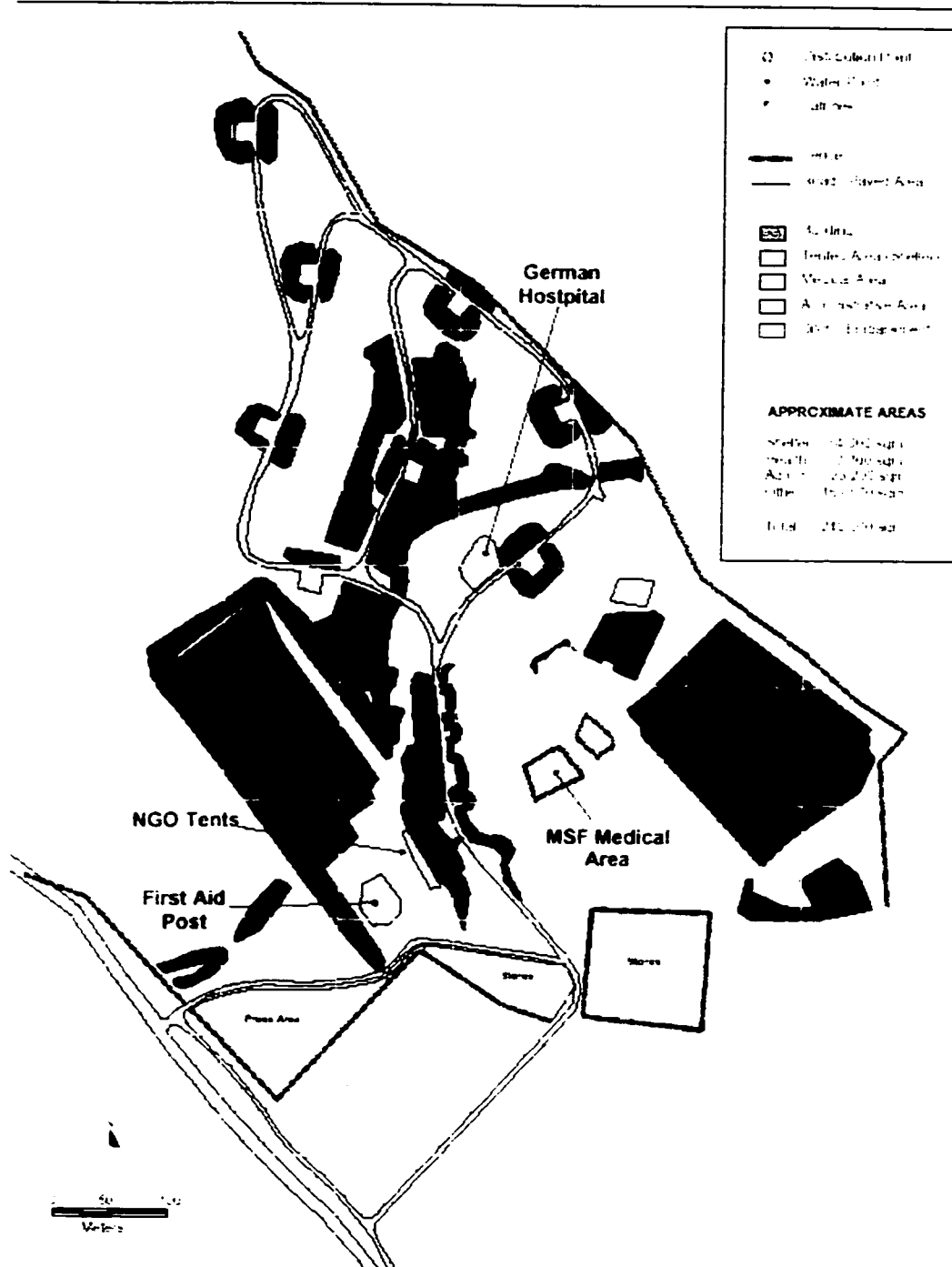
German
Hostpital

NGO Tents

First Aid
Post

MSF Medical
Area

APPROXIMATE AREAS

Appendix 11: Kosovo Polje Routes
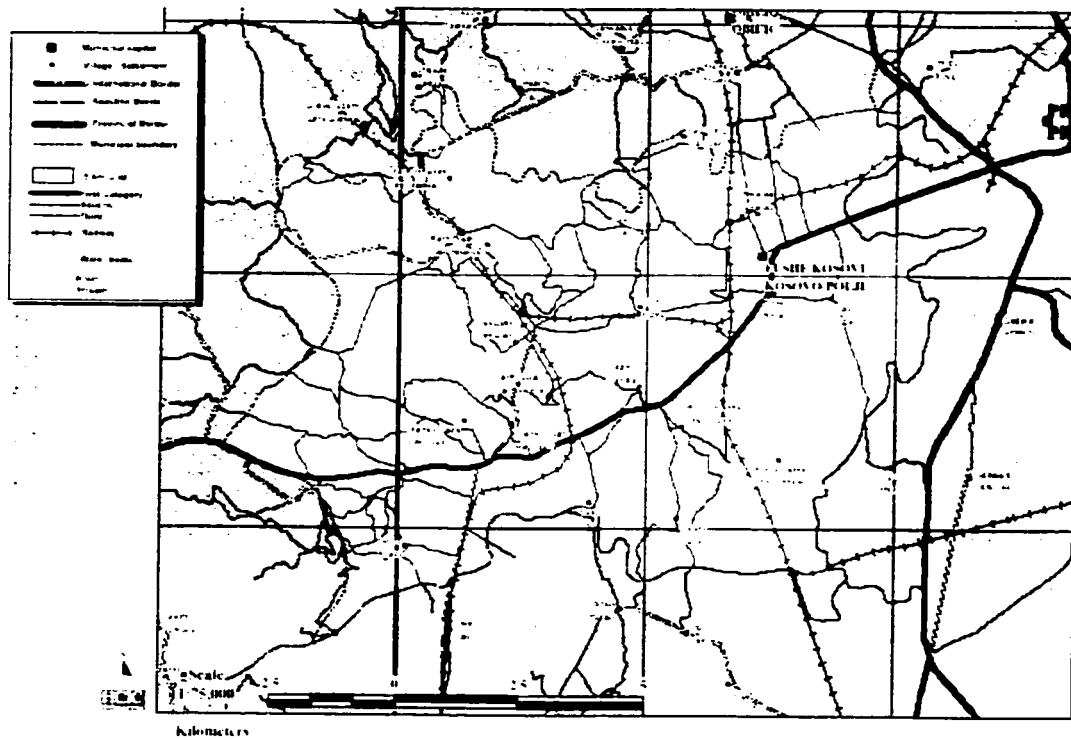
Appendix 12: Mine Awareness
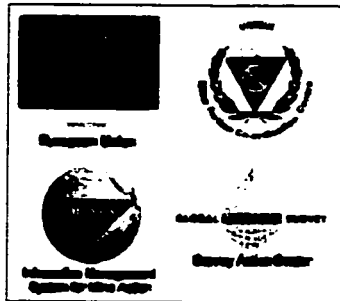
Community Mine/UXO Awareness Program Locations

Appendix 13: Events Leading to New Displacement

Events Leading to New Displacement
24 December 1998 to 8 March 1999

MAJOR EVENTS

MAJOR EVENTS SINCE RAMBOUILLET

Source: http: www.reliefweb.int/hcic

Appendix 14: Kosovo Gazetteer

Kosovo Gazetteer

This gazetteer accompanies the Kosovo Planning Map. Version 1

Mcode	Albanian	Serbian
01	Deçan	Decani
02	Gjakove	Dakovica
03	Gllagoc	Glogovac
04	Gjilan	Gnjilane
05	Dragash	Dragaš
06	Istog	Istok
07	Kaçanik	Kacanik
08	Kline	Klina
09	Fushe Kosove	Kosovo Polje
10	Kamenice	Kamenica
11	Mitrovice	Mitrovica
12	Leposaviq	Leposavic
13	Lipan	Lipljan
14	Novoberde	Novo Brdo
15	Obiliq	Obilic
16	Rahovec	Orahovac
17	Peje	Pec
18	Podujeve	Podujevo
19	Prishtine	Priština
20	Prizren	Prizren
21	Skenderaj	Srbica
22	Shtime	Stimlje
23	Shtërpce	Strpce
24	Suhareke	Suva Reka
25	Ferizaj	Uroševac
26	Viti	Vitina
27	Vushtrri	Vucitrn
28	Zubin Potok	Zubin Potok
29	Zveçan	Zvecan
30	Malisheve	Malisevo

Settlement — Settlement name in Albanian or Serbian
Mcode — Municipality code (see left)
Grid — Location on Kosovo Planning Map v*
MGRS — MGRS* grid reference accurate to approx 100m

* Military Grid Reference System

Settlement	Mcode	Grid	MGRS	Settlement	Mcode	Grid	MGRS	Settlement	Mcode	Grid	MGRS
Abri e Epërme	12	N15	DN427202	Babimoc	15	S13	EN064323	Bakshi	15	S13	EN686301
Abri e Poshter	21	N15	DN806219	Babin Most	15	S13	EN064323	Baksija	15	S13	EN686301
Ade	15	R15	EN024237	Babq	17	H16	DN521190	Baloban	19	A12	EN263377
Agubia	19	T13	EN391313	Babq	25	J8	DN615571	Baki	25	S21	LM686916
Ajnovce	10	Z16	EN449199	Babaj	25	T20	LM123994	Balance	26	K20	LM300953
Ajvali	19	T16	EN148164	Babljak	25	T20	LM123994	Balc	25	S21	LM686916
Ajvalia	19	T16	EN148164	Babudovice	28	L8	DN703570	Balince	27	P12	DN909396
Al lup	13	U12	EN196161	Babush	13	U19	EN151017	Balince	30	N17	DN825170

Source: http: www.reliefweb.int hcic

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Appendix 15: Gnjilane AOR - Population Breakdown

Gnjilane AOR - Population Breakdown

LEGEND

Municipality Border

Main City

Road

Albanian village/town

Serbian village/town

Mixed village/town

Previously mixed, now all albanian

Predominantly croatian village/town

WFP Pristina - VAM Unit 15 09 99

Data Source: Gnilane WFP Sub-Office

The Boundaries and names used in this map do not imply official recognition by the United Nations

Source: http://www.reliefweb.int here

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Appendix 16: P-codes Village Information

Village Information

Mcode	Pcode2	Albanian	Serbian
02	60013	Abri e Eperme	Gornje Obrinje
21	61125	Abri e Poshtme	Donje Obrinje
07	60125	Adam Mala	Adam Mala
04	61676	Adzini	Adzini
25	61307	Agusovi Mahala	Agusovi Mahala

Assistance Convoys

Mcode	Pcode2	Date	Agency	Blankets	Stoves
03	60012	15-Jun-99	CRS	650	150
21	61125	15-Jun-99	MCI	-	350
21	61125	22-Aug-99	UNHCR	450	-
23	61605	25-Aug-99	MTS	500	250
24	61609	8-Sep-99	MTS	800	200

Housing Damage

Mcode	Pcode2	Survey Agency	Total Houses	Cat1/2	Cat3/4	Cat5
03	60012	World Vision	250	200	32	18
21	61125	IMG	264	14	85	165
07	61096	IMG	194	82	62	50
30	62001	UNHCR	206	16	113	77
29	62034	CRS	85	20	24	41

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Appendix 17: P-codes Lipjan Region Map

Source: http: www.reliefweb.int heie

Appendix 18: Average Minimum Temperature
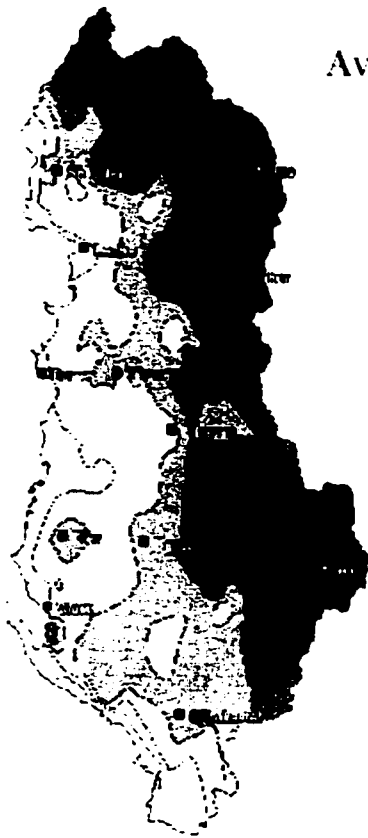
Average Minimum Temperature in December
Based on 30 years of climatological data

Lowest Average
temperature (Celsius)

- Over 6
- 4 to 6
- 2 to 4
- 0 to 2
- -2 to 0
- -4 to -2
- -6 to -4
- Below -6
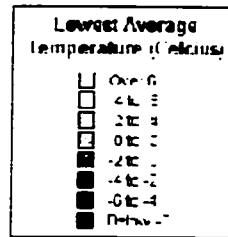
Lowest average temperatures by month

Area	Altitude*	Sep	Oct	Nov	Dec	Jan

* Altitude in metres of weather station

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Appendix 19: Winterization Scenarios
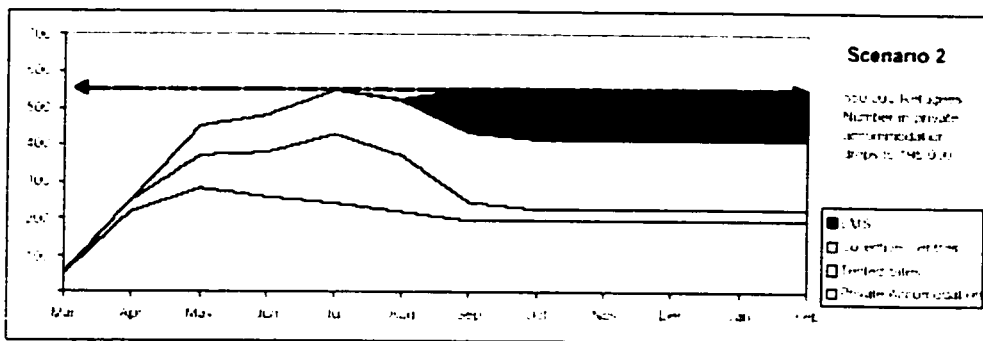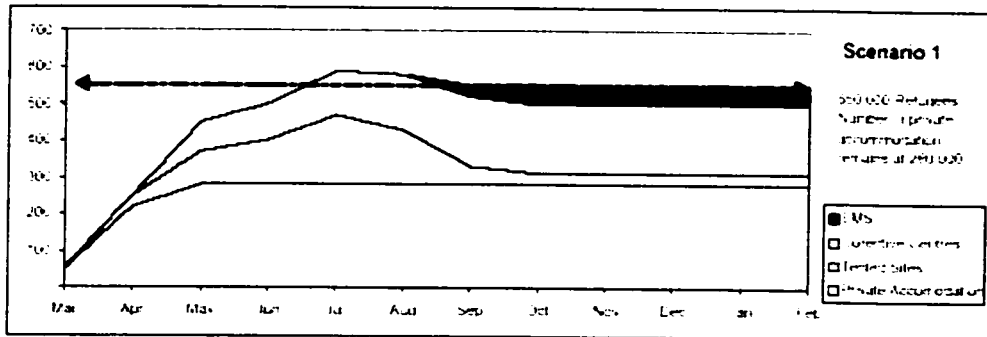
Appendix 20: Cost Projection

Scenario 1

Shelter Type	Refugees	Cost per Refugee ($)	
Private Accommodation	280.000	150	42.000.000
Collective Centres & Tented Sites	190.000	350	66.500.000
Emergency Mobile Shelters (EMS)	50.000	1.500	75.000.000
Winterized Tented Sites	30.000	1.000	30.000.000
	550,000		**213,500,000**

Scenario 2

Shelter Type	Refugees	Cost per Refugee ($)	
Private Accommodation	195.000	150	29.250.000
Collective Centres & Tented Sites	190.000	350	66.500.000
Emergency Mobile Shelters (EMS)	135.000	1.500	202.500.000
Winterized Tented Sites	30.000	1.000	30.000.000
	550,000		**328,250,000**

Shelter cost per additional Refugee in EMS: $1.500

Source: http: www.reliefweb.int here

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Appendix 21: Cost Projection for Range of Refugees

Source: http: www.reliefweb.int heic

Appendix 22: The Largest Camps in Albania (22 May 1999)

UNHCR/MSF
Basjkira
Kukes 1
Kukes 2

Former Airport
Tobaco Factory
Airfield

Shkoder

Pllana

Shuliza

Lezhe

Hamallaj 1
Hamallaj 2
Hamallaj 3

Rrushkuli 1

Spitalle 1

Golem

Warehouse

Tirana

Fushe Labinot

Mjekes

Elbasan

Former
Military
Barracks

Seman

Airstrip

Vlore

Fish Farm

Qatromi

Gjirokaster

Elevation (metres)

2.250

2.000

1.750

1.500

1.250

1.000

750

500

250

100

Legend

▲ Camps

◉ Capital (Tirane)

■ Main town

— Main road

+—+ Railway

UNHCR/EMG GIS Unit
Tirana, Albania
22 May 1999
GTED Overview

Appendix 23: Refugees in Albania (20 May 1999)

	With Host Families	In Tents, CCs and Buildings	TOTAL
Berat	3 026	4 777	7 803
Diber	6 378	7 992	14.370
Durres	40 875	10 242	51.117
Elbasan	12.038	10.185	22.223
Fier	14 523	8 206	22.729
Gjirokaster	856	1.802	2.658
Korce	4 575	9 469	14 044
Kukes	90.516	35 441	125.927
Lezhe	14.152	15.019	29.171
Shkoder	26 991	11 024	38.015
Tirane	75 663	25 939	101.602
Vlore	5.178	11.504	16.682
	294,771	**151,600**	**446,371**

**Total arrival of refugees
in Albania: 450,283**

*All figures from the Ministry
of Local Government*

Refugees in Shelter Sites
and with Host Families

- ■ 75 000 to 101 000
- ▨ 50 000 to 75.000
- □ 25.000 to 50 000
- □ 1 to 25 000

Shelter Sites, Planned Capacity
and Present occupancy

- 60.000
- 30.000
- 6.000

- □ Planned Remaining Capacity
- ■ Present Occupancy

Country boundary
Prefecture boundary

Source: http://www.reliefweb.int/hcic

Appendix 24: Main Routes in Albania

LOCATION CODES			
Berat	BE	Lezhe	LE
Bulqize	BU	Librazhd	LI
Delvine	DE	Lushnje	LU
Devoll	DV	Malesi e Madhe	MM
Diber	DI	Mallakaster	MA
Durres	DU	Mat	MT
Elbasan	EL	Mirdite	MI
Fier	FI	Peqin	PE
Gjirokaster	GJ	Permet	PR
Gramsh	GR	Pogradec	PO
Has	HA	Puke	PU
Kavaje	KA	Sarande	SA
Kolonje	KL	Shkoder	SH
Korce	KO	Skrapar	SK
Kruje	KR	Tepelene	TE
Kucove	KC	Tirane	TI
Kukes	KU	Tropoje	TR
Kurbin	KB	Vlore	VL

CODAN	
Tirane	1250
Kukes	1252
Elbasan	1254
Durres	1255
Fier	(1256)
Shkoder	1251
Airport	1253

PHONETIC ALPHABET	
Alpha	November
Bravo	Oscar
Charlie	Papa
Delta	Quebec
Echo	Romeo
Foxtrot	Sierra
Golf	Tango
Hotel	Uniform
India	Victor
Juliet	Whisky
Kilo	X-ray
Lima	Yankee
Mike	Zulu

Source: http://www.reliefweb.int/hcic