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**The ramifications of economic sanctions  
on health service system:**

**A comparative study of Sudan health service system before  
and after economic sanctions**

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## **Abstract**

For thousands of years sanctions have been a tool of economic statecraft. It represents one of the major tools of international governance of the post-cold war era that are often blamed for human suffering. The severities of economic sanction imposed on Sudan have contributed to massive cuts in social services and have adversely affected the health infrastructure and health status in the country. The aim of this study is to assess the impacts of economic sanctions on health services system in Sudan and if economic sanctions are one of the obstacles for easy health services access. There were two research questions: (1) how did economic sanctions affects Sudan health service system? and (2) How do economic sanction affect future health planning and achieving 2015 millennium development goals (MDGs)?

The methodological approach used for this study is qualitative deductive content analysis. Literature review was used to carry out a comparative analysis and systematic identification of selected studies and documents. Health service system performance such as availability, utilization, quality and quantity were assessed. The main focus of this study was emphasis on comparing Sudan health service system before economic sanctions 1990-1997 and after economic sanctions 1997-2010. The comparative findings from Sudan that follow are for 1990, 2000 and 2010, although data from 2006 was used.

Longitudinal comparisons of Sudan health service system, before and after the imposition of sanction shows that economic sanctions on Sudan have led to serious adverse impacts on the welfare of innocent people and affected the country's economies and infrastructures due to the restrictions on access to the international market. These restrictions limited the exports and decreased potential income, which negatively affected the economic development of Sudan. The lack of capital has directly contributed to government financial cut allocated to the health sector. The functional capacity has degraded, creating limited access to health services, critical shortages of essential drugs and equipment and delayed the achievement of the 2015 Millennium Development Goals.

Keywords: economic sanction, health system, Sudan economy, health services

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## **Introduction**

### **1.1 Economic Sanctions**

For thousands of years, economic sanctions have been a tool of economic statecraft (Chan and Drury 2000, 1). It is one of the major tools of international governance of the post-Cold War era that are often blamed for human suffering (Petrescu 2010, 1). Economic Sanctions are similar to embargoes and is defined as penalties that one country (initiator) imposes on another (target), where the international finance and trade are partially or completely prohibited with the (target) country. Economic sanctions are used as strong diplomatic methods imposed in an effort by the initiator to obtain a certain national-interest result from the target. Rennack and Shuey defined economic sanction as “coercive economic measures taken against one or more countries to force a change in policies or at least to demonstrate a country's opinion about the other's policies” (Rennack and Shuey 1999, 4).

Economic Sanctions first documented case occurred in 432 B.C when Pericles, the foremost leader of Athens, imposed sanctions on Megara, which is a city-state that had sided with Sparta. Megara appealed to Sparta for assistance resulting in the Peloponnesian War (Bartlett 1985). Since then and during modern history, economic sanctions have come before or with war as naval blockade intended to weaken the enemy. However, the serious results of World War One have led President Woodrow Wilson to ask for an alternative to armed conflict were economic sanctions seriously considered (Elliott et al. 2008). Wilson stated that apply this economic, peaceful, silent, deadly remedy and there will be no need for force. It is a terrible remedy. It does not cost a life outside the nation boycotted, but it brings pressure upon the nation, which in my judgment, no modern nation could resist (Carter 1988).

Sanctions were subsequently adapted as a method of enforcement by the two collective security systems established in the 20th century; the League of Nations between the two world wars and the United Nations after World War two. The collapse of the Soviet Union and the end of the cold war drove U.N. Security Council to authorize sanctions to force some countries to end civil wars and national strife particularly in Africa and Yugoslavia (Elliott et al. 2008). However, the most important U.N. sanctions were those against Iraq

(1990–2003) preceding and following the first Gulf War (1991). In addition to U.N. sanctions, the United States took the lead among western powers in applying sanctions post the cold war (ibid.).

Although Sanctions are intended to punish states to pressure them to change policies, it leads to predictable outcomes such as economic inefficiency, inequitable distribution of goods, civil conflicts and population movements which presents as health threats to the social system (Garfield et al. 1995, 455). The governments involved in imposing any economic measures acknowledge the adverse effect of such measures on the population (Petrescu 2010, 1). United Nations Committee on Economic, Social and Cultural Rights stated that

Economic sanctions cause a significant disruption in the distribution of food, pharmaceutical and sanitation supplies, it jeopardizes the quality of food and the availability of clean drinking water, it severely interferes with the functioning of basic health and education systems, and undermines the right to work  
(Holmes 2008, 65)

In contrast, the former U.S. Secretary of State described the purpose of sanctions that the US imposes against any country as not intended to create unnecessary hardships for innocent people (Petrescu 2010, 1). According to Garfield (2002), the 1977 additional protocols to Geneva Convention prohibit any wartime measure that has the effect of depriving a population the essentials to survival (ibid.). The protocols states that operations should be relived if civilian populations are not adequately provided with humanitarian goods (article 70) or suffer undue hardship owing to a lack of supplies essential for its survival, such as food stuffs and medical supplies (article 18). The protocol also guarantees the protection of goods indispensable to survival and states that starvation of civilians as a method of combat is prohibited (article 14) (ibid.). It is well documented that in the hard-hitting of war only small percentage of population would be exposed to bombs but almost the entire population of a country may be exposed to risks from a shortage of essential items permanently under embargoes (ibid.). Economic sanctions imposed measures over long period of time among a large population increase the risk and result in more death and destruction than war (ibid.).

## **1.2 Sudan**

Sudan is considered as a low-income country. It was the largest country in Africa until July 2011. Following the secession of South Sudan, Sudan became the third largest country in Africa (U.S. Department of State 2012). The total of population is 43,552,000 as of 2010 statistics (The World Bank 2012). Sudan's population is one of the most diverse on the African continent (U.S. Department of State 2012). The country administrative subdivisions consist of 15 states, which are divided into districts most with an elected governor, state cabinet and elected state legislative assembly (ibid.).

## **1.3 Economic sanctions on Sudan**

Sudan and U.S. political clashes started in 1967 when Sudan broke diplomatic relations with the U.S following the outbreak of the Arab-Israeli War. In March 1973, Palestinian terrorists of the Black September organization murdered U.S. ambassador and deputy chief of mission in Khartoum. In April 1986 U.S. relations with Sudan government deteriorated as a result of U.S. attack against Tripoli, Libya (U.S. Department of State 2012). Furthermore, Sudan assistance to Islamic terrorist groups and Iraq invasion against Kuwait strained the relations with U.S. (ibid.). Subsequently, U.S. designated Sudan as a state sponsor of terrorism in 1993 and in 1996 U.S. embassy operation in Khartoum were suspended. However, it was in October 1997, that comprehensive economic trade and financial sanctions were imposed against Sudan in response to its alleged connection to terror networks and human rights abuses (ibid.). In November of the same year, the executive order issued by president Clinton imposed a trade embargo against the entire territory of Sudan and a total asset freeze against the Government of Sudan (U.S. Department of the Treasury 2008).

According to Rennack (2005, 12), in 2000 the Secretary of the Treasury released an executive order excluding Gum Arabic exports from the comprehensive trade restrictions after the huge devastation the sanctions caused on the U.S. Gum Arabic processing industry. In 2003, President George W. Bush renewed imposed measures in response to Sudan failure to meet minimum human rights standards and obligations (ibid.). On

September 2005, and in order for the State Department's Office to Monitor and combat trafficking in persons, Sudan moved from "sanctionable" to "watchlist" status (ibid., 13).

Again in 2006 an executive order was issued by President Bush continuing the countrywide blocking excluding the regional government of Southern Sudan (U.S. Department of the Treasury 2008). In May 2007 new economic sanctions were imposed against Sudan in response to the countries continued complicity in persistent violence occurring in Darfur. In 2010 U.S. assured the Sudanese government that should South Sudan referendum go peacefully it would quickly release the country from the list of states sponsors of terrorism. In November 2011 U.S. President Barack Obama renewed the imposed economic measures on Sudan (Sudan Tribune 2011, 21 November).

A quote statement by the Sudanese foreign ministry as reported by Reuters, emphasizing the main reasons for the U.S. imposition of economic sanctions is, "the sanctions imposed by the U.S. administration are political sanctions which were and still are aimed at damaging Sudan's vital interests by hindering development ambitions and plans to fight poverty" (Sudan Tribune 2011, 21 November)

Since 1955, Sudan was involved in three prolonged civil wars. First civil war was a conflict between the North Sudan and the South of Sudan from 1955 to 1972. The second civil war, was from 1983 to 2005 between the central Sudanese government and the Sudan People's Liberation Army, was in fact a continuation of the first civil war, however, it spread to Nuba Mountains and Blue Nile. Before the second civil war ended, a third civil war started in Darfur in 2003 when the Sudan Liberation Movement Army and Justice and Equality Movement accused the Sudanese government of oppressing non-Arab Sudanese in favor of Sudanese Arabs. The Sudanese government was accused of aggression, suppression of democracy, and support of terrorism. The United Nations Security Council ordered collective economic sanctions against Sudan in an attempt to force the Sudanese governments to change its policies (Rennack 2005, 3).

However, according to Chan and Drury (2000, 3), the large numbers of economic sanctions against Sudan were imposed outside the U.N. the United States has placed restrictions on foreign aid and restricted commercial exports and imports to Sudan as result

of the Secretary of State declaring that Sudan has been found to be supporting acts of international terrorism, controlled by a military dictatorship, and has fallen into arrears in its debt repayment (Rennack 2005, 7). The United States also refused to support requests from Sudan for funding from the international financial institutions for reasons related to terrorism, regional stability, and human rights, including religious freedom, worker rights, and trafficking in persons (ibid.).

War's effects and famine-related effects in Sudan resulted in more than four million people displaced and more than two million deaths (CIA 2012). Darfur conflict alone has resulted in almost two million displaced people and caused an estimated 200,000 to 400,000 deaths (ibid.). Furthermore, the large refugee inflows from neighboring countries with high HIV/AIDS prevalence increase Sudan vulnerability to the pandemic (ibid.). The severity of economic sanctions measures declared by the United Nations Security Council and the US in addition to the drain of resources caused by Sudan government defense and security spending in recent years consequently attribute to massive cut in social service expenditures (Decaillet et al. 2003, 89).

#### **1.4 Aims and research question**

The aim of this study is to assess the impacts of economic sanctions on health services system in Sudan and if economic sanctions are one of the obstacles for easy health services access. The study discusses the effect of economic sanction on the 2015 millennium development goals achievement. Health service system performance such as availability, utilization, quality and quantity were assessed. This study focuses on comparing Sudan health service system before economic sanctions 1990-1997 and after economic sanctions 1997-2010. The comparative findings from Sudan that follow are for 1990, 2000 and 2010, although data from 2006 were used.

There were two research questions:

- (1) How did economic sanctions affect Sudan health service system? and
- (2) How do economic sanctions affect future health planning and achieving 2015 Millennium Development Goals (MDGs)?

A comparative analysis and discussion of selected literature both published and unpublished were reviewed to answering the research questions

### **1.5 Delimitation of the Study**

This study will focus on one sanctioned country (Sudan). The presentation of the study is based on secondary data, extracting different level of details including key ideas, theories, concepts and assumptions in support of the in-depth reviews of both published and unpublished academic related resources. However, due to pages number limitation, only four health status indicators related to MDGs are used to measure the health service system status of Sudan.

### **1.6 Structure**

The thesis is organized as follows: section one is an introduction, section two is methodology, design and literature review approach, section three describes the concepts, purposes and classifications of economic sanctions through presentation of scientific literature, section four presents the analysis of the findings and discussion of the main existing literature that will answer the research questions through presenting the impact of economic sanctions on;

- Sudan health service system performance (availability, utilization, quality and quantity),
- Preconditions to health (water and sanitation),
- Humanitarian exemptions,
- Health status indicators.

The presentations are followed by comparisons between the years of 1990 and 2010.

Section five is conclusion.

## **2 Methodology**

This section provides description of the methodological and literature review approach, unit of analysis, study design, data analysis. It also provides collection, validity and reliability of data, as well as the major challenges faced when conducting this study.

### **2.1 Unit of Analysis**

The unit of analysis for this study will be the population of the low-income country of Sudan.

### **2.2 Study Design**

This study aims to focus on details and in-depth meaning of the texts rather than numbers and quantifiable phenomena. Therefore, qualitative deductive content analysis method is employed to undertake this thesis (Chambliss and Schutt 2010, 250-253). Content analysis as a research method is a systematic and objective means of describing phenomena, it is also known as a method of analyzing documents, which allows theoretical issues testing that enhance understanding of the data (Kynga and Elo 2007, 108-111). This study is only resetting existing texts on the economic sanctions that Sudan has been exposed to, in a new context, instead of collecting numerical data applying generalizations (ibid.). An explanatory approach that offer a reliable data is also used, because it allows more explanation to the effects of economic sanctions on Sudan's health services in accordance with Chambliss and Schutt (2010, 11).

### **2.3 Deductive content analysis approach**

The techniques used to organize the qualitative literature review in this study, and to demonstrate the structured and systematic skills in library searching is includes:

- *Searching*: the systematic identification of key landmark studies selecting what they consider to be the key sources and core authors from the relevant literature (Hart 2003, 29). The search engines used to find and select the literature were, Google, Google scholar and Bibsys.

- *Screening*: the application of critical appraisal of key works, mapping out the general approaches, usual methods, what is included and excluded from the review questions and identify what will be expected to extract (ibid., 53).
- *Data-extraction and analysis*: the observation at the general structure to assess the quality of the study, moving from general to particular, by extracting different level of details to include key ideas, theories, concepts and methodological assumptions in support of the in-depth review (ibid., 54, 110).
- *Synthesis*: rearranging reviews derived from analysis to the development of a framework and identification of key themes (ibid., 111).
- *Writing*: presentation of the review findings.

## 2.4 Data collection and analysis

Data collection for this study was carried out taking into consideration the reliability of the data collection techniques as well as the accuracy of the data. (Hart 2003, 86). To be able to assess the effects that sanctions have had on Sudan's health services system, data from Sudan that follow are for 1990, 2000 and 2010, although data from 2006 was used, for instances, maternal mortality ratio.

This study compiled large data set from Sudan, which include archival and historical data, and agency record, in addition to data on sanctions, economic status; health services availability, utilization and performance and related health indicators. Data set for analysis includes, key process and outcome health indicators drawn from prospective studies. The data is therefore cited on relevant secondary sources, internationally and nationally that apply to Sudan concerned. Therefore, the main multiple data sources, databases used for this study is Sudan Demographic and Health Surveys, Survey Indicators Database, in addition to publications from World Health Organization (WHO), World Bank (WB), Ministry of Health (MoH), and various articles and books.

The *process indicators* that include access to and consumption of safe drinking water, medical services, and public health materials are used. In addition to, *outcome indicators*, which include basic health indicators such as Infant and under-five mortality rate, maternal mortality ratio and life expectancy at birth for vulnerable population groups, is also

measured. Combining this data set is enabled the study to assess the affect of economic sanctions.

## **2.5 The method of comparison**

To identify, analyze and explain Sudan health service system status before and after the imposition of economic sanction between years 1990 and 2010, a longitudinal comparison method of differences is used for this study (Ragin 1987, 38). The search for variance places more emphasis on context and difference in order to understand specificities and reveal unique aspects of a particular entity that would be virtually impossible to detect otherwise (Mills et al. 2006, 621). This study seeks to find out if Sudan health service system has been affected after the imposition of economic sanction and therefore the achievement of 2015 millennium development goals. It also analyzes if embargoes are one of the obstacles for easy health services access.

## **2.6 Validity and reliability of data**

Criterion validity established for this thesis is defined as “the type of validity that is established by comparing the scores obtained on the measures being validated to those obtained with a more direct or already validated measure of the same phenomenon” (Chambliss and Schutt 2010, 94).

According to Garfield (1995, 455), the health impacts of embargoes are similarly difficult to identify and that because of the multi-causal and indirect nature of the outcomes. It is difficult to pinpoint the specific sanction’s related effects and specific war related effects considering the ongoing war and conflicts situation in Sudan. However, reliable support about the impact of sanctions on health services system is depending on the reliability of the data, honesty of the source, in addition to an argument that establishes a convincing link between the sanctions regime and the outcomes identified.

The ethical principles of the social research according to Chambliss and Schutt (2010, 65) are to maintain honesty and openness to achieve valid result and encourage appropriate application, which is going to be the approach for this thesis. Furthermore, focusing on

research ethics, my obligation as conductor is to present scholars information and being open and honest in disclosing their findings. Lastly, the personal pressure and role of the conductor to find a particular outcome would affect the presentation of literature for this study.

## **2.7 Challenges**

One of the major challenges is the lack of both published and unpublished literature on Sudan's health services system and economic sanctions.

### **3 Key Concepts and Framework**

#### **3.1 Usage of concepts for the present paper**

For better understanding of the discussion, the usage of concepts and definitions of different terms, as well as United Nations conventions and agreements around the topic is presented. The terms are economic sanction, health service system, and health indicators, in addition to United Nations Millennium Development Goals (MDGs). There are eight goals with 18 targets; therefore, only four linked to MDGs and related to this literature review are presented. Health status indicators are related to maternal mortality, infant mortality, under five mortality, and life expectancy rate.

#### **3.2 Economic sanctions**

According to Nyun (2008, 464), the economic sanctions broad definition considered only the economic deprivation inflicted upon a target country, and not the means employed for that deprivation. In other words, any measure economic or military that disrupts the economic activity of an adversary would be defined as an economic sanction. Today's narrow definition focuses only on trade-disrupting measures. Boozer defined economic sanctions as "the deliberate, government-inspired withdrawal, or threat of withdrawal, of customary trade or financial relations" (Boozer 2000, 1). A further definition emphasizes the definition of economic sanction as "the actual or threatened withdrawal of normal trade or financial relations, imposed by the sender against the target, for foreign policy purposes" (Nyun 2008, 464). For this definition economic sanctions are limited to restrictions on trade, investment, and other cross-border economic activity that reduce the target country's revenues, to enforce and facilitate the desired change in policies without resorting to military action (*ibid.*). Therefore, economic sanctions are often considered as an alternative to military force, punishing party economically, politically or socially (Smith 2004). David (1995) suggests that "sanctions are questionable ethically because they impose disproportionate harm on innocent civilians" (David 1995).

In most of modern history, imposition of economic sanctions has led or accompanied war (Elliott et al. 2008). According to Elliott (2008) president Woodrow Wilson during the World War I prompted sanctions as an alternative to armed conflict, claiming that,

sanctions could be a deadly force and a very effective diplomatic tool. Earlier in 1995 David suggests, “sanctions are a prelude to war rather than an alternative” (David 1995, unpaginated). Sanctions are one of the strongest tools of enforcement among the collective security systems ever established (Elliott et al. 2008).

#### **4.2.1 Unilateral Sanction**

The logic behind the unilateral sanction is to force a behavior or policy change in a target country by inducing economic losses. Prohibition or restrictions on normal trade relations, foreign direct investment, and development assistance are intended to inflict economic loss on a target country. Therefore, severe hardship brought about by these economic losses will then foster political discontent among the population in the target country (Nyun 2008, 467).

According to Miller, et al. (1998, 1-1) “Unilateral sanction” is defined as “any unilateral restriction or condition on economic activity with respect to a foreign country or foreign entity that is imposed by the United States for reasons of foreign policy or national security” (Miller, et al. 1998, 1-1). Martin (1992, 17) suggests that, unilateral sanctions are costly to the sender country, where it’s less effective than bilateral sanctions measure.

The total number of unilateral sanctions cases imposed on targeted nations by the U.S. were twenty-three and eighteen were initiated in the developing countries, Sudan was one of the cases (United Nations, General Assembly 2011, 5) that face the broadest range of U.S. restrictions on trade, aid, and financial transactions as a country sponsoring of terrorism (Miller, et al. 1998, 2-1).

### **3.3 Classification of economic sanctions**

According to Elliott (2008), there are two main ways of economic sanctions, when a “sender” country tries to strike costs on its target country. The two main ways include, trade and financial sanctions.

### **3.3.1. Trade Sanctions**

According to Lindsay (1986) trade sanctions is defined as “measures in which one country (the initiator) publicly suspends a major portion of its trade with another country (the target) to attain political objectives” (Lindsay 1986, 154). Elliott (2008) states, trade sanctions are selective that is basically affect only one or a few goods. Therefore, intended economy wide impact of the sanction may be quite limited.

### **4.2.2 Financial Sanctions**

Elliott (2008) suggests that, financial sanctions could be either by governments imposes limits on target countries’ exports to reduce its foreign sales and deprive of foreign exchange, or impose limits on their own export especially if the sender country exports a large percentage of world output therefore, the target will pay higher prices for substitute imports if the sender country reduces its overall output (Elliott et al. 2008). Financial sanctions defined as “restrictions on free access by designated individuals or entities to any funds and economic resources owned or controlled by physical or legal persons, groups or entities” (Danish Business Authority 2011).

The imposed financial sanctions “are not a cure-all solution” (Biersteker 2001, 9), it is mainly the interruption of the commercial finance system and/or cut loans to the target country’s government, probably coerce the target country to pay higher interest rate and to lose all alternative creditors (Elliott et al. 2008). It is usually more difficult to escape in contrast, to unilateral selective trade sanction (ibid.) which is understood as “a ban on selected activities or the means by which targets maintain their objectionable behavior” (Biersteker 2001, 6).

According to Biersteker, the targeted financial sanctions are incapable to achieve the desired political goals in isolation (Biersteker 2001, ix). Instances, stakeholders (i.e. investors and private banks) suggest “the target country will face a credit squeeze in the future” (Elliott et al. 2008), consequently “sanctions may diminish future trade” and “may generate a political backlash against the initiator’s leadership” (Lindsay 1986, 169). Therefore, it is usually use in some combination with trade sanction (Elliott et al. 2008) to creat hardship for the target country.

### **3.4 Purposes of Economic Sanctions**

According to Elliott (2008), the purposes (ends) behind the use of economic sanctions are found to be the equivalent match to the three basic purposes of national criminal law: to punish, deter and to rehabilitate (Elliott et al. 2008) through satisfying punishment or deterrence as a favorable outcome (Boozer 2000). According to Lindsay “punishment should be treated as a separate objective” (Lindsay 1986, 156). In this regards, Boozer (2000) affirmed that all the foreign policy objectives associated with the imposition of economic sanctions are imprecise and mismatched with the principal goal of a sanction (Boozer 2000, 5).

The frequently uses of economic sanctions are designed to achieve a wide variety of foreign policy goals, demonstrating resolve, signaling displeasure and forcing a change in the target country’s policy even when the possibility of change is insignificant (Elliott et al. 2008). Although, Boozer in his policy assessment suggests, “sanctions are sometimes never intended to succeed, in the sense of providing a real change in a country's behavior especially when used primarily for domestic political purposes” (Boozer 2000, 5), for instance Iraq and Cuba sanctions (Elliott et al. 2008).

### **3.5 Health system**

A System is understood as an arrangement of parts and their interconnections that come together for a purpose that is concerned with the population’s health. The World Bank strategy for health, nutrition, and population results defined health system as “all activities whose primary purpose is to promote, restore, and maintain health” (World Bank 2007, 168). Recently, this definition has been extended to cover the prevention of household poverty due to illness (ibid.). According to WHO (2013) health system is “the people, institutions and resources, arranged together in accordance with established policies, to improve the health of the population they serve, while responding to people’s legitimate expectations and protecting them against the cost of ill-health through a variety of activities whose primary intent is to improve health” (WHO 2013).

Health system parts includes patients, families, and communities, Ministry of Health, health providers, as well as health services organizations, health financing bodies, and other organizations that play important roles (ibid.). The interconnections and roles played by these parts can be viewed as the functions, which include oversight, health service provision, financing, and managing resources (ibid.).

### **3.6.1 Sudan Health System Organizations and Financing**

Back in 1899s the health care in Sudan was delivering by the army. Then in 1924 Sudan Medical Services was established. Later in 1949 it became the Ministry of Health. Each state of the twenty-five states of Northern Sudan has a ministry of health, which is managed through a district health system approach (WHO 2009, 19).

The organization and financing of Sudan health care system is multifaceted (WHO 2009, 20). That is consisting of Federal Ministry of Health in the Government of National Unity (GONU), the Government of Southern Sudan (GOSS), and the State Ministries of Health and Locality Health Management Authorities (ibid.). In addition to Federal and state ministries of health, health services are provided through different partners with no system for coordination and guidance where they perform in isolation. Those partners include armed forces, police, universities, private sector and the civil society (WHO 2006). In 1976, primary health care (PHC)<sup>1</sup> adopted as a main strategy for health care provision in Sudan. In 1992 the strategy has been re-emphasized in the National Comprehensive Strategy for Health (ibid.).

The sole provider of health services in Sudan was the public health system where the major source of funding has been through taxation. Since the colonial period and till the beginning of the 1990, health services were offered free of charge (WHO 2006). The pressures of economic hardship and the prescriptions of the International Monetary Fund (IMF) and World Bank (WB) resulting from the economic reform as part of the Structurally Adjusted Programs (SAPs) a progressive deregulation of Sudan health services system has occurred (ibid.). In 1992, and as a result of SAPs the government

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<sup>1</sup> Primary health Care facilities include dressing stations, dispensaries, primary health care Units, Health Centers and rural hospitals  
Units, Health Centers and rural hospitals

started implementing radical macroeconomic reforms where spending on health has been significantly reduced (ibid.). However, according to the World Bank's report (2003), Sudan health system was challenged over the 1990s by a combination of decentralization and funding cuts, which has led to deterioration of the primary health care system. The deterioration and shortage of finance allocated to health sector led to introduction of user fees (WHO 2006). User fees introduced to balance the massive cuts of government finance to the health services through channels other than the government budget, and therefore guarantee the sustainability of providing finance for the health services (ibid.). Those channels include taxation, social insurance contribution that is collected through payroll, direct and out-of-pocket payments and recently private insurance (ibid.).

The organizational and management capacity of the majority of state ministries of health is limited in terms of financing, personnel supervision, logistics management, essential services, medicines and supplies (WHO 2009, 21). Sudan ranked among the lowest in the world in public health expenditures of less than 1 GDP (Decaillet et al. 2003, 7). Whereas, spending however seems to be highly skewed towards the better off, it is estimated that total out-of-pocket expenditures are larger than total government health spending (ibid.). For instance, in 2000 the total per capita expenditure of health including out of pocket, public and health insurance was estimated to be 15\$ - 20\$ compared to 34\$ recommended by WHO for delivering minimum essential package of service (FMoH 2003, 21).

### **3.6 Health service delivery system**

WHO defines health service system as “any service not limited to medical or clinical services aimed at contributing to improved health or to the diagnosis, treatment and rehabilitation of sick people” (WHO 2013).

#### **3.6.1 Sudan health care delivery**

The country interim constitution, article 46 states that, the government is responsible to provide universal and free of charge basic health services. Therefore, Sudan health care is delivered at three levels. First, at the top are teaching, general and specialist hospitals, having a varying number of specialties and beds providing secondary and tertiary care. Second level is the rural hospitals providing secondary care and diagnostic facilities. And

at the third level is primary care, which is provided through a variety of outlets primary health care units, dressing stations, dispensaries and health centers (WHO 2009, 21).

In general, the health care network has a curative bias. During the period (1995- 2004) there has been a significant increase in the number of hospitals/beds. Yet, a little investment in primary care facilities fulfilled. According to WHO (2009) report that based on health infrastructure survey 2004, on average, 36% of primary health care facilities are not fully functional in the northern states and the various types of health facilities are unevenly distributed in the different states of the country (WHO 2009, 22).

### **3.7 Health status indicators**

The health indicators are essential for understanding the health situation in a country. It is highly correlated with living conditions, lifestyle, the nutritional deprivations, scarce resources and healthcare on pregnant women and infant. Lindstrand defines health indicator as “a variable that provides a single numeric measurement of an aspect of health within a population for a special period of time” (Lindstrand 2010, 99). This study presents health status indicators that summary the measures of survival and mortality that may actually increase under conditions of sanctions, for instance, life expectancy rate, maternal mortality rate and infant mortality rate.

#### **3.7.1 Infant Mortality rate**

Infant mortality rate is defined as “the annual number of children less than one year of age who die per 1,000 live births” (Lindstrand 2010, 102). Infant mortality is divided into neonatal (from birth to 28<sup>th</sup> day of life) and postnatal mortality. The focus of this thesis is postnatal mortality, whereas the causes are mainly dependent on socio-economic, nutritional and care issues (ibid.).

However, the infant mortality rate is considered as an important measure of the well being of infants, children, and pregnant women. It is associated with a variety of factors, for instance, quality and access to medical care, maternal health, public health practices and socioeconomic conditions (Holmes 2008, 71). In general, infant mortality rate is most used

health indicator and also widely used as general indicator of socio-economic development of a country (Lindstrand 2010, 102).

### **3.7.2 Under-five mortality rate**

According to Lindstrand (2010), Under-five mortality rate is defined as “the annual number of children dying between birth and exactly five years of age, expressed per 1,000 live births” (Lindstrand 2010, 103). This indicator is more frequently used as measure of overall socio-economic development of a country or a population group. However, Under-five mortality rate is depends on socio-economic factors, for instance, female education, access to preventive and curative health serives, quality of water supply and sanitation, food security and diet (ibid., 104).

### **3.7.3 Maternal mortality ratio (MMR)**

Lindstrand (2010) defines maternal mortality ratio as “number of deaths of women from pregnancy-related causes per 100,000 live birth” (Lindstrand 2010, 107). Pregnancy related deaths occure almost exclusively in low and middle income countries. The strength of MMR measure expresses the quality of pregnancy care and delivery care (ibid.), another measure used is the maternal mortality rate, which is defined as “the number of maternal deaths per year per 100,000 women aged 15-49” (ibid.). This indicator measures the contribution of maternal mortality to the overall mortality among women of reproductive age (ibid.).

However, factors associated with maternal mortality and longer-term morbidity attribute to complications during pregnancy, delivery and unsafe abortion. Each pregnancy increases a woman’s risk of mortality. Each pregnancy increases a woman’s risk of mortality (Decaillet et al. 2003, 53).

### **3.7.4 Life expectancy rate**

According to Lindstrand, the main reasons determined low life expectancy at birth are poverty together with diseases and consequences of war. Life expectancy at birth is socio-economic development indicator, is defined as “the number of years a newborn baby would live if subjected to the present mortality risks prevailing for each age group in the

population” (Lindstrand 2010, 105). However, life expectancy at birth is also a measure of overall quality of life and summarizes the mortality at all ages. It is indicative of the potential return on investment in human capital and is necessary for the calculation of various actuarial measures (CIA world fact book 2012).

### **3.8 Millennium Development Goals (MDGs)**

In 2000, 189 nations made a promise to free people from extreme poverty and multiple deprivations. This pledge turned into the eight Millennium Development Goals to be achieved by the 2015 (United Nations 2000). United Nations Millennium declaration, commits world leaders by an action plan with 18 targets to combat poverty, hunger, disease, illiteracy, environmental degradation, and discrimination against women. The MDGs are derived from UN Declaration, and all have specific 18 targets and indicators (WHO 2013). The Eight MDG goals include, Goal 1) eradicate extreme poverty and hunger; Goal 2) achieve universal primary education; Goal 3) promote gender equality and empower women; Goal 4) reduce child mortality; Goal 5) improve maternal health; Goal 6) combat HIV/AIDS, malaria, and other diseases; Goal 7) ensure environmental sustainability; and Goal 8) develop a global partnership for development (ibid.)

According to WHO website, MDGs are inter-dependent, they all influence health, and health influences them all. For example, reducing poverty and hunger, gender equality, and environmental degradation are positively influences and essential to the achievement of better health. On over all, MDGs assessments in Sudan indicate to positive and encouraging progress on Goals Two, Three and Six. While based on current trends, Goal One, Four, Five and Goal 7 of the MDGs may not be achieved unless current efforts are scaled up on all fronts (resources both human and financial) to reverse current trends (UNDP 2012).

## **4 Key Literature - findings and discussion**

This study is focusing on one sanctioned country; Sudan. Sudan and U.S. political clashes since 1967. But it was only on October 1997, the comprehensive economic trade and financial sanctions imposed against Sudan in response to its alleged connection to terror networks and human rights abuses (U.S. Department of State 2012). In order to set solid ground for comparison, data from Sudan before and after sanction 1990, 2000 and 2010 were chosen.

The study assesses the affects of economic sanctions and its preconditions on Sudan's health services system and the 2015 millennium development goals achievement. In this section the main literature concerned with the research questions will be analyzed, discussed and compared. Firstly, there will be an analysis of the impact of sanction on the economy, health system and its performance and precondition to health (i.e. Water, Sanitation) as well as humanitarian exemptions. The analysis is carried out taking into account factors such as health indicators before and after the imposition of economic sanction, maternal mortality, infant mortality and under-five mortality as well as life expectancy rate. . The discussion on Sudan achievement of the United Nations MDGs is also presented. The impacts of economic sanction are presented separately and followed by comparison and discussion.

### **4.1 The short-term impact of economic Sanction on health of Sudan**

According to Holmes (2008, 90), general health services include basic elements that are associated with the healthcare system, for instance, medical services provision in the event of sickness, mortality rate reduction and the healthy development of the child. It also includes the prevention, reduction and control of endemic and epidemic diseases (ibid.). However, good health requires some preconditions that are not directly associated with the healthcare system such as clean environment, clean drinking water and proper medical infrastructure. Therefore, economic sanctions can have a devastating impact on these elements of the health services system (ibid.). In this regards Garfield (1999) and Holmes (2008) suggest that the impact of economic sanctions is not only limited to problems with

the supply of medicine but also on health and health services. For example functioning safe water and sanitation infrastructure, functioning equipment such as X-ray facilities, ambulances and refrigerators to store vaccines as well as electricity. Medicines in humanitarian situations are exempted, however, it would not be sufficient to maintain healthcare systems and health.

Before analyzing the effect that economic sanctions have had on the health system of Sudan, the difficulties of such analysis must be acknowledged. However, the studies and reports cited in the previous sections strongly suggest that economic sanctions have had a direct impact of health of the target countries population. The following provides an answer to research questions “how did economic sanctions affect Sudan health service system?” and “How do economic sanction affect future health planning and achieving 2015 millennium development goals (MDGs)?”

#### **4.2.1 The impact of economic sanction on economy and health system of Sudan**

In terms of natural and human resources, Sudan is considered as a rich country. However, economic and social developments since Independence in 1956 have been below expectations. This has positioned Sudan at number 19 on the list of poor countries with an estimated growth domestic product (GDP) per capita of US\$ 340, which is lower than the average of US\$ 460 of Sub-Saharan Africa (Decaillet et al. 2003, 7). In 2005, Sudan was ranked at number 139 out of 177 countries in terms of human development indicators (WHO 2009, 15).

Despite the 1990s macro-economic reforms, oil and agricultural production that contributed to annual GDP growth of \$ 468.35, evidence from household surveys on changes in asset ownership and social indicators suggests that the growth was quite unequally distributed (Decaillet et al. 2003, 20). According to the U.S. Department of State, the severe external debt burden limit Sudan relations with the International Financial Institutions (IFIs) and in turns the country integration into the world economy.

The legal sanctions imposed on Sudan and its legislative mandates have complicated U.S. government participation in IFI regulation and debt relief. More significantly, the confused

application of Sudan's Islamic law that reduced donor disbursements and capital flight, has led to a serious foreign-exchange crisis and increased shortages of imported inputs and commodities (U.S. Department of State 2012). In 2001, Sudan growth declined to GDP \$361.71 as a result of limited access to external financing and heavy debt amounted over US\$ 20 billion (ibid.). Consequently, the country faced difficulties to finance all its development and reconstruction prerequisites (The World Bank 2003, ix). A report by the United Nations Secretary-General's suggests that the imposition of economic measures has led to the suffering of innocent civilians of Sudan, in other words the comprehensive trade and economic embargoes considerably impede the trade and development of the Sudanese economy (United Nations, General Assembly 2011).

Only in 2010 the economy have seen slight growth rate due to the increases in oil high prices and to the significant inflows of foreign direct investment which contributed to GDP \$1,424.64 (U.S. Department of State 2012). However, following July 2011 South Sudan's secession, Northern Sudan has struggled to maintain economic stability resulted from the lower share of oil (CIA 2012). A report by U.S. Department of State, Diplomacy in Action showed that the unclear immediate and profound impact on Sudan's economy has occurred after July 2011 secession of South Sudan. The country has suffered a dramatic decline in its oil revenues upon secession, which considered as the principal driver of growth since 2000. Therefore, Sudan and its people are not able to rebuild its infrastructure in the near future (ibid).

According to Decaillet (2003), the high inflation and restricted access to external finance, in addition to the continuing civil war and drain of resources during the period 1992-1996 have forced the government of Sudan to balance the budget through drastic cuts in public expenditures causing considerable reductions in health services and infrastructure development. Consequently, fewer resources located for education and health. In 1998-2000 Sudan government expenditures on health averaged 0.8% of GDP (Decaillet et al. 2003, 85). There is no available data for government expenditure on health for year 2010.

#### **4.2.2 Impact of economic sanction on health system performance (availability, utilization, and quality of services)**

According to Garfield, the weakened medical infrastructure due to lack of vital imports, in addition to reduction in state funds for capital investment, maintenance and running costs (consequence of an embargo) had an impact on the ability of the health system to provide services and respond to medical emergencies. As a result quantity and quality of health services declined, and people were less motivated to continue using them (Garfield 1999). The coverage and access to local basic services in many areas in Sudan is low and in some case extremely low, although number of hospital has increased relatively since the 1996 (WHO 2006). However, according to WHO (2006) Sudan health profile report, in 2003 the percentage of none functional health facilities ranges from 62% for dressing stations, 51% for Basic Health Units, 30% for dispensaries, 17% for Rural health centers, and 6% for urban health centers. This deterioration in Primary Health Care (PHC) facilities functionality was only linked to the government macroeconomic policy and funds cut to the health sector. Furthermore, it is noted that the increase in the PHC units is low compared to the population growth, which is significantly increased from 25.75 million in 1990 to 31.1 million in 2000 and 40.13 million in 2010 (ibid.). The geographical distribution of health facilities shows clear significant disparities, for instance, many peripheral areas lack health system in terms of functional facilities. Accordingly, analysis of health facilities distribution indicates substantial regional imbalances (ibid.).

Since mid 1990s, the government back cuts in budget allocated for health sector, quality of health services, in addition to the introduction of user fees have contributed to growth of the private sector (WHO 2006). Yet, private and public availability of health care services in urban areas are relatively more and better than peripheral rural areas, while some parts of cities, in particular migrant settlements are underserved (Decaillet et al. 2003, 74). The poor have less access and utilization of services, for instance, households with higher economic status are more likely to obtain treatment with private doctor and hospital, at the same time, poorer households are more likely either to go to traditional healers and drug sellers (informal providers) or not seek treatment at all. In other words the poor make use of services significantly less than those higher on the socio-economic scale (ibid.).

Garfield suggests, limited access to clinical services in addition to shortages of medicine and equipment frequently characterize less developed countries and these in turn characteristics can be compounded by sanctions (Garfield 1999). Although, there's no data estimated for excess death of deteriorated health system per years of sanction. Given the overall evaluation of Sudan health system performance, and based on the WHO report (2003), the quality of health care services deteriorated along with cuts in funding over the past decade, especially in peripheral areas.

#### **4.2.3 Impact of economic sanctions on humanitarian exemptions**

For more than 20 years of conflict between the Government of Sudan and the Sudan people's liberation movement/army (SPLM/A), more than 2 million people has been killed, approximately 4 million are displaced and estimated 600,000 people are seeking refuge in neighboring countries creating the world's largest population of internally displaced people (U.S. Department of State 2012). Moreover, the comprehensive peace agreement (CPA) in 2005 that ended North-South conflict resulted in 2 million displaced people returned to their land of origin. The conflict in Darfur since 2004, according to the UN estimation, resulted in approximately 2.7 million internal displaced persons (IDPs) that are still dependent on humanitarian assistance. In addition, the outbreak of violence and conflicts in Abyei and South Kordofan occurred mid-2011 displaced nearly 200,000 people (U.S. Department of State 2012). Sudan health services were not well developed even before the war. Over two decades of conflict the health service system have deteriorated so that most are now supported by international humanitarian agencies (Decaillet et al. 2003, 23).

The top priorities of the Sudan government are security and defense. Its expenditures are six times the amount available for health and education combined. The provision of these services has been left to the Non-Governmental organizations sector (Bertelsmann Stiftung 2012, 16). In March 2009 the government of Sudan blocked and expelled 13 international humanitarian aid organizations and shut down three national aid organizations, following the International Criminal Court's (ICC) issuance of arrest warrant for the country's president. These organizations served for the provision of immediate humanitarian needs among other services, for instance, water and sanitation, health care, and protection. Consequently, their forced departure according to the UN affected 50% of aid delivery in

Sudan (U.S. Department of State 2012). The absence of expelled non-governmental organizations (NGOs) creates huge critical gaps in life-saving operations (ibid). The U.S. Mission in Sudan has declared disasters due to the complex emergency occurrence annually since 1987. October 2009, Sudan complex emergency disaster declaration for fiscal year 2010 has been renewed (ibid.).

According to the European Commission (2012), millions of people in Sudan are in serious humanitarian need. Sudan programme will face severe challenges as a result of poor local capacity, climate and landmines, in addition to access limitations, logistical and administrative constraints (ECHO 2012). The value of humanitarian assistance to Sudan in millions of dollars has significantly reduced since 1990s and through out the 2000s.

According to Gordon (2010, 118), the entire humanitarian programme implemented can admittedly meet but only small fraction of the priority needs. The provision of humanitarian assistance during sanctions should be sufficient to ensure that the lives and health of the civilians are not endangered (Holmes 2008, 89). In fact even if humanitarian exemptions of medicines were effective which is usually not the case, still humanitarian aid are not sufficient to sustain healthcare services and therefore health of the population (ibid.).

#### **4.1.4 Impacts of economic sanction on health status indicators**

The health status indicators are crucial to measure the impact of economic sanction on health. It is as essential for understanding the health situation in a country. In this section the health status indicators and the ones that correlated to MDGs is discussed.

According to WHO (2006) Sudan health profile report, the overall health status indicators in Sudan, are not as good as averages in the Middle East and North Africa, not to mention the clear significant regional disparities between peripheral rural and urban areas, that are mirrored by large socio-economic disparities. These differences narrowed over the 1990s, as a result of rural migration to the cities.

#### **4.1.4.1 Life expectancy at birth**

According to the UN (2012), demographic transition key features are a fundamental component of a country development. These features are related to fertility and mortality declines, the pre-transition societies are marked by high mortality rates among all age groups (UN 2012). However, mortality declines displays estimated levels and trends in life expectancy at birth. In Sudan population's human development indicator is very low compared with high-income countries. The life expectancy rate at birth has shown a significant improvement from 52.9 in 1990 to 56.0 in 2000. In 2010 the rate has fallen to 54.2 (WHO, World Bank, UNESCO, CIA 2010). The top causes of death are related to preventable communicable disease, for instance, influenza and pneumonia, coronary heart diseases and diarrheal diseases (ibid.).

#### **4.1.4.2 Health status indicators related to MDGs**

Given the challenges created by the country's huge external debts problem and pressures of economic hardship, Sudan progress towards achieving the MDGs has been slow and will continue to be slow should the amounts of resources allocated to health poor sectors continue to be very low (Ahmed 2008, 7). According to Ahmed (2008) report, it will be difficult for the Sudan to achieve these goals without mobilizing enormous local resources and substantial concessional development aid from the international community in the future.

##### **4.1.4.2.1 Goal 4: Reduce child mortality; reduce by two thirds, between 1990 and 2015, the under-five mortality rate**

Studies show that, child mortality is lowest in the economically better-off compare to peripheral areas, which experience high to higher mortality rate (WHO 2006).

##### **A Infant mortality rate**

Infant mortality rate is most used health status indicator and also widely used as general indicator of socio-economic development of a country (Lindstrand 2010). Infant mortality rate has fallen from 78 deaths per 1,000 live births in 1990 (UNICEF 2010), to 68 per 1,000 live in 2000 (MoH, Unicef 2001), while in 2010 it has been estimated at 66 per

1,000 live (UNICEF 2010), which shows little improvement in this indicator. Note that 2015 target is 53 per 1000 live birth (UNDP 2012).

## **B Under-five mortality rate**

Based on Sudan birth and death histories statistics, the under-five mortality rate in 1990 estimated at 123 deaths per 1,000 live, the estimates declined at 104 per 1,000 live in 2000, and stood at 88 death per 1,000 live in the year of 2010 (The World Bank 2012). Still 41 deaths per live birth have to be reached by 2015 (UNDP 2012). However, according to analysis of trends, there's some progress has been made towards the MDG 4, still Pneumonia, malaria, diarrhea, and malnutrition represents the major causes of under-five illness and deaths. Statistics showed a clear decline in infant mortality rate and under-five mortality rate since 1990s to 2010, which is still comparatively high (UNDP 2012).

### **4.1.4.2.2 Goal 5: Improve maternal health; reduce by three quarters the maternal mortality ratio (MMR)**

MMR has improved from 1,000 per 100,000 live births in 1990, to 870 per 100,000 live births in 2000 (The World Bank 2012). A massive increase has been recorded in 2006, which is estimated at 11,107 per 100,000 live births (NPC/GS 2010). In 2010 maternal mortality ratio estimates at 730 per 100,000 live births (The World Bank 2012). While MDGs 2015 target is estimated to be 134 per 100,000 live births (UNDP 2012). According to WHO (2006), there is huge disparities and inequalities in MMR both between states and within the same state. Sudan levels of MMR are the worst in Eastern Mediterranean Region.

### **4.1.4.2.3 Goal 7: Ensure environmental sustainability; Halve, by 2015, the proportion of population without sustainable access to safe drinking water and basic sanitation**

#### **A Water**

According to the World Bank, access to an improved water source (safe) refers to the percentage of the population with reasonable-access<sup>2</sup> to an adequate amount of water from

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<sup>2</sup> Reasonable access is the availability of at least 20 liters a person a day from a source within one kilometer of the dwelling

an improved source such as a household connection, protected springs or well borehole, public standpipe and rainwater collection. While, unimproved sources (unsafe) include tanker trucks, vendors and unprotected springs and wells (The World Bank 2012). Sudan domestic water supplies type and quality of are highly variable and generally inadequate in driest states with high proportion of the poor. However, there's a considerable variation in the quality of water supplies within each state, although, an analysis by states is unlikely to reflect the full extent of the problems facing people in urban or rural areas (ibid.).

World Bank studies (2010) suggest that, Sudan population with access to improved drinking water has decreased from 1990 to 2010. The percentage of improved water usage is likely to be higher in urban areas, in contrast to peripheral rural areas (The World Bank 2012). For instance, data from the World Bank report (2012) shows that the western states in Darfur and Kordofan regions have the lowest proportions of households with access to safe drinking water supplies. For instance, the percentage of population with access to improved water sources has decreased from 65% (58% rural, 84% urban) in 1990 and 62% (55% rural, 76% urban) in 2000 to 58% (52% rural, 67% urban) in 2010 (WHO, UNICEF 2012). While 2015 target is 82% (UNDP 2012).

According to Sheriff (2004, 17), provision of safe drinking water has proved to have the most visible impact on public health as well as national development than any other invention. Therefore, extreme interaction between health and water cannot be overstressed. Pathological conditions of human beings associated with unsafe and inadequate water are classified under the rubric of water-borne diseases caused by ingestion of contaminated water (ibid.). However, improved safe water and hygiene can reduce the morbidity and mortality rates of some of the most serious diseases by a factor of 20 to 80%. Yet, lack of resources to develop, maintain and sustain water related infrastructure has proved to be difficult due to inadequate budgetary allocations (ibid.).

## **B Sanitation**

According to the World Bank, sanitation basically covers solid and liquid waste and excreta disposal in addition to removal of other sources of environmental pollution. The sanitary methods used in Sudan include modern traditional pit latrine, flush toilet, or a septic tank (which are both limited to urban areas). However, people without any of these

methods have basically nothing and depending on the location (The World Bank 2012). Excreta could become a serious health hazard, therefore, sanitation is considered to be a major issue in Sudan.

The quality of sanitation facilities varies considerably between and within states, and between and within urban areas in Sudan (Ahmed 2008, 11). World Bank report (2012) indicates, the higher percentage in urban compared with rural areas. In marked contrast to the prevailing situation of sanctions, the percentage of population with improved sanitation has slightly decreased from 27% (18% rural, 51% urban) 1990, and 27% (16 rural, 48% urban) in 2000, to shares of 26% (14% rural, 44% urban) in 2010 (WHO, UNICEF 2012), while 2015 target is 67% (UNDP 2012). According to this estimates, the indicators rate did not improve during the 1990 and 2000, it declined in 2010.

The impact of sanction on health is not limited to the supply of medicine. Health services depend on numerous other aspects, for instance, functioning water, proper sanitation, medical infrastructure and electricity (Garfield 1999). Bossuyt (2000, 15) suggests that, the imposition of economic sanctions have a dramatic impact and numerous effects on civilian populations, where an extreme significant disruption in the distribution of sanitation supplies, jeopardize the quality of the availability of clean drinking water, and severely interfere with the functioning of basic health systems (ibid). Ahmed (2008, 31), suggests, the possibility of meeting the environmental sustainability goal, especially when it comes to improving people's access to safe drinking water and sanitation services, are attainable if more resources and expenditures are allocated to the target sectors.

## **4.2 Comparison and discussion**

In this section and through analysis, a brief discussion and comparison of the data is presented. The analysis aims at finding how economic sanctions affected the health service system and its preconditions. It also aims to answer to what degree economic sanctions affect the achievement of MDGs.

#### **4.2.1 Health service system**

The impact of high inflation and restricted access to external finance after the imposition of economic hardship has declined the country annual GDP. The civil wars incidents and severity of poverty in Sudan are all reflections of a low level of human development. Data on health financing and expenditure before and after the economic sanction is deficient and incomplete. In 1990 the proportion of GDP allocated for the health sector reduced in contrast to 2000 expenditures on health. There is no available data for government expenditure on health for year 2010. However, as a proportion of total government spending, the expenditures on health for the period of 1997-2000 remained at relatively very low levels and deteriorated dramatically compared to the period of 1990-1997. Based on the available information, the overall government health expenditure is very low and the health sector is under-funded.

The coverage, access and utilization to local basic services in many areas in Sudan are extremely low. One year before the embargoes, there has been a relatively increase in the number of hospitals, with clear disparities between urban and peripheral areas. The government cuts in the budget allocated to health sector after the imposition of sanction has contributed to firstly the increase of the number of none functional health facilities and secondly, the introduction of user fees that in turn contributed to the growth of the private sector. It resulted on the poor to have less access and utilization of services. Given the overall evaluation of Sudan health system performance, the quality of health care services deteriorated as results of the cuts in funding over the past decade, especially in peripheral areas.

#### **4.2.2 Health status indicators related to MDGs**

Child mortality rate has significantly fallen from 1990 to year 2000, with slight improvement in 2010. There was no significant difference in mortality levels between urban and rural areas. Data shows little improvement in child mortality rate and that it is falling short in achieving the 2015 MDG target. MMR level has decreased from 1990 until the first years of economic sanctions. In 2006 a massive increase was recorded, however, another massive drop was recorded in the 2007. This could only be explained by possibly under reporting of maternal deaths in rural and urban areas. The MDG indicators

particularly their disparities make it clear that child and maternal health is poor in under-served areas.

The percentage of population that has access to clean water and sanitation did not improve and has remained constant before and after the first years of the embargoes. However, it was severely hit in 2010 where the percentage dramatically decreased with huge disparities in urban-rural. This has also contributed to the poor health situation in rural areas. Both indicators show no improvement towards the achievement of 2015 MDGs.

According to the World Bank (2003, 59) development of Sudan major public infrastructure including health, water and sanitation need an urgent attention

## 5 Conclusion

Sanctions by definition intend to further weaken the target country through increasing target's anxiety and therefore escalating a conflict. It cannot be effective politically if they are unacceptable morally (Smith 2004). The economic pressures should be imposed against decision makers not the innocent (Cortright 1995). However, the long-term unilateral economic measures imposed against Sudan have had severe adverse impacts on the welfare of people and has led to the suffering of innocent civilians. The comprehensive trade and economic embargoes considerably impede the trade and development of the Sudanese economy (United Nations, General Assembly 2011). According to the United Nations Secretary-General's report, the economic sanctions imposed on Sudan have harmed the country's economies as well as the infrastructures, which have been badly affected. Furthermore, restrictions on access to the American market have hampered exports and decreased potential income and had a negative impact on the economic development of Sudan. It contributed to delaying the achievement of the 2015 Millennium Development Goals (ibid.).

The severe restrictions caused by the comprehensive sanctions imposed on Sudan for imports and exports reduced overall production and extremely affected the country economy. The overall decline in Gross National Product (GNP) and per capita income and the declines in state revenue have lead to social service cuts and therefore lower quality of social services. The devastating effect on the funding cut adversely affected the budget allocated to the health sector. These effects reflected on inefficient resources allocated to the sector, inefficiency utilization of the resources, unequal geographical distribution of the health care facilities and personnel, deterioration in the work environment and continuous decline in the work force in the sector (WHO 2006).

It has been shown that, the impact of economic sanction on health and well-being is mediated by the country's economic and social systems (Garfield 1995). The major impacts occur through the effect of sanctions on the importation, production and distribution of vital goods (ibid.). The limitations caused by sanctions on the importation of medicines and other survival-related materials due to disruption of commercial arrangements, complications in transportation and lack of capital have directly contributed to weakening Sudan health services system. The functional capacity of the health care system has also

degraded.

Economic Sanctions on Sudan have limited the access to clinical health services. They have also resulted in the shortages of medications. Furthermore, the lack of minimal life-saving facilities at the first referral level such as the lack of equipment, personnel, know-how even in referral hospitals, lack of access to spare parts and international professional training led to the loss of essential medical assistant , and faulty patient management.

Limited ability to import vital goods accompanied by reduction in the states' funds contributed directly to weakening the health infrastructures. Thus, the ability to correctly diagnose or treat common diseases was crippled. An inadequate health care system with misplaced priorities contributes to high morbidity and mortality rates. The degree of major infectious diseases is very high leading to an overall increase in morbidity and mortality rates that has become part of the endemic pattern of the precarious health situation. Compared with the 1990s, access of the Sudanese people to basic health services deteriorated considerably during the 2000s and 2010 as a result of economic sanctions imposed on the country.

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