

Abstract

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Legal Reform, a solution of the water resource based conflict in Darfur - Sudan

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Abstract

1- Introduction:

Increasing global surface temperatures are very likely to lead to changes in precipitation and atmospheric moisture, because of changes in atmospheric circulation, a more active hydrological cycle, and increases in the water holding capacity throughout the atmosphere. Atmospheric water vapor is also a climatically critical greenhouse gas, and an important chemical constituent in the troposphere and stratosphere. Thus the 21st. century is called (the century of water.

Water is one of the most strategic natural resources. It is intertwined in the everyday life of human beings in countless ways. The importance of water as a driver for health, food security, and quality of life and as a pillar for economic development is unique. The damage caused by floods and droughts is growing rapidly. The human impact on ecosystems is catastrophic in countless ways. Water is largely a political good since a bulk of the people in Darfur lives in an arid area shared by two major categories of tribes namely farmers and pastoralists.

Sudan is not an exception to most parts of the world, which face difficulties in meeting the growing water demand from deteriorating supply. Decisions and attitudes concerning solutions on capacity such as human development, institutional set-up, water constructions and other technological issues, given the economic and social constraints constitute a challenging entity with no simple answers.

The water issue is not only irrigation, hydropower, water supply, sanitation, but all these and much more. Besides the drought and the immature political foresight, water is largely a political, social and economic issue. The water sector has traditionally been split into narrow, competing branches, but the last decade showed a rising concern of interdisciplinary, holistic, and integrated water management. The challenge to water professionals is the enormous growth in the complexity of problem solving, given these new requirements.

There should be more focus on real multidisciplinary and integration in national water assessments. Water should be considered in closer connection with social, economic, financial, environmental, political, and institutional issues to bring the analyses closer to policy making. Comparative, cross-sectoral works are needed. A methodological challenge to cope with inter-disciplinary and extreme uncertainties and complexities is evident. Regions like Darfur where water scarcity has resulted in poverty in view of the population growth, and animal demands increases in terms of conflict with the farming activities. Water demand in the future demand will even increase more by the need for economic development. Underground water, although was historically unknown myth, but it may play a role in solving the crisis of Darfur.

The social factors and the effects of the climatic change are the main causes of the conflict in Darfur.

2- objectives:

The objectives of this paper are as follows:

- To evaluate the history of the socio-legal impacts of the climate change in the Region, and the response of the successive governments in face of climate change.
- To outline the shortcomings of the legal solutions adopted to solve the resource based conflict in the Region.
- To study from human rights and environmental justice point of view, the extent to which the various people of Darfur can enjoy water rights.

3- the results:

The paper attempts from the discussion to sum up with the following conclusions:

- to propose a draft Memorandum of Understanding between the farmers and pastoralist tribes , to guarantee access to water by all the tribes , within a framework of code of practice to be agreed upon by the community leaders.
- To propose a draft project to seek the synergy of the international community and donors, to facilitate the sustainable development of underground water utilities in the Region.
- To promote the establishment of catchments for seasonal rivers and streams.
- To promote the privatization of water resources supplies, through public or private Special Purpose Vehicles Companies whose equities are to be held by all the stake holders.
- To propose water management agency for the whole Darfur Region to be established by a statutory law, embodying the water rights.
- To propose a regional agreement between the countries of the region adjacent to Darfur, such as Chad, Libya and Centre Africa for joint co-operation as regards the management and division of ground waters.
- To propose the change the attitude of the Army and the Janjaweed militia from mere military operations to civil works, especially in the field of water resources.

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1- Introductory Impact of the global warming:

The existing pressures facing the water supply - including rising demand and variations in the water cycle - could be compounded by greenhouse gas-induced changes to the climate. But because climate change models are only capable of simulating change at large scales, it is difficult to pinpoint effects at the local level, where most decisions about the water supply are made. Current general circulation models predict that climate change will significantly affect precipitation, evaporation from the surface and transpired from plants, and runoff. Predicting effects for specific regions introduces new uncertainties. (the proceedings of HCNER- Sudan 2005).

Despite these uncertainties, it may be found that climate change may increase the frequency of intense precipitation days and floods, particularly in northern latitudes and snowmelt-driven basins. Heavy rainfall may also lead to soil erosion and contribute to the leaching of agricultural and urban pollutants into streams and lakes. At the same time, arid regions may become more prone to drought, placing added stress on their limited water resources for irrigation and other uses. (Jonathan Halperin (1999), Communication Planning Strategy- Resources for Future.)

This article attempts to show the impact of global warming on the water resources which results in scarcity of water resources globally and in Darfur in the Western part of Sudan in particular. The article tries to find how the link of the conflict over water as one of the major causes of the conflict in Darfur Region in Sudan. It then takes the endeavor to propose some politico-legal solutions to the natural resource based

conflict in the region. The water resources should be addressed as the main natural resource of such solutions.

2- History of the Impact of Global warming: -

Studies show that the average global air temperature near the Earth's surface increased 0.74 ± 0.18 C (1.33 ± 0.32 F degrees), during the hundred years ending 2005.¹ It is evident that the creasing global surface temperatures are very likely to lead to changes in precipitation and atmospheric moisture, because of changes in atmospheric circulation, a more active hydrological cycle, and increases in the water holding capacity throughout the atmosphere. Atmospheric water vapor is also a climatically critical greenhouse gas, and an important chemical constituent in the troposphere and stratosphere. Thus the 21st. centaury is called (the centaury of water). (Instrumental Temperature Records).

Water is one of the most strategic natural resources. It is intertwined in the everyday life of human beings in countless ways. The importance of water as a driver for health, food security, and quality of life and as a pillar for economic development is unique. The damage caused by floods and droughts is growing rapidly. The human impact on ecosystems is catastrophic in countless ways. Water is largely a political good, since the bulk of the people every where and in Drafur in particular, live in an arid area shared by two major categories of tribes namely farmers and pastoralists.

Thus Sudan is not an exception to most parts of the world, which face difficulties in meeting the growing water demand from deteriorating supply. Decisions and attitudes concerning solutions on capacity such as human development, institutional set-up, water constructions and other technological issues, given the economic and social constraints constitute a challenging entity with no simple answers.

The water issue is not only irrigation, hydropower, water supply, sanitation, but all these and much more. Besides the drought and the immature political foresight, water is largely a political, social and economic issue. The water sector has traditionally been split into narrow, competing branches, but the last decade showed a rising concern of interdisciplinary, holistic, and integrated water management. The challenge to water professionals is the enormous growth in the complexity of problem solving, given these new requirements.(ibid, Instrumental Temperature Records).

There should be more focus on real multidisciplinary and integration in national water assessments. Water should be considered in closer connection with social, economic, financial, environmental, political, and institutional issues to bring the analyses closer to policy making. Comparative, cross-pectoral works are needed. A methodological challenge to cope with inter-disciplinary and extreme uncertainties and complexities is evident. Regions like Darfur where water scarcity has resulted in poverty in view of the population growth, and animal demands increases in terms of conflict with the farming activities. Water demand in the future demand will even increase more by the need for economic development. Although underground water , historically unknown as myth, but it may play a role in solving the crisis of Darfur. The social factors and the effects of the climatic change on water may be deemed to be one of the main causes of the conflict in Darfur, and else where. See Abu- TALET Maher F 2000 -

International Water Resources Association Vol . 25 n 3 , pp. 457- he showed that the same attitude of study has been carried by Jordanian authorities

3- Shortcomings of Water Resources in Darfur:

Shortcomings of water resources have direct impact on many socioeconomic. The direct impacts of the same address many aspect of life, including pastoral as well as agricultural activities.

3-1 Pastoral Activities:

Animal routes in Darfur are areas between the farms plots designated for nomads to pass through during their movements from south to north during rainy season and from north to south during the dry season. This arrangement was agreed upon by the local leaders of the nomads and the settled farmers in early 1950s. This arrangement then was fostered by the Government and enforced by all parties. The arrangement continued facilitating effectively the movement of the nomads without serious implications, apart from minor conflicts which were normally resolved by traditional mechanisms until the late 1970s. (see Adam alzain, The Role of Traditional Institutions in solving conflicts in Darfur, International Peace University, and U of K Forum Khartoum 2004)

Generally, the animal routes agreed upon and established in Darfur were eleven passages on the eastern and western parts of *Jebel Marra Plateau*. For more explanation, the following definitions are known for this arrangement:

- *Massar* is an animal route or passage between agricultural farms within one hundred meters in width used by the animals to move from area to another without stopping for grazing or watering.
- *Seeniya* (Roundabout), it is a grazing area between the farms within 4 to 5 Km² designated for the passing animals to graze and rest for hours or one day before resuming their movement.
- *Manzalla*, Fariq (Nomad camp). Originally this is a grazing area between, near or around the farms used by moving nomads for grazing within certain periods and then they move to other locations during their trips.

As stated before, eleven animal routes were known since the early fifties. The length of these routes ranged between two hundred and fifty to six hundred kilometers from north to south. The latter animal route is from *Wakhsyim* in North Darfur to *Um Dafog* in South Darfur and the former is the route from *Kulkul Dam* in North Darfur to *al-Daein* in South Darfur. The total areas for the eleven animal routes are estimated to be thirty-four thousand square kilometres. Some of those routes were for the cattle and others for the camel nomads. Due to the deteriorating environmental conditions in the early eighties the cattle movement from south to north has been limited to south of the railway line to Nyala (south of parallel 12:30). Moreover, the grazing areas have been limited by the cultivation of crops, especially groundnut and sesame as sources of cash for the farmers.

Some of the camel routes and dry season grazing areas in the dars of some tribes have been used for crop production throughout the year, staple food grains in the rainy season and vegetables and horticultural crops in winter either by rain moisture or irrigation. And the recent conflicts between the camel nomads and the settled farmers were the result of competition over the *wadi* and clay areas (in *Jebel Marra*, *Garsilla*, *Kabkabiya* and *Geneina*) and the preset Darfur conflict was initiated from this situation. However these routes have received some changes due to the following reasons:

- 1- The extent of the drought forced many Darfurian tribes to change their Nomadic lifestyle and seek settlement in lands considered by other tribes as their Dar or homeland. The decades of drought led to migration of more nomads into Darfur in search of water and grass.
- 2- Introduction of new traditions and new ways of fighting conflict, including the spread of modern firearms.
- 3- In the eighties the traditional rule, which provided the main conflict resolution mechanisms, suffered from occasional political and administrative upheavals.

The population of Darfur is generally divided into Arabs and non-Arabs. The separation along such lines is probably more based on cultural heritage than on true ethnic separation. Although what is called Arabic tribes may have some Arabic roots, generations of immigration and intermarriage have rendered such separation almost meaningless. (see Adam alzain reference for suprar paragraph).

3-2 Water resources

The Darfur region, especially the north, has been considered as an area of general water shortage. However, in spite of declining rainfall, water shortage has not become a cause of

severe conflict between the stakeholders.

The situation of drinking water in Darfur has improved substantially due to:

- Continuous efforts of the Government in investing in water in Darfur since 1984. (see Combating Thrust Programme Ministry of Irrigation- Sudan 1984).
- The Government has encouraged the private sector to invest in water resources, so many water sources are now operating privately in most parts of Darfur.
- The international assistance for water provision in Darfur was substantial especially after the 1984/85 drought. As an example, UNICEF of the United Nations under its Water and Sanitation Project (WES) has drilled and installed over six thousand water hand-pumps in thousands of villages in Darfur. This made millions of cubic meters of drinking water available for humans and small animals. Some studies revealed that hand-pumps in North Darfur led to increased animal population, especially sheep and goats.
- WFP in North Darfur for example has constructed over forty *hafir* (wells) and dams between 1999 and 2002 and this in turn has contributed effectively to solve the problem of drinking water for human and animals.
- Other international organizations have also provided considerable assistance in the field of drinking water provision of assistance in the water sector with the contribution and participation of the grass root beneficiaries.

3-3 The Evolution of Land Tenure in Darfur

The land tenure systems in Darfur are the result of a long historical evolution and changing political, economic and social organizations. The present structures have their roots in the institutions and ways of life among the different tribal groups in the area. Each tribe acquired for itself a large territory of land (*Dar*). The *Dar* is regarded as the property of the whole tribe and the chief of the tribe is regarded as the custodian of the property. Land is allotted to every member of the tribe for cultivation purposes while unused land is left as a shared resource to be used by all the visitors (nomads).

The Darfur Sultans did not change the basic structure, but they introduced certain innovations called *hakura* (pl. *hawakir*) or landed estates that were recorded in written documents, *wathiqa al-tamlik*. This arose because high-ranking officials and army commanders were not given regular salaries. Instead, the Sultan granted them large

estates, *hakura*, to collect taxes and dues, *ushur* from cultivators to sustain themselves. Some prominent figures and religious men were also granted estates as a means of obtaining their support. These changes played an important role in shaping tenure arrangements. Land was used in political bargaining and to win the favour of prominent tribal chiefs and influential men. In nomadic areas, particularly Southern Darfur, communal ownership was preserved.

The colonial government was able to stop the growth of neo-feudalist class and restored the communal ownership. The colonial government began regulating land by a series of ordinances. In Darfur, where land was held communally, the policy was to avoid registration of individual rights. It recognized rights over land that were less than full ownership.

Hence, the policies recognized three forms of land tenure. These are:

1. Government lands with community rights.
2. Government lands with no community rights.
3. *Hawakir* (tribal or individual) and lease (license).

However, there was no demarcation between the three forms. But the tribal lands, *dars*, were demarcated and mapped.

Against this background of uncertainty in relation to the ownership of unregistered lands, the Unregistered Land Act of 1970 was passed. This Act brought about a drastic change in the concept of the ownership of unregistered land as 'all land of any kind whatsoever, whether unregistered, shall be the property of the government and shall be deemed to have been registered as such', (El Mahdi 1971). This Act gives the local inhabitants usufructuary rights. However, within these government lands (according to 1971 Act), customary tenure has been modified and adapted itself to suit the changing conditions.

At present, the forms of tenure practiced during the colonial period are to a greater degree still practiced, but with some modifications. Within the customary tenure, individuals exercise different rights according to established norms and customs. According to tradition, four scales of ownership exist:

1. . At the communal scale, each tribe has a given land as a *dar*. Within the tribal *dar*, there is the clan ownership with a known boundary.
2. . At village level, there is the village land where each villager practises his private ownership, which is respected by all.
3. Unclaimed land, used as range land or allocated to 'strangers' (migrants) by the village head.

As a general rule, land allocated to any person cannot be withdrawn unless he/she leaves the village. Under such circumstances, the land abandoned by any person reverts to the village community to be allotted to someone else. In all cases, the owner of the land is free to hire out part of his land or dispose of it in the way he likes and after death, the land is inherited by his children or relatives.

The village head in carrying out his responsibilities is entitled to collect one tenth of the produce from food crops. This arrangement continued to be respected at the local level, but with an awareness of the legal aspects of landownership. According to the 1970 Act, all lands are the property of the government, but some cultivators, particularly migrants, refused to give it willingly. The abolition of native administration gave this attitude further momentum and helped to disrupt the long established customary system. Disputes were taken to civil courts to solve the problem of how to establish individual rights of use which does not amount to full ownership and to reconcile traditional claims with the established government policy. The process became more complicated when charter-holders (*wathiqa*) issued by the

Darfur Sultans emerged in the form of certain individuals laying claim to large areas as their property.

The process of land tenure was further complicated as the result of drought and desertification, where migrants in large numbers moved southwards looking for agricultural land and pasture for their livestock. For many of the cultivators, they were able to obtain land to grow crops provided that they respected the traditional customs of giving one tenth of the crop to the Sheik. As their numbers increased, some started to look for authority over land. Hence there emerged a distinction between 'Land Sheikh' and 'Men Sheikh' (*sheikh anfar*). (Bashir - Land Law in Darfur- a working paper in the Justice Review Periodical – Sudan 2005).

4- Shortcomings of legal solutions to the conflict in Darfur:

The pursuit of water was the initial cause of dispute in Darfur. Darfur is located in the Sahel Region, a belt of desert land that covers a large portion of Northern Africa. Due to this natural condition, coupled with the effects of severe droughts in the last several decades, water and pasture land became increasingly scarce. UN Secretary General Ban Ki-Moon stated on June 16 2007 that the conflict “derives, to some degree, from man-made global warming.” (see Khartoum Review Newspaper- Khartoum June 16 2007).

Darfur is settled largely by farmers in the agriculturally-rich central region near the Jebel Marra mountains, nomadic camel herders in the northernmost region, and Arab cattle herders in the eastern and southern regions. The camel and cattle herders have been encroached upon the farmers' land. Rebel groups began to form among the non-Arab African villagers, the most notable being the Sudan Liberation Movement and the Justice and Equality Movement. As competition for access to water and pasture land increased, small-scale raids turned into persistent battles among the rebel groups and the Arab Janjaweed militia.

The conflict as we know it today formally began in February of 2003 when a group by the name of Darfur Liberation Front publicly claimed credit for an attack on Golo, the headquarters of the Jebel Marra District. In the past four years, this conflict has evolved into the first large-scale example of genocide in the 21st century. The victims are the non-Arab, African tribal groups of Darfur: the Fur, the Massaleit, the Zaghawa, and other tribes that feed into the rebel groups. These people have been politically and economically suppressed for years but now they are being raided by violent Arab militias and the government is doing nothing about it.

In fact, there is accusation from the international community to suggest that the government is even supporting the Arab militias, the Janjaweed. Human Rights Watch, a nongovernmental organization, obtained Sudanese governmental documents in 2004 that indicate a government policy of militia recruitment, support, and impunity that has been implemented from high levels of the civilian administration – a sharp contrast to the Sudanese government's repeated denial of militia support.

Absence of water for rural communities is emerging as a major cause of conflict on the African continent. In Darfur, the story is one of pain and desperation for the nearly two million displaced persons. And the organizations that work in the area are

convinced that it is battles for water and pasture that sparked it off. (See World Council of Church, Feature , 7 June 2007).

The conflict was triggered off by clashes over access to water and pasture between small groups of black African farmers and Arab pastoralist communities. Gradually the groups grew bigger and the clashes more frequent. The turning point came in 2003 when powerful leaders of local Militias appeared in the scene , giving the conflict a new dimension. (see Ismail Aljizuli, Ecumenical Water Network (E W N) , conference 21 -25 May 2007 , Antebbe Uganda.).

The conflict in Darfur is a typical resource based conflict. Conflict over water was one of the scenarios of the suffer by Darfurians over resources since the early era of drought in the 1970s and 1980s. The successive governments left the tensions between the Farmers and Herders to be solved by the local leaders. Now the Sudanese Government is accused by the international community as arming the Arab Tribes' militia (Janjaweed) ,to destroy and defeat the farmers accusing them of supporting the rebel movements. The result is that , social development is not followed by the successive government. (Shadad (2007) , Los Angles Times : Shadad is the Head of the Sudanese Environment Conservation Society .He stated in a conference held in Alfasher the Capital of Northern Darfur: " We have been shouting for water resources based crisis in Darfur , but no one listened ").

One of the main reasons of the tension is the land law governing title to land. The tribes in Darfur are either Farmers or Herders. Farmers are settled in areas known as Hawakeer, Herders are nomads who pass though the Hawakeers in their movement in search of pastoral resources to feed their cattle. Conflict which arose in the past were solved by the tribal leaders through the process of Judia . However , this process is no longer existing , as the political agenda appeared by the government and the rebel leaders to support the tensions between the Farmers and Herders.(Yagoub Abdella (Land Tenure in Darfur) International Peace University 2004).

5- Environmental Justice in Darfur:

Environmental Justice:

A condition of environmental justice exists when environmental risks and hazards and investments and benefits are equally distributed with a lack of discrimination, whether direct or indirect, at any jurisdictional level; and when access to environmental investments, benefits, and natural resources are equally distributed; and when access to information, participation in decision making, and access to justice in environment-related matters are enjoyed by all."

"Environmental Injustice:

An environmental injustice exists when members of disadvantaged, ethnic, minority or other groups suffer disproportionately at the local, regional (sub-national), or national levels from environmental risks or hazards, and/or suffer disproportionately from violations of fundamental human rights as a result of environmental factors, and/or denied access to environmental investments, benefits, and/or natural resources, and/or are denied access to information; and/or participation in decision making; and/or access to justice in environment-related matters."

5-1 Principles of Environmental Justice

The following principles were adopted by delegates of the Firsts National People of Color Environmental Justice Summit in 1991. These principles were developed to serve as a "guide for organizing, networking, and relating to government and nongovernmental organizations."^(www. Weikpedia .com).

- 1) Environmental Justice affirms the sacredness of Mother Earth, ecological unity and the interdependence of all species, and the right to be free from ecological destruction.
- 2) Environmental Justice demands that public policy be based on mutual respect and justice for all peoples, free from any form of discrimination or bias.
- 3) Environmental Justice mandates the right to ethical, balanced and responsible uses of land and renewable resources in the interest of a sustainable planet for humans and other living things.
- 4) Environmental Justice calls for universal protection from nuclear testing, extraction, production and disposal of toxic/hazardous wastes and poisons and nuclear testing that threaten the fundamental right to clean air, land, water, and food.
- 5) Environmental Justice affirms the fundamental right to political, economic, cultural and environmental self-determination of all peoples.
- 6) Environmental Justice demands the cessation of the production of all toxins, hazardous wastes, and radioactive materials, and that all past and current producers be held strictly accountable to the people for detoxification and the containment at the point of production.
- 7) Environmental Justice demands the right to participate as equal partners at every level of decision-making, including needs assessment, planning, implementation, enforcement and evaluation.
- 8) Environmental Justice affirms the right of all workers to a safe and healthy work environment without being forced to choose between an unsafe livelihood and unemployment. It also affirms the right of those who work at home to be free from environmental hazards.
- 9) Environmental Justice protects the right of victims of environmental injustice to receive full compensation and reparations for damages as well as quality health care.
- 10) Environmental Justice considers governmental acts of environmental injustice a violation of international law, the Universal Declaration On Human Rights, and the United Nations Convention on Genocide.
- 11) Environmental Justice must recognize a special legal and natural relationship of Native Peoples to the U.S. government through treaties, agreements, compacts, and covenants affirming sovereignty and self-determination.
- 12) Environmental Justice affirms the need for urban and rural ecological policies to clean up and rebuild our cities and rural areas in balance with nature, honoring the cultural integrity of all our communities, and provided fair access for all to the full range of resources.
- 13) Environmental Justice calls for the strict enforcement of principles of informed consent, and a halt to the testing of experimental reproductive and medical procedures and vaccinations on people of color.

14) Environmental Justice opposes the destructive operations of multi-national corporations.

15) Environmental Justice opposes military occupation, repression and exploitation of lands, peoples and cultures, and other life forms.

16) Environmental Justice Calls for the education of present and future generations which emphasizes social and environmental issues, based on our experience and an appreciation of our diverse cultural perspectives.

17) Environmental Justice requires that we, as individuals, make personal and consumer choices to consume as little of Mother Earth's resources and to produce as little waste as possible; and make the conscious decision to challenge and reprioritize our lifestyles to insure the health of the natural world for present and future generations.

5-2 Government monopoly of decision making:

In Darfur and in Sudan as a whole, the government monopolizes the decision making and planning without giving the public any access to such process. Thus the government undergoes feasibility studies for projects without listening to the vulnerable let alone incorporating their views and worries in the projects. This attitude is expected to change by the promulgation of the Environment Protection Act 2001, with its Environmental Impact Assessment tools, as the informed decision making , may lead to the respect of the environmental human rights of the people of Sudan generally and the people of Darfur in particular. By this the people of Darfur may chose the projects they deem fit for their human life and the agriculture , cattle and water resources. (Nubian Reservoir Report 1959 , Merawi Dam 2005 , as development projects done without listening to local people of the areas as it was expressed by Dr. Nadir Awad Ex- Secretary General of HCENR 2004 – council's proceedings).

6- Results and conclusions:

1- Conclusion

From the above analysis of the natural resources management and use in Darfur, the following are the main conclusions:

- The expansion of agricultural lands as the result of declining productivity resulted from shortages of rainfall and the increase in pests has affected negatively the range and pasture lands in Darfur.
 - Increased livestock population and the deterioration of the range and pasture have increased competition and friction between the animal owners and the farmers.
 - The movement into Darfur of pastoral communities from Chad, especially camel nomads, is a factor: these do not respect the traditional relations and mechanisms for conflict resolution between the pastoralists and the farmers and this has increased the frequency of conflicts.
 - The communal grazing system is one of the most important factors leading We thus note that water in Darfur is not one of the elements causing conflict between the stakeholders to conflicts between the nomads and the farmers.

- The weakening and politicization of the traditional local administrative system has undermined its effectiveness in minimizing conflicts between the pastoralists and the farmers.
- The lack of development in the agricultural sector to increase real productivity has led to horizontal expansion and increased friction between animals and agriculture.
- Governmental policies and its strategy in managing the grassroots issues, especially those regulations that are not based on suitable and practical ways, such as selling of unattended animal fences to the merchants in the villages as a source of revenue, the communal – *talaig* – regulations have substantially intensified the present friction and conflicts between the farmers and the pastoralists.
- The study clearly showed that, there are some tensions in Darfur Region of the Sudan. The way of life of the people shows that they are either farmers or pastoralists. Over years people lived and adopted traditional methods of settlement of tensions which might have occurred between the components of farmers and pastoralists communities.
- The drought during the 1970s and 198s lead to shortcomings of natural resources including water, pastoral areas of land and agricultural areas. This situation needs the adoption of some measures to address these issues and thereby curb the conflicts and describe the road map for future co-operation between people of Darfur . They may also put an end to the tragedy of , and pave the path for sustainable management of natural resources , including water resources to meet the needs of current as well as future generations.

2- Recommendations:

The following recommendations were perceived as giving some hope for change of attitudes towards the rational use of natural resources:

- 1- The traditional leaders of the pastoralists as well as the farmer's communities may adopt and conclude a memorandum of understanding to sustainable use the natural resources. This can not be achieved unless all the parties have equitable access to such resources, to use them in the light of a code of practice to be agreed upon by the local communities. Such mechanisms may provide for dispute settlement among the communities.
- 2- The international organizations , the international donors, the international funding agencies may play a prominent role in utilizing the underground water, building of catchments to retain the flood and fall stream waters to be used during the drying season of the year. This can be done through donation or long term finance with some facilities. Some fees may be levied to avail some managerial finance for development and maintenance of the resources. Scientists may give some scientific solutions in terms of veterinary and agricultural aspects to mitigate the consumption of water resources. The local communities may legally be organized in some organizations to supervise such resources.
- 3- At the cross- regional level, an agency is proposed to regulate the managerial, legal and scientific research issues. Membership of the board of directors shall be of government, farmers and pastoralists. Such agency shall have planning

- function mandate, as well as the preservation of access to natural resource rights (including water rights) among the local community.
- 4- At the regional level , and due to the similarity of environmental and cross-cutting issues relating to tensions , across the borders of countries adjacent to Sudan needs regional co-operation between Sudan and its neighboring countries. Such co-operation between Sudan, Chad, Centre Africa and Libya may lead to the development, division and conservation underground and rail fall waters to meet the needs of the people of the region. Darfur will benefit a lot from this regional co- operation.
 - 5- As the tension in Darfur region is mainly between farmers and pastoralists, due to the lack or shortcoming of natural resources, the proliferation of arms lead to the tragedy of the region. This could be remedied by change of attitude of the military militias to civil works of development of water resources, and establishing of funds to compensate those who lost lives and property. Political declaration of the conflicting parties of their responsibility towards worsening the situations in the region may pay perceived as the first step in the right direction.

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