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1. Introduction

Drought and soil erosion in vast regions in Africa are seriously hampering food production and threatening the lives of millions of people. In this paper, the extent of these and other phenomena of environmental¹ degradation in Kenya shall be looked at and their social effects shown. It will be examined if and how this can eventually lead to conflict² situations and what solutions³ would be possible.

The country is in a unique position within East Africa: Its historic background, geography, and ethnic composition make it a microcosm of the region. Though poor by absolute standards it is the wealthiest state of the region. Kenya is regarded as a stable country in the midst of states that are, or until recently were, engaged in civil wars.

It is helpful to become first familiar with some general facts about Kenya. This will include information about geography, the population, the political and economic situation.

1.1. Geography

Kenya is located between 4°N and 4°S of the equator and covers an area of 582,646 km². The highest point of the country is the peak of Mount Kenya, 5,199 meters above sea level. In the East, the land borders on the coast of the Indian Ocean. In the West, Lake Victoria, source of the Nile, forms part of the border with Uganda. Just across the southern borderline, on Tanzanian ground, rises the highest mountain of Africa, Mount Kilimanjaro. Huge and almost empty plains stretch in the North and Northwest, bordering Sudan, Ethiopia, and Somalia. The Rift Valley, a branch of the East-African Escarpment, trenches the country from North to South. There is an enormous variety of ecological systems and climatic zones. It ranges from very rich farming areas in the central highlands and around Lake Victoria to deserts in the northern region.

1.2. Population

Kenya's current population is about 25 million; with an annual increase of 3.5% it is one of the fastest growing populations on the planet⁴. The outlook predicts a total population of 35 million by the end of this century and one of almost 80 million in the year 2025, a

1 For a definition of the term „environmental“ as used in this paper, see Libiszewski, p. 2 ff.

2 Ibid., p 7 ff.

3 The paper is based on the framework proposed by Böge.

4 The World Bank, p. 288.

number more than ten times higher than in 1950⁵. Life expectancy is 60 years⁶. Half of the population is less than 15 years old⁷.

The population density is very high in some parts of the country, where more than 300 people live on one square kilometer, while in other regions, such as the Northeast, this number drops to three⁸.

The urban population tripled between 1960 and 1990, reaching 23% of the total. On the whole African continent, this percentage grew at the same time from 18.3 to 33.9⁹.

About 40 different African ethnic groups belonging to three main language families – the Bantu, the Nilotic, and the Kushite – can be distinguished: The largest ethnic groups are the Kikuyu (belonging to the Bantu language family, about 20% of the population), the Luo (Nilotics, 15%), the Luhya (Bantu, 13%), the Kamba (Bantu, 11%), and the Kalenjin (Nilotics, also 11%). These five biggest groups form 75% of the whole population¹⁰. However, these figures are contested. Critics of the government of President Moi say that the figure of the Kalenjin population, to which Mr. Moi belongs, has been deliberately exaggerated in order to receive more development aid.

The about 50,000 Europeans, 60,000 Asians, mainly Indians and 40,000 Arabs, represent economically powerful minorities¹¹.

1.3. Political Situation

The political situation in Kenya today is one of apparent stability and democracy. This is surprising if one recalls some of the events of the recent past that used to occur, and partly still do, in the neighbouring countries and regions: The long-lasting civil wars in Uganda and Ethiopia have only been settled recently, but the struggle in Southern Sudan has been going on for almost two decades. The tragedy of civil war and famine in Somalia is continuing, too. Since very recently, the population of Rwanda has been suffering from what was described as one of the worst humanitarian disasters since World War II.

In the middle of this turmoil Kenya seems to go its own way, according to the slogan created by Jomo Kenyatta, the first African president of Kenya: "Harambee", which in Kiswahili, the lingua franca, means: "Let's pull together". Daniel arap Moi who

5 The World Resources Institute, p. 246.

6 Ibid. p. 248.

7 The World Bank, p. 200.

8 Nohlen / Nuscheler, p. 89.

9 The World Resources Institute, p. 264.

10 Nohlen / Nuscheler, p. 89.

11 Ibid.

succeeded Jomo Kenyatta is only the second leader since the country's independence in 1963. He has been acting president since 1978. On December 10, 1991, the Parliament decided unanimously to introduce a multi-party system. Just about a year later, on December 29, 1992, the first pluralistic parliamentary and presidential elections in 26 years took place.

But behind this façade of stability and democracy, things look different. Though it failed, in 1982, young air-force officers attempted a coup against the president. For some days thereafter, the capital Nairobi experienced difficulties, as people went on the rampage, looting and destroying shops. According to official numbers, 160 people were killed¹². Other estimates that include information from hospitals say that at least 500 people lost their lives.

Starting in 1991, more serious incidents occurred which caused several hundreds of victims. They were particularly bloody in 1992 and continued during 1993. The press perceived them usually as being linked with the scheduled elections¹³. Moreover, some newspaper articles speculated that government supporters deliberately fueled the conflicts¹⁴ in order to have a reason for halting the process of political liberalization. Although some journalists had predicted the cancellation of the elections and even the outbreak of a civil war after these events, the situation calmed down and elections could take place as foreseen.

At these elections the political opposition remained weak. It suffered a defeat which was partly due to internal quarrels and partly due to other reasons, such as many irregularities during the preparatory period. Bribery had been widespread. Several sources indicate that maybe more than 30 billion Kenyan shilling were printed by the government in place and used to buy votes¹⁵. But foreign observers of the election, the Commonwealth Observer Group, several Western states, and the Kenyan National Election Monitoring Unit appealed to the opposition to acknowledge the outcome. They declared that the final results still reflected the broad will of the people. Moi, head of the only important party since independence, the KANU (Kenya African National Union), was elected president, and his party won a majority in the Parliament.

After this election, however, it seems that it was not possible to build an atmosphere of confidence and a basis for fruitful co-operation between the KANU and the opposition. On the first day the new Parliament gathered, the opposition's members of Parliament refused to stand when the president entered the chamber. The next day Mr. Moi dissolved the body for several weeks.

12 Timberlake, p 167.

13 Cf. *Neue Zürcher Zeitung*, March 20 1992.

14 Cf. *ibid.* and *The Economist*, November 20 1993.

15 Cf. *Tages-Anzeiger (Zurich)*, January 4 1993.

An opposition member of Parliament was badly beaten by police officers in May 1993, when he wanted to complain about the alleged rape of six women in Kisii, in the west of the country¹⁶. In November 1993, the police arrested several members of the opposition without giving a reason¹⁷. Freedom of the press is under threat: in May 1993, the authorities closed a company printing independent newspapers¹⁸. In January 1994, 15,000 copies of a book written by an opposition politician, Kenneth Matiba, were seized by police. The government declared the print as illegal¹⁹.

1.4. Economic Situation

Kenya figures among the poorest countries of the world²⁰. For various reasons, it has long been regarded as a developing country worth receiving assistance. It was stable and a firm ally of the West during the Cold War. Thus, the country could always count on financial help and other support from abroad. The contributions amounted to one billion USD in 1991²¹. In fields like agriculture, schooling, and services, Kenya has indeed reached quite high standards compared to countries with similar preconditions. But towards the end of the 1980s, the donors began to demand internal changes as condition for their continued assistance. They called for improvement of the economy, the administration of development funds, and human-rights policy, and fundamental change in the political system.

Agriculture absorbs about 80% of the labour force, industry 8% and services 12%²². These sectors contribute roughly 30, 20, and 50% respectively to the GDP²³. Changes and damage to the environment which hamper agricultural production therefore directly affect a very large part of the population, a much larger portion than they would in industrialized countries where the figures for agriculture are far smaller²⁴.

16 The Economist, June 12 1993.

17 Neue Zürcher Zeitung, November 9 1993.

18 The Economist, June 12 1993.

19 Neue Zürcher Zeitung, January 19 1994.

20 The World Bank, p. 238.

21 Ibid. p. 276.

22 The Word Resources Institute, p. 264.

23 The World Bank, p. 242.

24 E.g. for Japan: 11% of the labor force in agriculture contribute 3 % to GDP, *ibid.*, p. 243.

2. Environmental Degradation

2.1. Aspects of Environmental Degradation

a) Soil

The environmental degradation of soil is mainly due to erosion. This is not a new problem in Kenya²⁵. It is basically a natural process. Human activities as well as natural disasters can intensify it. The main forms of soil degradation in Kenya are erosion due to wind and water, soil nutrient depletion, salinity, acidity, compaction, reduction in organic matter, and the effects of toxic chemicals and pollution²⁶. Water erosion prevails in the intensively used farming areas, the important first main category of land. These areas are defined mainly by their altitude of 1,000 meters and more above sea level and also, depending on that altitude, a sufficient amount of rainfall. Most of them lie east and north of the capital and in western Kenya around the town of Kisumu. Other valuable zones can be found on the coast to the north and the south of Mombasa. The soils are mainly used for rainfed agriculture. Erosion is in most cases intensified through inappropriate cultivation practices and/or over-cultivation.

Wind erosion is the main cause for degradation in the second main category of land, in the area that embraces the large arid and semi-arid parts of Kenya. The soils are usually not arable, at least not on a large scale, but used mainly for animal husbandry. Here, overgrazing, which leaves the soil unprotected against the impact of sun and wind, leads to erosion.

About 483,860 km² (or 83% of the total area of Kenya) are affected by desertification to varying degrees. About 110,000 km² must be considered as severely affected, while 53,000 km² show moderate signs of desertification²⁷.

b) Deforestation

As compared to other environmental issues and to other countries, the specific problem of deforestation in Kenya has been, and still seems to be, of less interest among environmentalists. Deforestation has been known to be a problem for some time²⁸ and continues to this day. The total loss over the 20 years between 1970 and 1990 was

25 Zöbisch, p. 27 ff., Walz, p. 32 f., Kipuri, Naomi, in: Bruhns / Kappel, p. 63.

26 UNCED report, p. 85.

27 Environment Report, Nairobi 1987, p. 31.

28 Hecklau, p. 29.

11,450 hectares (ha)²⁹. Statistics have to be dealt with cautiously. The question arises as to the size of the original forested areas and the statistical basis for measuring following changes. There were no exact data when the process was initiated.

Because pressure on this resource is so strong, it is not surprising that monitoring almost inevitably fails, since stocks change constantly. Some important forest areas have been put under protection in National Parks, such as the forests on Mount Kenya, Mount Elgon, and the Aberdares. One would think that statistics concerning forest *plantations* were likely to be more accurate than those of natural woods, but this is not the case³⁰.

Deforestation can also trigger erosion. Without the stabilizing, shielding trees, the soil is more exposed to wind and rains.

c) Lakes

Lake Victoria is by surface area the third largest fresh water lake in the world and an important source of fresh water for its riparians Kenya, Tanzania, and Uganda. The Kenyan share of it is about 10%³¹. The seven rivers flowing into it from Kenyan territory contribute 7000 million m³ of water annually, the largest volume of all the East African countries³². The lake is particularly important as a breeding ground for fish. The Kenyans caught about 186,000 metric tons (MT) in 1991³³.

Estimates say that the yearly catch of fish could be as high as 100,000 MT a year, without threatening the stock of fish in the lake³⁴. The above-mentioned figure for the 1991 catch shows that this amount has been exceeded greatly by the Kenyan fishermen alone, without taking into account those of other states.

Another threat to the fish population is the existence of the Nile perch in the lake. The perch was first introduced in the 1950s. Until about 1970, this new species developed normally beside various other kinds of fish. Then suddenly, in the late 1970s, there was a sharp increase which led to the extinction of more and more species and to the brink of collapse of this ecosystem. Today even the Nile perch itself appears to be threatened³⁵. Already in the 1950s there were warnings that introduction of such a new species would have negative consequences. The output in calories delivered by the herbivore cichlid, the main prey of the piscivore Nile perch, is bigger than that of the

29 UNCED report, p. 84.

30 Economic Survey, p. 134.

31 Okidi, p. 12.

32 Ibid., p. 24.

33 Economic Survey, p. 133.

34 Hecklau, p. 18.

35 Time, September 14 1992.

latter. Besides, since the perch has a high fat content, it needs to be dried on fire for conservation, unlike the cichlid for which sun-drying is sufficient. This fact has increased the demand for firewood³⁶.

Rivers flowing into the lake carry along a lot of waste caused by activities of the dense population around the lake. In particular the clearing of forests and fields by burning in the hinterland of the lake causes smoke of which some particles are washed out by rainfall. This leads to a massive influx of nitrogen, phosphorus, and sulfur which boosts reproduction of sea weed. The rotting, slowly sinking sea weed consumes oxygen at the bottom of the lake, thus creating a deadly zone for fish. This zone is already over 40 meters thick³⁷.

In mid-1994, fishing in Lake Victoria was prohibited by Kenyan authorities, but not for ecological reasons: The clashes in Rwanda had led to hundreds of thousands of victims. Tens of thousands of dead bodies were thrown into the Kagera River in Rwanda. The river enters Lake Victoria on its western side where the bodies were washed into the lake. Some of carnivorous fish ate human flesh and became unfit for consumption.

The second largest lake in Kenya is Lake Turkana. The lake has no outlet, and its water contains soda. In that region the water table and the level of Lake Turkana have been sinking continuously for several years. Lake Jipe in the coastal area has almost disappeared due to silting caused by erosion, and Lake Bogoria is threatened by the same phenomenon.

d) Wildlife and Biodiversity

The fate of East-African wildlife receives major attention from the media and the public in Western Europe. Kenya's fauna is well known for its biological diversity. The number of different species of animals and plants is by far above the average of other African countries. However, 15 of the 314 known mammals and 144 plants are threatened³⁸. Between 1973 and 1989, poachers decimated the population of elephants from 160,000 to 16,000. The number of rhinos sank from 20,000 to 500 during the same period.

e) Atmosphere

Atmospheric pollution, global warming (the global temperature has increased over the past hundred years³⁹), and depletion of the ozone layer are a world wide matter of concern. The direct effects of these phenomena on the region are yet little known, if at

³⁶ Hagen, p. 21.

³⁷ Time, September 14 1992.

³⁸ The World Resources Institute, p. 304/306.

³⁹ OECD, p. 26.

all. One can expect a negative influence on human health, animals, and vegetation. Precipitation patterns may change and the sea level could rise. Yet the greenhouse effect is to a certain extent a natural phenomenon. Direct links between greenhouse effect as a presumed cause of the effects named here will be difficult to prove. Global warming, among other reasons, may be responsible for desertification and the fall in the water table in parts of the country.

Important beside these presumptions is the fact that authorities in Kenya apparently do link climate change with consumption patterns in other countries. There is a fear that the change could result in a rise of the sea level and in increased aridity⁴⁰. If the sea level *were* to rise in the future, Kenya would be directly affected. The second largest city of the country, Mombasa, lies on the shores of the Indian Ocean, and its northern and southern coast is quite densely populated. More than two million people are expected to live in the coastal urban agglomerations of Kenya by the year 2000, about four times more than in 1980⁴¹. Expansion of the arid areas would further affect agriculture. But as for now, no studies have been carried out to examine the influence of atmospheric pollution on Kenya.

2.2. Causes of the Environmental Problems

a) Eco-Geographical Conditions

Of all the agriculturally important soils, the first category described in 2.1. a), covers only about 20% of the country's surface. On the other hand, about 90% of the population live on it. The result is a very high population density and pressure on this area. Almost 80% of the total surface belong to the second category mentioned *ibidem*. To this day, this part is considered unsuitable for intensive cultivation. Mostly pastoralists and nomads, who account for about 10% of the population⁴², have traditionally lived on this territory.

This already difficult situation is further complicated by the fact that the conditions do not remain stable and predictable. The climate has undergone frequent and sometimes significant changes over the years. Precipitation, for instance, is difficult to predict in Kenya, especially in the arid zones. There are two rainy seasons: a longer one around March-May and a second, less important one around October-December. But the actual beginning, amount, and duration of the precipitation are uncertain. In 1992, during the

40 UNCED report, p. 81.

41 The World Resources Institute, p. 336.

42 As pastoralists are described those parts of the population whose economic basis is cattle. They often have a nomadic or semi-nomadic lifestyle. Nomads are those pastoralists whose economic basis is the mobile keeping of cattle.

first rainy season, precipitation was particularly below the medium level in Kenya⁴³. In Nairobi, the highest temperature for the last 50 years was recorded in January 1991 when it reached 33°C. In the arid and semi-arid regions rains can completely fail in one season and fall too abundantly in the other. These difficult climatic conditions make agriculture extremely vulnerable or impossible.

b) Available Renewable Resources

The absence or unattainability of other available energy resources for household purposes still forces consumers to rely on wood as a main material for heating, cooking, and construction of dwellings. In 1990, wood covered 77% of the for energy demand⁴⁴ in Kenya. This figure was up to even 90% in rural areas⁴⁵. The need to open up more cropland and pasture is another reason to clear woodlands. Reforestation can not be accelerated to keep supply and demand for wood in balance. Imported petrol-based household fuel is too expensive for most people; its consumption is more or less stagnant⁴⁶. Production of geothermal and hydro energy is low, especially in rural areas. The number of electricity consumers is increasing although still almost insignificant⁴⁷.

c) State of Agricultural and Industrial Production

ca) The Kenyan agricultural sector is one of the technically most advanced in East Africa. Food production increased steadily from 1980 to 1990⁴⁸. Yet because the population increased, the food supply in calories per head fell slightly during that period⁴⁹. Large farms occupy 20 to 30% of arable land⁵⁰. In many cases they produce cash crops (coffee, tea, fruit, wheat) grown in pesticide-intensive monocultures; parts of these farms lie fallow⁵¹, which increases pressure on the remaining surface.

Still most farming is on a subsistence basis⁵². Small farms consisting of less than 12.5 ha account for about 75% of output, about 80% of usable land, and over 85% of employment in the rural areas⁵³.

43 Economic Survey, p. 120.

44 UNCED report, p. 64.

45 Ibid., p. 84.

46 Economic Survey, p. 146.

47 Ibid., p. 7.

48 The World Bank, p. 244.

49 FAO, p. 253.

50 UNCED report, p. 52; Wichterich, Christa, in: Hofmeier / Tetzlaff / Wegemund, p. 60.

51 Wichterich, Christa, in: Hofmeier / Tetzlaff / Wegemund, p. 60.

52 Hecklau, p. 113.

53 UNCED report, p. 52.

Avoiding degradation requires knowledge and care for the land one is depending on. This is true for the cultivator as well as for the cattle rancher. To know which fertilizer and which seed to plant on what soils, when to plant, when to harvest, how to store, etc. is not a simple thing to do. Cattle raising is also a science of its own. Farmers in Kenya will often have a lot of experience and skills handed down to them by an old tradition in farming. But knowledge is useless if it cannot be put into practice. This usually requires financial investment which in many cases is unavailable. New and possibly better means of production will in most cases be out of reach if they are costly. Breaking this cycle would require financial assistance from outside or assistance in kind.

Care for the land is something not everyone can afford, especially in a poor country like Kenya. Someone struggling for mere survival is unlikely to plan on long terms. He will exploit the land as much as possible. There will probably be no long-term strategy aimed at keeping up the ground's productive capacity. Population growth aggravates the situation. A non-enlargeable surface has to be distributed among more and more people.

Subsistence farmers often raise some cattle. It provides some additional milk and meat. Moreover, some people engaged in monetary economy will raise cattle, regarding them as a kind of savings account. It gives yields in the form of milk, and it can be exchanged at a more or less known value.

Especially for pastoralists, ownership of cattle means even much more, since these groups depend (or used to depend) almost entirely on it. It shows their social status, it is their *main* food supplier, means of transportation, exchange item, etc. While for the subsistence farmer it is wise to raise some cattle, it's mandatory for a herdsman since he is defined by it. Cattle are considered to have a value of their own without considering their productivity. It is less important if they supply a lot of milk or meat. What counts is the pure number of heads. The result is creation of large, unproductive herds in parts of the country where in some cases they have devastating effects on vegetation. Badly designed construction of wells, originally dug to achieve a safer water supply and a better distribution of herds throughout the country, first led to an even further increase in cattle and then, very often, to complete destruction of vegetation around these wells, where ever more cattle gathered⁵⁴. However, commercialization of cattle herding has transformed many of normally pastoralist ethnic groups in Kenya from pure pastoralists to actual commercial cattle keepers who raise cattle to obtain money and no longer just for sheer numbers.

Women do most of the work in rural areas, and they manage in some areas up to 70% of the rural households. They produce up to 75% of the food and the cash crops. The reason for this owes partly to tradition. It is strengthened by the fact that many men leave the rural areas to find wage labour. Women work in the fields, collect firewood, take

⁵⁴ Hecklau, p. 33.

care of the house, and look after the children. On the other hand, their rights are rather limited and can usually be derived only from their relation with their husband⁵⁵.

cb) Kenya is the most industrialized country of East Africa. Yet in absolute terms, the industrial production is still relatively small. Many "simple" goods such as bicycles or kerosene lamps and stoves are imported, most of them from India or China. They are relatively cheap but of poor quality. Even these items remain too expensive for many households. People go on using traditional techniques for cooking and heating. In this sense, the underdeveloped state of industrial production speeds up deforestation and intensifies pollution indirectly. Large-scale environmental damage due to industry itself is not a major concern today⁵⁶.

d) Position in World Economy

Kenya's GNP per head of 340 USD per year is among the lowest in the world⁵⁷. There are only a few sources of income, thus they gain high importance. Tourism represents a main economic factor. It has been Kenya's biggest source of hard currency for many years. Other positive impacts are the creation of job opportunities, the building of infrastructure, the protection of large areas and wildlife in game parks and reserves, and the attempt to preserve the environment as a whole, since, because of its undisputed attraction, it is the main reason for tourists to visit Kenya.

Yet tourism has also undesirable effects on the environment. Tourists consume much more water in hotel swimming pools etc. than the average Kenyan. Early in 1992, some hotel pools at the coast had to be emptied; water was too scarce. The responsible authorities promised improvement⁵⁸. Many hotels are built in an ugly and inconsiderate way in environmentally sensitive areas like the beach. The protected Kenyan areas for parks and reserves cover 5.8% of the total land⁵⁹. Most of it lies in arid or semi-arid regions; it nonetheless represents a loss of land which could be used partly for cattle farming and which would lift the pressure, although only to a small extent.

Many of the threatened species of animals and plants are supposed to be protected in national parks and game reserves. But the flora and fauna in the parks, actually supposed to be protected *for* the tourists, has in turn to be protected *against* them if people arrive in large numbers. There is, by the way, no law to date protecting the *flora* in these areas.

55 Wichterich, Christa, in: Hofmeier / Tetzlaff / Wegemund, p. 57.

56 Lake Nakuru, today the main part of a national park, could be protected from pollution by the sewage waters of an industrial plant after the intervention of the World Wildlife Fund. In another case, a quarry wasteland caused by a cement factory was rehabilitated and turned into a self-sustaining ecosystem. This system, now called the Baobab Farm, today serves as a demonstration object and is designed to show how industrial progress and environmental protection can be combined.

57 The World Bank, p. 238.

58 Neue Zürcher Zeitung, Nr 42, February 19 1992.

59 The World Resources Institute, p. 298.

Pollution and exploitation, partly caused by diving tourists or the demand of corals as souvenirs, have led to destruction of some of the coral reefs lying just off the coast⁶⁰. Much of the foreign-currency benefit will have to be spent to cover tourism-related costs, e.g. the infrastructure, roads, water supply, etc.

Another economic asset, production of the cash crops tea and coffee, has been held responsible for direct negative impacts on the environment: Especially when extended over large areas, this production requires substantial inputs of pesticides, as mentioned. Moreover, forests often had to be cleared for these plantations. Coffee trees are at least considered to contribute to halting erosion. For a small farmer it is also interesting or necessary to grow some cash crops. But they limit the surface available for planting food for one's own consumption, thus increasing the remaining soil's exploitation. Harvesting times for cash- and other crops often coincide, leaving some land without the necessary care. Planting of cash crops can lead into difficult entanglements: Once a farmer has decided to plant a cash crop, he will depend on it for several years because it will obviously be difficult for him to alternate crops every year. His income depends on the market price, something he can not influence but which can change fast. In recent years, world market prices for coffee have been falling. As a result, the harvested area remained stable after increasing considerably during the 1980s⁶¹ when prices were higher.

e) Population

Population size and particularly its growth are important causes of environmental degradation. The underlying reasons for growth are manifold. It would clearly overtax this paper if I should explain them. Many studies on this subject have been carried out⁶². They all underline the interactions between the economy, society, development, environment, and population size.

It is widely recognized that the actual size of the population threatens the environment. It causes a problem because more food has to be produced on ever fewer resources. This can lead to the above mentioned overfishing, overcultivation, overgrazing, the clearing of forests for new cropland, or migration. But more people also need more infrastructure or increase pressure on the existing one; they produce in particular more waste and overburden the sink capacity, as described for Lake Victoria. Social side effects of high population growth create threats to mothers and children, further socio-economic side effects lead to a decrease in capital accumulation and an increase in income inequalities.

⁶⁰ Tolba, p. 172, with further references.

⁶¹ FAO, p. 187.

⁶² See for further reference e.g.: Richard Anker / James C. Knowles: Population Growth, Employment and Economic-demographic Interactions in Kenya, New York 1983; Pradip K. Gosh (Editor): Population, Environment and Resources and Third World Development, Westport (Connecticut) 1984; David Pitt: Rethinking Population, Environment and Development, Bern 1986; Dominick Salvatore (Editor): World Population Trends and their Impact on Economic Development, Westport (Connecticut) 1988; The World Bank: Population Growth and Policies in Sub-Saharan Africa, Washington D.C. 1986.

While on one hand it is argued that population is *the* key factor of the threat to the environment, other authors emphasize the state of the economy, social behaviour, and underdevelopment. According to the latter, not too many people, but their lack of technical and organizational meanings cause major concern. As proof of this, the example of industrialized countries and particularly the cases of Switzerland and the Netherlands are often cited to show how densely populated areas, given their sound technical and organizational background, can manage very well. However, this comparison does not help, since it is done with two completely different entities in terms of history, society, development, and economy. European countries cited gradually evolved from self-sufficient agricultural states into industrial powers. Population growth never reached the same dimensions as in Kenya and is stable today at a very low level. Moreover, nations had to pay a high environmental price for the current state of development. They have completely transformed large parts of the land from its natural state into industrially used and highly urbanized areas. Even agriculture is at best semi-natural; more often and increasingly so it is industrialized. Environmental pollution is very high, though today relatively stable.

Quite a fair formula to express the influence of the population factor on the environment is this: Environmental strain can be defined as product of population (A) x consumption patterns (B) x damage per consumption unit (C)⁶³. As for factors B and C it can be said that they are less important in our case. Kenya is not a consumer society. Many people just manage to cover their basic needs. The environmental damage C is relatively low and mostly necessary for mere survival.

f) Other Reasons

Poaching is seriously threatening wildlife. Pushed by a lack of other job opportunities and high prices paid for products like ivory and rhino horns, poachers have diminished some animal species to alarmingly low numbers (see above).

Ignorance by foreign "experts" has caused several ecological disasters: officials of the Food and Agricultural Organization of the United Nations (FAO) introduced the Nile perch into Lake Victoria. Foreign capital made possible the drilling of wells and led to destruction of vegetation because too many cattle gathered around these wells. There are other examples of negative influence on the environment caused by "assistance" from abroad⁶⁴.

Colonial administration is held responsible for land degradation in farming areas and in areas of pastoralist people. The administration restricted the areas for different reasons: One was to reserve the best land for whites. Another was to stop clashes between tribes.

⁶³ Leisinger.

⁶⁴ Hagen, p. 209 ff.

Sometimes this was also done to stop overgrazing of particular plots. Finally, white farmers wanted to protect their cattle from cheap competition and disease. In some areas, campaigns during colonial rule to halt erosion resulted in an opposite effect. The authorities realized that erosion was threatening the soil and introduced tough measures, like forcing the farmers to build terraces. Because of the negative attitude of the farmers towards whatever came from the colonial administration, the measures could not always be put into practice or they were reversed when colonial rule was over. Some farmers destroyed the terraces at the moment of independence. The establishment of grazing schemes for cattle, the interdiction of access to certain areas, and other measures to stop degradation also generally turned out to be a failure: indigenous peoples had developed over time a sophisticated system of land use that avoided overexploitation of land. When their free access to land was limited, that which remained was overgrazed⁶⁵. Additionally, improved medical and veterinary services introduced during British rule initiated and sustained the process of increasing the human and animal population⁶⁶. This led to a joint effect of increasing erosion due to population growth on a restricted area.

Until 1993, about half a million people had fled the civil war in Somalia to take refuge in the northeast of Kenya. Those who could brought their cattle with them. Since most of the refugees were herdsmen, many did. But inevitably, this increase in animal population has accelerated soil degradation and depletion of water reserves in the fragile arid region.

2.3. Reversibility of the Environmental Problems

Some loss of arable land or pasture could probably be regained if a lack of necessary available ingredients to restore soil fertility were the only problem. This is impossible where all the top soil has been lost completely due to erosion or where compaction and siltation occurred. The only possibility left is to stop these processes at least.

Deforestation is basically reversible but merely with regard to quantity, not to quality. Old rain forests can not simply be re-cultivated. Because forests have not only been cleared to obtain firewood, but also to give way to other uses like necessary increased food production, reversibility is often purely theoretical.

The threats to wildlife and overfishing, as long as they have not led to the extinction of certain species, are also theoretically reversible, but it would imply fundamental social and economic changes. People depending economically on fishing, for example, would have to be offered an alternative so that stocks could recover. This is unlikely to be feasible. On the other hand, if the condition of Lake Victoria is really as bad as feared, then changes will *have* to be made sooner or later. Fewer fishermen will find jobs, and the catch will feed less people.

⁶⁵ Walz, p. 21.

⁶⁶ Mahar, Dennis J., in: Salvatore, p. 73.

The other environmental problems must be regarded as irreversible.

2.4. Geographical Origin and Effect of the Environmental Problems

Origin and effect of environmental problems are often not easily definable geographically. All the same an attempt should be made to establish certain broad categories:

Environmental problems in terms of causes and effects are confined to Kenya as far as soil degradation in the Kenyan *highlands* is concerned, whereas wind degradation in *other areas* is a transboundary phenomenon. The causes of destruction of coral reefs and the *diminishing* of wildlife are not geographically confinable. Their effects are limited mainly to Kenya. But every *definite loss* of biodiversity is of global scope, even if direct consequences of the loss might be difficult to perceive.

The problems are of regional nature as far as ecological causes and effects are concerned in the case of Lake Turkana. Deforestation has mainly internal direct *causes*, but also regional, if not global *effects* because the local climate may change and emissions add marginally to global warming.

The over-exploitation of fish stocks in Lake Victoria is of regional nature in terms of ecological causes *and* effects.

3. Social Effects of Environmental Degradation

3.1. Economic Problems / Economic Decline

Until 1988, Kenya's food production had grown steadily. After that, not only food supply per head but also total food production declined. This was officially attributed to reduced precipitation, lower input of fertilizer, reduced hectarage, and tribal clashes⁶⁷.

The carrying capacity of Kenya was already exceeded in 1982⁶⁸. In the recent past, parts of the Kenyan population have suffered severe food shortages and even famine. The drought that affected the whole Sahel in 1984 also struck a large part of Kenya. Only with imports worth at least 200 millions USD could massive famine be avoided. In 1992, famine again threatened people in parts of the country, particularly in the north. Insufficient rainfall in the region during both rainy seasons of 1992 was blamed for the

⁶⁷ Economic Survey, p. 121.

⁶⁸ The World Bank: Population Growth and Policies in Sub-Saharan Africa, Washington D.C. 1986, p. 26. Carrying capacity is defined as the relation between population numbers and land (and hence food). The concept has been criticized as being too simple; yet it is a valuable indicator for a country like Kenya, where agriculture is the backbone of the economy.

abnormal harvest⁶⁹. Other explanations fault the management of the National Cereals and Production Board. This public institution is accused of being unable to balance good and bad production years⁷⁰. The government had to import 415,000MT of the staple food maize in 1992. Food aid for Kenya was announced at the beginning of 1994. To avoid famine, the World Food Programme (WFP) was going to distribute 82,000MT of food worth 36 million USD during this year. The aid was destined first for pastoralists in the north of Kenya who had lost their herds because of the drought and then for needy women and children in western Kenya, victims of clashes. This year, Kenya also had to import maize, rice, wheat, vegetable oil, and even sugar.

There have been reports about droughts in Africa almost since there were reporters. In recent decades, droughts following bad harvests and often famines have occurred with striking regularity about every 10 years: In 1963, 1973-1974, 1984, and 1994. It would obviously not be correct to link these droughts directly with man-made environmental degradation since the latter is a more recent phenomenon.

The production of coffee, Kenya's most important export product, sank by 30% between 1989 and 1992⁷¹. The reasons are almost the same as for the decline of total food production. Only reduced hectarage is not a factor since it has remained the same. The decline is economically even more serious when considering the fact that world market prices for coffee continued to decline during the same period⁷².

In 1992, the fall of the level of Lake Turkana and the drying out of a breeding ground led to a dramatic decline of the catch of fish⁷³. However, this cannot be linked exclusively to man-made disturbance of the ecosystem. One could only suppose that the influence of an atmosphere changed by human activities plays a role.

In 1992, incomes from tourism fell by 15% compared to the previous years⁷⁴. Worldwide recession, competition, and the impression among potential tourists of Kenya as an unsafe place are the main reasons.

On top of this, the most important donor countries, the World Bank, and the International Monetary Fund (IMF) froze their financial contributions to Kenya in 1991 in order to back their demands for political and economic changes. After this, the balance of payments worsened, internal growth decreased, and unemployment increased⁷⁵. The

69 Economic Survey, p. 120.

70 Hecklau, p. 95.

71 Economic Survey, p. 124.

72 FAO, p. 269.

73 Economic Survey, p. 133.

74 The Economist, June 12 1993.

75 Neue Zürcher Zeitung, Nr. 274, November 24 1993.

inflation rate at the end of 1992 reached between 30 and 40% according to estimates of the IMF and the World Bank⁷⁶. As a result of increasing pressure, President Moi introduced the multi-party system. He also floated the country's currency and raised interest rates. The World Bank then released 85 million USD of financial aid. Yet on March 15, 1993, the donors refused to lift the sanctions completely. Kenya had not shrunk the costly civil service. Neither had it stopped fixing prices on farm products nor privatized state-owned enterprises⁷⁷.

3.2. Population Displacement and Migration

In pre-colonial times, the territories of the cultivators lived in a "fragile equilibrium"⁷⁸ with those of pastoralist tribes. Under colonial rule, large parts of the valuable land were owned by whites. For the reasons mentioned in 2.2. f) the territories of pastoralists often were restricted. The mobility and hence the possibility adapting to the changing climate and environment was hindered. While pastoralists had to move out, Kikuyus and other groups were allowed or even encouraged to move into the "white" areas where they served as a cheap labour force. After independence, they could expand into areas previously designated as buffer zones between pastoralists and settled farmers⁷⁹.

Jomo Kenyatta generally gave preferential treatment to the Kikuyu and particularly a more privileged status as far as land distribution is concerned. However, due to population growth since independence, with the highest growth among the Kikuyu, the land handed over soon became insufficient. Already in the 1960s, hundreds of thousands of Kikuyu and the Luo began to move out of the fertile highlands in search of new land which they often found in the Rift Valley. Confrontations with the tribes living there, like the Pokot and further south the Masai, were inevitable. But until 1991, they could be settled peacefully.

The migrations are partly due to land scarcity and partly to man-made degradation: We can reasonably suppose that no migration will take place as long as enough food can be grown on the land people are living on. But the capacity of the land will be stretched to the utmost while the population increases. Pressure to grow cash crops on part of the land will result in more pressure on the rest. A given plot of land can produce food for a certain number of people. Even with the help of technical and scientific means, more fertilizer, other kind of crops, and other varieties of the same crops which are not readily available in Kenya, potential food production has a natural limit from which it can not be increased any further. The number of calories produced can be pushed to that limit and

76 The Economist, June 12 1993.

77 The Economist, April 24 1993.

78 Walz, p. 19.

79 Walz, p. 22 f.

remain at this level for some time. If the population increases further, less calories will be available per head. Because this is undesirable, it appears inevitable that a rising population on a given space will try to exploit this space even beyond its natural fertility. The fact that the fertility limit is reached will only become obvious when negative consequences appear, like a decrease in yields. Then it will be too late. The land will be of poorer quality than before, perhaps indefinitely. This decrease in land fertility because of over-exploitation is a consequence of the man-made disturbance of the regeneration rate. The land will finally feed even fewer people than before. One can therefore discern the following reasons for migration: While one part of the population will be forced to migrate because of population growth, another will be forced to because of the decrease in land fertility, itself an effect of the growth.

Apart from the migration from one rural area to another, there is also a strong flow of people towards urban centers, especially Nairobi, but also Kisumu and Mombasa⁸⁰. This migration is a significant effect not only in Kenya. There are certainly several reasons, not exclusively ecological ones. But the main reason has an ecological *aspect*. There is not enough work on the land for everyone, because of a simple lack of land and because it is degraded. Even if there is work to do, subsistence farming does not always generate enough income. So people are forced to migrate. Because of this high influx of people in towns, it was impossible to build the necessary infrastructure in time. Slums are growing where no infrastructure at all exists. About one fifth of the population of Nairobi live in shanty towns! The infrastructure of the city today would have been necessary 20 years ago.

3.3. Restricted Migration

The carrying capacity has not only reached its limit in the peasant farming areas but also in those of different pastoralist tribes, like the Turkana and the Samburu. The process of erosion is magnified by the behaviour of the affected people: They react to the worsening conditions and the higher risks of loss of cattle by increasing the herds in order to try to compensate for the risk⁸¹. For the pastoralists involved, raids on the cattle of the neighbours form a part of their social behaviour. The appearance of firearms among some tribes during the 1970s led to an important demand for and influx of modern weapons which were paid for with cattle. The raids escalated and became more numerous and bloodier. Because of all this, the readiness to simply steal cattle grew even more⁸². While they were stealing each other's cattle, security among the groups

⁸⁰ Walz, p. 42.

⁸¹ Walz, p. 32.

⁸² Bollig, Michael, in: Scheffler, p. 53. Bollig only mentions drought as one ecological reason for the conflict. He emphasizes the high demand for cattle for all the social transactions of the concerned tribes.

worsened. The raids also interfered with seasonal migration. The usable area diminished further and was ever more exposed to erosion. Migration hence was restricted.

3.4. Domestic Problems and Differences

Agricultural resources are limited and even dwindling because of degradation and population growth. The distribution of resources is decided upon by the government. Politicians tend wherever possible to gain support giving preferential treatment to the ethnic group to which they belong. Elections like the one in 1992 are crucial for distribution of resources among different ethnic groups and can easily lead to conflicts between these groups.

Worsening environmental conditions, migration, and the bad economic situation have led to social divisions and a widespread decrease in social solidarity. The main victims of these social changes are women⁸³. Those who leave the countryside are usually men. The women stay alone and also have to perform work done previously by men. But women in towns, too, are in a more difficult position than men. The social structures in the towns are still weak. Men for instance can leave their wives and children and do not have to bother about paying alimony. So women are again left with the problems of educating children and trying to earn money at the same time.

Nairobi was considered a relatively safe city until the late 1980s. Of course even then, the wealthier villas had to be protected by watchmen, and it was not wise to go for a walk in the city alone after dark. But this was considered normal for a capital of a developing country of Nairobi's size. Yet according to more recent reports the situation has clearly worsened: Robberies and attacks occur in the middle of the day. In particular, many cases of "car-jacking" were reported in 1993, and in some instances the car owners were shot dead⁸⁴.

Crimes like robberies and rape against Somali refugees living in camps along the Somali-Kenyan border have been reported repeatedly. The reports say they have often been committed by Somali bandits but sometimes also by camp personnel⁸⁵.

3.5. Geographical Impact of the Social Effects

The social effects of ecological degradation are so far confined to Kenya. But Kenya is quite tightly linked with its neighbouring countries, especially Tanzania and Uganda. In the long run, economic and other domestic problems in Kenya will not remain without effect on these states.

83 Cf. Wichterich, Christa, in: Hofmeier / Tetzlaff / Wegemund, p. 56 ff.

84 Newsweek, October 4 1993.

85 The Economist, October 23 1993.

4. Environmental Conflicts

4.1. The Conflicts since 1991

Fighting between different groups started in 1991. It was particularly fierce in 1992 and continued in 1993. According to press reports⁸⁶, mainly Kalenjin "warriors" and members of pastoralist tribes like the Masai repeatedly attacked Kikuyu, which were the most affected. Besides, tribe members of the Luo, Luhya, Kisii, Kamba, Meru, and Teso were targets. Armed with spears, bows and arrows, machetes, but sometimes even automatic weapons, the "warriors" killed people, looted and burnt down their houses and fields, and often stole their cattle. They claimed land from which they had been expelled by white settlers (see above) or which had been sold by their families, sometimes as far back as the 1960s.

Attacks led to counterattacks and retaliations, which fueled the conflicts. Before the end of 1993, some 1,500 persons had been killed, about 1% of the whole population has been displaced, and the area affected covered about 25% of Kenya. Clashes occurred throughout the Rift Valley, Western, and Nyanza Provinces. Thousands of homes, public facilities, and business shops were destroyed. More recently, in 1994, the clashes spread to areas that formerly were calm, such as parts of the Coast and Western Pokot. In that area, up to 10,000 people are feared dead. These killings have been dubbed the "silent massacre" since nobody talks about it. Emergency measures put in place by Moi hinder the flow of information.

Usually these events were described by the press as tribal clashes, stirred up for political reasons by the government⁸⁷. Obviously, the confrontation lines are drawn between different tribes and by the parties involved. Thus, the conflict is being perceived as a traditional, mainly ethnic conflict. But it was also argued that there was an underlying political reason: Some of the ruling elite, including the president, wanted to prove that democratization would simply tear the country apart and lead to such tribal conflicts. To do so, supporters of the president and the ruling party had sparked off the outbreak. They kept the clashes going by inciting some of the folks loyal to them. Public statements by some of Moi's cabinet ministers support this sentiment.

One cannot hold only one party responsible for the environmental problem, since soil degradation is widespread in the area of both parties and both are affected by it. The aim of the conflict is by no means a *solution* to the underlying problem but a redistribution of

86 Cf. The Economist, April 24 and November 20 1993; Neue Zürcher Zeitung, March 20 1992.

87 Cf. The Economist, June 12 1993; Neue Zürcher Zeitung, Nr 77, March 20 1992.

its costs. The wish to enlarge the individual's usable area must necessarily clash with the wish of groups which want to remain where they are.

Both parties are affected by the increasing pressure on limited resources. They both must perceive the problems as being grave and urgent. Public opinion in the "First World" remains more or less indifferent. Information about the conflict in European newspapers is scarce. Compared to other conflicts (Somalia, former Yugoslavia, Rwanda), the Kenyan case is a much smaller scoop.

The parties engaged in the conflict have only simple means at their disposal to fight it out. Both parties are relatively poor people. International aid from United Nations' agencies, the Red Cross, churches, and other relief organizations has to a certain extent alleviated the consequences. Economic resources are meager as are the military ones. Yet this does not, by itself, say anything about the actual and yet possible consequences of the clashes. The case of Rwandan civil war that has escalated into genocide since April 1994 has tragically shown what terrible effects simple machetes can have. Fortunately, the opponents in Kenya have not gone as far as those in Rwanda. But clashes could easily have escalated further. In some cases, for instance, security forces apparently did not intervene to stop the aggressors. Since the causes of the clashes have not been eliminated, there is still a danger of more clashes occurring. The ethnic cleavages remain and have deepened during the conflict. Political agitation has not stopped completely. The political forces that are suspected of having incited the clashes remain in power, the opposition is oppressed. Finally, environmental resources are increasingly scarce, the population is rising, marginalization and impoverishment are continuing.

The effects of the conflict's violent conduct on the environmental situation in the conflict area are manifold: The fields of the chased-out farmers were burned, some plots lie fallow, and weeds are growing. Whether this will aggravate the environmental situation is difficult to guess. One is inclined to say that in some cases this might even improve the situation, since fields could recover. More likely, however, the situation on the whole will at best be like before: peasant farmers will often occupy some land in other places and eventually increase the pressure there. The land they leave behind will not lie fallow forever but will later be used again.

The conflict has poisoned the social and political situation. Opposing positions have hardened and are polarized. It has led to a loss of already scarce resources – not only natural ones but also social ones. That is the ability to live together by sharing these resources in a way that takes the needs of all the parties into consideration.

4.2. Conflicts between Pastoralists

Conflicts between different pastoralist tribes have occurred frequently in history and continue up to date. They can have serious consequences too but are covered even less by the press.

Pokot and Turkana tribesmen clashed on several occasions between 1970 and 1984⁸⁸. Regularly, Turkana raided Pokot settlements, killed people, and led as many cattle away as they could. Just after the outbreak of this series of conflicts the Turkana enjoyed a military advantage since they live closer to the border with countries engulfed in civil wars (Uganda, Sudan, and Ethiopia). From there, relatively cheap weapons were flown in. Firearms were readily available especially in the northeastern Turkana territories. There, during the time of the conflicts the price of a gun was probably never higher than 10 to 20 cows. In 1991, a Kalashnikov was available in exchange for 7 to 10 goats. Further to the south and away from the borders, in the Pokot areas, the prices for automatic guns were higher. They varied between 20 and 30 cows in 1975 and between 8 and 10 in 1988. The Pokot, in the first years of the conflict being militarily weaker than their counterparts, purchased modern weapons despite the higher prices in the middle of the 1970s. They wanted to be able to better defend themselves and to retaliate. The intensity of the clashes grew. Sometimes as many as several hundred men fought on each side. The Kenyan authorities tried to mediate in the conflict. They brought elders and chiefs of both groups together for peace talks. The Kenyan army finally tried to enforce a conflict settlement by being present and by disarming the groups so that the intensity of clashes decreased after 1984. However, there is no lasting peace today as skirmishes still occur sporadically.

In the course of the conflict the interest pursued by both parties lies mainly in the attempt to increase the number of cattle. This fact leads to the vicious circle described in 2.2. This has clearly aggravated the environmental problem. The parties have more or less the same lifestyle, so it can be said that they are equally responsible for and affected by it. They certainly perceive the problem as being grave and urgent since they entirely and directly depend on their natural environment.

The economic resources of the parties to fight out the conflict are limited. Because of the conflicts and droughts, both sides are impoverished. They have both lost parts of their cattle. Some Turkanas depend on food aid from abroad. Again, mobilization of public opinion was low and the attention of the international media near zero.

Similar clashes have more recently occurred between other tribes. Sometimes they were of different nationalities, like Kenyan Turkana and Sudanese Toposa⁸⁹. The Toposa often enter Kenyan territory from southern Sudan. The border is long and mountainous; infiltration is easy. Police and some soldiers are on duty in the most important settlement of the frontier region, Lokichokio. They are supposed to protect the town and its surroundings. But the Toposa do not hesitate to raid even the settlement itself when the

⁸⁸ Cf. Bollig, Michael, in: Scheffler, p. 42 ff.; also Walz, p. 52 ff.

⁸⁹ We will include these "transboundary" conflicts in this paper as long as one party of a conflict is of Kenyan nationality or living mainly on Kenyan territory. Some groups of the population in and around Kenya do not halt at national borders. They have long been moving as nomads across borders in the region and still do so.

situation seems favourable. Such a situation was described vividly by an author who wrote about the security forces in the town of Maralal: "For most of their professional lives they have very little to do, and they are absurdly overmanned. Then suddenly there will be trouble with cattle raiders..., and they will be hopelessly outnumbered..."⁹⁰.

The Kenyan army is to a certain degree willing and able to respond to the incursions. It orders small, machine-gun equipped helicopters to pursue the raiders into their Sudanese territory. There have so far been no official Sudanese counter-measures. The Toposa live in territory held by the rebel Sudanese People's Liberation Army (SPLA). The official Sudanese government is almost unable to react. The SPLA, since 1991 split into two factions, relies for a good part on the supply route leading through Lokichokio and therefore on good contacts with the Kenyan authorities. This, among other reasons, explains why the SPLA will not take measures against the Kenyan army either.

This situation prevailed until the beginning of 1994. But at that time military forces from Khartoum advanced south, threatening the civilian population and the SPLA. The direct military actions, further threats, and starvation led to the exodus of thousands of Sudanese. They have been sought refuge in Uganda and Kenya, adding to the tens of thousands already there.

What the situation would be like if the Sudanese army could reestablish its control over the whole South and down to the Sudanese-Kenyan border is difficult to imagine. One has to fear that the situation would become more tense. Intensity and type of conflicts could change and go beyond cattle raids. The border would represent the dividing line between a "white" and a "black" African state, between a mainly Christian and a Muslim nation. So far relations between the two states can be described as normal, although it is clear that the leaders of the SPLA often choose Kenya as their base. Kenya could risk a somewhat embarrassing situation if the SPLA would have to retreat completely from Sudanese territory and rely on Kenya for headquarters, training bases, and logistic. A bilateral conflict affecting Kenya and the Sudanese state could develop. Political, ethnic, and religious reasons would probably be of equal or greater importance than environmental ones.

Kenyan helicopters were also involved in action against the Ugandan Karamojong in 1984, killing "between several dozens and several hundred" of them⁹¹. That year, the Kenyan army intervened in the same region to stop intertribal feuding. Some 57 Degodia tribesmen were killed⁹². The cause of the fights, grazing and water rights, suggests that there could be a link with environmental degradation.

90 Marnham, p. 59.

91 Timberlake, p. 170.

92 Ibid.

Because of its large scale, the so-called Shifta war is mentioned here, too. It started in 1963 and lasted about five years. It was fought mainly in the border region between Kenya and Somalia and was for most of its duration a low-intensity conflict. Yet regular Kenyan and Somali troops were involved on certain occasions. However, the reasons for the conflict were more of a historical, political, and religious nature than of an ecological one⁹³.

4.3. Poaching

I would also describe the regular clashes between poachers and guards as an environmental conflict. It concerns the environment because poachers have killed off an especially large part of the elephant and the rhino population⁹⁴. It is a conflict because poachers are equipped with modern weapons, communication facilities, and vehicles. They often engage in shoot-outs with park rangers. The massacres only stopped after the rangers received better equipment in 1990, including firearms, planes, and helicopters⁹⁵. They have the right to shoot-to-kill poachers on sight.

4.4. Potential Conflicts

A potential conflict has just been named, i. e. the one between Sudan and Kenya. Another one concerns the waters of the Nile. The large arid and semi-arid areas on one hand and the abundant volumes of water in certain other regions on the other make it seem likely that water resources exploitation favouring development of the dry areas will grow more important in the future. Studies on how to enhance this possibility have been carried out⁹⁶. If the Kenyan government wanted to use the waters of Lake Victoria, one source of the Nile, more extensively for irrigation, it should not forget that Egypt depends almost 100% on the water of this river. It must be presumed that Egypt would react fiercely to every threat to this resource. Egypt regards the whole Nile basin as its area of interest. The then Egyptian Minister of State for Foreign Affairs, Butros Butros Ghali, predicted in 1985: "The next war in our region will be over the waters of the Nile, not politics."

More water diversions, decrease in fish stocks, and pollution of Lake Victoria could easily lead to a crisis among the riparians. These problems must be solved. The resources of the lake have to be distributed fairly. Otherwise critical international repercussions are likely.

93 For a more detailed description of the Shifta war cf. Matthies, p 209 ff.

94 See p. 7.

95 Frankfurter Allgemeine Zeitung, January 18 1994.

96 Cf. Hecklau, p. 102 ff.; Okidi, p. 24 f.

The greenhouse effect represents a global issue and creates potential conflicts though there is a dispute among scientists whether it is man-made or not and even whether higher temperatures do *negatively* affect the environment. The Kenyan authorities admit that the country adds to the problem because of the ongoing deforestation. But they regard the industrialized world, plus Brazil, India, and China, as major contributors to and as primarily responsible for the climate change because of their emissions of carbon dioxide, methane, and other greenhouse gases⁹⁷. In the Kenyan UNCED report it is stated that these emissions are directly linked with the global climate change, and Kenya asks for measures against them.

4.5. Conflict Issues

I have mentioned three different types of current and several potential conflicts. I presume that there are underlying environmental problems with all of them. The problems are caused by different important factors named in 2.2. Environmental problems then engender social effects described in 3. This cause-and-effect pattern is more complex than it seems: Causes can become effects and vice versa. Environmental problems were said to be an effect of the state of the economy or population growth. But they are also a cause of it. None of the described conflicts emanates directly and only from ecological degradation but rather from its social effects. A set of circumstances – all linked with the environment rather than one particular reason – has led to the clashes. It is impossible to say quantitatively how important the environmental contribution is. Environmental degradation and the need to compensate for loss of land arising have certainly added to the readiness to resort to violence fighting out existing political and ethnic rivalries and disputes about land rights. That is also because land scarcity closes one simple, traditional way to settle disputes: To walk away from them and to look for other land.

While degradation of the environment and related matters such as population growth have for some time been perceived as grave and urgent problems by the Kenyan authorities, those emanating from ethnic tensions appear to be relatively new to them. Nation building has been a major goal since independence, and since ethnicity has seemed to be an obstacle to it, one has tried to overcome it. But it has always played a certain role. With introduction of the multi-party system, cleavages alongside ethnic lines became apparent.

From abroad, the conflicts that erupted in 1991 as well as those between different pastoralist groups are generally perceived as ethnic conflicts. When it comes to reports about wars in Africa, the causality is often somewhat simplified. Sometimes this is already done by the reporters, sometimes by readers or TV spectators. The problem of

⁹⁷ UNCED report, p. 81.

land distribution and the link with population growth has been mentioned in reports. But the environmental part which itself is linked again with these two problems has rarely been considered.

Political agitation has played a major role in the genesis and further development of the latest conflicts. Whatever the aim of this agitation was, all sources accuse it of being the very reason for the conflict. Because the agitators incited ethnic groups against each others, it looked in the foreground like an ethnic conflict.

The conflicts to date remain basically internal conflicts without transboundary repercussions. The skirmishes caused by intruding tribes from Uganda do not pose a real exception.

4.6. All-Out War?

On several occasions in recent years, particularly before and during the latest elections, it was widely believed that Kenya was at the brink of a civil war. This has also been reported repeatedly by the press⁹⁸. There have been victims to deplore in recent times, but fortunately an all-out civil war has been avoided so far. Kenya appears to be a more stable country, even in this difficult period of transition, than many observers were inclined to believe. There is hope that Kenya does not have to experience the same sufferings as some of the neighbouring states which became involved in bloody, large-scale internal conflicts. Not only Kenya would be affected if this happened. The country is a hub of the region. The consequences of a destruction of its infrastructure would not be limited to Kenya. Its roads link the nearby countries. The railway leading through Kenya gives Uganda good access to the Indian Ocean. Many goods for the region are imported and exported through Nairobi or Mombasa. Foreign aid in kind often transits there. The recent massive relief operations for the Sudan, for Ethiopia, and Somalia could be organized because there are at least the basic logistics' facilities. Many businessmen or journalists, working in or covering several countries in the region, have their base in Nairobi, from which it is relatively easy to travel around and where good communication facilities exist.

As noted at the outset, the land is like a microcosm of the African continent, also as far as its problems are concerned. The way these problems will be resolved or not, will serve as a good or a bad example to other African countries.

⁹⁸ Cf. *The Economist*, p. 44, November 20, 1993.

5. Approaches to Peaceful Conflict Management and Conflict Resolution

The focus of this chapter will be on the most important conflict in recent years in Kenya, the one between ethnic groups that started in 1991. Though many of the findings, especially those in the more general part of the chapter, under 5.1., will be applicable to the other conflicts. The relations between the two factions in this conflict are deeply rooted. Mutual disdain and mistrust reign. Generally, the aggressors declare themselves unwilling to ever give back the land they consider their own. The people who lived there for many years are obviously unwilling to accept this re-occupation.

Elders of both sides are holding meetings, though, and in some places normal communication seems to have been re-established. Because one side of the conflict suspects elements within the government as being responsible for it, it is likely to reject an authoritative way to overcome the differences. I will discuss management of the dispute on two levels. First, on a broader one, possibilities to halt the causes of environmental degradation must be outlined. On that level (5.1.), I try to show how environmental degradation could be slowed down or even eliminated. If that is possible, then the social effects of degradation should theoretically diminish, too. On a second level (5.3.), management and containment of the conflict itself must be dealt with.

5.1 Eliminating the Causes of the Environmental Degradation

The Kenyan government places a high priority on halting environmental degradation. It clearly understands that the necessary food for an increasing population can be produced only within a healthy environment.

Preservation of the environment and protection of nature are regarded as vital for tourism. Healthy environment and economic development are not regarded as contradictions but are tried to be integrated in sustainable, environment-friendly foundations of the economy.

Many efforts to halt degradation are being undertaken in Kenya. They will be summarized here. Beyond, some new ways to conduct environmental policy will be reviewed which have been neglected or are less known⁹⁹.

a) Eco-Geographical Conditions

Eco-geographical conditions have created certain limited areas that offer privileged conditions for agriculture. Population density in these regions is very high, while in other, less favourable parts it is very low. The latter are characterized mainly by low rainfalls and aridity. The solution to this problem may look obvious: Distribute the water over the

⁹⁹ For a summary of the UNCOD (United Nations Conference on Desertification) Plan of Action to Combat Desertification see Grainger, p. 322 ff.

whole country and encourage migration in order to achieve a more equal distribution of the population within the country to ease high concentrations. This would mainly imply finding new land for cultivators outside the highly profitable farming areas, on marginal land. Then this land would have to be irrigated. Yet it is not so simple. It is true that modern irrigation technologies have proved able to turn even deserts into orchards. In fact, irrigation does not yet play a central role in Kenyan agribusiness; the percentage of withdrawn water is relatively low¹⁰⁰. There are irrigation projects, and some work quite well, while others have failed; still others, especially those using the waters of Lake Victoria, are yet planned¹⁰¹. The total hectareage of irrigated areas has not increased in recent years¹⁰².

But apart from the social tensions that can be expected from large irrigation schemes, there are political and technical obstacles: As has been said above, even the *attempt* to make extensive use of Lake Victoria's water would be likely to provoke serious reactions from Egypt, although the impact there of a water catchment in Kenya is unknown. For the technical difficulties: precipitation is unequally distributed during the whole year and over the country. Water would have to be caught and then transported over long distances to the final destination. During the wet season, rains can downpour heavily. Rivers swell fast and carry along a lot of silt, an effect strengthened by frequent deforestation in the source area of the rivers. This would necessitate massive dams which can still be damaged easily and filled with silt within a short period. Dams and irrigation systems have to be well adapted and maintained. Part of the water will be lost because of a high rate of evaporation in hot areas. Bad irrigation can also lead to salinization. Moreover, large schemes often clash with other environmental concerns such as loss of habitat and wildlife. They can also restrict pasture land further. This process, with the addition of other strong influences, has to a certain extent been a source of conflict. Finally, good irrigation technique is capital-intensive. Hence, this way is rather restricted.

The water necessary for human consumption requires even more complex technology. It would also have to be transported from one part of the country to another and usually be treated to make it fit for consumption. The task would be huge, considering that in 1980 only about 15% of the rural population had access to safe drinking water¹⁰³. But despite cuts in funding, the government remains committed to provide potable water to most households by the year 2000. If people migrate to more remote and drier areas, this goal seems impossible to be achieved. The most efficient and environment-friendly way of using many of the marginal areas is extensive cattle farming. It would require fewer water installations than cultivation. So improvement of farming systems and support for

100 The World Resources Institute, p. 328.

101 Okidi, p. 25.

102 Economic Survey, p. 126 f.

103 The World Resources Institute, p. 252.

cattle farmers must not be neglected. The total pollution and emission of CO₂ and other gases caused by industrialised countries is suspected to have worldwide effects. Negative influences on the eco-geographical conditions caused by a degraded atmosphere and climate change must be prevented if still feasible, or at least slowed down and stabilized. Legitimately, Kenya is urging the industrialized countries to take steps to reduce emissions¹⁰⁴. These reductions are also in the long-term interest of the industrialized countries, since they are affected as well.

b) Available Renewable Resources

As for the available renewable resources, Kenya has tried to explore the possibilities of reducing its dependence on wood and to use, for instance, more oil instead. Oil has been prospected for on Kenyan territory. No major deposits have been found. It still has to be imported. Given the known negative consequences of burning fossil fuel, alternative sources of energy would be preferable anyway. Electric (hydro and geothermal) energy consumption is on the rise; the potential for solar or biomass energy is only marginally exploited. Especially in the arid areas, the use of solar energy would make sense. It can not be denied that the technology is still relatively unreliable and complicated in particular as far as the energy storage is concerned. Yet some examples of how to make direct use of solar energy, e.g. for cooking in "solar stoves", are encouraging. Another question is the acceptance of such new techniques. Few like to cook in the plain hot sunlight.

Some small progressive steps have also been made in saving wood by using energy-efficient charcoal stoves and gas stoves. However, even if changes in use of energies were made rapidly and fundamentally, this would not change the fact that there still is a lasting and growing need of wood as a source of energy. It is predicted that even with present wood consumption *beyond* a sustainable level there will not be enough wood fuel in 1995¹⁰⁵! To cope with this challenge and to control desertification, Kenya's forestry department wants to coordinate resource management with the ultimate goal of sustainable use¹⁰⁶.

c) State of Agricultural and Industrial Production

ca) I have said before that subsistence farming can lead to over-exploitation of the ground. To break the cycle of poverty and land over-use, different institutions and facilities have been created. Credit schemes, cooperatives, and producers' and marketing

104 UNCED report, p. 84.

105 Oesterdiekhoff, Peter, in: Bruhns / Kappel, p. 216.

106 Economic Survey, p. 133.

boards are common¹⁰⁷. They should support first the survival and independence of farmers, and then provide some entrepreneurial flexibility. Yet some of the institutions have become more of an obstacle to rural development than a help because they are slow and bureaucratic. Cases of abuse of cooperative funds have weakened the confidence of peasants. Compulsory membership in cooperatives has not proved useful.

Since many smallholders and pastoralists are economically obliged to engage in other activities, it would be important to support them by providing access to off-farm jobs. Educational projects are being implemented to spread knowledge about new, better farming techniques among a large part of the rural population. The Swedish International Development Authority (SIDA) is massively supporting a state soil-protection programme¹⁰⁸. 40% of the peasant farms introduced terracing of their plots during the last 30 years. This technique helped, for example, in the Machakos district to feed not only a population that had grown fivefold within 60 years but to increase food output even fifteenfold during the same period¹⁰⁹. Because women do a large part of the work, there can be no development without paying particular attention to them.

For different reasons there have been attempts to settle those tribes which still mainly live as pastoralists. One cause was the fact that some pastoralists had lost their herds and were obliged to turn to farming another was an attempt to increase the output of farm products. The projects to settle pastoralists raise some fundamental questions. It seems that at least some pastoralists prefer to keep their traditional lifestyle. From the environmental point of view, this should be supported. However, the desire to stick to old habits clashes to some extent with environmental constraints such as increased aridity, population growth among one's own and other ethnic groups, and the goal of nation building. The modern state tends to integrate all groups living on its territory. However, this should remain a political and economic integration, something which is by the way not really contested by the concerned tribes. They should be granted the freedom to safeguard their social and cultural institutions as far as possible, while modernization should target only the political and economic field¹¹⁰.

The large and sometimes environmentally harmful herds of cattle that sustain social security will not disappear unless there are real alternatives such as public or private pensions. Such facilities obviously demand relatively high organizational standards of the state or the private institution offering them. For a developing country this is not obvious. Even in Western Europe public schemes were introduced only a few decades ago, and they need to be updated regularly.

107 Cf. UNCED report, p. 124 f.

108 Janssen, Volker in: Hofmeier / Tetzlaff / Wegemund, p. 176.

109 The Economist, December 11 1993, p. 46.

110 Walz, p. 253 ff.

A difficult question is if and in what situation state formation of prices for basic goods is reasonable. State interference to keep prices low by decreeing top prices was introduced in Kenya in colonial times and continued until recently. Nowadays price controls of most products have been sidelined. When the system was partly changed, the incomes of the producers rose. Controls are still in vigour for staple food. This discriminates against the population engaged in the first sector compared with the one in the second and the third, depriving them of participation in economic growth. It can hinder production and investment in agriculture which can engender shortages. On the other hand, rising prices placed a heavy burden on budgets of the urban population. Due to fears of an outbreak of protests and violence in urban centres, the government tends to refrain from liberalizing the market. Riots like the above-mentioned¹¹¹ are warnings. Not liberalizing means treating the more politicized urban population preferentially to the detriment of the rural masses. This, again, is not a typical Third World problem. Farm products are rarely sold completely free of any state intervention. The answer consists in finding within a given market a fair solution for producers and consumers.

Another factor influencing the state of agricultural production is the access to water and to the market itself. Farmers close to Nairobi and other major cities with relatively easy access are at a clear advantage. If the potential of the whole country should be exploited, then infrastructure – mainly roads and the water supply network – has to be adapted. Products have to reach their buyers quickly and reliably. A better infrastructure could also cut the often large number of dealers between producers and consumers. As long as prices are unfair and infrastructure is insufficient, some parts of the land may still lie fallow and will not contribute towards easing the pressure on arable areas. Neither smallholders nor larger producers have an incentive to deliver goods for the market.

The form or the mere possibility of land ownership must be discussed. It can vary by province. Generally speaking, while peasant farmers know forms of private ownership of land, this is less the case among pastoralist groups, where shared use is the rule. The question about which form of land use is more likely to avoid environmental damage is controversial. In my opinion, it can be left open here. What seems more important is to provide rules and laws concerning land ownership that are predictable and enforceable.

cb) By demanding high taxes on imported goods, Kenya had long tried to protect its own industry, a particularly common practice for countries with emerging industrial markets. The IMF and the World Bank asked Kenya to drop this protection. Today the sector is largely liberalized. The two institutions have also demanded dismissal of several thousands of state employees and to close loss-making state enterprises¹¹². But all these measures would further increase the unemployment rate and have therefore been

111 See p. 3.

112 Frankfurter Allgemeine Zeitung, May 4 1993.

criticized¹¹³, the government remains reluctant to comply. At the same time, attempts have been made to improve the investment climate.

There have been negative examples of efforts to increase industrial power which should not be repeated. In the late 1980s, a car named "Pioneer" was designed and built in Kenya. It appears to have been a pure prestige object. The car probably never had a real chance on the market. In Kenya itself demand is not reasonably high to sustain production. Abroad, tough competition on the car market minimizes chances of success for such a product. After a prototype appeared in a Nairobi stadium, the project seemed to have been abandoned.

But industrialization should be supported. More often stoves, lamps, shovels, and other items in common use, often imported today, could be manufactured locally. This would create some urgently needed jobs. The energy-efficient stoves built in Kenya that were mentioned above proved that intelligent, adapted products can be a commercial success. On the other hand, there are few examples of successes in heavy industries and large-scale manufacturing¹¹⁴. Adverse government policies, lack of investment, and the unfavourable state of the world economy are main reasons. It is unlikely that these factors will change considerably in the near future.

d) Position in World Economy

The income generated in export and in tourism depends largely on the state of the world economy. This economy should work, especially after completion of the GATT Uruguay Round and now within the World Trade Organisation (WTO), basically according to the logic of the free market. However, in this pure logic of the market there is still little room for environmental concerns. Common goods like the air for instance are still widely regarded as abundant and therefore to have no price. Yet smog alarms in towns, traffic restrictions and destruction of stone buildings due to pollution have made it obvious to anyone that the quantity of clean air is not endless. International regulations dealing with protection of common goods exist, but it will take a long time until these regulations are transformed by the nations into binding, enforceable rules. The term "internalization of external environmental costs" has become fashionable in industrialized countries but it remains mainly a term. So, producers in these countries, although they sometimes undertake expensive measures to produce in a less damaging way, can go on polluting the environment without paying an accurate price as long as national legislation does not prevent this.

The priorities in developing countries are in general less focused on environmental questions than on economic growth to which "environmentalism" is perceived as being

113 Neue Zürcher Zeitung, March 3 1993.

114 Cf. Coughlin / Ikiara.

an obstacle. Industry and agriculture tend to be environmentally harmful, though in total still less than in the First World. Through environmental-unfriendly means of production and other reasons such as a cheap labour force, output is possible at competitive prices. Production can be at the lowest possible price when environmental damages are not taken into account. This producer gains an advantage on the international market compared to the one who has to comply with rules destined to protect the environment but which, in some cases at least, raises production costs. Environmentally sounder production would often mean more technology, higher prices, and therefore loss of competitiveness. Now the consumer of, for instance, Kenyan tea or coffee generally does not care about the environment nor the means of production (wages, working conditions) because the most important reason to buy or not to buy is a low price. He cannot or does not want to know about the rest. However, "fair-trade" and "environmental-friendly" products gain increasing market shares. It has become obvious that a growing number of consumers in the First World are prepared to pay higher prices for these kind of goods. Such production conditions should be encouraged. More information at the production site, on the product, and for the consumer would be a necessity.

In general, environmental friendliness of production and world trade should be given a higher priority. NGOs and environmentalist parties in Western Europe have criticized the GATT and the WTO, insisting that they do not respect environmental concerns. Some have urged their governments not to sign the GATT-agreements because of this. Hopefully, the WTO will be concerned about the environment.

Tourism has probably reached its limits. The infrastructure is already overextended. Marine reserves and game parks cannot support an unlimited number of people. The environment is the best asset to the tourism industry. It has to be safeguarded. Kenyan authorities, of course, are aware of this. The government is financially supporting the "Kenya Wildlife Services" (KWS) and the Department of Resource Surveys and Remote Sensing (DRSRS). These institutions are involved in activities aimed at conserving natural resources and wildlife in particular¹¹⁵. Foreign companies investing in tourism should pay more attention to environmental questions. Some already do. Travel agents and tour operators can encourage more environmental-friendly tourism: Several operators, sometimes upon request, today deliver an environmental-balance sheet on a certain journey to clients who intend to book, critiquing the spot they want to travel to. The environmentally-conscious side of potential tourists is growing, so the image of tourism might change. Competition in tourism is stiff world-wide, and environmental friendliness could well become a selling argument.

115 Economic Survey, p. 136 f.

The dedication of land to numerous parks for tourist attractions creates another problem. This occupation competes with other possible uses, mainly farming. Fewer people find work in the agricultural sector, and less food can be produced. It again increases pressure on the rest of the farming area. It is questionable which is environmentally safer: the agricultural or the tourist use. Intensive agricultural use is quite certainly not; extensive use could be. The criticism of Kenya's large reserves has to be taken seriously. Many Kenyans do not see any benefits from allocating considerable areas specifically to wildlife and to the pleasure of some foreign tourists. They would rather have a piece of land of their own. Moreover, while domestic animals are not allowed to graze in parks, wild protected animals often leave the parks and destroy crops on fields surrounding the parks. The peasants are more or less defenseless because whenever they shoot a wild animal they are suspected of poaching and have to face severe charges. The question is whether tourism covers its direct environmental costs, whether its benefits compensate the loss of employment in the agricultural sector and the loss of food production. This does not seem to be the case – by far. Ways should be found to make tourism more profitable. In any case, the population must participate in the benefits of the parks. The administration of Masai-Mara park and the Masai have already found a way to realize this goal.

Several points are being considered further:

There is discussion about reintroducing game hunting, forbidden since 1977. Because the parks are only nature-*like* and not completely self-regulated, some park animals are too numerous. Thanks to strict measures, the downward trend of animal populations in the parks which had lasted more or less 20 years could be stopped by the end of the 1980s. There are amateur hunters who would be willing to pay for a license to shoot animals. This would regulate the number of animals, when needed and could be an additional income. Quite a number of these kind of facilities already exist – for instance in South Africa.

Income could also be generated by selling the ivory of elephants or the horn of rhinos which died in a naturally or tusk and horns seized from poachers. Kenyan authorities are currently opposed to this. Other countries like Zimbabwe, which had also successfully protected animals and where ivory can be obtained without threatening the very existence of the elephants, have a different opinion.

Another way to let the population profit directly from the wildlife and to reduce the surplus of wildlife is to shoot them not just for trophies but in order to get protein-rich food for the rural population. This use is called game-cropping.

To save endangered species, plants, and animals from extinction is of global importance. This effort must be supported.

The financial sanctions imposed in 1991 also led to the conviction within the Kenyan government that instead of depending on external aid it would be more sensible to start relying on its own resources. The government created a three-year plan aimed at

stabilizing the household and curbing the deficit. In November 1993, the donors decided to release 850 million USD of financial aid¹¹⁶. Continuing economic problems, recession, droughts, and the consequences of the sanctions forced the Kenyan State to plead for the rescheduling of debts in January 21, 1994. 600 million USD of foreign borrowings were delayed. The creditors agreed to reschedule for eight years¹¹⁷.

e) Population

The high fertility rate in many African countries often remains a misunderstood phenomenon to the First World. The impression prevails that there is no family planning at all. This is wrong. But, very generally speaking, Africans plan *large* families. Children support their parents, they help in the fields, and they are expected to ensure a decent old age.

This perception is about to change. The Kenyan government is aware of some of the problems caused by population factors. It names particularly the growing need to create employment and improve basic infrastructure. The increasing pressure on the environment seems to remain unnoticed. In the 1960s, Kenya was the first black African country to implement family-planning programmes. Among the Kenyan female population of today, there is a wish for smaller families, mainly because of health concerns and rising costs for education. This wish opposes the socio-cultural value of children and mothers as well as other social behaviour patterns and constraints. According to the UNCED report, 13 Government Ministries and 13 Non-Governmental Organizations (NGOs) are currently implementing family life education and family planning services in collaboration with the National Council for Population and Development (NCDP)¹¹⁸. The programmes have been quite successful so far. More than 80% of people (men and women) questioned in 1984 knew at least one method of contraception. By the early 1990s, about 30% of the women used one. Still, apart from the mentioned conflicting socio-cultural values, there is a widespread fear of negative consequences of contraceptives, sometimes justifiably. Inapt and even dangerous means have sometimes been used. Also, they are neither so easily available nor cheap enough. But these programmes together with other influences do not remain without effect. The fertility rate declined from 7.9 to 5.4 between 1979 and 1993. According to a press report quoting the Kenyan Minister of Internal Affairs, the growth rate has dropped from 3.8 in the beginning of the 1980s to 3.3 in 1989¹¹⁹, lower than predicted some years ago.

116 Neue Zürcher Zeitung, Nr 274, November 24 1993.

117 Neue Zürcher Zeitung Nr 17, January 21 1994.

118 UNCED report, p. 50 f.

119 Frankfurter Allgemeine Zeitung, December 7 1993

The government intends to increase projects aimed at curbing population growth. However, this goal should be achieved following an ethically legitimate policy. Three conditions – ethical, social, and economic – are prerequisites to such a policy¹²⁰:

The ethical include: voluntariness, self-responsibility, respect for life, the aim of human development in dignity and freedom.

The social include: change of inter-familiar income distribution by removing patriarchal structures, improvement of the social status of women, and a better health care system.

And finally the economic: sustainable economic development, more equitable income distribution, introduction of a social market economy.

f) Role of NGOs

Many of the programmes to protect of the environment are being carried out by NGOs. Directly trying to safeguard the environment, for example, is the Green Belt Movement¹²¹. Other NGOs playing roles in environmental management alongside governmental efforts are the Kenya Energy and Environment Organization (KENGO), the Wildlife Clubs of Kenya, the Mazingira Institute, the Kenya Water for Health (KWAHO), the East African Wild Life Society, and many more¹²².

g) Further Action

I think many of the social effects could at least be alleviated if the environmental problems could be solved. As has been said, considerable efforts have been made in Kenya to halt environmental degradation. These have to be upheld and even reinforced. In Kenya, there is, for instance, an environmental officer in every district. He might be useful, but apparently his advice is rarely paid attention to. It has also been stated that external factors play a role and that the "outside world" has a certain responsibility regarding climate change, world market conditions, etc. Continued efforts on an international level to ensure that environmental considerations gain increasing importance, so that further necessary international regulations are agreed upon, and that enforcement of these regulations is ensured.

Money can enable or speed up many of the required actions to halt environmental degradation. Because some of the effects of degradation are international, it is also in the interest of wealthy industrialized nations to make contributions to stop them. It is reasonable also in a narrower economic sense: It is cheaper to avoid CO₂ emissions in the non-industrialized countries.

¹²⁰ Leisinger.

¹²¹ The World Resources Institute, p. 225 f.

¹²² UNCED report, p. 49.

But generally, financial help should be linked to conditions. Authoritarian, repressive rulers, or cliques should not be supported. It is a waste of resources. Civil unrest in countries like Liberia, Somalia, and Zaire has been directed against corrupt heads of state, with tragic consequences for hundreds of thousands of people and a threat to regional security and, in some cases, the environment. Internal tensions and civil war can destroy the fruits of years of work and render useless millions of dollars of foreign aid. One condition for financial assistance is a political reform as has been asked for in Kenya and led to a multi-party system. However, it is too simple to ask any country to introduce as quickly as possible a Western-style political system. Democracy does not appear only in the European or the American shape. Africa has its own democratic traditions; they could be rediscovered or strengthened. A second condition is economic reform: Yet economic growth must not be asked for at any price but must be environmentally sustainable.

There is a suspicion that the conditions for renewed help from donor countries in recent years have less to do with the genuine wish of these countries to introduce democracy and respect for the environment but with the simple fact that money is short and that a state like Kenya has lost some of its former political importance.

5.2. The Ethnic Question

Ethnic tensions evidently *seem* to be the main trigger of the conflict. Yet little has been done to curb tensions. Instead, ethnic cleavages have deliberately been widened and abused to achieve political goals. It must be said that some of today's troubles are inherited. According to the rule "divide et impera", the British, when coming to power, also took advantage of pre-existing rivalries among different groups in order finally to pacify them and to consolidate their position. Before colonial times, differences between groups were less pronounced. There were few impermeable lines between ethnic groups. People were sometimes unable to say which tribe they belonged to. For different reasons, a strict "classification" was then set up by the foreign power. Historians today even say that tribes have in fact been *invented* by colonialists and that they had not existed before. Certainly new is the word "Kalenjin" as the name of a tribe. It was created by linguists as late as in the 1960s. For sure, the rather common perception of clearly defined tribes as something typically, traditionally African is wrong.

Yet ethnic cleavages are a reality today. Kenya was built as a one-party state¹²³ some 30 years ago to avoid this. But this state with centralized power lacked legitimacy and credibility. Although the single party tried to represent small groups of all regional and ethnic differences, some groups felt excluded from power. Instead of trying to find an equilibrium between different parties, it seems that the aim was to hide these differences.

123 Kenya became a one-party state de facto in 1969 and de iure in 1982.

Not the tribe but Kenyan nationality should be the reference for a feeling of togetherness. Behind that, though, ethnic origin played an important role. The two presidents seem to have granted privileges according to ethnic point of views, the Kikuyus being privileged under Kenyatta, the Kalenjin under Moi.

Some critics, not only Kenyans, felt the multi-party system would deepen ethnic cleavages because different parties would simply represent different ethnic groups. The election's outcome has widely confirmed these fears. Each party derives its support from mainly one, only occasionally from two or more ethnic groups. Moi won the election basically because he still had the widest support across ethnic borders. The Kikuyus' votes were, as an exception to the general trend, divided among candidates of different parties but parties both led by Kikuyus.

The Kenyan governmental system has to find a way to really integrate all the interests. Parties and different groups must be represented in the parliament and the government. Power could also be decentralized by delegating more responsibilities to the provincial and district level. Minorities have to be protected.

In the long run, along with the delegation of power to lower levels, the creation of supranational unities is still conceivable: The decision in 1964 by the OAU not to change the colonial borderlines or to create a Pan-African unity may have helped to avoid some disputes about the exact drawing of borders. Yet, it has in many cases just consolidated the power of heads of state who made this decision in their own interest, taking the well-being of their subjects less into consideration. It also rendered impossible a more considerate drawing of borders. Today, many borderlines run through areas that are or used to be inhabited by people of the same origin. Borders had not been planned to take into account the needs of particular groups like nomads. In Kenya, the Masai and some Somali groups are concerned by this fact. This had negative consequences for nation-building and integration of these groups. The building of larger political and economic units – considered feasible in 1964 by opponents of the colonial-border status quo might have been the better alternative. The main adherent of Pan-African ideas, Kwame Nkrumah, was probably ahead of his time. The "revival" of the East African Union between Kenya, Tanzania, and Uganda buried in 1977 could be a step forward. In 1994, high-level officials of these countries discussed the possibility of introducing the free transit of persons and goods within these states.

5.3. Conflict Management

Management of environmental conflicts will be the subject of a project following ENCOP. Therefore, it will be dealt with only very briefly here. All parties involved will have to make efforts to overcome their differences. There are many recommendations to

make to the Kenyan government, the political opposition, NGO relief organisations, and donor nations¹²⁴.

It is the duty of the state to distribute scarce resources, at least where other means of distribution fail or lead to social tensions. It is doubtful whether the state is really willing and able to fulfill this duty.

The state must use all available legal means to stop violence. Those suspect of wrongdoing, be it inciting or executing, must be arrested and brought to court.

For the actual process of reconciliation that must follow, I would like to state two possible ways to go: first, the parties would find a solution themselves, assisted by outside mediators. This may be the reasonable solution if it is found that the state does not really want to solve the problem. Or the second way: the authorities would get more involved. This is their duty. However, that way seems less favourable today given the wide mistrust of large parts of the population towards the authorities.

Ideally in both cases the history of the conflicts must be revealed, the underlying reasons and events that had led to the confrontations named. The present situation is to be described as compared to that before the confrontations. The responsibility of each party to the conflict should be weighted. The possibility and willingness of each party involved to change the situation which led to the conflict must be examined.

The opponents must be given the opportunity to speak their points of view clearly so that their mutual claims can be considered. In this way, a possible solution will really be able to follow the needs of the parties.

The claims will have to be dealt with strictly according to law. Questions regarding ownership of land must be answered swiftly in any case. Resulting hardship cases could be solved with the help of international aid if there is no national possibility. The solutions accepted must be enforced quickly.

124 For an overview, see Human Rights Watch/Africa Watch, p. 94 ff. .

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