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DROUGHT AND POPULATION: THE CASE OF THE SAHEL

The sahelian zone, which lies between the western Sudan area and the Sahara Desert is a land roughly 4,500 km long and 600 km wide which stretches from the Atlantic Ocean coast to the Red Sea; it is a transitional region where the action of the weather, man and livestock seems to have been causing a deterioration in a relatively fragile ecological environment for a long time.

The current drought and its effects have nevertheless considerably heightened awareness of the increasing deterioration of the environment; such environmental deterioration is spreading southward. Since the 1970s, a succession of studies, scientific and political consultation meetings have been held to try to better understand the phenomenon and to formulate strategies to control it particularly within the framework of specialised agencies dealing with drought issues such as the Permanent Inter-State Committee on Drought Control in the Sahel (CILSS), the Intergovernmental Authority for Drought and Development (IGADD) and the United Nations Sudano-Sahelian Office (UNSO) and even international organizations such as the Food and Agriculture Organization of the United Nations (FAO), the World Bank, the United Nations Environment Programme (UNEP) and the United Nations Educational, Scientific and Cultural Organization (UNESCO). Although there is fairly broad agreement on the nature of the calamities (drought, famine and desertification), there are significant differences in opinion when it comes to identifying their main causes. There is, however, one unavoidable fact: the struggle to bring the drought under control can be successful only when the causes and effects of the drought are very well known. The present paper wants to contribute to the discussion on the causes and effects of the drought mainly from the angle of the relationships between population and drought. It will seek to find out whether or not the inhabitants of the Sahel are to blame for the drying up of their environment, the impact of such an environment on the population and consequently the appropriate population policies that should be implemented in order to reduce the harmful effects of the drought or stop the drought altogether.

I. Drought and ecological degradation: natural disasters or man-made phenomena

Even if all the causes of the drought have not yet been sufficiently investigated, they have, on the whole, been identified quite well. A simplistic explanation of the drought as being caused by a set of factors has become two major schools of thought on the drought and its impact thus highlighting the fact that there is no consensus among scientists on the matter.

1.1 A simplistic and empirical explanation of the drought as being caused by two series of factors

Several explanations have been put forward for the current drought in Africa especially in the Sahel, they are generally classified into two categories: natural causes and man-made causes.

1.1.1 Natural causes

The climate of the Sahel is «normally» a dry tropical one; but relatively considerable climatic variations cause serious deficits in rainfall which bring about a very considerable decline in surface water resources (considerable reduction in the flow or drying up of waterways) and underground water resources (drop in the groundwater level). As a result, the plant cover shrinks and the animal kingdom is disrupted because some of the links in the food chain are broken, the soil deteriorates because of wind and rain erosion which are accelerated by the decrease in the plant cover. This vicious circle of drought which in turn generates drought can be broken only by the cumulative effect of successive and «good» rainy seasons.

1.1.2 Man-made causes

To satisfy the material needs of people such as food and energy, available natural resources such as land, water and the plant cover have to be used; the extent to which such needs are satisfied depends on the level of technological development and the socio-cultural context. In the Sahel, such resources have been misused for several reasons: development of the market economy which is a major consumer of natural resources; rapid population growth; relatively low level of technological growth; natural resources that are quite limited and precarious, etc.

Such misuse of resources results particularly in a decrease in the plant cover following the growing requirements of agriculture (land clearing particularly by burning) stockbreeding (over-grazing, trampling of soil by the livestock) and for energy supply (indiscriminate chopping down of wood). This accelerates water runoff and soil degradation, stops the seepage of water and the replenishment of groundwater resources and decreases the water balance resulting in a decrease in the plant cover and soil impoverishment.

This supposedly has a boomerang effect on the inhabitants of the Sahel whose sole productive activities are assumed to cause their environment to dry up.

1.2 Two conflicting schools of thought with respect to the causes of the drought and ecological degradation

Two conflicting schools of thought have emerged with respect to the above-mentioned causes of the drought and ecological degradation in the Sahelian countries: one school favours natural causes and the other man-made causes.

1.2.1 The advocates of natural causes

The advocates of natural causes feel that the drought is a natural disaster caused by adverse trends in climatic factors such as the characteristics and positions of masses of air and general atmospheric circulation. Some of them even

argue that there is a gradual drying up of the environment; this argument is defended among others by M. Leroux (1976) who states that the decline of rainfall in the tropics is bound to continue. Others like P. Chamard (1976) and H. Plote (1974) argue that there will be major climatic changes followed by a regular or irregular succession of "humid periods" and "dry periods". Although all these arguments recognize the destructive action of Sahelians, they feel that such action plays a minor role in the drying up of the environment which is mainly due to the backwardness of production techniques and to the excessive pressure of men and animals.

1.2.2 The advocates of socio-political causes

Those who advocate socio-political causes stress the fact that the drought, particularly its alleged effects such as famine and desertification, are merely indicators or premonitory signs of a society crisis which is essentially due to the over use and squandering of natural resources. They all focus on the destructive action of the people of the Sahel: some feel the Sahelians are entirely to blame (outdated techniques, rampant population, etc.) while others feel that external factors such as the international division of labour, economic dependence and political subjugation are to blame. 1/

1.3 The problem should be stated better

The advocates of natural causes rightly base their arguments on the drought which is definitely due basically to insufficient rainfall; the advocates of socio-political causes rightly stress the action of man on his environment (his productive activities based on the use of natural resources). The natural causes theory is mainly advocated by natural science specialists such as geophysicists, botanists and geologists; the socio-political causes theory is advocated by social science specialists such as economists and historians. The theories therefore developed in different fields of study which in our opinion complement each other: for the advocates of natural causes, man's action only aggravates the natural disaster while the defenders of the socio-political theory feel that the drought merely shows the effects of the destructive action of Sahelians (such action is always placed within the context of existing social structures). Although it is useful at an initial phase of research to analyse separately and thoroughly all the factors that cause drought and ecological deterioration (as indeed the above-mentioned theories do), it is even more useful during a second phase (which has rarely been attained so far) to carry out a highly varied analysis of these calamities covering various localities. Although there are decisive factors, there are crucial interrelationships combining natural factors and human action which would bring about a greater understanding of the ecological and economic situation of the Sahelian countries where, as elsewhere, everything is interdependent: man, his society, his environment, his economy and so on.

1/ In the latter case, see "Comité d'Information Sahel: Qui se nourrit de la famine en Afrique?"

In any case, the second phase is especially relevant since the homogeneity of the Sahel (widely disseminated by the mass media) hides a number of differences which are not yet common knowledge: in addition to the zonal droughts of 1910-1915, 1940-1942 and 1968-1973 there were, for instance, local droughts on which few studies have been made; obviously the drought, particularly its effects, are not the most widely shared things in the Sahel. This clearly shows that ways and means of dealing with the drought have to be tailored to suit specific cases.

II. The Impact of the Drought and of Ecological Deterioration on the Population

Since there is a close relationship between man and his environment, the drought and the deteriorating ecological situation of the Sahel definitely have various consequences on the population; however, current knowledge has identified only some of them. The study on "Drought and Population Dynamics" planned under the 1988-1992 five-year programme of the Centre for Studies and Research on Population for Development (CERPOD) will, from this point of view, be very useful for planning the development of Sahelian countries which henceforth should be better able to make allowances for changes in the weather and all the direct or indirect effects of such climatic changes. In the absence of data, this document will focus on the impact of the drought on the three main population variables: migration, fertility and mortality.

2.1 A reality which is still not fully understood: the increase of migratory flows

The development of migratory flows is the best known demographic result of drought and ecological degradation because it is also the most dramatic. Migration is one of the most important and oldest strategies to combat those scourges which constitute the main components of the population history of the areas concerned. There are, however, different patterns: family migrations, so-called individual migrations; migrations maintaining the main productive activity (agricultural colonization, seasonal migration) or coupled with professional mobility; domestic or international migrations, etc.

In all instances, actual pioneer fronts towards the more humid south have been observed, accompanied by intense rural depopulation. The result is a relative "human drain" of the areas most affected by drought; a rapid increase in urban population (6 to 10 per cent per year in the Sahel region); a remodelling of the "human map" in favour of the southern parts of Sahelian countries and increasing migrations towards the countries of the Guinean coast (Cote d'Ivoire in particular) and other continents. By and large, all Sahelian countries tend to have a negative migratory balance and the trend is clearly growing: clearly negative for Cape Verde, Burkina Faso, Mali and Niger; slightly negative for the other countries. 2/

2/ Cote d'Ivoire is the main recipient of international migratory flows from the Sahel.

Obviously, those migrations constitute a population phenomenon, and have multiple economic, social, political, cultural and ecological consequences, although they are still diffuse and not sufficiently taken into account in the development policies and strategies of the Sahel.

A witness to this is the "unfortunate" selection of a zero migratory balance in population projections and therefore in development planning (at global, sectoral, national or sub-national level) whereby only the natural increase (at best) is taken into consideration.

This lack of information is also apparent in the demographic impact of migrations (on the size and structure of the households, the geographical distribution, etc.) which all have an impact on the economic mix, (adjustment of human resources regional potentialities), the social sector (location of health and education infrastructures, etc.).

2.2 Drought and fertility

Does the persistent drought in the Sahel have an impact on the fertility of the Sahelian population? The question is certainly relevant but in the present state of knowledge and since we do not have the proper hind perspective to carry out such an investigation, we could only formulate hypotheses.

One is that drought and the resulting malnutrition and famine may reduce women's fertility (disruption of the menstrual cycle or even the disappearance of periods).

Drought-related migrations could also tend to reduce the final descendency of women the number of husbands emigrating being on the increase. Even in the absence of accurate data, this phenomenon has been observed in a number of Sahelian villages where the only people to be found are elderly men, women and children.

In any case, the actual impact of drought and its consequences on fertility could be measured with some accuracy because of the slow pace of the usual determining factors of this population variable (marriage rate, ways and customs, religion, economic situation, health conditions, etc.).

2.3 Drought, morbidity and mortality

Although they are still as unclear, the consequences of drought and its effects (malnutrition, famine) on morbidity and mortality are better perceived than the impact on fertility. Disease and mortality have particularly increased in "refugee camps" accommodating "hunger migrants" (Thiam B., 1981 and Sawadogo P., 1975).

Malnutrition and famine reduce physical endurance and resistance towards infectious diseases that become endemic in the areas most affected by drought. We remember, for instance, the 1974 cholera epidemic in those regions. An increase in morbidity is always followed by an increase in mortality due to the even worse health infrastructure in those areas and the late arrival of emergency relief.

III. Combating Drought and its Consequences: What Can be Done?

The combat against drought and its consequences in the Sahel region both at the national and at the regional level must obviously be carried out in a coherent manner on several fronts: economic, ecological, social, political, cultural, etc. On the basis of an accurate and critical evaluation of the present situation, drought control must be extended to all components of Sahelian life. The countries of the Permanent Inter-State Committee on Drought Control in the Sahel (CILSS) are now convinced of this approach; they adopted a new strategy in 1985 for combating drought known as the "revised strategy" and it has three main objectives; to give back to the people their role as the driving force of development, to rebuild the economy of the region on sound foundations, to seek a new ecological equilibrium and to use the space accordingly.

Therefore, the fight against drought as re-directed towards the Sahelian people in their relationship with the environment requires the implementation of population policies. What is the best action to be taken in that field so as to reduce or even stop the man-made ecological degradation? What can be done to limit the consequences of drought on population? In any case, there must be population policies in tune with the objectives of economic planning and adapted to the sahelian environment. But, these could be effective only if they are based on an in-depth knowledge of the interrelationship between drought and population dynamics, a task to be performed by the CILSS (through the CERPOD) in the near future. Measures should already be taken in the context of those policies to reduce drought-related morbidity and mortality, i.e. setting up essential drug banks in the most drought-prone areas, systematic extended immunization programmes (UNICEF EIP programmes), better organization of food emergency supplies, upgrading road networks, etc.

Although the effects of drought on fertility (publicized by malnutrition, famine and diseases) are less dramatic and may be more limited, action should, however, be taken to adapt human density (and therefore animal density) to actual potential (measured in a dynamic fashion in relation with improvements in production technology and in the preservation of natural resources).

At this level, the organisation of population transfers (which should not go as far as clearing out some areas) could well be accompanied by family planning policies (birth spacing, sterility control, etc.).

All in all, population policies should be followed by land development actions at parochial, sub-national, national and Sahelian level.

The establishment of a specialized institution in West Africa, the CILSS and the recent adoption of a revised strategy to combat drought (as mentioned above) augur well for the future. And let the Sahel come to life again!

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