

CARTER CENTER - GLOBAL 2000**AFRICAN AGRICULTURE AND RURAL DEVELOPMENT PROGRAM****Introduction:**

Prior to World War II and even during the first post-war decade, most African countries were self-sufficient in production of basic foods and a considerable number of them were sizeable food exporters. During the past three decades, however, per capita food production has been decreasing progressively because of rapid population growth (3-3 1/2 % per year) which has outpaced the increase in food production (2.0%). Food shortages, in virtually all African countries south of the Sahara, have greatly worsened during the last decade, in part attributable to two widespread devastating droughts (1983-84 and 1991-92) and further impaired by social unrest and civil wars in a number of countries. As a consequence, millions of Africans across the breadth of the continent have suffered, and continue to suffer, from hunger, undernutrition or malnutrition.

African governments, without exception, have been, and continue to be notorious, for neglect of agriculture and rural development, despite the fact that 65 to 85% of the population in these countries are rural and depend directly on agriculture and animal husbandry. The continuing current neglect of agriculture in African countries is reminiscent of the widespread hunger, famine, starvation and resulting death in the densely populated countries of south, southeast and east Asia (e.g. India, Pakistan, Thailand,

Indonesia and China) in the 1950s and 1960s when their governments, intent on rapid industrialization to solve the problems of poverty and unemployment, neglected agriculture with the dire consequences that followed. The introduction and widespread demonstration of the benefits of the improved high-yielding wheat and rice production technology into Pakistan and India in the mid-1960s, convinced governments to change economic policies to permit and stimulate adoption of the new technology by many millions of small farmers, which in turn ushered in a spectacular revolution in cereal production, which became known as the so-called "green revolution". By the late 1970s, the aforementioned Asiatic countries had become self-sufficient in basic grain production. Meanwhile, the food shortages in African countries worsened.

Much of the land being cultivated for food production in sub-Saharan Africa--excluding the Sahel--is managed under a slash and burn migratory agriculture. Under this system, for the first two years after the land is cleared of forest or brush, it is highly productive, then loses fertility rapidly as the result of the combined effect of oxidation of the organic matter and release and utilization of the plant nutrients, leaching, competition from weeds and soil erosion. After the third harvest, the land is abandoned because of low yields and reverts to a "brush fallow" to begin to restore soil fertility, meanwhile more forest is cleared to produce the required food. During the current period of worldwide concern, by many, of the disastrous deterioration of the environment resulting from the slash and burn shifting agriculture,

the belief has developed that the majority, if not all, of the soils and ecosystems of the tropics are of low productivity, fragile and being degraded at a frightening rate. It is true that as human population grows and demands for food increases the land area under slash and burn shifting agriculture--with a shortening of the "brush fallow" period--is increasing rapidly. This necessitates the development of a system wherein soil fertility can be maintained at a level that permits the production of high crop yields on the same land on a sustained basis, in those ecosystems (areas) best suitable for cultivation, while leaving the more fragile, less productive ecosystems in native vegetation.

The Goals Ahead for African Agriculture

Over the Next two Decades

Africa's population if it continues to grow at its present rate(1), will double within the next twenty-five years. To alleviate ever-worsening food shortages and the accompanying human misery--hunger, starvation and political instability--African agriculture must revolutionize basic food production in the next decade.

To achieve this goal will require a shift in emphasis away from the flood of philosophically over-sophisticated analytical reports focusing on all of the ills of African agriculture--that has been the thrust of most studies over the past decade--to developments of

(1) Assuming the incidences of the human AIDS virus does not dramatically modify mortality, morbidity, and longevity.

a few well focused interdiscipline action oriented programs. The primary thrust should be aimed at increasing crop yields and production, improvements in marketing, storage and transportation, and improvements in availability and distribution of credit and production inputs. Finally, improvements are badly needed in education at two levels: 1) primary and secondary education, especially in rural areas and 2) at the profesisonal agricultural level (college/university), to prepare a new generation of agricultural scientists equipped with the best up-to-date state of advanced agricultural and biological scientific knowledge, combined with the skills of how to apply this knowledge to meet the needs of African farmers--especially the small, but also the large.

At present, quality of instruction in the rural primary and secondary schools is so poor, that few youth with rural agricultural/farm backgrounds qualify for entrance to African Universities. The result is that most students who enroll and receive degrees in agricultural sciences, come from urban backgrounds and while graduating with rather good theoretical knowledge of the agricultural and biological sciences, they are devoid of farming skills and motivation.

What is needed is the development of a school similar to The Panamerican School of Agriculture "Zamorano" in organization, quality of instruction, scope and integration of instruction in modern agricultural/biological/physical-chemical/social sciences, combined with a practical, field work module ("learning by doing")

not seen in other colleges today. "Zamorano's" agricultural-animal science-forestry education program is a dawn-to-dusk, 11 month per year educational program, equally divided between classroom and field. This intensive schedule compresses into 3 years, the equivalent of what would be 4-1/2 years of university education in the USA.

The Panamerican School of Agriculture "Zamorano" is a private school located in Zamorano, Honduras. The school is a private school that was founded in 1942, with Wilson Popenoe (a world famous plant explorer, fruticulturist and horticulturist) as its founding director, and with funding from the United Fruit Company. Its original objective was to train sons (and today also daughters) of the small farmers of the Central American countries in the practical skills of modern agriculture, so they could return to the land to demonstrate the benefits of improved agricultural practices to their family and the neighborhood. Originally, no degrees were awarded, only a diploma; but Zamorano, under the visionary leadership of directors and staff, has evolved into the most effective agricultural college in the developing nations. Dr. Simon E. Malo, who retired from the Directorship of "Zamorano" in December of 1992, described its evolution in these words: "I don't think anyone envisioned anything like what this school has become. Wilson Popenoe, who started Zamorano for the United Fruit Company, had the idea that what these countries really needed was a school of agriculture that was completely practical; that the students should "learn by doing". But how was he going to create this