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# Analysis of the Interrelationship Between Agriculture and Population in Africa

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# I. EXECUTIVE SUMMARY

This report explores the problems of increasing population and lagging agricultural/food production in sub-Saharan Africa today. The authors analyze the effectiveness of AID policies and programs in resolving these problems, recommend modifications in policy, and suggest linkages between agriculture/food and population including criteria for an optimal program balance.

Generally, sub-Saharan African countries' agriculture has lagged because they were the last area of the developing world to receive assistance and that assistance was in relatively small amounts. One thing stands out, however, in the analysis. Various political (including war) and economic problems in ten countries (totalling 215 million people) are the direct principal causes of lagging agricultural production.

The main obstacle to increasing agricultural production is developing country policies which discourage farmers from growing more. As population increases over the next two-three decades, and given the cultural factors which severely limit the effectiveness of population programs at this time, policies which hinder increased agricultural/food production must be changed.

Priority must be given to increasing the amount of food available. This includes the entire food chain - farm to table. Priority to increased food production/availability is necessary not only to meet the near-term increases in demand for food, but also to help set the stage for slowing population growth by reducing the level of risk the African perceives. Moreover, action is needed today if Africa is to be prepared to take advantage of tomorrow's biotechnical revolution.

Ten years of population efforts in Africa have proven that widespread demand for contraception to limit family size is not present. Experience has shown that the Ravenholt approach of simply getting contraceptives to people doesn't work. Study of African culture shows the reasons. Pressure tactics directed at African governments or individuals are counterproductive. Population is as culture specific as agriculture is location specific. Population efforts must be tailored to the priorities, and constraints of each country with sensitivity to the political situation and individual cultures of its people.

This report makes several major recommendations for AID. First, after fifteen years of population work AID needs to do a full evaluation of the dimension of the population problem and the dynamics of the interaction between development, cultural values and fertility in Africa, the AID approaches that have worked well and what new approaches are suggested. Africans must be involved in the process and the conclusions must be well disseminated in AID. The second recommendation is that AID must concentrate on process, not just results, because it is in all stages of project development and implementation that mutual trust, understanding and commitment are built. Third, AID should concentrate on programs that give Africans the skills necessary to solve their own problems. Fourth, data collection should be incorporated into many projects so their effectiveness can be better evaluated and to provide better input for AID's research effort and strategy evaluation. Finally, in most African countries today, the sensitivity of family planning demands that it be introduced in conjunction with maternal and child health programs. It should be introduced as an extension of traditional child spacing for the health and well-being of mother and child. Thus, as socioeconomic development and Western

influences change family size values, the family planning programs would be in place, proven acceptable and ready to meet new demands.

To be effective and acceptable in Africa, population programs must be seen in the broader context of development utilizing the natural linkages to agriculture, which stress enhancement of African life rather than limitation. The optimal balance must be determined by the recipient country's priorities, policies and capacity to implement. Perceptions of past AID programs within the government and country at large must also be factored in. Given the strong commitment to agriculture, its role in affecting population attitudes, and the resistance to direct population limitation in most African countries, it is recommended that AID put major emphasis on agricultural/food production, while continuing to lay the groundwork for integrated population programs when Africans are ready. This decision, however, must be made on a country-by-country basis and re-evaluated periodically.

## II. OBJECTIVE

The objective of this report is to examine and analyze the relationship between agricultural/food production and population program issues in order to provide AID/Africa with medium- and long-term policy guidance and to recommend modifications in the policies and programs for the above-mentioned two areas. The need for such analysis and subsequent recommendations arises from the fact that in sub-Saharan Africa agricultural production has lagged over the past two decades while population growth rates have actually increased. Family size values are inextricably intertwined with other cultural patterns, many of which derive from agricultural realities, as they are perceived by Africans. Because of the growing need for food and the continuing high value placed on large families, sustainable increases in food production are imperative in themselves and as a principal factor in allowing African attitudes vis-a-vis large families to change.

USAID recognizes that both the food and population problems are complex and that there are no fast, easy solutions. It also recognizes the need to understand the food and population issues better and to seek means to coordinate agricultural/food and population programs effectively.

Sub-Saharan Africa has not yet demonstrated the same progress that much of Asia and Latin America have over the past 20 years. This report addresses the reasons why this is so, explores the linkages between the twin problems of stagnant agricultural/food production and growing population, and suggests ways in which they might be alleviated in the medium- and longer-terms.

## III. OVERVIEW

### A. The Limits to Growth

The setting for much of today's expressed concern with and misunderstanding of sub-Saharan Africa's food and population problems is the early 1970's. In 1972, The Limits to Growth was published, a book widely received by many educated "elites." It purported that "mankind is steadily depleting the earth's potential resources for foods, fuels and minerals . . ." and that "all signs point to catastrophe for the medium- and long-term future."[1] With respect to food supply, global population was portrayed as growing at exponential rates with a Malthusian disaster just ahead. A particularly grim view of global food sufficiency emerged in 1974, when after the second year of extensive droughts in many countries (1972 was the first), world grain reserves were at their lowest in decades and grain prices were at their highest level ever.

The other villain in the population/food equation was economic growth--that attendant increased incomes would place additional demand-induced strain on limited food production capabilities. Apparently the authors of The Limits to Growth had not heard that effective demand, i.e., demand with money behind it, calls forth supply. And they were also seemingly unaware of the fact that not only are there "substitutes" for the traditional factors of agricultural production (e.g., multicropping for land, agricultural chemicals for labor), but also, and more importantly, that technology is an increasingly potent factor of production.

B. Starvation and Minimum Caloric Requirements

> "Few bureaucrats wish to admit that the problem they are relieving is a modest one, and international bureaucrats are no exception."[2]

Part of the grim view has been the spectre of famine, heightened by pictures of cattle with ribs protruding.* When it became evident (late 1970's) that widespread famine was a remote possibility, malnutrition received increasing attention. Malnutrition is a very real, continuing problem for some peoples. Insufficient protein-energy intake is also a problem for many in the two-three months before harvest time in those years when inadequate amounts of grain have been available from the prior year's harvest, and there are areas in which food insufficiency causes hunger and great misery. Malnutrition must, however, be approached with caution. Since the 1950's, gloomy estimates of large numbers of people suffering from undernutrition and malnutrition, and even on the verge of starvation, have been bandied about.

There is a great deal of confusion as to the number of people suffering from undernutrition and/or malnutrition. Accurate estimation has been further hindered by the fact that nutritional requirements vary according to age, sex, body weight and size, physical activity, season, environment, and climate. For example, a South Asian requires fewer calories than a Swedish lumberjack. The FAO continues to estimate that

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*The uninformed reader gets the impression of widespread, year-round, near starvation in Africa, which simply is not the case, except during periods of severe, prolonged drought. The pictures of cattle are taken at the end of the dry season when there is little feed available. Typically, these same bony cattle fatten out one month into the rainy season when there is ample forage. The authors have seen this "phenomenon" in Mauritania, Upper Volta and Malawi. The pictures of children with bloated bellies, reddish complexions and of bony cattle are very useful for organizations seeking to raise funds for relief/welfare organizations in Africa. Unfortunately, they do not depict the whole truth.

10 percent of the world's population (more than 450 million people) have an insufficient protein-energy supply. The FAO average minimum caloric requirement is 2,260 calories per day. This figure is widely used by those wishing to show how badly off the developing countries are. The FAO also gives a range of minimum caloric adequacy--1,900 per day for South Asians to 2,800 for Europeans/Americans. While the use of a range of caloric values is a step in the right direction, in that it recognizes differences between individuals, environments, activities, etc., the range itself appears high. If, as Srinivasan points out, ". . . much of the information on protein requirements and energy-protein relationships comes from studies on healthy young men in the U.S.A.," then not only is the FAO range high, but of very dubious value when applied to other populations.[3]

By contrast to the FAO, Colin Clark*, the Australian economist, estimates minimum caloric requirements to be 1,625 calories for a small-bodied

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*Clark, Colin, Starvation or Plenty, Taplinger Publishing Company, New York, 1970. In the first chapter of this book, Clark gives the origin of the confusion surrounding global malnutrition--an arithmetical error made by the first Director General of FAO, Lord Boyd-Orr, who, upon his retirement published in the Scientific American (August, 1950) that "a lifetime of malnutrition and actual hunger is the lot of at least two-thirds of mankind." As Clark points out, the "two-thirds of mankind" story provided excellent emotional fuel for those who believed (and still believe) the world is overpopulated (Clark, p. 11). He also traces the evolution of the "two-thirds of mankind" argument to today's "10% have an insufficient protein-energy supply."

Apparently, the FAO realized that the "two thirds" story was inaccurate, but has been reluctant to lose the "mileage" the estimate gave them. Over the past 30 years, the estimates of starvation have given way grudgingly to estimates of under and/or malnutrition as facts have surfaced giving the lie to the earlier "estimates." As Clark correctly points out (pp. 13-14), estimates of this sort are not only scientifically inaccurate, but also can lead to inappropriate agricultural policies and decisions in developed countries based on the misconception of a starving world willing to accept surplus foods produced.

sedentary person in a hot climate (Asians, Africans) and slightly over 2,000 calories per day for a larger-bodied person working in a colder climate--say northern China.

It is instructive to look at American caloric intake. The figure 3,200 calories per day has been stated for years; however, 3,200 calories is daily per capita caloric availability, not consumption. Data from the 1977 USDA National Household Food Consumption Survey show the following:

Caloric Intake*

| Age | Men | | Women |
|---|---|---|---|
| Under 1-8 (males and females) | | 1,441 | |
| 9-18 | 2,424 | | 1,846 |
| 19-50 | 2,410 (2,768) | | 1,574 (1,726) |
| 51-64 | 2,148 (2,422) | | 1,522 (1,619) |
| 65 and Over | 1,921 (2,000) | | 1,417 (1,468) |
| All individuals | | 1,865 | |

(Bracketed figures for 1965)

Even allowing for the preliminary nature of the data, the potential inaccuracy of recall data, the fact that the survey was based on the recall of only one day's consumption, the increasing stigma attached to obesity, sedentary lifestyles, the probable lack of complete candor of women, and general lack of candor about consumption of alcoholic beverages, Americans are in pretty bad shape by FAO standards. Assuming that this sample is representative of the U.S. population, we are consuming calories at 83% of the FAO average and 67% of the FAO top of the range. 1,865 calories per day places us below the FAO minimum for small-bodied Asiansin a hot climate.

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*Based on a one-day recall of what 9,620 individuals ate on the previous day in spring, 1977.

We must be aware of alarmist tactics and the careless use of less than meaningful averages, for these can result in inappropriate and possibly harmful policies and actions taken. This is not to say that there are not many millions in LDC's suffering from inadequate nutrition. The inadequacy comes more from their inability to command a satisfactory diet than from insufficient food production. Fortunately, there are technologies and actions that can be taken now to solve a great deal of the world's major nutrition problems in a short period of time.

C. The Global 2000 Report to the President

Even today, much of what the authors of The Limits to Growth propounded is given currency, although facts and events have proven them wrong. The most recent study given widespread attention was The Global 2000 Report to the President (1980).[4] It reiterated most of the neo-Malthusian arguments concerning difficulty in feeding a growing world, especially the developing countries.

In large part, the Global 2000 authors' argument is based on agriculture's continuing dependence on petroleum-based inputs--agricultural chemicals, diesel oil for tractors, pumps, etc. In the report's first section, the authors state that world oil production will approach geological estimates of maximum production capacity during the 1990's--even with rapidly increasing petroleum prices. Rising prices of petroleum-based agricultural inputs are the culprits which will keep food output barely ahead of population growth in the developing world (per the authors).

Prophecies that we are going to run out of oil have been made for over 100 years as the following table shows:

Oil Prophecies and Realities

| Date | U.S. Oil Production Rate (billion bbls/yr) | Prophecy | Reality |
|---|---|---|---|
| 1866 | .005 | Synthetics available if oil production should end (U.S. Revenue Commission) | In next 82 years the U.S. produced 37 billion bbls. with no need for synthetics |
| 1885 | .02 | Little or no chance for oil in California (U.S. Geological Survey) | 8 billion bbls. produced in California since that date with important new findings in 1948 |
| 1891 | .05 | Little or no chance for oil in Kansas or Texas (U.S. Geological Survey) | 14 billion bbls. produced in these two states since 1891 |
| 1914 | .27 | Total future production only 5.7 billion bbls. (officials of Geological Survey) | 34 billion bbls. produced since 1914, or six times this prediction |
| 1931 | .85 | Must import as much foreign oil as possible to save domestic supply (Secretary of Interior) | During next 8 years imports were discouraged and 14 billion bbls. were found in the U.S. |
| 1947 | 1.9 | Sufficient oil cannot be found in United States (Chief of Petroleum Div. State Department) | 4.3 billion bbls. found in 1948, the largest volume in history and twice our consumption |
| 1949 | 2.0 | End of U.S. oil supply almost in sight (Secretary of the Interior) | Petroleum industry demonstrated ability to increase U.S. production by more than a million bbls. daily in the next five years. |

Source: Presidential Energy Program, Hearings before the Subcommittee on Energy and Power of the Committee on Interstate and Foreign Commerce, House of Representatives. First session on the implications of the President's proposals in the Energy Independence Act of 1975. Serial No. 94-20, p. 643. (Washington: U.S. Government Printing Office, February 17, 18, 20, and 21, 1975); Kahn, Herman, William Brown, and Leon Martel, The Next 200 Years, William Morrow and Company, Inc., New York, 1976, pp. 94-95.

The next table presents a comparison of known world mineral reserves between 1950 and 1970.

How Known Reserves Alter

| Ore | Known Reserves in 1950 (1,000 Metric Tons) | Known Reserves in 1970 (1,000 Metric Tons) | Percentage Increase |
|---|---|---|---|
| Iron | 19,000,000 | 251,000,000 | 1,321 |
| Manganese | 500,000 | 635,000 | 27 |
| Chromite | 100,000 | 775,000 | 675 |
| Tungsten | 1,903 | 1,328 | - 30 |
| Copper | 100,000 | 279,000 | 179 |
| Lead | 40,000 | 86,000 | 115 |
| Zinc | 70,000 | 113,000 | 61 |
| Tin | 6,000 | 6,600 | 10 |
| Bauxite | 1,400,000 | 5,300,000 | 279 |
| Potash | 5,000,000 | 118,000,000 | 2,360 |
| Phosphates | 26,000,000 | 1,178,000,000 | 4,430 |
| Oil | 75,000,000 | 455,000,000 | 507 |

Source: Council on International Economic Policy, Executive Office of the President, Special Report, Critical Imported Materials (Washington, D.C.: U.S. Government Printing Office, December, 1974); Kahn, Herman, William Brown, and Leon Martel, The Next 200 Years, William Morrow and Company, Inc., New York, 1975, p. 92.

It simply shows that known reserves have grown (have been found) in response to demand. Economics dictate that known reserves will not exceed anticipated demand by more than a few decades. There is the tendency, however, during a period of temporary shortage of a given commodity to believe that the shortage will become permanent. This was certainly the case of petroleum during the 1970's and early 1980's. In the case of petroleum, the real issue is which geological estimates pertain, when, and at what price per barrel. Furthermore, the authors of Global 2000 apparently do not recognize that advances in technology, economies of

scale and more efficient operation of petroleum-using facilities and machinery have blunted the impact of higher energy prices and in the longer-term reduce the costs of energy-based agricultural inputs and activities. Following is a table for the production of urea (a nitrogenous fertilizer) which demonstrates these three economic facts:

Prices for Urea (1974 $)

| | Technology/Plant Size | | Utilization | |
|---|---|---|---|---|
| Price of: | 1960 333 Tons/Day | 1974 1667 Tons/Day | 60% of Capacity | 90% of Capacity |
| Natural Gas (input) | FREE (Assumed) | $1/MCF | $1/MCF | $1/MCF |
| Urea (output) | $164/ton | $116/ton | $155/ton | $120/ton |

MCF = thousand cubic feet
Design Capacity - 1667 Tons/Day

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Source: D. Gale Johnson, World Food Problems and Prospects, p. 47, notes 12 and 14.

The report dwells heavily on the impact of rising petroleum prices (no thought was given to the possibility of declining oil prices) without offering much in the way of solutions, either technological or policy, to the real food problems of the developing world. A principal fault of the Global 2000 report is its failure to say anything more than that agricultural technology will proceed at the same rate as it did in the 1950-1970 period. The authors seem to be unaware that the world is in a transition from a resource-based agricultural system to one which is science-based. The former is highly mechanized and intensive in its use of land, water and energy. The latter is based on biology and is sparing of land, water

and energy.[5] They seem singularly unaware of the biological revolution that is taking place, and which, with time, will truly change the face of agriculture.* They say nothing about the "quality" of prospective scientific discovery. Imagine, for example, the impact on corn yields if agricultural scientists are successful in changing plant architecture so that corn plants can capture twice the amount of solar energy they currently do. Just such plant architectural rearrangement has happened with rice. Science has created a better light-receiving system by vertically positioning the flag leaves of the rice plant above the panicles of grain. The fertilizer requirements of the rice plant, however, have not changed. We have only started to explore the biological capabilities of expanding food production.

The authors do not take into account the fact that as science and technology advance, so does the range of material resources. In an age of expanding technologies, there are substitutes for just about everything, both "products" and ways of doing things. We are oriented toward producing substitutes cheaply and introducing them rapidly on a mass scale. If cropland becomes scarce, people don't roll over and starve; they improve yields on the land that they have. Other inputs substitute for land--including technology.

In the early 1970's, we were warned of the impending demise of the high-yielding varieties--a mono culture increasingly susceptible to disease. Its "death" was to have been caused by its very success in having been

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*It should be noted that the time needed for the transition to a science-based agricultural system is uncertain at that point, and that conventional agriculture will give way slowly to science-based agriculture.

widely adopted to the exclusion of the more traditional disease-resistant varieties. Today, there are "multiline" selections of wheat, rice, barley, corn, sorghum and millet. A multiline composite is a mechanical mixture of strains of grain (such as wheat) which resemble each other in height, maturity, grain type and yield, but which differ genetically in disease resistance. For example, such composites are crucial for resistance to rust in wheat. In 1978, India released the first multiline varieties of semi-dwarf wheats. It should be noted from this example that development of agricultural technology is not limited to a few Western countries.

In the near-term, conventional improvements will be responsible for much of food production increases. Conventional agriculture should not be played down. After all, it was principally a combination of genetic improvements by conventional means and increased fertilizer use in wheat that gave India a tripling of wheat production from 1966-67 to 1978-79.

The Global 2000 authors' position on global population is brief: "rapid growth in world population will hardly have altered by 2000."[6] They state further that the rate of population growth will slow only marginally from 1.8% per year to 1.7% per year. In fact, the Population Reference Bureau reports an annual global population growth rate for 1982 of 1.7%.[7]

More instructive is the work by Donald J. Bogue and Amy Tsui, who pointed out that fertility declines appear steeper and more pervasive than those reported by the United Nations in 1977, and that family planning efforts are really starting to tell in Asia.[8] The following sections detail what has happened over the past 20 years in Asia and Latin America, and what is starting to happen in Africa.

D. 1975 - The Turning Point in World Population Growth Rates

One year after the grim assessment of the World Food Conference, the global population growth rate, after more than a 25-year climb, turned downward and has been declining ever since. What is happening is a demographic transition in the developing world similar to that which occurred in all developed nations. The transition occurs as economic development and improvement in public health begin, with a consequent decrease in death rates. A population "bulge" appears due to a lag in the decline of birth rates. Birth rates only start down later in the development process--a time at which parents perceive children as having less value as labor and "social security," as being more costly to rear, and at which traditional cultural pressures for large families start to ease.

Fortunately, the time required for demographic transition is compressing. What took the U.S. and Western Europe 150 years appears to be taking large parts of Asia and Latin America 50 years or less, some countries perhaps only 25-30 years. In the last 10 years, Africa has just started the first stage of her transition, the decline in death rates. The population bulge is starting to show. The decline in the death rate is the first harbinger of the demographic transition. It is also an important bellwether of impending economic and social changes. It presages the climb to economic development, greater aggregate human resources via health and increased life expectancy, and the coming of cultural changes which will result in lowered population growth rates. As G. Edward Schuh, Head of the Department of Agricultural and Applied Economics of the University of Minnesota, points out, increased life expectancy induces increased investment in human capital, thus further helping to set the stage for additional income growth and lowered population growth rates.[9]

Sub-Saharan Africa - Demographic Data

| Growth Rate (%) | 1970 | 1975 | 1980 | 1982 |
|---|---|---|---|---|
| Growth Rate (%) | 2.5 | 2.6 | 2.9 | 2.9 |
| Birth Rate (per 1,000) | 47 | 47 | 47 | 47 |
| Death Rate (per 1,000) | 22 | 21 | 18 | 18 |

Source: Population Reference Bureau, World Population Data Sheets

E. Asia and Latin America

Over the past 20 years, various Asian and Latin American countries have shown significant declines in birth rates. The death rates of both continents are similar to those of North America and Western Europe. (See table on Demographic Transition: Developing World on following page.)

Current Comparison of Death and Birth Rates, 1982

| | Death Rate (per 1000) | Birth Rate (per 1000) |
|---|---|---|
| U.S. | 9 | 16 |
| U.S.S.R. | 10 | 18 |
| Europe | 10 | 14 |
| Asia | 11 | 30 |
| Latin America | 8 | 32 |
| Sub-Saharan Africa | 18 | 47 |

Source: Population Reference Bureau, World Population Data Sheets

## Demographic Transition: Developing World

### SELECTED ASIAN COUNTRIES
### Birth Rates (per 1000)

| | 1960 | 1965 | 1975 | 1980 | 1982 |
|---|---|---|---|---|---|
| **Chinese Culture Area** | | | | | |
| China | 31 | 34 | 26 | 18 | 22 |
| S. Korea | 41 | 35 | 24 | 23 | 19 |
| Taiwan | 39 | 32 | 23 | 25 | 23 |
| **Indian Sub-Continent** | | | | | |
| Bangladesh | 51 | 50 | 49 | 46 | 47 |
| India | 44 | 43 | 36 | 34 | 35 |
| Pakistan | 48 | 48 | 47 | 44 | 44 |
| Sri Lanka | 36 | 33 | 27 | 28 | 29 |
| **Southeast Asia** | | | | | |
| Indonesia | 47 | 46 | 40 | 35 | 34 |
| Malaysia | 45 | 42 | 31 | 31 | 30 |
| Philippines | 45 | 44 | 36 | 34 | 34 |
| Thailand | 46 | 44 | 34 | 32 | 28 |

### SELECTED LATIN AMERICAN COUNTRIES
### Birth Rates (per 1000)

| | 1960 | 1965 | 1975 | 1980 | 1982 |
|---|---|---|---|---|---|
| **Central America** | | | | | |
| Costa Rica | 47 | 41 | 29 | 31 | 29 |
| El Salvador | 48 | 46 | 40 | 40 | 35 |
| Guatemala | 48 | 45 | 43 | 43 | 42 |
| Honduras | 53 | 51 | 48 | 47 | 47 |
| Mexico | 45 | 44 | 40 | 37 | 32 |
| Nicaragua | 51 | 49 | 46 | 47 | 47 |
| **South America** | | | | | |
| Brazil | 39 | 42 | 38 | 36 | 32 |
| Chile | 34 | 33 | 23 | 21 | 22 |
| Colombia | 45 | 44 | 33 | 29 | 28 |
| Paraguay | 43 | 42 | 39 | 39 | 34 |
| Peru | 44 | 43 | 42 | 40 | 38 |

Source: Population Reference Bureau, World Population Data Sheets.

Asia is of particular interest because she has almost 60% of the world's population, because of her agricultural progress, her many cultures, and because of the parallels and contrasts which may be drawn with Africa.

China, Thailand, Indonesia and India (especially the states of Kerala and Karnakata) have all shown decreases in population growth rates. These four countries make up 42% of the world's population. China, with a population estimated at 1 billion, has had the most success of the four in reducing population growth rates with what must be called a coercive policy of incentives and disincentives aimed at later marriages and smaller families. Cultural factors also played an important role in China's decline in population growth rates, as they did in Taiwan's and South Korea's--all members of the Chinese culture area.

India was the first country to adopt a family planning program (1952) officially. Her program was one of incentives, disincentives, and coercion. The communist state of Kerala, one of India's poorest, managed a spectacular decrease in birth rates through widespread literacy and birth control programs, as part of an aggressive overall commitment to social change.

Thailand's program tied community development and government services with family planning in the context of income-generating activities and betterment of the quality of life.[10] Indonesia's approach was one of strong government involvement, education, motivation, incentives and disincentives.

On the agricultural side, Indonesia provides an interesting look at what is happening throughout many parts of Asia. Richard Critchfield, special correspondent on rural development for The Economist, states that high yielding varieties, year-round irrigation, multiple cropping and modern inputs* are being accepted and are spreading rapidly. Asked by Mr. Thomas C. Niblock, Director of the USAID Mission in Indonesia, to survey the progress being made, Critchfield states that in 28 of 35 Javanese** villages (in ten separate geographical and cultural regions) queried, the IRRI high-yielding rice varieties IR 36 and IR 38 predominated and that in all 35 villages, better irrigation, drainage and water management were desired in order to permit more multiple cropping.[11] In the same article, he also reports high levels of progress in India and China.

F. Africa

The situation in sub-Saharan Africa is akin to that in Asia 20-25 years ago. A few countries have shown significant increases in income growth*** and some have demonstrated recent, modest declines in birth rates. Others, however, have shown little economic growth, and some even have posted slight increases in birth rates. The recent rise in birth rates in Kenya to 53 per 1,000 has raised alarms that not only Kenya but also, by inference, most of the sub-Saharan Africa, is destined to have a population explosion, serious food shortfalls, and attendant starvation,

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*Reportedly, Indonesia's use of urea (a nitrogen fertilizer) has grown from 800,000 to 2.2 million tons in the last five years.

**Java has 85 million people.

***e.g., Ivory Coast, Cameroon, Kenya.

political disruption, and worse. To make this quantum causal leap borders on nonsense. More to the point is to examine what is happening in Kenya and what has happened elsewhere, as economic development begins.

The "Kenya Effect" (described in Section IV-B) of increasing birth rates among women who recently have become somewhat better off economically and educationally was also evident in Indonesia. The increase in fertility appears to be the result of exposure to Western ideas which, in the short-term, encourage the reduction of traditional birth spacing periods. Also, knowledge of better sanitation and health practices improve health and therefore the fecundity of these women. What is happening in Kenya is not a harbinger of disaster for Kenya or for sub-Saharan Africa. Kenya and much of sub-Saharan Africa, with the great values placed on large families, are just starting the process of economic development with the anticipated early population effects. As one might expect, there are a few leaders and many laggers. Agricultural production and the adoption of technology have definitely lagged and population growth rates have remained high. There are few, if any, quick and easy solutions. Development in sub-Saharan Africa will take effort and time.

But it must be taken into account that independence came to Asia in the late 1940's, agricultural aid began in the 1950's, population programs began in India and China in the 1950's and Thailand, Indonesia, etc., in the 1970's. This places Africa 10-20 years later in the development process with independence in the late 1950's, early 1960's, agricultural aid beginning in the 1960's, and population aid in the 1970's. Sub-Saharan Africa has a myriad of problems to be solved, however, with appropriate policies and strategies, and with carefully tailored programs and actions, development will accelerate.

## SECTION III
## FOOTNOTES

[1]Kahn, Herman, William Brown and Leon Martel, The Next 200 Years, (William Morrow and Company, Inc., 1976), New York, p. 12.

[2]Poleman, Thomas T., "World Hunger: Extent, Causes and Cures," Cornell/International Agricultural Economics Study, Ithaca, New York, May 1982, p. 12.

[3]Srinivasan, T.N., "Hunger - Defining It, Estimating Its Global Incidence and Alleviating It." Paper presented at the conference, The Role of Markets in the World Food Economy, Minneapolis, Minnesota, October 14-16, 1982, p. 4.

[4]The Global 2000 Report to the President, a report prepared by the Council on Environmental Quality and the Department of State, Washington, D.C., 1980.

[5]Wittwer, Sylvan H., "The New Agriculture, a View From the 21st Century." Paper given at the Conference, Agriculture in the 21st Century, Richmond, Virginia, April 11-13, 1983.

[6]The Global 2000 Report to the President, a report prepared by the Council on Environmental Quality and the Department of State, Washington, D.C., 1980, p. 1.

[7]1982 World Population Data Sheet, Population Reference Bureau, Inc., Washington, D.C., 1982. Footnote 3 states that birth and death rates, from which the population growth rate is derived, are based on 1979 and 1980 data for the more developed countries and on data from the late 1970's for the developing countries. Of course, the admonition that developing country statistics tend to be unreliable applies.

[8]Bogue, Donald J., "Policy Implications of the Changing Relationship Between Population and Economic Growth," The Politics of Food, D. Gale Johnson, ed., The Chicago Council on Foreign Relations, 1980.

[9]Schuh, G. Edward, "The Role of Markets and Governments in the World Food Economy." Paper presented at the conference, The Role of Markets in the World Economy, Minneapolis, Minnesota, October 14-16, 1982.

[10]David, Henry P., "Incentives, Reproductive Behavior, and Integrated Community Development in Asia," Studies in Family Planning, Vol. 13, No. 5, May 1982, p. 167.

[11]Critchfield, Richard, "Javanese Villages: The View From Below," Transaction: Social Science and Modern Society, Vol. 17, No. 6, September/October, 1980, pp. 40 and 42.

## IV. PROBLEMS AND RECENT PROGRESS

### A. Agricultural Production

To many observers, sub-Saharan Africa's overall lag in agricultural production is perhaps best summarized in the following two quotes.

> "Sub-Saharan Africa is the only region in the world where per capita food production declined over the past two decades. A few countries improved on the record of the early sixties."[1]

> "By contrast [to Asia and Latin America], the yearly rate of agricultural output in Africa declined (from 2.7 percent in the 1960s to 1.3 percent in the 1970s)--and the rate of population growth accelerated. These changes meant that output per capita grew at 0.2 percent a year during the 1960s, but then fell by 1.4 percent a year in the 1970s. Part of the decline was associated with a slowdown in the production of non-food crops (tropical beverages and fibers); but the growth of food output per capita was also transformed from a modest increase in the 1960s to a decline (-1.1 percent) in the 1970s."[2]

What is instructive, however, is to look behind the yearly averages to see which countries are lagging, why, and to see which, if any, countries have shown consistent increases in agricultural production.

The table on the following page compares the results of World Bank and USDA estimates of food production per capita throughout much of sub-Saharan Africa. The countries are categorized according to the World Bank ranking of high-, medium-, and low-growth estimates of countries' agricultural sectors' contribution to GDP.

#### 1. Main Findings

- Nine countries, totalling 76 million people (23% of the population categorized by the World Bank by country according to rate of agricultural growth), were in the high growth category over the 1970's. Those nine countries performed slightly better according to the USDA study.

- The seven medium- to low-growth countries performed significantly better in the USDA study, while the low-growth countries were significantly worse in food production per capita performance.

FOOD PRODUCTION PER CAPITA
SUB-SAHARAN AFRICA: 1970's
WORLD BANK AND USDA - A COMPARISON

| | World Bank[4] | | USDA[5] | |
|---|---|---|---|---|
| Agricultural Growth[3] | Population Mid-1980 (Millions) | Average Index of Food Production Per Capita 1978-80 (1969-71 = 100) | Population 1977 (Millions) | Index of Per Capita Food Production, Annual Average, 1976-78 (1961-65 = 100) |
| High: > 3%/yr. | | | | |
| Cameroon | 8.4 | 109 | 6.7 | 95 |
| Ivory Coast | 8.3 | 107 | 5.1 | 130 |
| Malawi | 6.1 | 99 | 5.2 | 101 |
| Liberia | 1.9 | 98 | 1.8 | 98 |
| Tanzania | 18.7 | 92 | 16.4 | 106 |
| Senegal | 5.7 | 89 | 4.6 | 76 |
| Mali | 7.0 | 88 | 6.0 | 83 |
| Kenya | 15.9 | 86 | 14.2 | 95 |
| Somalia | 3.9 | 84 | 3.3 | 90 |
| Subtotal/Ave. | 75.9 | 96.4 | 63.3 | 98.5 |
| Med.-Low: 1-3%/yr. | | | | |
| Sudan | 18.7 | 102 | 19.5 | 117 |
| Central African Republic | 2.3 | 101 | 1.9 | 102 |
| Burundi | 4.1 | 99 | 4.0 | 106 |
| Upper Volta | 6.1 | 95 | 6.3 | 67 |
| Lesotho | 1.3 | 91 | 1.2 | 100 |
| Zaire | 28.3 | 88 | 25.8 | 103 |
| Sierra Leone | 3.5 | 86 | 3.1 | 97 |
| Subtotal/Ave. | 64.3 | 93.9 | 61.8 | 103.6 |
| Low: < 1%/yr. | | | | |
| Madagascar | 8.7 | 95 | 8.1 | 103 |
| Niger | 5.3 | 93 | 4.7 | 85 |
| Chad | 4.5 | 91 | 4.2 | 87 |
| Uganda | 12.6 | 89 | 12.1 | 75 |
| Nigeria | 84.7 | 87 | 66.5 | 87 |
| Ethiopia | 31.1 | 83 | 29.3 | 69 |
| Angola | 7.1 | 82 | 6.7 | 59 |
| Ghana | 11.7 | 82 | 10.5 | 77 |
| Togo | 2.5 | 81 | 2.4 | 98 |
| Congo, Peoples Republic | 1.6 | 79 | 1.4 | 93 |
| Mauritania | 1.5 | 76 | 1.3 | 72 |
| Mozambique | 12.1 | 75 | 9.7 | 82 |
| Subtotal/Ave. | 183.5 | 85.6 | 169.7 | 75.3 |
| Total/Ave. | 323.6 | 89.8 | 294.8 | 86.2 |

FOOD PRODUCTION PER CAPITA
SUB-SAHARAN AFRICA: 1970's
WORLD BANK AND USDA - A COMPARISON

| | World Bank | | USDA | |
|---|---|---|---|---|
| Agricultural Growth | Population Mid-1980 (Millions) | Average Index of Food Production Per Capita 1978-80 (1969-71 = 100) | Population 1977 (Millions) | Index of Per Capita Food Production, Annual Average, 1976-78 (1961-65 = 100) |
| Other Countries (not classified) | | | | |
| Rwanda | 5.2 | 106 | 4.4 | 102 |
| Benin | 3.4 | 99 | 3.2 | 84 |
| Zambia | 5.8 | 95 | 5.3 | 141 |
| Guinea | 5.4 | 86 | 4.6 | 101 |
| Zimbabwe | 7.4 | 97 | 6.7 | N/A |
| Guinea-Bissau | 0.6 | N/A | 0.9 | N/A |
| Gabon | 0.6 | N/A | 1.4 | N/A |
| Botswana | 0.8 | N/A | 0.6 | 111 |
| Swaziland | 0.6 | N/A | 0.5 | 103 |
| Namibia | 1.0 | N/A | 1.0 | N/A |
| Cape Verde | 0.3 | N/A | 0.3 | N/A |
| Gambia | 0.6 | N/A | 0.5 | 95 |

Not included in the above: Djibouti, Equatorial Guinea, Comoros, Mauritius, Reunion, Seychelles, Sao Tome and Principe.

Comparison of the World Bank index with that of the USDA shows some striking differences which in large part are a function of:

- choice of different base and ending years used;
- less reliable statistics in earlier years. Both population and food production statistics in much of Africa are notoriously unreliable.

Ten countries*, totalling 215 million people, or 2/3 of the sub-Saharan population examined by the World Bank, have extremely serious political and/or economic problems. As a result, agricultural production has suffered. These countries had an average annual decline in food production of 1.5% while the remaining 18 countries had an average yearly decline of only 0.3%. Cameroon, Ivory Coast, Sudan and the Central African Republic registered modest increases in annual food production. The USDA study showed seven countries with increases in food production, five modest and two significant.

Poleman, in questioning Africa's dismal food production performance, states succinctly, "The answer, of course, lies in political instability and the incompetence and corruption which have characterized so many African governments since independence."[6]

The two sub-Saharan African countries which stand out are Cameroon and the Ivory Coast. These countries have managed higher-than-average agricultural growth by emphasizing export crops (Cameroon - coffee; Ivory Coast - cocoa), while at the same time expanding food crops. The Ivory Coast has more than quintupled cocoa production since 1960, partly because of marketing efforts and price policies conducive to increased production, and partly because of Ghana's demise as a cocoa producer--brought on by policies which discourage production.[7] Cameroon encouraged a cooperative marketing effort among coffee producers in that country which has been successful.[8]

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*Angola, Chad, Ethiopia, Ghana, Mozambique, Nigeria, Somalia, Tanzania, Uganda, Zaire.

2. Lag in Growth

In general, sub-Saharan African countries have lagged in the growth of agricultural production and in the adoption of more advanced agricultural technology, because they were the last to get independence, were considered to be the "responsibility" of several European countries, were geopolitically unimportant relative to Asia and Latin America, and they appeared to be a remote backwater of the world. Thus, they were the last to get assistance, and that in small amounts relative to the more populous countries of Asia.

Moreover, these countries suffered from a general lack of most of the factors necessary for agricultural development i.e., viable physical and communications infrastructures, viable institutions, knowledge of the location specific and cultural specific requirements for agricultural advance, research-education-extension-farmer networks, experienced leadership, and policies conducive to success.

These conditions are being slowly and sporadically alleviated at this point in time. We know a great deal more now than we did 20 years ago, based on our experience both in Africa and in other developing countries. To date, however, the effectiveness of agricultural development assistance in sub-Saharan Africa has been spotty. This topic is pursued in greater detail in Section V, Current AID Agriculture and Population Policies and Philosophy.

B. Population Growth Limitation

The main obstacle to limiting population growth is that in most African countries, limitation is not perceived as necessary or even positive. The majority of African countries see their population growth rate as satisfactory for their development potential--a significant number even see it

as too low.* Reinforcing this belief is the fact that most Africans genuinely want large families and equate them with physical and emotional security. The family, not the nation, insures the individual's basic needs. In fact, as the clan and tribal governments become less effective, but the nation has not yet gained the people's trust, reliance on the family may increase. Until the emotional and physical needs can be met by smaller family units and outside organizations, the current level of growth will continue or increase.

1. Development Needs

African leaders view their countries as having vast untapped physical and human resources. They see the problem as lying in the means to development: education, training, capital and technology. Application of these inputs would fully utilize current and anticipated manpower to achieve the desired level of development. Seasonal agricultural manpower, shortages and skilled technical and managerial manpower shortages further this view. Technology is seen as a means to increase productivity with only a long-term lessening of labor needs.

Much land is still communally controlled and distributed to families according to need. Thus, land is viewed as a "fluid" resource, responding to changing needs, rather than strictly limited by private ownership as in our system. In most countries, large sections of land are not being utilized for agriculture because of slash and burn techniques, disease prevalence, climate factors, intergroup friction, etc. Thus, population density

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*Statistics, government views on population and project descriptions for each non-member country is presented in the Inventory of Population Projects in Developing Countries Around the World, 1980-81, published by the United Nations Fund for Population Activities.

is not visually perceived by Africans as a problem. In fact, for the agricultural, disease, and to a growing extent, the climatic factors, technologies are becoming increasingly available which can make this land suitable for agricultural production and human habitation, thus making this perception valid.*

2. Cultural Values

African culture is pro-natalist. Societal roles are performed as a family member--not as an individual. Marriage is a means to provide for, enlarge and strengthen the family group through procreation and alliances to other strong families. Economic activity enhances the well-being of the group with earnings being distributed in the group according to its needs. The achievements of each individual are attributed to the family group and bring prestige to all. Children provide labor and/or income for the family throughout their lives and security in old age. They also provide for the perpetuation of the family--"immortality."** In this view, more children enhance the lives of everyone in the family.[9,10] As a result:

- In Kenya, 1980, only among women with nine or more children does the proportion of women who wish to terminate childbearing exceed the proportion who wish to continue having children.[11]

- In Senegal, 1982, total fertility rates are 8.1. In answer to how many children are desired, women respond that it is in God's or their husband's hands. For those who would qualify, nine is the ideal number.[12]

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*For example, slash and burn techniques are a consequence of an unstable agriculture caused in large part by soils of low fertility and holding capacity. The objective is a stable sustainable agriculture which entails soil building crops (forage legumes in rotation with food crops, e.g.) and fertilizer use. River blindness is now coming under control in parts of Africa with the result that lands are being opened.

**In the traditional religions of most of sub-Saharan Africa, the dead survive as spirits only as long as the descendants remember them, serve them and contact them. "Without descendants the spirits fade and death is complete."[14] The strength of this belief among the Yoruba in Nigeria is illustrated in the table on the following page.

FEELINGS ABOUT DYING WITHOUT LIVING DESCENDANTS, 1973: SELECTED RESPONSES TO SPECIFIC QUESTIONS BY SEX (PERCENTAGES OF TOTAL RESPONDENTS)[15]

| Question | Response | Percentage Giving That Response | | | Significant Deviations |
|---|---|---|---|---|---|
| | | Females | Males | Both Sexes | |
| Agreement/ disagreement (for all questions) | | | | | |
| (1) "A man lives on through his sons." | Agree | 98 | 97 | 98 | |
| (2) "Children are still needed to do services for the ancestors." | Agree | 86 | 84 | 85 | Agreement is least among Lagos men with extended education in white collar employment, but even in this group it is 81% and is no lower among those under 30 years old in this category. |
| (3) "The real dead are those who die without descendants." | Agree | 92 | 92 | 92 | |
| (4) "A woman without children might as well never have been borne." | Agree | 62 | 62 | 62 | |

- Two-thirds of Sudanese married women 45 or older want additional children, as do those married 30 years or more.[13]

Both men and women are concerned with family size. Often a woman's marital status, security and prestige are based on the number of children she adds to the family group. A man's prestige and political clout in the community are also functions of the size and accomplishments of his family as a whole. A change in attitude will have to come from both men and women.

- Eastern Nigeria, wives (ages 13-44) wanted 6.8 children. Their husbands wanted 8.2, and the husband's authority in the family tends to be strong.[16]

- Eastern Nigeria, 44% of wives with husbands under 50 thought husbands would approve attendance at family planning clinics, but only 24% of husbands over 50 would approve.[17]

A community is generally made up of families within a clan group. Here, too, strength is perceived in numbers and accomplishments. Traditional leadership and peer pressure is generally still pro-natalist. Tribal politics are also pro-natalist in the same way.

The fact that traditional religions often raise ancestors to supernatural status with the power to reward or punish for adherence to or disrespect of cultural values reinforces pro-natalism and adherence to social obligations. For example, in Western Kasai, Zaire, it was believed that death in childbirth was punishment for a woman's unfaithfulness.[18] In addition, Christianity and Islam have tended to reinforce these beliefs.

- Many Africans take very seriously the Bible scriptures encouraging procreation--"God has absolute authority over procreation." "It is sinful to plan a family," etc.

- As a woman from Manono, Zaire points out, Christianity in Africa often discourages traditional abstinence which led to child spacing and lower total fertility rates: "The Bible does not say that the couple should separate when a child is born... It is our religion (Christianity) that keeps us together and the result is that we have lots of children!"[19]

- Sudanese Muslims consider an attempt to regulate fertility for economic reasons an expression of "lack of faith in God, the Provider."[20]

3. Perception of Conspiracy/Genocide

> "Five dollars invested in family planning is worth 100 dollars in economic development."
>
> 1965 - President Lyndon Johnson

In the light of received colonial exploitation and neo-colonial pressures, such well-meaning statements served to further arouse suspicion of U.S. intentions. The sudden Western commitment to population limitation came into direct confrontation with the pro-development, pro-natalist outlook of the newly independent African nations. What to the U.S. was a statement of concern for African quality of life, was to the African mind a denial of quality of life. A frequent conclusion was that the West wanted to hold independent Africa in its status of dependency--raw material supplier to the developed world. It seemed a rejection of all their aspirations to develop their human resources and economic capacities. This reaction was reinforced by:

- the sudden availability of funds for population limitation;
- the flood of groups with little family planning experience and ill-planned, uncoordinated programs;
- the cultural insensitivity--assumption of universals in transplanting U.S. techniques in Africa; and
- the tying of agriculture, health and literacy funds to adoption of family planning.[21,22]

As an example, for many Kenyans interviewed in the late 1970's, "the very copiousness of funds for family planning coupled with their scarcity for other health services, fortifies the perception that population programs are an offshoot of imperialism and a genocidal attempt to reduce the number of Africans."[23]

4. African Government Programs

Even when African elites have seemed to recognize the implication of population growth rates on their development programs and have announced a policy, the programs tend to be weak and tentative. Examples are Senegal, whose program was announced in 1978-79, and Kenya, whose program was announced in 1966. African leaders have been and are hesitant to deal with such a potentially explosive issue until they feel people are ready for it. The political instability of many countries accentuates the problem. Few have been willing to make the kind of comprehensive government commitment that has brought the successes in Indonesia, Thailand, and, to a degree, in India.

5. Impact of Development on Population Attitudes

Based on Western experience, it is assumed that as a certain level of development is achieved, family limitation will be a natural outcome. This demographic transition has been observed in Europe, the U.S. and in many parts of Asia, but an increase in birth rates in Kenya has caused some observers to believe that the demographic transition will be blocked on the African continent. Analysis of "the Kenya Effect" provides new insights on the demographic transition in Africa.

a. "The Kenya Effect"

Kenya was the first sub-Saharan African country to start a government-sponsored family planning program with subsequent USAID assistance. Yet by 1978, it had a total fertility rate of 8.1, a 5.8% modern contraceptive use rate, and its annual population growth rate had risen from 2.9% in 1966 to 3.9%. Kenya's economic and social success has led to one of the world's most rapidly declining death rates. This explains the dramatic increase in the population growth rate. However, rather than beginning to decline, the

birth rate also seems to be growing. What is more surprising is that the growth is greater among women with one to four years of education, than among uneducated women. (The expected reduction in births for women with nine or more years of education has happened.) The reason for this anomaly seems to be that initial exposure to Western ideas tends to discourage following the traditional African spacing methods of prolonged breastfeeding and abstinence following each birth (1-3 years).* At the same time, knowledge of better sanitation and health practices improves the health of the mother and child, and nutritional knowledge reduces the danger of infant mortality and morbidity during the weaning period. Both give the mother confidence to have children closer together, since the main incentive for the spacing was the health of mother and child. This is substantiated in other African countries as well. A Zairan woman explains:

> "Today we do not make any decisions about spacing the births of our children. In general, we do not follow anything. Our ancestors had stronger children because they were not born too close together. Today parents no longer worry about their children getting sick. They think that they can always buy medicine and then the child will get well. This is why couples no longer separate their beds after the birth of a child, as they used to in the time of our ancestors. We are no longer so afraid of small children dying."[24]

Also as Dr. S. Okun Ayangade of the University of Ife in Nigeria warns:

> "The practice of prolonged breast-feeding and a long period of sexual abstinence has important implications for family planning programs. The impact of a carelessly designed family planning program that may interfere with local beliefs and constraints can only serve to increase fertility levels."[25]

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*It should be noted that a wide variety of traditional child spacing and birth control practices are used in various African cultures. In Zaire, seven general categories have been identified: virginity, total abstinence, polygamy, withdrawal, medicinal plants, contraceptive rites and abortion. Source: Waife, Ronald S., "Traditional Methods of Birth Control in Zaire," Pathpapers, No. 4., December 1978.

Educated women are also less likely to be in a polygamous marriage where the birth rate is generally lower than for monogamous marriages.

Cultural factors impede the transition to lowered birth expectations in Kenya. As stated previously, children provide work throughout their lives, extra labor during the peak seasons, status, care in old age, and security in numbers to confront life's risks. As it became advantageous for some family members to seek work elsewhere or be nonproductive for extensive periods of schooling, there was a perceived need for more children to maintain the agricultural activities and family roots in the village. The role of women in Kenya is also crucial. Infertility is seen as God's punishment for wrongdoing--many children as a sign of God's favor.* Thus a woman's status in the family is dependent on the number and health of her children. Also, a woman cannot inherit from her husband, leaving her dependent on her children after his death. While African mothers are extremely supportive of children's efforts to succeed in modern life, a tremendous fear is spending old age alone, rather than surrounded by children or grandchildren as in the past.

Tribal loyalty is still quite important in Kenyan politics. Political power is equated with relative size of tribe. Thus, any program which is seen as disturbing this balance receives opposition, and smaller tribes, striving to achieve greater prominence, often oppose all population limitation efforts. On the other hand, uniform programs sometimes lack the diversity to appeal to all the cultures within the country.

Thus economic/social development and Western influences initially encourage rather than discourage large families. For example, improved health

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*This stress on fertility is reflected in the African woman's frequent fear of utilizing artificial contraceptive means.

care causes greater fecundity, optimism about survival of childbirth and lower infant mortality, thereby encouraging more births. As we already stated, one to four years of education seem to increase fertility. Well-intentioned efforts to provide free health and education services are pro-natalist because they shield parents from two major costs of childrearing. The availability of non-agricultural (industrial, urban, governmental, foreign) employment opportunities encourages women to have more children in hopes that some children will reach the top in the various professions and bring prestige/income to the family. At the same time, employment opportunities for women, which might encourage smaller families, are still negligible and likely to remain so.[26]

Rather than causing a change of attitude toward smaller families, economic and social development has in the short-term supported the cultural preference for large families. Attempts by the Kenyan government to provide greater security and opportunity for its citizens--free health care and primary education--have failed thus far to bring about the anticipated population impact. Not only in agriculture, but also in health, education and employment, the population growth rate makes development goals difficult and costly to attain in spite of remarkable efforts. For example, Kenya set a goal of free primary education (grade 1-7) for all by 1983. In 1965, 45% of primary age children were enrolled; by 1975, 92% were enrolled. This was achieved, however, at an ever increasing cost (rising from 8% to 28% of total current government expenditures). By 1978, population growth was causing Kenya to lose ground, as enrollment slipped to 83%.[27]

The insecurity of life in most African environments has produced a society based on strong social relationships and obligations to enable survival and social harmony. Satisfaction is drawn primarily from the social

rather than economic sphere. Since the glue of the society is social, high fertility is essential. Initially, the society responds to new opportunities within the traditional framework, i.e., mobilizing the large extended family to take advantage of them. While on the national scope the impact of population on development is perceived by some, circumstances in Kenya have not yet disproven the effectiveness of large families in the minds of most Kenyans.

While, as in Indonesia*, the rise in the birth rate is a short-term aberration occurring in the early stages of economic growth, the dramatic impact of short-term birth rate increase dictates action. The difficulty of taking action is demonstrated by Bernard Berelson's study of twenty-nine key developing countries in which all African countries analyzed were unlikely to achieve a crude birth rate of 20 per 1,000 by the year 2000.** Since most African leaders (unlike many Asian leaders) are hesitant to force or even offer incentives for population limitation, change can only come from a value shift in favor of smaller families. On the other hand, the population situation in most of Africa is far from the population "crisis" of India and China. A gradual, comprehensive approach will create far less turmoil and a more stable cultural adjustment than the coercive policies used in some parts of Asia.

b. Selected Interpretations

On the basis of thorough literature searches conducted by Battelle Memorial Institute and Westinghouse Health Systems in 1978, Steven W. Sinding, current Director of the AID Office of Population, concluded that

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*as well as Taiwan, Singapore, Malaysia and Mauritius.[30]

**Berelson Study quoted by Steven W. Sinding (footnote 28), 15-18.

socio-economic determinants alone cannot cause lower fertility rates. Evidence suggests that the role of development in fertility should be seen at the level of individual and community responses to socio-economic changes caused by the development process and reinforced by mass communication. These changes affect couples' perception of the role of children and families. When this is reinforced by the community, peers sharing a common perception, and a program making available contraceptive services, the total fertility rate will decrease.[28]

John C. Caldwell's Theory of Fertility Decline[29] analyzes the complexity of individual family responses to development and the factors which will cause a value shift in favor of smaller families. He provides a case study substantiating the "community ethos" theory described by Sinding.

The Theory of Fertility Decline studies the Yoruba of Nigeria, a highly commercial, urbanized tribe who maintained firm roots in agriculture. The Yoruba began developing commercial cities, like Ibadan and Lagos, over 1,000 years ago. At the same time, most urban families maintained a farm and family labor was transferred from the city to the farm during the growing season. Caldwell makes a strong case for the effectiveness with which the Yoruba have utilized the extended family to take full advantage of Western innovations in Nigeria. His analysis sheds further light on the complex and variable interaction between development, culture, and family size.

Caldwell argues that the intrusion of the West has already greatly reduced the need for the large family. For example, he states that common residence and communal land tenure are weakening. Insecurity is reduced by health care, better communications, more commercialization and stronger governments. The reduction, however, has not made the large family an

inefficient family unit. Studies done by Western scholars, like Eva Mueller's The Economic Value of Children in Peasant Agriculture (1975), which concludes that children are more a burden than net labor contributors, have not fully taken into account the functioning of the large family in Africa. After mentioning the extended family, they seem to slip back into a Western mind-set. In a society with relatively little labor-saving technology, children from five years on perform numerous household tasks, hauling water--often several miles, carrying messages, caring for younger children, herding of livestock and many other time-consuming tasks, which free parents for more difficult work and allow them some leisure time, an important reward in all cultures. The greatest parental burden is felt with the first three or four children in terms of time devoted to care and cost. Additional children are largely cared for, and financed, by older siblings. Thus both the economic burden and the fear of dying childless become progressively less with each additional child. In Caldwell's surveys, when asked to name the best thing about a large family, only one-ninth of the respondents answered in terms of current economic gain and one-ninth of future support. Non-economic motivation, such as that discussed earlier, predominated. In fact, many respondents reacted with resentment to questions on the economic value of children.

"The emphasis in tropical African and other Third World societies tends to be far more on security and on being guaranteed survival through times of duress than in maximizing the profits of good times."[31] Economic obligations expected in social relationships and expanded by marriages provided this security. Anyone who achieved economic success used it to "buy" titles

which gave him the prestige and the community the economic gain*. Jealousy was avoided, and social harmony enhanced.

Yoruba have been quick to seize the opportunities offered by Western education. While adults lack the prerequisites for the high paying white collar jobs, their children can achieve this success and the system of obligations will require that a part of their earnings will return to parents and the extended family. Extended families have proven very effective both in assuring educational fees and securing professional positions. With not only parents, but uncles, aunts, and siblings to assist, the network is broad. Educated children provide the peasant farmer with a "window to the modern world and a means of sampling its pleasures."[32] The child provides gifts from the modern economy, visits to the city and sharing its lifestyle, contributions to village ceremonies which bring honor to the whole family, new intellectual skills and outside contacts from which parents also gain prestige, improvements to the family compound, and influence on governmental authorities to promote local interests. In association with other villagers working in the urban area, money can be raised for village improvements like a community hall, clinic, etc. In this way the large extended family has proven more effective than the nuclear family in exporting prosperity (and Western influence) from urban to rural areas. To insure such potential advantages, sufficient children must be raised to have at least one highly gifted one. Among urban professionals, the system has continued. They have proven even more successful in educating and placing their children, cousins, etc., in good jobs--thereby increasing their own

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*This is vividly described in Chinua Achebe's novel, Things Fall Apart (Greenwich, Connecticut, Fawcett Publications, Inc., 1959).

wealth. Caldwell's surveys, conducted in Western Nigeria, substantiate that fertility rates in urban areas have risen with rural fertility rates for this reason. This may be especially true among Yoruba because urban living in itself is not new. However, in many developing countries, like Malaysia, India, Pakistan and Algeria, urban fertility is as high as rural fertility.[33]

In the mid-70s, though widely known and available in southern Nigeria, traditional and modern contraception other than abstinence and breastfeeding was used by only 11% of Lagos women. With the exception of a small, well-educated Westernized group, it was used for the traditional reason of child spacing for health reasons or increasingly to allow premarital or extramarital relations. It was seldom intended for fertility limitation.

Financial Return to Parents from Working Children[34]
1974-75

(Investment in education by parents and financial assistance from working children)

| Monetary Help from Parents With Education | All Working Children N | % | Financial Assistance to Parents in Percentages of All Working Children: Money Sent Both Regularly and in Emergencies | Money Sent Regularly Only | Money Sent in Emergencies Only | No Money Sent |
|---|---|---|---|---|---|---|
| Help given | 392 | 100 | 34 | 4 | 35 | 27 |
| No help* | 149 | 100 | 17 | - | 61 | 22 |
| All cases | 541 | 100 | 29 | 3 | 42 | 26 |

*Generally parents unable to help and therefore not penalized. In fact, there were fewer cases where no money was sent.

Western observers have often concluded this system is felt to be burdensome. Caldwell's surveys suggest this comes from the observer's own reactions and emotions. The young do not see the system as burdensome because they expect to receive wealth in turn from their own even more successful children. In biographies recorded of men who rose from traditional society to modern economic success, the expenditure that brought the greatest pleasure was that on relatives and even non-relatives.

It can be seen from this analysis that the net flow of money and labor in this system is from child-to-parent. As Western influences* conveyed in the schools, media, and cross-cultural interaction, penetrate the society further, they may in the long-term--together with economic and social change--create the "community ethos" to support the economic and emotional shift to the nuclear family** by:

1. promoting the belief that children should share more equally in the family's standard of living, thereby raising the cost of child-rearing--"making children more expensive in terms of alternative uses for money, emotion and time."[35]

2. reducing the willingness of young adults to forego "the profits of good times" to share wealth and reducing the expectation that their own children will share with them, thereby shifting the lifetime inter-generational flow of money to parent-to-child.

   "When significant sections of the society foreswear major obligations outside the nuclear family, and invent a rationale for doing so which can be used by others to justify their own actions, then the whole system would decay fairly rapidly."[37]

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*P.T. Bauer agrees with Caldwell that modernization is a euphemism for Westernization.[36]

**Alan Sweezy in "Economic Development and Fertility Change" in New Perspectives on the Demographic Transition (Washington, D.C.: Interdisciplinary Communications Program, Smithsonian Institution, 1976), reaches the conclusion that agrarian Eastern Europe reduced its fertility well before economic development took hold because of cultural influences from Western Europe (late 19th C.).

3. lessening the desirability of village relatives assisting the working urban family with domestic tasks, child care, etc. (at the same time economic and social development have lessened their availability), thereby making large families more difficult in urban areas.

4. reinforcing a shift in sources of prestige from activities and generosity in the local community to achievements in the wider community.

5. enforcing laws against nepotism, thereby minimizing the family's employment assistance.

According to Caldwell, this process has already begun and is likely to be completed in 20 years among Yoruba and 50 years in Africa generally.[38]

Another possible aspect of the "Kenya Effect" is presented by Robert W. Morgan in his studies of the Yoruba.[39] He points out that while among the best educated and professionally advanced in Lagos, fertility is lower; among those with lower education levels and less job security, fertility is extremely high. He cites particularly those in positions of frequent unemployment and recent primary and secondary school graduates where the market is now tight. Morgan suggests that the reference group theory of Hyman, Merton and Rossi applies. When people aspire to membership in a new social group, they continue to honor the norms of their original group until they feel they have fully attained membership in the new group. For those who have some schooling, have entered the cash economy, and are partially relying on modern medicine, an over-allegiance to traditional norms in other areas, such as high fertility, may alleviate the anxieties caused by the transition. Since children are the best insurance in the traditional system, it gives them a foot in both worlds.

In order to alleviate this problem, governments need to hasten and equalize access to the modern synthesis of African and Western values. To achieve this, Morgan recommends:

1. Facilitate poor people having a role in making decisions and implementing programs in their interest (self-help, etc.).

2. Upgrade access to opportunity, security and prestige in urban areas.

3. Restore prestige and attractiveness to rural life--stress agriculture and rural enterprise.

4. Restructure education to train mid-level manpower for agriculture, industry, and practical life, not just pre-university training.[40]

All these analyses suggest that population limitation is a complex issue. Keys to speeding the demographic transition lie in the minimization of risk provided by economic and social development combined with hastening culture-and circumstance-specific social value adjustments and an inevitable long-term Westernization of values or modern synthesis.

## SECTION IV
## FOOTNOTES

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## V. CURRENT AID AGRICULTURE AND POPULATION POLICIES AND PHILOSOPHY

### Aid

> "Progress is evidence of its efficacy and so an argument for its expansion; lack of progress is evidence that the dosage has been insufficient and must be increased. Some advocates argue that it would be inexpedient to deny aid to the speedy (those who advance); others, that it would be cruel to deny it to the needy (those who stagnate). Aid is thus like champagne: in success you deserve it, in failure you need it."[1]

### A. Agriculture.

To understand AID's current developmental policies, it is useful to look at how developmental assistance and policy have evolved. In the early days, AID's assistance largely took the form of disposal of excess U.S. grain, physical and research infrastructure building, and direct transfer of U.S. agricultural technology. The transplant of U.S. technology rarely took hold because it was not adapted to local conditions, and the gifts of grain usually served to disrupt the operations of local markets. On the other hand, there were some solid successes, as was evidenced by the strengthening of agricultural research-education capabilities in Brazil and India.

#### 1. Help the Poorest of the Poor.

In the aftermath of the 1972 and 1974 global grain shortfalls and the 1973 "energy crisis," the notion that developing countries should become self-sufficient in food grain production became very important. It was

also at this time that the "gap philosophy"* in terms of incomes (equity between individuals and nations) and in terms of future food demand and supplies started to gain widespread credence. The industrialized, the centrally planned and the newly industrializing (graduates from the LDC ranks) countries would sop up food supplies, leaving the LDCs to scramble for whatever would be left - at high prices.

AID's development policies shifted toward tailoring assistance and technologies to local conditions (a correct move since agriculture is location specific), toward both individual projects and integrated rural development schemes with a strong emphasis on a "bottom-up" approach and on small and marginal farmers. The bottom-up, small farmer approach sprang out of the perceived Congressional mandate (still in force) to focus efforts on the rural poor of the developing world. This "mandate" has been popularly called "Help the Poorest of the Poor." This was (is) a very humanitarian, but on closer examination, a very unrealistic concept. It does not make a great deal of sense to concentrate totally on the weakest, least productive areas of a country's agriculture - especially when time is of the essence.

Integrated rural development programs tended to embody the idea of getting everything going at once (agriculture, health, literacy, associated infrastructure and local supporting "institutions"). Integrated rural development programs have had extremely limited success due to their inherent complexity; often inadequate design; poor planning and

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*The "gap philosophy" still prevails in many intellectual quarters, but is put in proper perspective when one is reminded that there are many opinion leaders who have a professional stake in alarm.

implementation; lack of control; lack of management capabilities within the host country government, AID, and the contractors carrying out the projects; and lack of sustainability once the project was turned over to the host country. Poorly planned, implemented and sustained projects can actually have a negative effect on development. Villager expectations are raised and then dashed. A few instances of raising expectations and not being able to carry through cause concern and then resentment. Following are excerpts from a recent evaluation of an integrated rural development program in the Upper Volta. In all fairness, it should be noted that there were a number of successes* in this extremely complex, ambitious ($6 million - 45 villages) effort.

Seguenega Integrated Rural Development Project:
Major Findings

Contractor - "The project design was deficient in the level of attention given to technical assistance requirements, operational management and financial controls required to insure the effective implementation of an extremely complex project carried out in a harsh environment."

Government of Upper Volta - "The lack of participation in the management and implementation of the project by the various concerned Ministries, i.e., Rural Development, Health Agriculture, etc., has hindered progress to date. Continuation and replication of the SIRD project will not be possible without the support and participation of the various ministries in the GOUV taking part in the project.

USAID - "There is a distinct absence of any meaningful project management guidelines in the AID/Africare Grant

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*an excellent, low-cost, all weather road network, well thought out in advance; promising sheep cross-breeding and fattening programs; a high potential vegetable production effort; and diesel oil powered mills for women's groups. These successes will be examined more closely as part of an upcoming private sector assessment of the Upper Volta.

Agreement, resulting in minimum Mission monitoring and supervision of ongoing implementation."

SOURCE: Mid-Project Evaluation: Seguenega Integrated Rural Development Project - Upper Volta, Ronco Consulting Corporation, July 1982, pp. I.2, I.3.

2. Help Them Help Themselves.

AID's overall development policy has recently shifted to what might be called "Help Them Help Themselves," under which agriculture sector programs, technology transfer, and increased private sector roles are being stressed. Development has been understood to be a long-term process, and therefore program "horizons" have been lengthened to 10 years or more. Effective demand, i.e., demand with money behind it, has been recognized as an engine of growth.

In this light, the current policy calls for more and better yield increasing technologies to be provided. It makes a direct appeal for host country policies which provide incentives for farmers to produce and for the private sector to operate. It stresses the need for private sector participation in the development process, at the same time recognizing that there are developmental/economic activities that the private sector carries out best (e.g., marketing, distribution) and activities for which the public sector is better suited (e.g., research, education). It recognizes that institution building is key to developmental success and that it requires a long-term effort.* It also recognizes that farming really

*This is particularly clear in agricultural research. In Morocco, for example, under a 10 year AID-University of Minnesota effort, the principal agricultural higher education institution (INAV Hassan II) is starting to turn out large numbers of its own Masters level graduates and the American philosophy of hands-on, applied agricultural education/research has taken hold.

is a system, often in Africa a cropping-livestock system, and as such requires a close two-way linkage between research-education-extension and the farmer.*

The Congressional "mandate" to focus efforts on the rural poor still applies, however. Small farmers are emphasized, the transfer and adaptation of existing appropriate[2] technologies (read labor intensive, small scale) are called for, and capital and commodity assistance are somewhat restricted[3] (one could read into this that physical infrastructure, fertilizers and pesticides are thought to be high cost and/or high energy inputs).

The poverty focus is still somewhat pervasive, and thus causes certain types of activities and research to be carried out. In many instances this may be entirely appropriate, given the state of development of many sub-Saharan countries. On the other hand, many Washington and field personnel tend to stress low technology, low energy options/projects/programs - some of which are not highly productive. As pointed out earlier, time is of the essence in spurring agricultural/food production and employment generation, given that the population bulge is starting to appear and

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*Establishing these linkages is a long-term effort, especially in Francophone countries where farming systems as a concept is resisted by bureaucrats, who want to compartmentalize agricultural activities. On the other hand, the concept of farming as a system tends to be welcomed by the farmer.

will be present for at least the next 20 years.* The focus on poverty has the effect of making personnel shy away from consideration of medium and large size, ambitious, possibly capital-intensive programs - which in some cases may be entirely appropriate for a country's development. It also diverts attention away from an opportunity seeking approach and fosters thinking small. Development can come from many quarters, and no high potential opportunity should be rejected out of hand just because it does not fit into one or another development philosophy.**

Moreover, there is no explicit statement of the close relationship between agriculture and population in Africa and how these two key areas should be linked, so that the importance of increased agricultural/food production in lowering population growth rates can be fully exploited. The following section traces past population policies and programs, and explores the problems in AID's efforts to date. Section VI deals with recommendations for the creation of linkages between the two activities and for modifications in current policies.

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*High energy inputs, and in some cases, physical infrastructure, may be the keys to increased crop production and food availability. Fertilizer, especially nitrogen, certainly is key in many parts of Africa. It was recently found in the Upper Volta that millet and sorghum yields had doubled where farmers had planted these crops on lands formerly planted to cotton. The doubling of yields was partly due to the residual effect of the fertilizer used to grow cotton. Millet and sorghum yields are estimated to have increased about 40% in the Mali-Sud project area (Mali). In addition, hybrid maize was introduced to the area with recent average yields of two metric tons/hectare on 24,000 hectares.[4]

**Helping the poorest of the poor in Mauritania precluded that AID mission (1979) from assisting in the development of Atlantic Ocean fisheries, a resource estimated to be capable of generating $500 million annually (source: author's conversations with Swedish businessmen in Nouakchott, Mauritania, May 1979).

B. Population.

1. Development of AID's Population Effort.

Population is the most donor motivated and implemented of all development areas. Born out of a sense of impending crisis which gradually took hold of the American mind, it grew from a small Private Voluntary Organization (PVO) effort to an obsession for some members of Congress and a crusade for its devotees. In the early 1960's USAID and the Department of State were hesitant about population assistance based on the belief it fell outside the purview of government. However, in 1967 Congress legislated $35 million to be spent exclusively for population work. The special treatment and extensive funding aroused resentment within AID that has lasted until the present day.

The inherent problems were accentuated by Director Ravenholt's policies and methods. The objective of the Office of Population was fertility reduction in developing countries. The assumption was made that population growth can be reduced by voluntary means, the most effective being family planning. This is reflected in their 1973 spending priorities with 47% of over $125 million going to delivery of family planning services. After the World Population Conference in Bucharest in 1974, where Third World leaders favored "Development is the Best Contraceptive" strategies, AID was pressured to link population programs to development programs. Ravenholt saw this as slow and a waste of desperately needed funds. Direct sell won out. High priority was placed on promoting contraceptive technology and short-term results to justify continued funding. This encouraged fast implementation without thorough involvement of the recipient country as well as reliance on incentive programs that were sometimes counterproductive. The Office of Population found itself in the

position of spending as fast as it could to justify the size of its funding as necessary to meet the demand.[5]

## The Airgram That Was Never Sent!

In the midst of this furious activity, there was a voice speaking out for a comprehensive approach responsive to African perceptions and priorities. Based on 14 years experience with health/population programs in Ethiopia, Kenya and many other African countries, as well as with the highly successful Danfa Project* in Ghana, Dr. Julius S. Prince[6] of the Africa Bureau, produced draft population guidelines in 1972 which then - and today - prescribe a meaningful AID role in Africa. Two years before the Bucharest Conference, he had identified the sensitivities of African leaders and channels for preparing the ground for a successful population effort. Dr. Prince's purpose was to clarify guidelines to the field population officers in order to diminish the backlash which had already begun, and at the same time to promote their interest in a realistic and humanistic approach to the population problem. Main points included:

1. "Population considerations cannot be dealt with separately from other development concerns. They must address the quality of life as well as the quantity of people."

2. Population programs in three areas should be increasingly acceptable to African leaders: (a) family health services including child spacing, (b) demographic data collection and analysis, (c) manpower training for awareness and preparation of Africans to develop, implement and

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*Danfa Comprehensive Rural Health and Family Planning Project.

evaluate their own population policies and programs.

3. Health and nutrition delivery systems should be developed; (a) to create the preconditions of fertility decline, (b) to control disease that makes certain land uninhabitable, and (c) to handle family planning once the program is acceptable.

4. Family planning should be integrated with health to be effective and feasible in terms of cost and sensitivity. This can also be achieved by use of traditional health providers, community workers and paramedical persons.

5. A wide variety of approaches should be tried with frequent analysis of the climate of receptivity.

6. The use of PVO's in politically sensitive situations and coordination with other donors to achieve the level of assistance necessary were stressed. Donors must be careful not to encourage African countries to overextend.

7. Health education in MCH clinics can open the way for population education.

8. "...we believe that population/family planning program assistance will be effective in proportion to the degree to which all its components and interrelationships are accounted for and are a part of a total assistance program" (p.14) - development planning, administration, delivery of services in agriculture, community development, etc.

9. Programs must relate to priorities of the individual African governments.

After being modified and approved by all appropriate offices, except the Population Office, this airgram was rejected - ostensibly because it preceded the prioritization project then being undertaken by the Population Office. "Results-at-all-costs" continued.

Since Ravenholt's demotion and resignation, the Office of Population has been in the process of synthesizing approaches to population programs implementation. Yet Ravenholt's imprint is still firmly felt throughout AID's population division. The result is seen in project evaluations when it is stated that AID/POP seems not to be sure of its goals - whether all efforts should be aimed directly at fertility reduction through family planning or whether the goals are broader.[7]

A useful way of viewing the development of population programs is Dr. Phyllis Piotrow's Thesis - Antithesis - Synthesis analysis.

Theme #1 - Organization

(1) Programs were integrated into maternal and child health programs (MCH).

(2) As this process seemed slow and allowed resources to be diverted from specifically population activities, free-standing approaches were tried. They were based on the philosophy that "If contraception is available, people will use it."

(3) Now AID is moving toward adding health to the single purpose programs. Attempts are being made to learn from both approaches to produce a stronger integrated program.

Theme #2 - Research

(1) Initial research was aimed at finding a panacea for population problems.

(2) When researchers found the task far more complex than anticipated research was narrowed to getting the supply system going.

(3) Now research has been broadened to operational research, involving all phases of practical supply and implementation of programs.

Theme #3 - Implementer

(1) In the early years, most work was carried out by the PVO's - most governments didn't want anything to do with promoting population control.

(2) In the 1970's International Planned Parenthood Federation brought population control out into the open. They tried to get governments to provide services. However, by the end of the decade IPPF concluded that governments couldn't deliver services as well as PVO's, who had both the willingness and ability to implement programs.

(3) The current trend is to examine the role of the private sector, since governments are often forced to put funds into politically useful programs and frequent changes of government can cause programs to be dropped.

Theme #4 - Communication/Motivation

(1) Early programs in Asia stressed the persuasion process - awareness leads to attitude change leads to changed behavior.

(2) In the second phase persuasion was not considered necessary. Logistics and getting supplies out was the most important aspect of family planning.

(3) Now programs incorporate both communications and implementation. Commercial advertising techniques are being employed.

Theme #5 - Funding

(1) Until the late 1960's there was extremely little money for population work.

(2) Concern for the "Population Crisis" made a considerable amount of money available for population programs. Many new ideas were tested - innovations tried.

(3) Based on this experimentation, many organizations have tested ideas to implement, but find difficulty in getting funding. The question now is "how to get the most bang for the buck."

Theme #6 - Policy Makers

(1) In the 1960's policy was set by political leaders - not experts. Congress insisted that AID develop a population staff.

(2) In the 1970's there was strong technical input from universities, public health and medical associations, service and delivery organizations, demographers, biomedical researchers, etc. This was the heyday of technical/professional input.

(3) Now population work is largely in the hands of bureaucracies, USAID, World Bank, host governments, etc. This presents a danger that population work will become institutionalized and less innovative.[8]

SUMMARY OF PIOTROW'S THEMES

| | | 1960's* | 1970's* | 1980* |
|---|---|---|---|---|
| #1 | Organization | Integrated MCH | Free Standing | More complete integration with MCH |
| #2 | Research | Search for Complete Panacea | Supply & Logistics | Operational Research |
| #3 | Implementer | PVO's | IPPF and National Gov'ts | Some Nat'l Govt. - Stress on private sector both PVO & commercial |
| #4 | Communication/ Motivation | Stressed persuasion | Stressed only delivery of supplies/services | Communication and Implementation--social marketing |
| #5 | Funding | Little funding | Major funding--many innovations | Reduced funding--scaling down of experimentation |
| #6 | Policy Makers | Political leaders in West responding to crisis theory | Strong technical input--diverse sources | Government-Bureaucracies |

* Dates are very approximate and vary a bit by theme.

2. Types of Programs.

An evaluation of the various types of programs currently being implemented by AID in Africa will offer some insights for future population programs and policies.

a. Assistance to National Programs.

Kenya's Family Planning Program is a good example of the problems of large-scale government population programs. Kenya's program grew out of the influence of expatriate advisors and a government desire to win the

confidence of Western investors and governments, who still associated Kenya and Kenyatta with the widely publicized Mau-Mau excesses. Following a Population Council assessment, the National Family Planning Program was founded in 1967. The objective was fertility reduction, but the rationale announced was birth spacing for health. The international community applauded, but Kenyans jeered. The government had allowed economic considerations to outweigh cultural and political ones. Based on the extent of foreign funding, lobbying and advising, critics charged that family planning was foreign and opposed to national values on fertility. Others argued that public hearings should have discussed the Population Council's report. The Minister of Health, who was responsible for implementing the project, resented the fact that the program had been developed in the Ministry of Economic Planning and Development without their involvement. Thus, from 1967 to 1978 the program suffered from weak commitment at the top. Sensing this, middle level implementation was also weak.[9]

With this background it is little wonder that AID's project evaluation in 1976 indicated many problems with its project assisting Kenya's Maternal and Child Health/Family Planning program. USAID had a stated goal of close cooperation with the Government of Kenya. Yet AID's insistence on demographic goals/results and refusal to recognize the presence of political and cultural considerations led to the Ministry of Health officials perceiving "an attempt at excessive domination of internal MOH affairs by USAID/K.[10] Communications largely broke down. As a result the project was ineffective as of January 1976. The crucial goal of cooperation between the six donors involved was only minimally achieved.[11]

The FY 84 Country Development Strategy Statement for Kenya expressed the understanding that overcoming the social, cultural and economic

restraints to family planning is essential.[12] Current projects in Kenya have backpedaled to the use of intermediaries (NGO's), promotion activities, and some training.

Many African governments do recognize the problem population growth creates for development and allow private family planning efforts. But the main concern of political leadership is establishing legitimacy for their rule. The regime's dependence on goodwill from external donors and the bureaucracy may cause it to formally endorse programs to which it is not fully committed. In the struggle for legitimacy, the promotion of free primary education is much more attractive than family planning. In this situation of low legitimacy, the more stable bureaucracy often has greater ability to see that goals are achieved. Yet bureaucrats tend to favor policies that will promote their career or specialization. Because of this, specialization tends to lead to interagency divisiveness and competition.[13] These factors, which limit program success, can be seen clearly in the Kenya National Family Planning Program.

Many African governments are highly dependent on a variety of foreign and multilateral donors. While coordination of donors was essential to the success of a major project such as this one, it is in practice difficult for the donors to achieve. The African government, intent on preserving what independence it can, tries to deal with each donor separately because it perceives that this procedure permits closer control over development programs. As seen in this project, it may also be in the interest of the donors' image to maintain a low profile.

Family planning literature stresses economic rather than political costs. Technology can handle the problem. Only political consent is needed. Yet it is easy to see how the Kenyan family planning effort and

USAID's involvement was nearly defeated by political issues. African leaders are caught in the dilemma of all leaders in that they must see issues both in terms of national goals and local interests. In a country where the level of education is low, and the concept of nation is new, appeals for support depend strongly on local interests. This is especially true in this case, where the issue is central to cultural values and local community structure.* The mistake was AID's underestimation of what was at stake for the African leaders and the bureaucracy responsible for its implementation. The assumption of inherent demand for contraception and family limitation led AID and the other donors to push a program which was doomed from the start. Not only did it fail to achieve its objectives but also it caused a backlash that will threaten serious government commitment to population for years. It is also possible to see how the same kind of divisiveness within AID can harm population programs and how there is temptation to hold to alarmist views and disproven beliefs in order to maintain funding levels.

b. Small-Scale Projects Through Intermediaries.

Pathfinder Fund is a good example of a specialized intermediary funded largely by AID which channels assistance to innovative and pioneering programs geared to lowering rates of population growth. The programs cover a wide variety of areas within the field. The comprehensive APHA evaluation in November, 1980 was favorable and recommended that the

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*Yet it seems from the discussion in Section IVB that the case for population control today is much less clear at the family and local level. The technology and national interests approach allowed AID to ignore this dimension - not so the African leaders.

program for Africa be expanded. The strengths of the Pathfinder Fund are that it can move quickly to fund small-scale innovative programs at the time that the impetus is present and funding needed. Pathfinder operates through regional offices staffed by local family planning professionals. These offices respond to requests and seek out worthwhile projects. It can more readily identify and evaluate indigenous organizations and groups with the prerequisites for a successful project which is capable of becoming self-sustaining. In this way, Pathfinder is encouraging local initiatives which are more likely to grow from and be sensitive to local cultural perspectives. It separates the funding from direct bilateral aid and the feeling that family planning is a Western rather than an African objective. As AID national experience in Kenya shows, this may be the best way to begin real population work in the region.

A particularly interesting example of Pathfinder in Africa is Family Planning Motivational Services of Maendeleo Ya Wanawake. This is the largest women's organization in Kenya, which includes all tribes in its 6,000 local groups. It has built an office building in Nairobi to generate rental income for seeding projects. This project is based on motivational work by members and cooperation with local community development officers, agricultural extension agents, nutrition educators, etc. "The integration of family planning motivation and education activities with self-help projects, e.g., poultry farms, potable water projects, etc., is recognized as leading to the greater acceptance by rural women of family planning services."[14]

Success is likely because of qualified leadership, participation of government, church, schools and local opinion leaders in its design and

implementation, and its link to self-help for rural women. This may well serve as a model for other women's groups in Kenya and elsewhere.

The weaknesses have been those characteristic of a small organization. Improvements in long-range planning and management are in order. More regional offices are indicated, i.e., it is difficult to supervise Nigerian projects from Kenya. Communications and delay in supplies have handicapped some projects. It was also noted that AID/W should do more to coordinate the family planning activities of PVOs operating with AID funds. A strong sense of unnecessary competition was felt which handicapped organizations from cooperating in a way beneficial to both. Clarification of roles by AID/W might resolve this.

A suggestion that Pathfinder be made AID's principal intermediary in Africa was rejected on the grounds that it might make Pathfinder less flexible and creative. At this point, it is in the interest of encouraging family planning to have a wide variety of competent U.S. and indigenous PVOs developing new approaches specific to local needs and perceptions.[15]

c. Research, Information and Influencing Policy Makers.

A shift in emphasis to research, information and influencing policy makers has been made. Three of these programs will be discussed.

Battelle

Battelle Memorial Institute's Population and Development Policy Program was designed to influence policy makers, gather data, and create a favorable climate for effective family planning programs. From the start it received conflicting signals from the Office of Population - a Ravenholt legacy:

(1) develop policy indirectly by supporting research and activities that consider the demographic process with the broad context of economic development, fertility, natality and migration.

(2) implementation of family planning programs must be the direct objective.

It took a special working session in November, 1978 to clarify the contract essentially in favor of the first position and in favor of country-specific research. Both represent a turn from the Ravenholt philosophy. The evaluation team praised some efforts and recommended that Battelle must limit the number of countries and increase staff to be effective.[16]

RAPID

Resources for Awareness of Population Impact on Development (RAPID) involves the design of a computer model to demonstrate graphically the projected impact of population growth on development sectors. The presentation is intended for top level policy makers.

The major initial flaw was that no funds were budgeted for in-country development. Beginning in 1980 this error was corrected, but, while worthwhile and well-received in some countries, both the development process and presentation leave a lot to be desired. Its use in Sudan and Tanzania will be summarized.

When Sudan was targeted for RAPID in 1979, no interest was expressed by AID/Khartoum or any Sudanese group. AID/Khartoum indicated population limitation was not viewed as a problem. The problem was labor scarcity caused by excessive labor migration to the Gulf States, which made high priority agricultural development difficult. A RAPID presentation would appear unresponsive to Sudan's concerns at the time and thus counter-productive. The model was prepared regardless without Sudanese input and

presented to the mission, which again let it slide in the absence of a Sudanese group to sponsor it. A Sudanese sponsor was located by AID/W and it is now being revised for use.

AID/Khartoum criticism is significant:

(1) It is simplistic and hence insulting to Sudanese politicians;

(2) It focuses on presentation, not content ("gimmickry");

(3) It doesn't deal with Sudanese priorities and concerns; and

(4) It will have little impact without follow-up.

The evaluation indicated that Battelle and IPDP (described next) might create a receptive climate, but concluded "Sudan may be one country where a low profile and less dramatic efforts to stimulate interest in population policy may be a better approach than high visibility and presentations targeted to top politicians."[17]

In Tanzania RAPID was requested, but it was done without Tanzanian input. Responses from Tanzanian viewers were even more negative:

(1) It was only technically impressive;

(2) RAPID presented simplistic conceptualizations that ignore Tanzanian perceptions of population issues and appropriate policies;

(3) It suggested Tanzanian officials were unaware of or ignore population impact; suggested birth control is the only appropriate response--which was insulting to some viewers;

(4) It ignored Tanzania's broadly humanistic population efforts;

(5) Senior officials raised questions of whether they were being used as guinea pigs;

(6) By excessive focus on population, it seemed to suggest reduction is the solution to all problems - "Discussions about the carrying capacity of the land, for

example, ignore questions of management, agricultural technology, and agricultural development policies, which are more important than total land area in terms of agricultural production."[18]

From these responses it seems RAPID was definitely counterproductive in Tanzania. It seems we are so conditioned to accepting or fending off the hard sell, we can't recognize when it will offend others - "But the problem is not solved by presenting a grim picture or by trying to alarm people. We don't need that kind of thing. We know the trends already..."[19] It represents the same blind faith in technology and belief that if you get the condom there, or the "message" there, it will be accepted. Rather than the intended message, it seems to have confirmed the belief of many Tanzanians that AID cares only about forcing birth control on them. A little technical assistance to the Tanzanian family planning organization in how to generate data in support of family planning might have been more effective. Another suggestion was training and technical assistance to enable Tanzania to develop a data base and the analytical capacity to evaluate the impact of rural development policies. In that way, trust and increasing awareness could be built in a non-ideological way.

This negative evaluation should be softened by recognition of RAPID usefulness in other countries. Modifications that should be made are for greater involvement from country nationals for input and developing supportive contacts for follow-up. Presentations should be interactive utilizing host country sponsoring agency staff. Follow-up should be planned.[20]

IPDP

The Integrated Population and Development Planning (IPDP) contract was designed to give technical planning/analysis skills and population issues awareness to Ministries of Planning with minimal planning capability.

The first part involving training and awareness has been highly successful. The contractor has been tactful in approach and sensitive in nurturing relationships. The second part involving dissemination will still take careful analysis of country-by-country opportunities. Again, the recommendation to AID is to reduce the number of countries for Part II to only those with the greatest chance of success. More funding is requested to make sure Part II, which will ultimately determine the programs' impact, can be well-staffed and allow sufficient follow-up. The training and technical assistance portions of the program are thought to be the most effective. This project provides excellent examples of how NGO's can cooperate with Missions and other NGO's in meeting objectives. In this case, the cooperation between IPDP and RAPID was facilitated by the clear delineation in roles.[21]

Insights on population issues and the process of program design and implementation gained from Section IV and Section V will be utilized for developing recommendations for population policy direction in Section VI.

## SECTION V
## FOOTNOTES

[1]Bauer, P.T., Equality, the Third World and Economic Delusion, (Harvard University Press, Cambridge, MA, 1981), pp. 90-91.

[2]Food and Agricultural Development, A.I.D. Policy Paper (Washington, D.C., May 1982), p. 1.

[3]Ibid., p. 8.

[4]Accelerated Development in Sub-Saharan Africa, An Agenda for Action, (The World Bank, Washington, D.C., April 1982), p. 54.

[5]Warwick, Donald, Bitter Pills, (Cambridge: Cambridge University Press, 1982).

[6]Prince, Julius S., M.D., PHA/POP/AFR, Draft Circular Airgram, "Population Programs in Africa," July 26, 1972.

[7]American Public Health Association, Battelle Memorial Institute Population Policy Development Contract - Mid-Course Evaluation - AID, June 1979.

[8]Piotrow, Phyllis, Prepared Remarks, Annual Conference of the Washington Chapter, Society for International Development, March 16, 1983.

[9]Warwick, Donald, Bitter Pills, (Cambridge: Cambridge University Press, 1982).

[10]Allen, David T., M.D., and Contis, George, M.D., "Evaluation of Family Planning" Project 615-11-580-161, USAID/Kenya, January 7-24, 1976, p. 5.

[11]Ibid.

[12]FY 84 Country Development Strategy Statement: Kenya, p. 45.

[13]Anglim, Patricia A., "A View on Antinatalist Policies: The African Case," in Comparative Policy Analysis, R. Kenneth Godwin, ed., (Lexington, Massachusetts, Lexington Books, D.C. Heath & Co.,) 1975, pp. 179-185.

[14]American Public Health Association, "A Comprehensive Evaluation of the Regional Programs of the Pathfinder Fund," October 27-November 26, 1980, p. 60.

[15]Ibid.

[16]American Public Health Association, "Battelle Memorial Institute Population Policy Development Contract - Mid-Course Evaluation" - AID (June 1979).

[17]American Public Health Association, "An Evaluation of Resources for Awareness of Population Impact on Development," A Project of The Futures Group, May 26-September 2, 1981, p. 79.

[18]Ibid., p. 82.

[19]Id.

[20]Ibid.

[21]American Public Health Association, "Evaluation of the Integrated Population and Development Planning (IPDP) Contract," May 27-June 10, 1982, p. 10.

## VI. POLICY RECOMMENDATIONS

### A. Agriculture.

As was pointed out in Section II, Objective, cultural patterns and agricultural realities are closely linked. Risk avoidance plays a large role in farmers' decisions as to what to grow and how to grow it. The element of risk also places a premium on large families, i.e., the larger the family the more agro-climatic risk is "spread" or "blunted" for the family and for the community. Larger families mean not only more hands during the period of agricultural activity, but also the chance that one or more family members will find employment outside the agricultural sector and thus provide an income buffer in the face of agricultural uncertainty. The advances in health, which have resulted in lower death rates, coupled with set cultural patterns and attitudes have ensured a population bulge for the next 20 years or so. In addition, there is some evidence (largely anecdotal) that increased agricultural production, and consequent increased economic well-being, may lead to an initial increase in the birthrate. This is then followed by a "reexamination" of the new risk of an increased number of children on the recent agricultural gains, and a decrease in the birthrate.* The bulge will require additional food availability and, in concert with cultural factors, will condition the responses of the African countries and donors necessary to fulfill the food requirements. In short, there is an immediate problem - that of a growing requirement for food, and a second problem, longer term and much less tractable in nature - that of population limitation. The resolution

*Increased rural and urban food security/employment availability will speed the value shift to more immediate use of economic gains (Caldwell) and the psychological adjustment to new values (Morgan), thus encouraging fertility decline.

of the food problem, as part of a greater developmental effort, can establish the preconditions for the slowing of population growth.

1. Reducing Risk Via Sustainable Food Production Increases.

An important element in lowering population growth rates in sub-Saharan Africa is the reduction in perceived (and actual) agricultural risk. Therefore, agricultural/food production must be increased on a sustainable basis, so that rural attitudes regarding the economic necessity for large families will be more susceptible to change.

2. Policies.

The main obstacle to success of agricultural production programs is developing country policies which discourage increased agricultural production. Because much has been written on inappropriate policies, it suffices to say that without policies which give farmers incentive to produce and which are conducive to successful private sector operation, efforts to increase agricultural/food production and availability will likely meet with failure. Therefore, as a condition for assistance, the recipient country must start the process of altering policies which currently act as disincentives to agricultural/food production, e.g., removing subsidies on food to urban consumers in steps over time, so as to avoid political repercussions, and instituting new policies which will help ensure the success of the assistance and those new and/or changed agricultural/economic activities the assistance generates. For incentive-creating policies to call forth the appropriate production responses, the appropriate technological-input packages must be available on a timely basis as must the physical marketing and communications infrastructure/linkages between urban areas and the farm gate.

3. The Food Chain.

Throughout this report, the term "agricultural/food production" has been used, for the simple reason that food entails more than just the agricultural sector. It involves the entire farm to table "food chain." This "chain" includes all of the activities from the farmer to the consumer - on and off farm storage, transportation, processing, packaging, market communications, wholesaling, retailing, other marketing arrangements (e.g., agents, franchising, etc.) and ultimate consumption - including changing consumer preferences. To view Africa's food needs from both the "food chain" perspective and the farm perspective opens many possibilities to resolve her short-term food needs. From the farm perspective, the essential elements are the networks which supply farmers with production inputs, financial resources, and consumer goods which make increased agricultural production for sale possible and worthwhile for the farm family. Consumer goods are necessary for the family to have things to buy which availability in turn will cause them to produce more. The "food chain" construct was added because it permits one to see where more interventions (than in the case of agricultural production), both in terms of food quantity and quality and in terms of population, can be made.

For significant increases in agricultural/food production to be possible, however, a widespread attitude must change: to wit, that the African country must perforce work within its relatively low potential agricultural environment. This attitude surfaces in much of the assistance (AID's and other donors') given to African countries, e.g., seed/input packages designed for infertile soils. By contrast, many of the agricultural successes in Asia and Latin America, not to mention the

United States, came about from a different mentality, i.e., let's change the physical environment (read, make the infertile soils fertile) so that it will be receptive to the many agricultural advances available.

4. Specific Recommendations.

Following are a series of short- and longer-term policy recommendations covering agriculture, the food chain, economic growth strategies, linkages to other economic sectors, and a plea for coordination within our own government.

(a) Short-term priority emphasis on increasing agricultural production/food availability to:

(i) Meet growing food demand;

(ii) Set stage for slowing of population growth by reducing perceived food security risk;

(iii) Prepare to take advantage of conventional advances in agricultural as well as the coming biotechnical revolution - especially genetic improvement and plant growth regulators. This type of advance is especially attractive because it knows no national boundaries, is scale-neutral, apolitical; and is sparing of capital and management.

(iv) Take advantage of improved chemical fertilizer, animal growth hormones (now a reality), and for the coming recombinant DNA techniques which offer the hope of revolutionizing the control of animal diseases.[1]

Wittwer points out current and potential application for genetic improvement and plant growth regulators.

## Genetic Improvement (via Tissue Culture Techniques)

### Crop

| | |
|---|---|
| African Oil Palm | Papaya |
| Banana | Potato |
| Carrots | Tomato |
| Citrus | Yam |
| Onion | |

Also genetically superior trees.

### Plant Growth Regulators

| Product | Source | Plants Treated | Effects |
|---|---|---|---|
| Cycocel | American Cyanamid | wheat, barley | shorter plants, thicker stems, better filling of heads, less lodging |
| Terpal, Ethephon + PIX ) | BASF Wyandott | barley, rye | reduces lodging |
| Brassinosteroids | many sources | vegetable crops | yield increases of 25-60% |
| Ripeners | several sources | sugarcane | 10% in yield of sugar |
| Premerge-3 | Dow Chemical | corn | yield increases, earlier pollination, longer grain filling period, better tip fill |
| ACA | AMOCO | corn | increased yield, bigger root system, larger leaf area, heavier kernels |
| Triacontanol | several sources | many crops | yield increases from 5-20% |

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Source: Wittwer, Sylvan H., "The New Agriculture: A view from the 21st Century," paper given at Agriculture in the 21st Century, Philip Morris, Inc., Richmond, VA, April 11-13, 1983.

(b) Expand agricultural assistance perspective to that of the entire food chain - farm to urban customer - on grounds that the food chain "construct":

(i) Permits many more interventions - in terms of both food quantity and quality:

- increases the chances to place scarce resources where they will have the greatest possibility of success; discovery of infrastructural gaps which can be filled - in order to capitalize on the infrastructure already in place.* All countries have some infrastructure, physical, human and technological. Examples abound of where high-potential interventions can be made - and these all represent on-the-shelf technologies and state-of-the-art practices. Postharvest food losses can be reduced via better marketing arrangements, timely transport from farm storage or field to processing point, establishment of cold-chains (refrigerated storage, transport and holding for sale), and better packaging (ranging from canning to aseptic packaging**).

- greater use of post farm-gate on-the-shelf technologies, e.g., storage, loss prevention, processing, quality control, transport, distribution.

- greater opportunities for the private sector to operate. There are many activities after the farm gate that the private sector does best. As development proceeds, greater opportunities will exist for possible multinational corporation participation.

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*For example, upgrading and maintenance of the "national highway" from Ouahigouya (Upper Volta) to Seguenega (50 km), coupled with a road link (15 km) from the southern end of the Seguenega project road to the "Canadian" road would link the entire Seguenega region to both Ouahigouya and Ouagadougou. It would permit effective use of the modern cold storage facilities existing in Ouahigouya, and would be a stimulus to increased vegetable and livestock production and marketing for the Seguenega and Ouahigouya regions.

**These are not new technologies; the author drank sterilized milk in Senegal during the period 1960-1962. It was available in Dakar in most groceries.

There is no organization better suited in the transfer of technology, expertise and general business functions than the MNC.*

(ii) Permit greater use of technology to "side-step" seemingly intractable situations caused by institutional and/or physical bottlenecks.**

(iii) Focuses on the developing country's need to keep as much of the "value stream" of products in-country as possible.

(iv) Permits a government, in some cases, as a monopsonist to increase quantities and qualities of food produced. For example, if the government represents the institutional market for the country, e.g., armed services, educational institutions, governmental organizations, etc., it can put its food requirements out on tender - requiring delivery of certain quantities and qualities

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*Others have pointed out that since there is such a rich flow of technology across borders, the enlightened developing country will design its trade and investment policies so as to exploit this flow rather than keep it out or duplicate it at high cost. These are opportunities that are not to be missed because they may not come again.[2]

**It is often the case that certain macro- and micro-nutrients are absent in the diets of much of a country's population. The classical remedy would call for increasing agricultural production of certain crops two- or threefold - often a physical impossibility. Technology offers a solution in the means to side-step the impossibility. For example, all wheat consumed in the Upper Volta is imported. It is milled in one facility in Banfora for shipment around the country. The centralization of milling operations permits the fortification of flour, a low-cost, administratively simple, effective means of correcting some nutritional deficiencies. It is an entry point that is feasible, economic and helpful. India introduced modern bread in 1968 - fortified with vitamins, minerals and lysine (one of the key eight missing amino acids in vegetable protein sources). It was so successful that private bakery firms had to fortify their bread in order to compete.

on a timely basis. This act can, in effect, raise standards of quality for the entire competing private sector (see previous note).

(c) Expand the agricultural assistance perspective to permit greater use of other growth strategies where warranted, e.g., export-led; capital-intensive; industrial sector-led; commodity-based; targets of opportunity - in concert with the agricultural sector development strategy.

(i) This flexibility in choice of combinations of strategies will become more important as development proceeds. The industrial sector grows in importance and concomitantly, the agricultural sector starts to decline in importance.

(ii) It would also allow AID to take better advantage of certain African leaders' changing perceptions that some of the elements of capitalism, e.g., trade, aren't so bad after all. If, as D. Gale Johnson of the University of Chicago points out, world prices of grains and vegetable oils are likely to remain low for the next 10-20 years, it would behoove AID to assist developing countries create their own in-house capabilities to trade and take advantage of world markets.[3]

(d) Recognize that development is a dynamic process, and that agricultural development is closely linked to the other productive sectors (industrial, manufacturing, service and export) of a country's economy, and that the various sectors are moving along changing developmental paths. Dynamism can be seen very clearly in agriculture as

the rate of advance has telescoped. Not only do advances make possible other advances, but also the effectiveness of one is often increased by using it with other methods. The shift from animal power to mechanical power is an excellent example of dynamism. Agricultural machinery increased output per worker - not only permitting better and more rapid tillage, planting and harvesting, but also, in concert with chemical fertilizers, made crops more suitable for mechanical harvesting.[4]

Dynamism is evident in economic development, as sectors and subsectors of any given economy change - going in new directions and at different rates. One has only to look at the Algeria of 1963 and the Algeria of today to see a country which has gone from being prostrate to a country which builds its own tractors in quantity - including diesel engines. She has her problems too, especially in agricultural production. Her agricultural production is declining while food imports are growing. Sufficient wheat production and milling are problems. Algeria could provide vegetables, fruits, jams, jellies and margarine of the highest quality, yet she has difficulty in marketing these same products domestically and internationally.

For any country, therefore, what should today's and tomorrow's strategies be, given that 20 years down the road, economic, political, socio-cultural, demographic and other factors will be changed in some considerable degree?

(i) As incomes increase, dietary preferences change toward wheat, rice, vegetables, fruits, meat and other

livestock products. This has program and policy implications - for much of sub-Saharan Africa, demand for wheat requires imports. Rice is relatively new for some countries, but can be grown locally given the right conditions and input packages. To be grown in large and stable quantities, however, rice requires irrigation which is capital-intensive and appropriate inputs which are expensive, thus making rice a relatively costly crop. Alternative crops such as maize, sorghum and cassava should be explored. Growing demand for meat and livestock products opens a range of possibilities for the private sector, for the growth of cooperatives, and carries infrastructural and institutional demands with it.

(ii) As a country develops, its agricultural sector becomes increasingly intertwined with the industrial/manufacturing/service/export sectors:

- activities ancillary to agriculture spring up with production, employment and income effects;
- increasing amounts of machinery, fertilizer, transportation, financing and other inputs come from the other sectors;
- finished goods of agriculture become some of the raw materials of manufacturing:
  - oilseeds - edible oils, other edible products, feedstuffs
  - grains, vegetable fruits, animals - processed foods, feedstuffs
  - animal byproducts - leather goods, non-edibles

- cotton, wool - textiles

- tree crops - beverages

(e) Finally, AID and other U.S. government agencies must coordinate development and trade policies for development assistance to be effective. For example, the people and organizations who represent U.S. agriculture are naturally most interested in developing export outlets for U.S. crops. On the other hand, one of AID's prime objectives is to help the host country become more efficient with internal marketing and to develop a greater degree of self-sufficiency in food production. The two motivations* are often at odds with one another, however, and they must be resolved. Perhaps some policy dialogue at home would be appropriate.

B. Population.

The lack of success in population programs in Africa stems from the crisis mentality. Population work became something of a crusade against time - separate from and taking precedence over other development issues. The Congressional mandate earmarking separate funds for population and the subsequent organization of the Office of Population at AID reflect this attitude.

This attitude led to a simplistic interpretation of the problem:

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*During October 1982, the author was part of a team sent to Morocco to design agricultural programs for the rainfed agriculture sector. One of the main objectives of the effort was to encourage more domestic production of food grains by upgrading Moroccan infrastructure, facilities, input and output networks. At the same time, a USDA group was present to determine how post-storage and transportation facilities could be improved so as to receive more U.S. wheat more efficiently.

- birth control is good for all countries
- freestanding programs concentrating on supply and delivery
- blind reliance on technology for answers
- the more permanent the contraceptive means the better
- the universal prepackaged family planning program

This very simplicity further reinforced the feeling of rightness about the American solution - and it led to wrong conclusions. The African doesn't understand, therefore let's use technology to make it even simpler and clearer - the RAPID presentation. Since the African is in fact an astute sociologist and very sensitive to attempts to control his newly-won independence of ideas and decision making, the result was to create a further gap in understanding and a gulf of resentment. The same has been true of many of our hard sell tactics. "Might (in this case funding) makes right" and "Feeling right makes you blind" both apply in this case. This is where AID programs often become the most counter-productive.

The feeling of imminent crisis also led to a results- or product-oriented approach - even in some cases an end-justifies-the-means approach. Programs were rushed through without adequate definition, preparation, staffing and follow-up. Too much was attempted too fast. This led to ignoring the process by which the result is achieved. The view was that population control is necessary worldwide and the techniques to achieve it are universal. The perceived "cultural imperialism" with which population programs were implemented came from the simplicity of interpretation, sense of urgency and rightness, and the feeling that the world's future and our's depend on the Third World controlling its rising

population growth rate. In a sense, U.S. population experts and concerned citizens were reacting to discomfort at feeling dependence on the policies of another part of the world, while at the same time Africans were reacting to what many perceive as our attempt to hold back development and keep them in dependency.

The very simplicity of the argument also made it difficult for AID to accept that programs weren't working and institute changes. The fault, it was felt, must be in the African's ability to perceive the problem. Hence the current shift to research, information and influencing policy-makers. Both in the bureaucracy and the private sector, population had a vested interest in the crisis mentality, the "belief" that the demand was there - all over the world, and "it worked this way in Asia, it will work the same in Africa." In the unending funding quest with Congress and the American people, the crisis and the simple solution was the most marketable. It is hard to sell a program filled with cultural variables. The conviction that widespread demand was really there became an automatic reaction, and was believed despite the evidence to the contrary.

There are some excellent population programs and parts of programs being conducted and funded by AID in Africa today. Also many of the changes in overall policy and strategy to be recommended here are already being started at AID. The problem is that in this period of transition, AID often seems to be schizophrenic, and this greatly affects the ability of contractors to implement projects.

1. Synthesis Process.

AID needs to continue the synthesis process it has begun. This summary suggests that there is a wealth of experience and research within

AID and the private sector on which to base future population work. It is important that AID steps back and takes a fresh look at what has been accomplished and where problems have occurred. For example, having achieved relative success in speeding the demographic transition in two continents, it should be possible to study the complex interaction between population programs, development and cultural values. Some preliminary conclusions can now be suggested as to what happens automatically with development and what, and at what stage, can best be done to precipitate the transition. Another area for creative analysis is the planning and working relationship between donor agencies, local governments, and external and indigenous NGOs implementing programs. Rather than simply synthesizing what has been tried, we must also look to see if there are still new approaches, even new goals. This can only be accomplished by involving Africans in the process.

There has been too much attention to product and not enough to the process. This concept is elaborated fully by Donald P. Warwick in his book, Bitter Pills, cited earlier. Concentration on process will lead AID to greater concern for the recipient country's perception of problems and a collaborative role in solving them. What the U.S. can offer to the process is a wide range of skills - technical, medical, managerial, economic, sociologic, modeling, demographic, data collection, etc. What the African wants is training, technical skills, and knowledge of population understanding and experience to date to solve his own problems - not Western-made solutions.* He also needs seed money for small-scale projects

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*This approach seems to be working successfully in the IPDP project.

of the type Pathfinder funds. At the same time, the U.S. must continue its development efforts in all the other important sectors with continual attention to the linkages between these sectors. Development in the agriculture health, education and private enterprise sectors will provide the preconditions for demographic transition. The concept and implementation of linkages will be developed further in part VI. C.

In the long term, as countries genuinely want nationwide fertility reduction/family planning programs, there will be a more comprehensive role for AID. AID should be attentive to such target opportunities, e.g., Rwanda may be ready and their program should be given careful, sensitive support.

The U.S. has so much to offer to the African nations, we must utilize those programs that build their human capacities to handle their problems and be sensitive to and curtail those programs which set back population solutions for Africa. Moreover, increased longevity will encourage increased investment in human capital which, in the longer term, will help create an environment conducive to changed attitudes toward family size.

2. Specific Recommendations.

(a) AID should utilize programs like IPDP that put technological skills of analysis and problem-solving in the hands of Africans. RAPID should be modified to fit this approach.

Where interest is expressed, the concept of computer-assisted projections and their design and implementation should be taught. Africans should then be assisted in developing their own projections

and models, based on their own perception of problems. They should also be warned about problems inherent in the use of statistics and models. In the role of teacher, the American can build trust, and because of it, have input in the process. The original RAPID presentation becomes an example of what can be done and not a U.S. solution. As such, even its conclusions become more acceptable (but should not be marketed). This approach has already been requested by Senegalese and Tanzanians.

(b) AID needs to foster a clearer understanding by its staff and consultants of cultural and political variables of the type explored in Sections IV and V. This and an attitude of open-mindedness to other solutions can facilitate an interactive approach to solutions and a role for AID assistance.*

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*An excellent example of this is described by Ronald S. Waife in "Traditional Methods of Birth Control in Zaire," Pathfinder Fund: Pathpapers, No. 4, December, 1978. Extensive study and discussion of traditional practices regarding spacing, and birth limitation was used as the basis for implementing a family planning program. One participant described the approach:

> "You did not come as tourists. You came to learn....(About the discussion of traditions, their rationale and the discipline with which they were enforced) What was said today is like a light to show us how to teach our own children." (p.15)

The team got to the subject through their African traditions and this captured their interest. This stress on continuity with the past can alleviate much of the stress of the cultural transition. The study revealed tribal beliefs that could well temper the success or failure of a family planning program. For example, the Batetela did not consider the fetus living, practiced abortion and coitus interruptus and encouraged adolescent sexuality. The nearby Baluba believed that the sperm contained the soul of a new person. Coitus interruptus was a sin, tantamount to murder. The implications for the unknowing family planning expert are profound.

(c) Family planning can best be introduced with health care since traditional spacing was done for health reasons. This has been proven more effective than freestanding programs in achieving results and keeping costs down in experiments conducted in Narangwal, India[5] and as part of the USAID Danfa Project in Ghana.[6]

(d) AID must be able to assist with a wide variety of approaches and means - including both artificial and natural family planning - so it is capable of responding creatively and specifically to each situation. In policy formulation, attention must be given to individual and community concerns as well as national development impact. This will lead to more stress on relevant social issues as well as economic and medical ones. Given the African cultural context, family planning should be presented as part of a family life promotion program as natural family planning usually does.* The African views man's fertility as one of his greatest gifts, not as an "inconvenience to be treated medically." A family planning program should discuss the traditional role of fertility in family life and the impact of changing family values. This will lessen the insecurity of the transition, thus probably minimizing, as Morgan theorizes, the short-term increase in birthrate and speeding the modern synthesis that can begin to reduce the population growth rate. Greater success can be achieved than through a purely medical

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*Analysis of the need for and impact of such a program can be found in "La Famille Africaine: Richesse et Questions," by Francois Guy, International Federation for Family Life Promotion, October 19, 1981, and other publications of the International Federation for Family Life Promotion.

treatment of the "problem." This approach also encourages development of the "community ethos" necessary to reinforce changes in family values and birth limitation practices.

(e) Research should be continued on effective delivery systems to provide contraceptives and related medical services. AID must be prepared with a good supply system to insure a steady flow of commodities once delivery programs are begun.

(f) Data collection should be incorporated into projects to produce inputs for project evaluation and planning.*

(g) Low-key supporting advocacy can best come from sector representatives most affected by high fertility rates:

-- agriculture

-- health care

-- education

-- community development

This integrated approach assures the involvement of host country nationals in perceiving the need and seeking the solutions, which is the best way attitudinal changes can be made.

(h) Well constructed ongoing continuing education/incentive programs for change agents geared to:

-- new skills

-- reinforcement of old skills

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*It is insistence on developing base-line data and scientific experiments as a part of projects, that gave Dr. Julius Prince his edge in understanding African population dynamics.

-- exchange of ideas on successful and unsuccessful methods

-- comprehensive supervision/advisement programs

Such programs, well-done, provide an opportunity for increased interaction, ongoing evaluation and reassessment, development of new ideas, and motivation of change agents.

(i) Better coordination with activities of other organizations in the field:

-- UNFPA

-- WHO

-- PVOs

-- Indigenous women's groups, self-help groups, etc.

This is needed to avoid overlapping activities and to implement joint projects effectively. It must be carried out in such a way as not to infringe on African sovereignty.

C. Linkages between Agriculture and Population.

Seeing population in the broader context of development, as the African does, allows a broad approach to the transition Africa is currently experiencing and a more acceptable and effective approach to population. The African attitude toward fertility is based on his view of the world. As development changes his circumstances, it will impact on the current pro-natalist attitude. The following Circular Flow Diagram illustrates the linkages between the various sectors involved in the development process. Each sector has a direct impact on population attitudes. The impact of agriculture/food production development on fertility is explored in Chart I. An example of how rural enterprise development

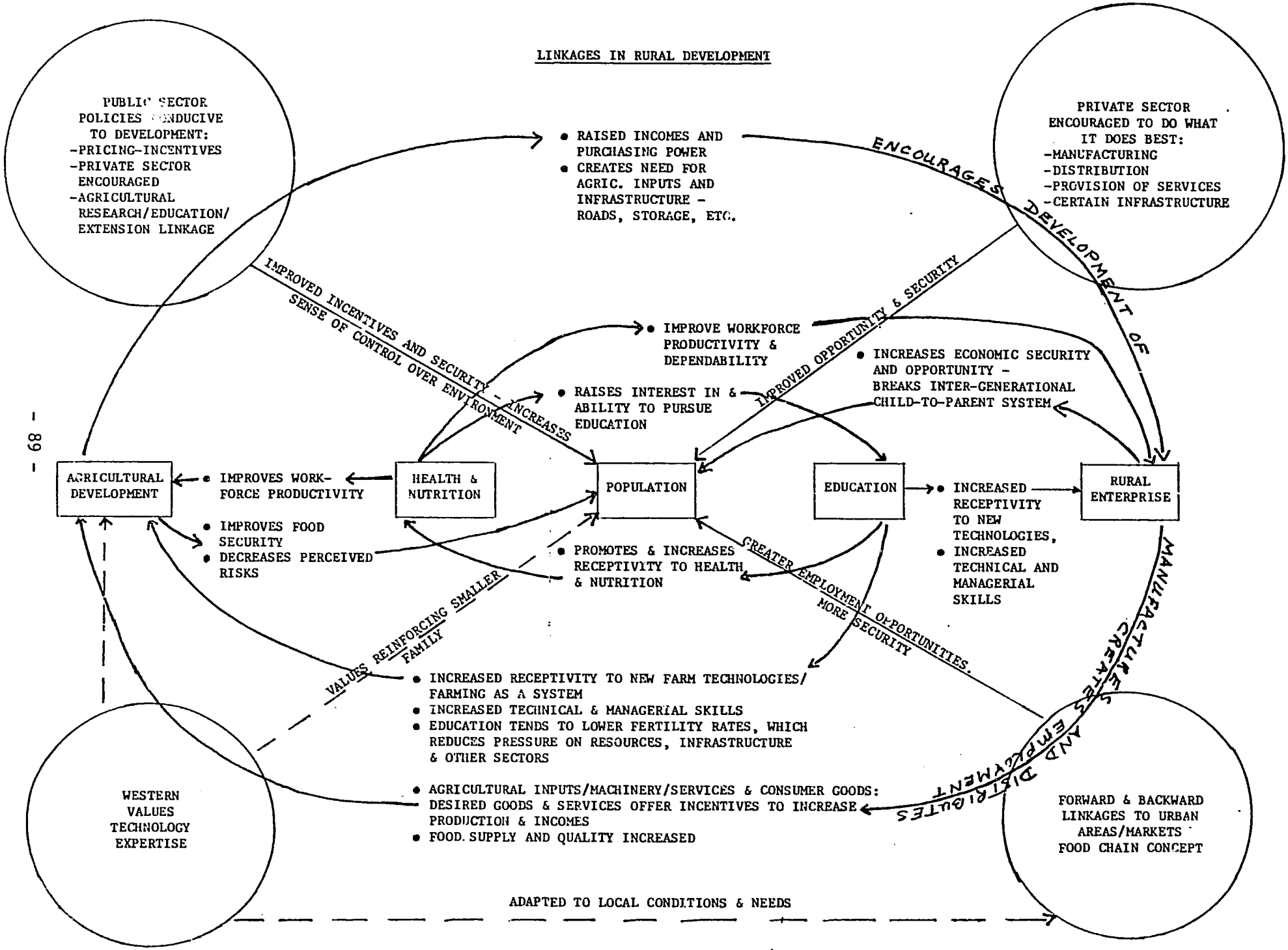
LINKAGES IN RURAL DEVELOPMENT
PUBLIC SECTOR POLICIES CONDUCIVE TO DEVELOPMENT:
-PRICING-INCENTIVES
-PRIVATE SECTOR ENCOURAGED
-AGRICULTURAL RESEARCH/EDUCATION/ EXTENSION LINKAGE
• RAISED INCOMES AND PURCHASING POWER
• CREATES NEED FOR AGRIC. INPUTS AND INFRASTRUCTURE - ROADS, STORAGE, ETC.
PRIVATE SECTOR ENCOURAGED TO DO WHAT IT DOES BEST:
-MANUFACTURING
-DISTRIBUTION
-PROVISION OF SERVICES
-CERTAIN INFRASTRUCTURE
ENCOURAGES DEVELOPMENT OF
IMPROVED INCENTIVES AND SECURITY - SENSE OF CONTROL OVER ENVIRONMENT - INCREASES
• IMPROVE WORKFORCE PRODUCTIVITY & DEPENDABILITY
IMPROVED OPPORTUNITY & SECURITY
• INCREASES ECONOMIC SECURITY AND OPPORTUNITY - BREAKS INTER-GENERATIONAL CHILD-TO-PARENT SYSTEM
• RAISES INTEREST IN & ABILITY TO PURSUE EDUCATION
AGRICULTURAL DEVELOPMENT
• IMPROVES WORK-FORCE PRODUCTIVITY
HEALTH & NUTRITION
POPULATION
EDUCATION
• INCREASED RECEPTIVITY TO NEW TECHNOLOGIES,
• INCREASED TECHNICAL AND MANAGERIAL SKILLS
RURAL ENTERPRISE
• IMPROVES FOOD SECURITY
• DECREASES PERCEIVED RISKS
• PROMOTES & INCREASES RECEPTIVITY TO HEALTH & NUTRITION
GREATER EMPLOYMENT OPPORTUNITIES. MORE SECURITY
VALUES REINFORCING SMALLER FAMILY
• INCREASED RECEPTIVITY TO NEW FARM TECHNOLOGIES/ FARMING AS A SYSTEM
• INCREASED TECHNICAL & MANAGERIAL SKILLS
• EDUCATION TENDS TO LOWER FERTILITY RATES, WHICH REDUCES PRESSURE ON RESOURCES, INFRASTRUCTURE & OTHER SECTORS
MANUFACTURERS CREATES AND DISTRIBUTES EMPLOYMENT
• AGRICULTURAL INPUTS/MACHINERY/SERVICES & CONSUMER GOODS: DESIRED GOODS & SERVICES OFFER INCENTIVES TO INCREASE PRODUCTION & INCOMES
• FOOD SUPPLY AND QUALITY INCREASED
WESTERN VALUES TECHNOLOGY EXPERTISE
FORWARD & BACKWARD LINKAGES TO URBAN AREAS/MARKETS FOOD CHAIN CONCEPT
ADAPTED TO LOCAL CONDITIONS & NEEDS

CHART I

THE LINK BETWEEN FOOD AND POPULATION GROWTH (FERTILITY)

| Problems | Possible Solutions | Impact on Fertility |
|---|---|---|
| 1. Overworked, infertile soils. | 1. Better farming practices, fertilizers, new varieties, etc. | 1. Less need for more family members to open more land; less need for slash and burn fallowing; more opportunity for effective fallowing, and thus more time to concentrate on producing food therefore lowering risk and increasing economic well being. |
| 2. Lack of agricultural inputs and effective technological packages. | 2. Introduction of inputs and effective technological packages plus development of rural enterprise to:<br>a. slow exodus of labor to urban/foreign areas and utilize seasonally underemployed;<br>b. create employment opportunities for women;<br>c. increase incomes which represent increased effective demand for farm products;<br>d. build technical skills among population. | 2. Local economic environments more secure: less labor emigration, less perceived need for children as labor/social security; women have opportunity for alternative means to economic security and enrichment of their lives; greater economic opportunities: hasten change to immediate consumption breaking the intergenerational system, more alternative uses for time and money (than children). |
| 3. Seasonal over/under employment. | 3. Technological packages which smooth out peaks and valleys in demand for labor, which increase yields, and which in the longer run, substitute for labor. | 3. Makes existing labor force more productive and reduces perceived need for more future labor (children). |
| 4. Lack of physical infrastructure, human resources; policies which give disincentives to produce. | 4. Fill infrastructural gaps; hands-on, practical training; alter policies so entrepreneurship thrives. | 4. Encourages sense of economic security, immediate consumption, and unintentional Westernization of values: encourage nuclear family. |
| 5. Nutritional status - missing macro/micro nutrients; insufficient caloric availability before harvest time. | 5. Attempt to gear production planning, new crops, increased yields and crop diversification to assessed nutritional needs. Fortification of "common carrier" type of foods, if available. | 5. Greater security for mother and child in childbirth, and lowered infant mortality during high-risk 1-5 year old period. |
| 6. Basic food security. | 6. All of the above. | 6. Helps reduce perceived need for large families - to obtain basic food security, and makes the introduction of the family planning concept easier. |

Similar "linkage patterns" can be shown for health and education with population.

impacts on population is seen in employment opportunities for women. In many African cultures women determine the use of income gained through their own economic activity. Women are more likely than men to spend that income on educational opportunities, even luxuries for children.* In this way, they are the ones more likely to realize the economic consequences of having more children. This will begin to change the monetary flow to parent-to-child rather than the current child-to-parent. According to Caldwell's research, this may be a major cause of family size limitation.

The program of the Centre for Development and Population Activities is a good example of the linkage approach well done. Training is offered to Third World Women in project design, management and evaluation. They are then assisted in organizing a team in-country (1) to provide training to spread the impact, and (2) to offer technical assistance to locally-trained women in the development of projects. CEDPA Washington remains involved with their alumnae in training assistance, project assistance, and seed money for innovative self-help projects incorporating family planning which are judged to have a good chance to become self-sustaining.

D. Criteria for an Optimal Balance Between Agricultural/Food Production Programs and Population Programs.

Improvements in agricultural/food production and population growth limitation are complex and long-term. There are various possible entry points to both systems which can produce the desired outcomes. AID must analyze each country to find the targets of opportunity where AID's

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*Studies in Nigeria have shown this.

limited development funds can be utilized the most effectively. AID must remain responsive to changes within the country that indicate the need for changes in AID policy.

Specific Criteria

- Recipient country's perception of their critical strengths, problems and priorities. For AID to pursue high-profile programs that are contrary to the recipient country's perceptions of problems, priorities and solutions has been shown to be counter-productive.

- Relative strength and commitment of Ministries in question, and their ability to respond to change.

- Recipient country's policies in priority areas; whether/ where they will be conducive to productive AID assistance.

- AID history in country; are there lingering perceptions of AID attempts to force its perceptions and solutions in a given sector which would dictate a low profile position oriented to reestablishing trust and entry through another sector?

- Are there viable non-governmental indigenous organizations, such as self-help groups, cooperatives, women's groups, private enterprise, with which AID can work to accomplish objectives?

- What is the role of other donors? Are there possibilities for effective collaboration? Are there saturated sectors?

This assessment will suggest targets of opportunity and relative levels of effort. It will also suggest AID priorities where the country analysis indicates a low profile.

E. Conclusion.

Population is not a crisis demanding direct action at all costs. Population is a critical problem that must be dealt with rationally, sensitively and comprehensively. The agricultural potential of Africa has barely been tapped. The human resource potential must be released

through sound policies that offer initiatives to productivity and community involvement in all areas and through technological packages and agricultural inputs. Sustained increases in agricultural/food production will underpin the belief in future security and in the governmental system which will allow/precipitate a shift in family size values to take place. At this time the demographic transition will enter the last stage in Africa.

## SECTION VI
## FOOTNOTES

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