

OUTLINE

DRAFT #2

GUIDELINES FOR PLANNING AND PROGRAMMING  
A.I.D. ASSISTANCE IN POPULATION

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I. The Dimensions of the World's Population Growth

In the year 1000 the population of the world was about 250 million. For centuries it grew little, advancing to 500 million in 1600. Around 1820 the human race reached the one billion figure. This figure was doubled in 1925. By 1960 some three billion people inhabited the earth.

Given continued recent trends of births and deaths, the world's population will reach 4.5 billion in 1980 and 7.5 billion in the year 2000.

Since the end of the century is only 33 years away, a glance beyond is illuminating. In 200 years, the population of Mexico will increase from 35 million to 35 billion; 120 years from today, 100 billion persons will walk the earth.

A. The Historical Need for High Fertility

While these data exert a powerful impact on the observer, before their implications are explored it is important to examine the historical setting from which today's situation has evolved.

In the 1930's the industrialized world became aware of, and developed policies to combat, the alarming prospect of population decline. Laws were passed prohibiting the sale of contraceptives. Private birth control organizations were created in the face of bitter resistance from the courts, local governments and police; their early leaders were harassed by officials and by public opinion alike. Western European governments instituted incentive subsidy programs to reward deserving parents and the government of Japan in 1940 adopted a population target of 200 million.

To the extent that individuals in the West concerned themselves at all with the population growth of Latin America, Africa, Asia, they may well have assumed that high birth rates would be cancelled out by high death rates and that the latter would decline only in the wake of industrialization and its concomitant, an educated society. In turn these economic and social gains would cause a declining birthrate as they had in the advanced countries in the West. Controls for the potentially explosive growth of population were thus thought to be inherent in the economic system.

The fears of a declining population of course extend deeper into history than the first half of the twentieth century. Nations, tribes and clans historically have needed more sons for warfare and prestige. Tribes and racial groups have had to replenish the human destruction of plagues and the erosion of epidemic diseases for their survival.

These motivating reasons, coupled with the availability of additional uncultivated land for the production of food or grazing of flocks, set the pattern for societal attitudes and institutions that historically have influenced population patterns. While these considerations were operative among larger groups, an additional factor influenced the family unit. Faced with the prospect of losing a high percentage of their children during child-birth, infancy or adolescence, parents have historically produced large families to assure that enough children survived to increase family income and to care for them during their old age. Veneration of both elders and ancestors and a profound desire to perpetuate the lineage, the traditions and the beliefs undergirded this inclination. It is for all these reasons that traditional values have called for early marriages and large families.

B. The Evolution of Fertility Decline in the Industrial West

While the relation between population growth rates and economic activity has long held the attention of demographers and economists, the functional or causal nature of the relation has not been established. Short-term fertility responses in pre-eighteenth century agricultural Europe could be documented, i.e., they occurred when epidemics or harvest failures caused brief, sharp increases in mortality accompanied by decreases in births. Sometimes deaths exceeded births during these periods. The interpretation of Adam Smith was that the consequent demand for labor stimulated an increase in the supply after a period of years; that increased income spawned increased births and lowered death rates. In his view, economic forces stimulated population rise in the years following a natural disaster.

The explanation does not satisfy the longer-term patterns of national population growth, particularly as these patterns might have been affected by the stages and directions of the industrial revolution in the several countries. Demographic research suggests rather that while economic opportunities ultimately influence, and perhaps in some societies even determine the population growth pattern, this is accomplished by the regulation and adjustment of fertility rates to prevailing mortality rates through social practices and institutions. Precisely how and why this occurs will engage the energies of demographers and economic historians for years to come.

Fertility rates in any society fall far below the potential of human fecundity. Despite the Malthusian hypothesis that the availability of food tended to constrain fertility, it now seems clear that the constraints on fertility are those of the social institutions which establish the conditions for celibacy, postponement of marriage and the regulation of sexual intercourse. These social

institutions historically have also defined the circumstances under which contraception, infanticide and induced abortion might be condoned.

A continuing, gradual drop in mortality accompanied the economic expansion of the past hundred years in the industrialized Western nations. Improved economic conditions permitted improved nutrition and somewhat better living conditions. These factors, rather than improvements in health and sanitation, induced the mortality decline. Health and sanitation factors generally became operative well after the start of the decline.

Decreased mortality, the product and obverse of extended life span, unmistakably is a concomitant of the process of economic growth -- or in a larger word, modernization. But again, the functional linkage is realized through a complex of social factors and institutions not definitively understood. The sustained decrease in mortality was followed, generally after a time lag, by a decline in the birthrate.

The reason for this last occurrence is known. With declining mortality came larger families. With economic growth came opportunity that could be seized best by those with educations. Thus the family consciously weighed the per-child costs of education against the opportunities for greater earning power and status in the widening industrial-technological community and made its choice. The response has been described by Kingsley Davis in these terms: "...regardless of nationality, language and religion each industrializing nation tended to postpone marriage, to increase celibacy, to resort to abortion, to practice contraception in some form and to emigrate overseas."

C. The Historical Linkage between Fertility and Mortality in the Less Developed Countries

Students of demographic and economic history have tended to extrapolate the discernible lessons of the past century in the industrialized nations

in an attempt to diagnose and predict the conditions and circumstances which might operate to influence the fertility rate in the LDCs. The assumption has been that, as in the case of Europe, the values and institutions of a nation's social system alone will determine the rate of fertility and that these social values and institutions would in turn respond to and be influenced by the process of economic growth and its concomitants: urbanization, education, increased income and consumption, etc.

The industrial/economic expansion which so profoundly influenced Western population history cannot be considered to be a factor in historical patterns of the LDCs which by definition have not enjoyed such a beneficial occurrence. Rather the earlier course of demographic growth in the LDCs has shown the existence of an elemental, causal linkage between fertility and mortality. The Malthusian contention, that levels of mortality were determined by fertility, is probably less valid than the now generally accepted belief that mortality rates -- high because of disease, warfare and malnutrition -- governed and determined fertility rates. As noted in IA above, traditional high levels of mortality created a strong motivation for survival through replenishment. The need to fend off tribal extinction, preserve the lineage and be cared for in old age by children that would outlive their parents, resulted in high birthrates.

The next logical stage in the diagnosis of the LDC demographic evolution would seem to suggest that in coming years as economic development programs begin to gain momentum, as the climb toward self-sustaining economic growth accelerates, as income increases and education spreads, the social forces and institutions would begin to operate as they did in Europe to reduce the traditionally high birthrate. Recently evidence has begun to emerge that the lessons of European, U. S. and Japanese history might apply.

Field demographic studies and program experience have revealed that the deeply imbedded desires for high fertility have been -- and are being -- replaced by dramatically contrasting attitudes. It now appears that the great majority of parents throughout the less developed world like to limit the size of their families and do not know about birth control but would like to know about it. In all probability, this attitude is the result both of the decline in mortality and the already discernable evidence of economic and social development.

D. The Present Demographic Contrast between the Developed and Under-Developed Areas

The present contrast between the demographic characteristics of the LDCs and the more developed areas is at the same time dramatic and definitive. The contrast is definitive in the sense that no developed country has a birth rate above 30 per thousand; no underdeveloped country has a birth rate below 30 per thousand. No developed country has a population growth rate above 2%; no underdeveloped country has a population growth rate below 2%. Clearly, stagnant economies and uneducated, illiterate populations do not coexist with low birth rates. High birth rates and the consequent potential for high rates of population growth empirically occur only in underdeveloped countries; these rates simply do not accompany modernization. By empirical and functional definition, a rate of population growth of three to four percent per year identifies a country with serious inherent barriers to economic and social development.

The following table illustrates this point.

Area	Annual Population Increase (percent)	Years to Double	*
<u>World</u>	2.1	33	
<u>More Developed Areas</u>	1.3	54	
Europe	0.8	88	
Northern America	1.6	44	
Oceania	1.7	41	
<u>Less Developed Areas</u>			
Mainland Middle America	3.8	18	
Tropical South America	3.7	19	
Southeast Asia	3.0	23	
Middle South Asia	2.6	27	
West Africa	3.3	21	
Polynesia and Micronesia	4.0	17	

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\* The term "doubling time", an analog to the "half life" concept of the nuclear physicist, is employed here for clarity. Doubling time is simply an obverse way of stating the growth characteristic of compound interest. Growth at the rate of 1% per annum will produce doubling in 70 years; at the growth rate of 2% the doubling time is 35 years; at 3% the doubling time is 23 years; at 4% it is 17 years; etc.

E. Projections, Prospects and Demography

Absolute numbers of people illuminate and give reality to the existing pressures on available food supply, land and material resources. The recent world population situation is depicted in such absolute terms in the following table.

World Population 1920-1960  
(billions of people)

<u>Year</u>	<u>World</u>	<u>More Developed Regions</u>	<u>Less Developed Regions</u>
1920	1.86	0.67	1.12
1930	2.07	0.76	1.31
1940	2.30	0.82	1.47
1950	2.52	0.86	1.66
1960	3.00	0.98	2.02

Rates of population growth permit an objective examination of the effects of population levels (amounts) on the adequacy of capital, land and material resources and on the capacity of the economic production and distribution system at any moment over a period of time. The recent world population growth rates are shown in the following table.

Annual Rate of Population Growth (percent)

<u>Year</u>	<u>World</u>	<u>More Developed Regions</u>	<u>Less Developed Regions</u>
1920-30	1.0	1.2	1.0
1930-40	1.0	0.8	1.2
1940-50	0.9	0.4	1.2
1950-60	1.8	1.3	2.0

Demographic projections are mathematical calculations based on knowledgeable assumptions of birth, deaths and migration. They are not intended as prophecies, prognostications or forecasts. The validation and consequent refinement of the assumptions has been much enhanced over the years by improved understanding of demographic techniques. Irrespective of the degree of refinement, the assumptions remain assumptions and are subject to unpredictable institutional and attitudinal changes. Indeed the projections themselves may stimulate change in policies which in turn will measurably modify the conditions on which the assumptions were originally based.

Short-term projections clearly are more reliable and accurate because of the qualities of population momentum. (The quantitative characteristics of population "braking distance" are well understood.) Even this reliability however is susceptible to erosion by wars and political upheaval and by unanticipated surges in trends even in peaceful periods.

The lessons of recent past errors are of great value today. Authoritative demographic projections prior to and following World War II for North America and Western Europe substantially underestimated growth rates in these economically advanced regions. Post-war demographic trends for the less developed regions have been underestimated to an even greater degree.

Despite these shortcomings, serious demographic analysis and projection must provide the basis for population policies and programs. The most authoritative data and sophisticated projections now extant originate in the Population Division of the United Nations. The U. N. projections are designed to encompass the unanticipated changes in trends and surges noted above. Their design does not attempt to accommodate major wars and massive disruptions with a

uselessly wide range between high and low variants. The four U.N. population projection variants and their assumptions are:

1. The "continued recent trends" variant. This projection reflects the almost constant fertility rate of the 1950's and the observable trends of decline in mortality. It assumes for the term 1960-2000, for each population, a 2.5 year increase in longevity in each five-year period until age 55, a slightly greater increase for the life expectancy range between 55 and 65 and a progressively lower increase to age 74 at which point the expectancy would terminate.

2. The "high", "medium" and "low" variants. These three variants generally utilize the mortality assumption noted above. They differ mainly in their approach to the fertility rate. In the developing nations the assumed fertility rate is based on recently analyzed data. For the less developed countries fertility was assumed to decrease to one-half the initial rate within about thirty years for all three variants. The final key assumption which differentiated among the three variants was the time at which the fertility decrease would begin. These starting points were established on the basis of known circumstances in each country.

In summary tabulated form, the U. N. projections are as follows:

ESTIMATED WORLD POPULATION 1960-2000  
(in millions)

	Current Recent Trends (constant fertility)		High Variant		Medium Variant		High Variant	
	1960	1980 2000	1980	2000	1980	2000	1980	2000
<u>More developed areas</u>								
Europe	425	496 571	492	563	480	527	467	491
Soviet Union	214	295 402	296	403	278	353	269	316
Northern America	199	272 388	275	376	262	354	248	294
Oceania	16	22 33	23	35	23	32	22	28
Japan	93	114 127	117	139	111	122	108	115
<u>Less developed areas</u>								
Mainland China	654	942 1811	971	1345	850	1045	782	893
Other East Asia	47	87 175	83	139	80	120	76	110
South Asia-	865	1446 2702	1448	2444	1420	2270	1378	1984
Africa	273	458 560	463	864	449	768	434	684
Latin America	212	387 736	383	686	378	638	362	532
<u>World Total</u>	2998	4519 7522	4551	6994	4330	6130	4147	5449

The difference between the U. N. "continued recent trends" variant and the "medium" variant merits examination as it operates in the case of two major countries, India and Pakistan.

PROJECTED POPULATION LEVELS  
(in millions)

	YEAR	Continued recent trend variant (constant birth rate)	Medium variant (birth rate halved)
<u>India</u>	1960	432.7	432.7
	1970	542.5	541.0
	1980	694.2	661.5
	1990	914.2	782.9
	2000	1,233.5	908.0
<u>Pakistan</u>	1960	92.6	92.6
	1970	121.0	120.6
	1980	161.7	153.6
	1990	222.8	188.5
	2000	314.3	226.5

If the present trends continue, India will treble and Pakistan will more than treble in size by the year 2000. Present trends have in fact been sustained from 1960 to 1965. Even if the "medium" variant should operate (initiation of birth rate decline in 1965; duration of decline, 30 years; amount of decline, 50% of current rate), the subcontinent population would stand at 1.1 billion at the end of the century.

A break in the present rapidly accelerating LDC population growth pattern will depend on the advent of a fertility decrease. There is yet little discernible evidence of such down turn. If it comes into being soon, there is some prospect that the next century will produce only a tripling of the world's present inhabitants. If the governments of the world were to pursue population control policies as a matter of urgency, it is entirely possible that growth could be held back to a mere doubling during that period.

## II. The Functional Characteristics of Population Structure

### A. Fertility

Significant decreases in fertility in the industrialized West became apparent in the last quarter of the nineteenth century, typically in the wake of earlier decreases in mortality. Thus the earlier growth that resulted from high mortality and high fertility was stemmed. There are as yet very few documented examples of declining fertility rates in the LDCs. Rather a number show increases in crude birth rate as indicated in the following table of Latin American countries.

ESTIMATED CRUDE BIRTH RATES FOR LATIN AMERICAN COUNTRIES

COUNTRY	1860-65	1900-04	1920-24	1940-44	1950-54	1955-59
Argentina	46.8	41.8	34.3	25.7	25.4	24.1
Bolivia				45.1	42.4	
Chile	46.9	44.7	42.2	38.3	37.0	37.6
Colombia		43.0	44.6	42.4	44.0	45.1
Costa Rica		46.9	44.9	42.8	45.0	45.3
Cuba		44.6	36.7	31.9		
Ecuador			47.7	46.0	46.4	46.5
El Salvador		43.8	46.6	45.2	47.9	47.9
Guatemala		45.8	48.3	45.2	50.9	49.0
Honduras			44.3	43.8	46.0	46.0
Mexico		46.5	45.3	43.8	45.0	45.8
Panama		40.3	40.0	39.5	38.5	40.5
Peru		40.3	40.0	44.5	45.5	46.2
Venezuela		41.8	41.2	41.5	44.2	44.3

The three countries exhibiting decreases (Argentina, Chile and Cuba) have experienced heavy immigration from Europe over the years.

Fertility may be fostered by advances in health which enhance fecundity, reduce miscarriage and decrease the incidence of widowhood. While such factors may indeed be operating, it is not possible definitively to state their effects because reliable and complete statistical evidence does not exist in most LDCs. Improvements in statistical collection and reporting in recent years may have introduced an indeterminate spurious element in the birth rates shown in the preceding table.

B. Mortality

Since World War II the less developed world has experienced a precipitous decline in death rates. Data from a few representative countries are shown to demonstrate the trend.

DEATH RATES(per thousand)

Country	1945 1949	1950 1954	1955 1959	1960	1961
Mexico	17.8	15.4	12.2	11.5	10.8
Costa Rica	14.8	11.5	9.6	8.6	7.9
Chile	17.2	13.6	12.6	12.3	11.5
Venezuela	13.5	10.3	9.0	7.5	7.1
Ceylon	16.0	11.5	9.9	8.6	8.0
Malaya	17.5	14.0	11.3	9.5	9.2
Singapore	12.5	10.4	7.3	6.3	6.0
Taiwan	15.1	10.0	8.0	6.9	6.7

The causes of this decline vary of course from region to region. In the considered opinion of many it results from the cumulative and mutually reinforcing benefits of public health programs for the prevention and control of contagious diseases, food assistance and child feeding programs, improvements in nutrition practices, malaria eradication programs, the availability of new insecticides, improved sanitation and water supply, etc. It is important to note however that these public health and other factors are not unrelated to economic development. While programs of disease prevention, etc., often are built on materials and skills imported from the advanced Western societies, they can be carried forward effectively only where the LDC has developed improved health and social welfare capacity which in turn inevitably is a reflection of economic advance.

C. Migration

D. Population Density

Density is an elusive issue and its utility as an index is doubtful. Density is unpatterned in world terms. It occurs as a geographic or historical accident irrespective of national frontiers. It does not link causally with population growth rates which are found to be equally high in both densely and sparsely populated regions.

Density often may appear to have some meaningful tie to land area, either in terms of agricultural production or natural mineral resources. While this tie often has some identifiable measure of value, the land resource itself is less relevant to economic development than the productivity and efficiency with which it is exploited. Any study of population-land ratios necessarily must consider other factors such as productivity of labor and equipment, and the capital requirements of bringing additional land under cultivation.

Correlations between population density and economic factors do not seem to exist except in a remote way: land values often rank high in the scale of local costs. The desire for land for purposes of privacy and recreation in the developed countries results in a high income elasticity of demand.

The concern with density had led naturally to the quest for a so-called "optimum population," a goal to be sought by nations which considered themselves to be "overpopulated" or "underpopulated." Such an optimum population would maximize the exploitation of natural resources, permit a more efficient division of labor, provide economies of scale, reduce transportation costs, etc. The concept is essentially static in that it must assume that technology, capital and other inputs to production are constant values. In economic development terms of course, they cannot be constant if stagnation is to be avoided. The irrelevance of the optimum population concept is confirmed by the fact that size of population is of less significance than excessive population growth where such growth competes with -- and erodes -- capital formation and in so doing frustrates the process of economic development.

E. Age Distribution

F. Time and Interplay of Demographic Factors

The first twenty-five or thirty years of significantly reduced fertility in an underdeveloped country are characterized by a stabilization of adult labor force, and a decrease in the relative size of the 0-15 age group. This reduction in the burden of child dependency will permit not only increased capital formation and investment but improvements in the capacity to finance better nutrition, health and other family services.

Following this initial period a significantly lower rate of growth in the labor force will emerge. This will permit per capita increases in capital investment availability, and reductions in unemployment and under-employment.

Beyond this second phase, additional benefits will accrue to the country in lesser pressures on social services, some respite from density and overcrowding and a more productive relation between natural resources and labor.

Deviations from this classical pattern of course may occur.

Examples are:

1. The institution of an effective population program in an LDC may not necessarily result in a reduction in population growth rate during the initial period because a disproportionately large number of young mothers are entering the child bearing age.

2. As economic development occurs, a short-term rise, rather than the expected drop in fertility may occur. This results from the fact that the traditional social constraints of celibacy, marriage postponement, regulation of sexual intercourse, etc., frequently give way under the pressures of the modernization process.

### III. The Implications of Population Growth for the Less Developed Countries

The less developed world faces two spectres: a) the increasing difficulty of sustaining an expanding population on the limited land area of an inelastic planet; and b) the cruel race against time which pits already minimal production and resources against accelerating human demand.

The spectre of time clearly is the more pressing. Given adequate time and the will, the LDCs can achieve the kind of productivity that would permit them to satisfy the basic needs of larger numbers and simultaneously to attain self-sustaining economic growth and modernization. Unless they act promptly and forcefully, burgeoning population may devour the resources on which modernization depends.

The technological and administrative skills that have been applied with such zeal to the eradication of disease and the consequent postponement of death can and must be directed to the problem of excessive population expansion.

A. The Implications for Capital

The capital requirements of a rapidly growing, poor population do not permit investment in economic development. A reduction in demographic growth will not guarantee the availability of resources for development; indeed, the released resources could be diverted to the consumption of more and higher quality food or to social services such as old age pensions, child welfare clinics, etc. The capital formation potential of a reduced population growth can easily be lost for development purposes by a government not strongly motivated and administratively disciplined. Nevertheless, a reduction in population growth is the sine qua non for capital investment in development programs. A high birthrate results in a large number of persons under 15 years of age in proportion to the labor force. This high dependence ratio adversely affects savings. It also creates pressure for capital expenditures for schools, hospitals and related services.

In many LDCs, certain forms of capital are unused. Labor is characterized by large scale unemployment and under employment; industrial capacity stands partially idle. Domestic purchasing power and foreign exchange, released by a declining population growth rate, could spawn a two-fold result: it could be channeled into development activities and also permit greater and consequently more efficient use of existing resources.

B. The Implications for Food Supply and Nutrition

The fear of food shortages, progressively growing more acute as population levels soar, does not own its origin to Malthus, whose predictions overlooked the factors of technology and land. The fear is soundly based on evidence plainly visible throughout the world.

The world rice supply is not now adequate and the supply-demand trend curves promise a growing disparity. Export supplies of wheat have diminished in the world's two key remaining suppliers, Canada and the U. S.; domestic wheat production in the LDCs has fallen behind local demands. The food grain supply in the less developed regions has moved from a 11 million ton export level to a 30 million ton import requirement in 30 years. The drawdown on world food reserves has increased from 10 million tons in 1961 to upwards of 18 million tons in 1966.

If the current LDC food production rate stays on its present course, if the LDC food consumption increases only a small fraction and if population expands at the median, or expected, rate projected by the U.N., the 1966 estimated deficit of 16-18 million tons of food grains will rise to 42 million tons by 1975 and to 88 million tons by 1985. This latter level is 12 million tons greater than the total U. S. production capacity including currently unused land. At present rates of population growth, in less than 35 years the world will

need as much additional food as it now produces merely to maintain today's inadequate per capita intake. To raise world nutritional intake to accepted standards would require an additive increase of 3.5 times present world production.

Increased food prices in Brazil, India, Indonesia, Pakistan and the UAR reflect growing local shortages. They are warning signals of possible famine situations.

To solve this problem we have in the past relied mainly on technical and capital assistance to increase agricultural production and productivity and on food assistance to fill the interim food deficit. Experience has shown that the greater part of this effort has gone to provide subsistence levels of food for the incremental increases in population. The historical LDC response to population expansion was to place additional acreage into cultivation. Today's shrunken reserves of uncultivated arable land offer little prospect that this pattern can long continue, or that the capital requirements for such land development are within reach.

The goal of increased yields embraces two separate but closely related questions. From the standpoint of total food production, increased per acre productivity or yield is the determinant. From the standpoint of economic development and of ultimate food cost to the consumer, the key issue is the productivity of agricultural labor. For further information refer to M.C. 1612.10. Recent trends in land use and productivity are shown in the following table.

Recent Changes in Area of Crops, Crop Output per Unit of Land,  
and Crop Yields for Field Crops, 22 Study Countries, 1948-63

Country	Time Span	Annual rate of	Changes in	
		Increases in Crop output* (per cent)	Area of Crops (per cent)	Crop Yields (per cent)
<u>Group I</u>				
Israel	1948-63	9.7	68.5	120.4
Sudan	1948-62	8.0	49.9	50.8
Mexico	1948-60	6.3	49.7	28.9
Philippines	1948-62	5.2	66.9	9.8
Tanganyika	1948-63	5.2	58.8	14.4
Yugoslavia	1948-63	5.1	6.8	33.2
Taiwan	1948-61	4.5	11.7	45.7
Turkey	1948-63	4.5	62.0	16.7
Venezuela	1953-62	4.5	54.0	14.1
Thailand	1948-62	4.4	29.5	23.8
Brazil	1948-62	4.2	54.6	5.9
Greece	1948-62	3.7	22.3	39.3
<u>Group II</u>				
Iran	1948-63	3.6	38.6	12.5
India	1948-62	3.1	26.0	11.5
Poland	1948-63	3.0	0.9	30.4
Argentina	1948-63	2.8	2.7	18.6
Chile	1948-63	2.8	14.0	8.3
Japan	1948-63	2.8	0.9	24.7
Spain	1948-61	2.7	3.1	31.0
Colombia	1948-62	2.6	11.5	50.2
UAR	1948-63	2.0	6.2	20.1
Pakistan	1948-63	1.8	13.9	8.5

\* Annual compound rates for field crops and other crops combined.

C. The Implications for Education

A nation's fertility rate is the prime determinant in the age structure of the population. The high fertility rate of the LDCs has resulted in a 0-15 age group far larger in proportion to the total than that found in the developed countries. The dependency burden on the labor force to finance health, education and other social services for this 0-15 age group is also disproportionately heavy. Of the many social costs which inhere in the support of children, the most massive cost and the one most causally linked to the process of economic development is that of education.

It has been argued that a reduction in infant and child mortality will consequently reduce the economic losses incurred when these children do not survive to fulfill a productive role in the labor market. If fertility is not also decreased, these surviving children will not only become adult workers, but will marry and produce children of their own -- presumably at the same high fertility rate -- thus adding to the already high child-adult ratio and aggravating the dependency burden.

There is almost always some political attraction in the prospect of reducing public expenditure, particularly where the government is hard pressed to meet its many and diverse commitments. Such a prospect might well bring forth the argument that savings in the cost of education would result from a reduced birthrate, i.e., that the reasons and incentives for reducing birthrates lie in possible reductions in the education budget. Carried a small step further, one might conclude that in the face of high per student investment costs, each birth can be equated to economic loss. This argument is specious. The simple economic development logic that properly links fertility growth to educational investment is the possibility that fewer students will lead to a

larger investment per student with a consequent greater contribution to national development.

To avoid the pitfalls of superficially attractive but inherently illogical doctrines it is important that the LDC government base its policies on an objective determination of the economic value of a prevented birth. Such a determination considers the duration of the dependency and productive stages; the consumption and production, both basic and marginal, occurring at each stage; and the relation of present and assumed future costs and values. This calculation is complex and will produce a necessarily imprecise result. Nevertheless, the result and the demographic research process behind it are absolutely essential for the formulation of intelligent population policies and objectives.

Calculations, based on a variety of assumed values and estimated rates of future production and consumption reduced to present value (discounting), have shown the value of a prevented birth to range from 1.5 to 5 times the value of a current per capita annual income.

The determination of the value of a prevented birth has no connection to the concept of a so-called "optimum population" discussed in Chapter II C above.

The measurable effect of high fertility rates on the ability of the LDCs to expand their educational programs is seen in recent U.N. statistics which show that illiteracy has grown by about 200 million persons in free world LDCs in the past six years. In these same countries only about 30% of the 373 million school age (5-14) children are in school. At the center of the problem is the high and increasing percentage of school age children. The contrast between the U. S. and Latin American school age populations is

illuminating: 44% of Latin America's population are in the 5-25 age bracket, the U.S. figure is 36%. The Latin American educational investment is \$3.1 billion, the U.S. figure is twelve times as large.

The critical inference for education, however, is the worsening trend. The 100 million Indian children of age 5-14 will rise to 150 million in fifteen years, Pakistan's 24 million children will increase to almost 40 million, Indonesia's 21 million to 35 million. The burgeoning of uneducated and illiterate populations can be only checked and subsequently reversed by rapid and dramatic reductions in birthrates.

#### D. The Implications for Employment

The labor force fills a critical role with respect to capital formation and investment, to family support and to consumption.

Where high fertility prevails, the labor force must expend its earnings for the subsistence needs of its proportionately large and growing child dependent population. The dependency burden inhibits adequate savings and capital accumulation for productive investment with resultant unemployment and underemployment. It also does not permit adequate public investment in education. Finally it retards consumption thus exacerbating the unemployment problem.

A decreased rate of fertility will permit a breakout from this stagnated situation. As noted in Chapter II D above, a prime characteristic in the first 25 to 30 years of a lower fertility rate is that the dependency burden will noticeably decline with a consequent increase in savings, investment and consumption. The increased availability of capital for productive investment will permit greater per capita productivity and expanded employment possibilities.

How the savings which follow from a decreased dependency burden are allocated between savings, investment and consumption and how efficiently each performs will, of course, be greatly influenced by government policies.

With regard to consumption, the result will be a smaller number of consumers with a larger product to divide among them and a greater individual ability to consume.

To wish that the capital formation process described here could also be successfully accomplished via the capital assistance programs of the U. S. and other donor countries is illusory. The unemployment -- underemployment problems of the LDCs have their roots in the difficult social and economic processes of transition from a subsistence agricultural society to an industrialized urban society. The solution to these problems lies in large part in the local formation of capital within the labor force, a possibility that can follow directly from a reduction in the child dependency burden. The absorption of excess labor in the rural areas is retarded by the slow process of technical change. In the urban areas the absorption is limited by the availability of capital and the lack of technical skills.

E. The Implications for Human Welfare, Housing and Urban Services

Excessive population growth has contributed immeasurably to the misery and suffering of the people of the underdeveloped world. It has aggravated the problems of malnutrition, hunger, susceptibility to disease and death. It is the root cause of many illegal abortions and the creation of widows and orphans. It causes physical want and despair.

Demographic techniques are able to project the rate of growth of populations more accurately than the rate of growth of individual cities. Post-war urbanization trends however, are stable at 4 to 5 percent per annum, made up in part by migration from the farm but in larger part by high fertility rates and mortality rates often lower than in rural areas despite the squalor of urban slums. It is in the massively dense urban areas where the human condition is at its lowest. The reliance on rural areas for uncertain food supplies, the limited social service, the lack of employment opportunities and the wretched sanitary conditions, all conspire to erode the margins of safety that have thus far prevented breakdowns in health facilities, water supplies, etc. If these breakdowns occur they will produce disastrous disease epidemics and violence.

It has long been argued that public health programs which reduce mortality are irresponsible in that they increase the want and suffering of multiplying numbers of people. It is also argued that there is an economic justification for permitting mortality to remain high even when the means exist for prolonging life. These arguments are false. Declining mortality rates are solid evidence that programs of social progress can be implemented rapidly and effectively. More importantly,

improved health has created economic advantage by improving productivity and permitting new lands to be opened for cultivation. It has induced social advance by relieving pain and misery. Finally the establishment of public health systems will permit their use for implementing population control programs. Experience has indeed shown that the existence of an effective health system which has gained the confidence of the people is virtually a necessary basis for a successful population program.

The facilities and communications networks for public health programs and family planning programs are commutual. There may be competition for limited funds between health programs and family planning programs (seemingly between death control and birth control) as there is competition between say, health programs and agricultural or educational programs. Allocative decisions of this kind are not moral questions; they are to be solved as technical matters within the frame of national development planning.

The argument that health programs irresponsibly add to the sum total of human deprivation or that declining mortality rates should consciously be reversed is hollow. The energy, the technical knowledge and the administrative skills which have been applied so effectively to the reduction of mortality can and must be mobilized for a similar reduction in fertility.

The health of mothers and children is closely linked with fertility and population control. Often the majority of deaths of women of childbearing age arise from childbearing itself. Short of death, the cumulative effects of frequent childbirth, inadequate pre and postnatal

care, unassisted or improperly assisted delivery and nutritive deficiencies in diet all tend to erode the physical and mental well being of the mother. Unlike the advanced nations of the west, women in the LDCs are outnumbered by and have shorter life expectancy than men.

The effects of frequent childbirth are also damaging to the health and wellbeing of the young. Inadequate nutrition and care are the inevitable precursors of children's diseases, including kwashiorkor which is rooted in the cycle of pregnancy and infant feeding. A clear correlation exists between infant mortality and family size. The implications of population growth for LDCs social welfare problems, policies and programs are many. They cannot be thoroughly examined here; indeed such understanding may be achieved only through research. A brief discussion of several key issues follows:

Old age pensions. The burden of old age dependency in many LDCs falls almost entirely upon the individual family; the welfare cost of meaningful national old age insurance programs is prohibitive for most countries. In theory, relief from this burden might bring with it a realization that the traditional need for more children to care for one in old age is no longer relevant. In reality such a realization would probably come very slowly in the wake of old age insurance programs and would not appear at this time to be a sufficient justification for initiating old age pension programs. That there is little or no perceptible awareness of the relation between old age security programs and fertility rates is probably due to inexperience with these programs.

Child welfare services. It might be assumed that child welfare expenditures, however badly needed, could conceivably have the effect of relieving the child dependency burden on the parents and consequently weakening the economic pressures against large families. There is no evidence that such an assumption is valid. In view of the general inadequacy of child welfare programs throughout the less developed world and the lack of objective evidence linking such programs casually to fertility, USAIDs should not be deterred from supporting host country initiatives in the child welfare area.

Child and maternal benefit programs. Tax deductions for children and maternity and other benefits may appear to act as incentives for larger families since they subsidize the child dependency burden of the parents. There is little objective evidence to confirm this hypothesis. The population control case for or against maternal and child benefit services and subsidizers is not clearly or simply drawn; each situation requires careful analysis. Depending upon the economic conditions, selective effects may be achieved by selective changes, e.g., tax deductions for only the first one or two children.

The legal minimum marriage age. The effects on fertility rates of raising the legal minimum age for marriage could be marked, particularly where the legal minimum age is measurably higher than the traditional age. The difficulty of enforcement would appear to be directly proportional to the gap between the legal and the traditional ages. The converse of using a higher minimum marriage age as a birth control measure is found in the fact that marriage age tends to rise as a concomitant to declining fertility rates.

To the extent that social services and benefits may have a casual linkage to birth control, it will in all probability be found in a very small number of urban, informed women who are in social security insurance covered employment and are aware of the economic advantages and disadvantages of large families.

The opportunities for pursuing population control programs as an integral part of family welfare programs are many. The relations between these programs however are not always necessarily clear and changes in one may produce unanticipated changes in the other unless survey research and other systematic analyses have been carried out.

F. The Implications for Political Stability and Development

Social discontent and political unrest, attributable to food shortages, economic stagnation and the absence of social progress, are not difficult to find in the underdeveloped world. As the causes grow more acute, so will the intensity of the reaction. Political dissatisfaction might express itself as hostility to the local government and under extreme circumstances could result in the overthrow of that government. This might mean the replacement of a stable, pro-U.S. government by a government hostile to the U.S. It could also mean the toppling of a government committed to democratic tenets and to economic and social development.

Because of the role of the U. S. as the major supplier of food assistance and of other forms of bilateral economic and technical assistance, any failure or seeming failure on our part to head off famines will create serious impairment in our relations. It will also create an opportunity for communist agitation.

G. The Cost Benefit Aspects of Population Control

It is of critical importance that the formulation of a national population policy be based on a considered appraisal of the costs, economic benefits and alternative choices of such an activity. It is possible to make crude calculations that will compare the costs of a population control program against the subsequent costs of providing education and other public services to the persons whose births were not prevented. It is possible also to compute the complete range of costs and benefits to society of a population control program.

1. The cost of family planning programs. The cost of carrying out national programs will reflect the overhead charge, solicitation or incentive costs, clinic service charges, the type and cost of the contraceptives and the administrative efficiency with which the program is implemented. The range of costs from country to country will be governed by whether or not an effective health service system already exists, and is capable of administering the types of programs selected, the degree to which the people can share the costs, the possible employment of otherwise unemployed personnel, etc.

Examples of per capita, annual expenditures are: Korea (4.8¢ in 1964, 5¢ planned); Hong Kong (4.2¢ in 1964); Taiwan (2.5¢ in 1965); Turkey (4.0-5.5¢ planned); Tunisia (4.1¢ in 1965); Pakistan (12.0¢ planned). It is not yet possible to tell how effective these expenditure levels are in achieving fertility decreases.

2. Cost of a prevented birth. A key fact in the construction of a cost benefit analysis is the calculation of the investment required to prevent one birth. The factors affecting this calculation are essentially those described in the preceding paragraph. Authoritative estimates place the cost at between \$5 and \$10 per birth.

3. The economic value of a prevented birth. In the less developed world where it is clear that population growth is a hindrance to economic growth, the economic value of a birth may be assigned a negative value, i.e., a prevented birth has a contributory value to development. As described in Chapter III-C, the life span embraces both private cost and public expenditure during dependency and the possibility of either productive or unemployed -- underemployed years of adulthood. Adjustments are made for the differences between present and projected future costs and values. Depending on the "discounting" assumptions, i.e., the reduction to present value of estimated rates of future production and consumption, estimates have placed the value of a prevented birth in the range of 1.5 to 5 times the value of a current per capita income. In terms of a family with a \$100 per capita income, the value of a prevented birth would range from \$150 to \$500.

Contrasted with the estimated cost per birth prevention of \$5 to \$10 (see paragraph 2 above), at its extremes the benefit cost ratio could range from  $500/5 = 100$  to  $150/10 = 15$ . Thus the President's statement at the twentieth anniversary of the U. N., June 25, 1965, in which he said, "Let us act on the fact that less than \$5 invested in population control is worth \$100 invested in economic growth" was directed at the conservative end of the range of estimated values.

4. Relative efficiency of investment in population and capital projects.

A further dimension of the cost benefit question is whether an investment in population control will provide greater returns than an equivalent investment in capital equipment and plant. The appraisal is most appropriately made in terms of increases in per capita income. Based on the estimated

\$5-\$10 cost of preventing one birth (see paragraph 2, above) and assuming an incremental capital-output ratio of 3, the calculation suggests a per capital investment by the end of the transition period of fertility reduction. As in the case of computations in preceding paragraphs, the comparison will be affected by variables such as the duration of the transition period and rate of fertility decline, per capita expenditure on population programs including cost of contraception method, etc.

This cost benefit index should of course not be construed as a measure of the rates of return on resources invested in fertility control.

5. The actual internal rate of return of fertility control expenditures.

In addition to the economic gains to be realized by the sharing of the fruits of production by fewer people, it is important to consider the possibility of increased savings by the fewer people and the subsequent investment of these savings to increase production.

Extensive studies have been made of the changes in incomes of rapidly growing and slower growing populations starting with identical per capita incomes. Assuming per capita incomes of \$100 per year, annual contraceptive cost of one-tenth of one percent of initial per capita income (10¢), and a fertility decline transition period of 30 years, the internal rate of return is 38%. A parallel calculation based on one-half the birth prevention cost, (e.g., planned rates for Korea and Turkey) produces a rate of return of 49%.

6. A cautionary note

The preceding paragraphs on cost benefit analysis are merely intended to illustrate that population questions are susceptible to analysis and that population policies and programs can indeed be based on systematically

determined indices. On the basis of simple arithmetic, either more deaths or fewer births might result in a low population growth rate. But a low rate of population growth may be the result of a balance between either high or low birth and death rates. Only a balance between these rates at lower levels will maximize returns on the investments in human resources and maximize the ratio between producers and dependents. And only a prior reduction of mortality will facilitate or permit success of family planning by developing the motivation as well as the need for commensurate efforts to limit family size.

The complex and inadequately understood process of development requires of us that we apply cost benefit analysis with caution and wisdom only to valid alternatives and to programs that share the same objective. It requires also that we avoid cost benefit analyses based on simple arithmetical assumptions and speculations which tend to ignore the dynamic nature and sequential interactions of economic and demographic factors in the modernization process.

It is a fact that a decrease in present day population growth rates is a sine qua non for economic development. But it is dangerous to extrapolate this fact to the questionable conclusion that doubling investment in contraception will double economic development without taking into consideration the role of other sectors.

#### IV. The Implications for U. S. Development Objectives, Policies and Programs

Since U. S. assistance constitutes only a small and selective fraction of the total required investment in development, its efficient use depends

greatly on the effect of the LDC's own development investment in economic growth. The erosion of progress in development -- and the consequent erosion of the value of U. S. assistance -- by excessive population growth is easily measured. Per capita growth is the difference between gross economic growth and population growth, generally expressed in percentage terms.

Throughout the underdeveloped world, population growth rates have averaged about two-thirds of the overall economic growth rates. In Latin America, the period 1960-1965 saw an average annual economic growth rate of 4.4 percent, the direct result of almost \$12 billion of annual investment, and devoted effort. During this same period the yearly population growth averaged 2.9 percent. The per capita progress for Latin America remained at 1.4 percent per year. Thus two-thirds of the total investment (including some \$800 million of the \$1.2 billion U. S. annual assistance program) was expended to merely maintain at existing subsistence levels the millions of additional persons born during that period.

In India the estimated population growth rate for the same period (1960-1965) was 2.5 percent, the economic growth rate 2.9 percent, the consequent per capita increase in income, 0.4 percent. The pattern appears consistent in all less developed areas. The effect of a continued climb in fertility on the dependency labor force ratio and on the possibilities for productive capital formation and investment are discussed in Chapters III A and III D.

In essence the implication for AID policy is that our primary objective of economic and social development is increasingly in jeopardy as a direct result of the increasing LDC population growth rate.

## V. Social Attitudes

The need and desire for large families is as old as mankind. The awareness that in certain circumstances it is advantageous and desirable to have smaller families has taken root in the less developed areas in recent years and has spread. The realization that it is within the power of the parents to limit the size of families is much more recent and not as widely distributed.

The dissemination of knowledge about how to control conception has barely begun to be available, and be used, by the vast populations of the world.

Until recent years, there was a serious question of whether family planning programs could be implemented in traditional, underdeveloped areas. Unsuccessful pilot experiments tended to confirm the belief that fertility would not decrease until the advent of economic development, as in Europe. As noted in Chapter I c, this is no longer the predominant case.

There are signs of a beginning awareness of the possibilities and advantages of birth prevention. This awareness is usually accompanied by an interest in acquiring information on how this is accomplished. Such changes in attitude may well represent a momentous retreat from ancient and profoundly rooted beliefs.

It is also entirely possible that the strength and durability of the traditional attachment to large families has been overestimated. In any case, the operative fact is that without such changes in attitude, effective family planning programs would not be possible.

The newly emerging outlook probably derives from the recent sharp decrease in infant and child mortality; the spread of information media that exposes people even in remote areas to alien examples of prosperity and material well being; advances in contraceptive technology and vastly improved and enlightened approaches to the design and administration of family planning programs.

Scientific evidence of current attitudes, as documented by survey studies on knowledge, attitude and practice of family planning (KAP studies), is shown in the following table. These studies have produced similar results in different national, religious and racial populations.

PERCENTAGE OF PARENTS NOT WANTING MORE CHILDREN

Country	Number of Children Living		
	3	4	5 or more
Ceylon	57	69	88
India	43	74	88
Pakistan	42	67	74
Taiwan	54	76	88
Thailand	71	85	96
Turkey	68	67	76
Philippines	56	68	85
Korea	65	81	94
Tunisia	44	68	87
Brazil	95	93	93
Colombia	67	79	93
Costa Rica	67	78	86
Mexico	64	76	86
United States	62	81	74

The beginning signs of awareness and interest do not necessarily reflect motivation (see Chapter III E). While the stage may be set for family planning, the inertial forces of a culture may powerfully inhibit motivation. Any effective family planning program therefore must be built on knowledge of, and sensitivity to, the personal, familial, religious and cultural traditions and beliefs of the people. This may require survey and other research efforts.

While no coherent theory or model exists for characterizing the fertility decline, several identifiable conditions have been noted:

- # Family planning programs based on persuasion and exhortation have little chance of success. Alternatively, programs that offer information and technical instruction have evidenced progress.
- # While motivation is of prime importance, acceptance of family planning is more rapid when motivation is combined with a contraceptive method which is simple, reliable and inexpensive as in the case of the intrauterine device (IUD).
- # Parents must feel persuaded that recently decreased levels of infant and child mortality will be maintained; this may require a generation. They probably are less concerned with fertility levels than with total numbers of children.
- # There is a relationship of changing equilibrium between the motivation to use contraceptive devices and the difficulty which their use entails (cost, effectiveness, ease of use, safety, availability, etc.). Where the cost, risk or inconvenience of the contraceptive method is high, motivation must also be high or the method will not be used. In turn

motivation is directly influenced by the conditions of misery and poverty which press upon people and cause them to seek respite. Where the motivation is low, two considerations will prevail. One is to elevate motivation by increasing awareness of the causal relation between fertility and personal deprivation. The other is to exercise care in prescribing the most convenient and appropriate method of contraception.

- # Parents will most likely turn to, and accept advice from, the health workers to whom they may attribute the survival of their children. Thus the role of health services has a significant psychological element as well as being administratively effective in family planning programs.
- # Parental motivation is directly proportional to the number of living children. Thus parents of large families provide a logical starting point for birth control programs at village level. While of critical importance, this tactical consideration may not produce a prompt and significant reduction in overall population growth simply because these highly motivated parents have already produced all or most of the children they could be expected to and probably would have begun to practice some form of contraception at their own initiative.
- # Significant and rapid localized improvements in income, employment opportunities, etc., resulting from successful economic development programs may have adverse short-term effects on parental motivation for family planning. As economic pressures ease and optimism increases, children may appear to seem less of a burden.

- # Fertility decreases occur earlier in the urban areas of an LDC where more adequate educational levels and communications facilities tend to exist.
- # Generally religious beliefs have not seemed to produce significant differences in the effectiveness of family planning programs throughout the world.

VI. The Elements of an AID-LDC Program Strategy

A. The posture of the United States with respect to the problem of excessive population growth in cooperating countries must be clearly known and understood. It is not our role to persuade or to exert pressure for family programs. It is our responsibility, however, as a donor nation and as a major world food supplier actively to assure that our assistance and the LDC development programs which we support are both based on the most complete and reliable understanding of all the factors that influence economic and social development including the factors of population growth.

1. Where LDC officials recognize the need for family planning programs and have intelligently formulated plans and programs, AID will provide appropriate financial and technical assistance.
2. In situations where the host government is aware of the seriousness of the problem but does not know how to meet it, AID will assist in all aspects of planning.
3. In countries where the demographic situation has not been measured or evaluated, the Agency will support demographic survey and analysis activity.
4. Where excessive population growth immediately or potentially imperils the achievement of development goals or causes the wastage of host country and U. S. resources, and the host country has not seriously contemplated necessary population control measures, AID will systematically and thoroughly present and explain the factual demographic, economic and other data required for an understanding of the effects on development goals and programs. To this end AID will where possible engage the assistance of interested international organizations such as the U. N. and its constituent bodies, and other donor countries and agencies.

In every case, the AID posture is based on three fundamental principles:

All parents have the incontestable right to acquire the knowledge and ability to plan the birth of their children.

Every child has the basic right to be wanted and to be adequately cared for.

There must be complete freedom of choice of family planning participation and method.

B. All AID assistance to population control programs must be addressed to the paramount aim of economic and social development, and must be based on self-help measures. The Food for Peace Act of 1966, passed by the 89th Congress, endorses self-help by recipient countries, in facing their population problems. It states that the President, in implementing this Act, shall "take into account efforts of friendly countries to help themselves toward a greater degree of self-reliance, including efforts to meet their problems of food production and population growth."

C. Population control programs are an integral element of the War on Hunger which stresses the urgent need to increase the per capita intake of nutritious food. Population thus shares with food production, nutrition and child feeding programs a priority status of great significance and urgency.

D. In accord with the concept of country program development, population control activities supported by AID must be jointly formulated by the host country and USAID to reflect the indigenous economic and social setting. Goals and required investment levels should evolve logically from an analytic appraisal of reliable demographic data and should recognize the longer-range dangers of an inadequate initial effort.

E. Where health and social welfare programs, systems and facilities exist, or where they can be created, they should be utilized for family planning programs. Labor unions, adult training and literacy programs, civic action groups might also play an active role. Such integrated usage fulfills several purposes:

1. Population activities gain positive acceptance as a key element in an integrated social program which embraces child and maternal welfare,

nutrition and health services and training, home economics, etc.;

2. The social service program is strengthened;

3. Operational efficiencies are increased and cost reduced.

Experience shows that successful family planning programs are more likely to occur when implemented through older, well established health services.

F. Any division of responsibility and labor between AID and host country program activity must take into consideration the massive numbers and wide coverage involved in a national family planning program. AID's limited resources must not be engaged in direct population clinics, services, instructional classes for health auxiliary or semi-skilled technicians, etc., but should be selectively employed at the policy, program planning and other central strategic levels.

G. AID assistance should recognize and support sound family planning activities by both public and private agencies of local or international origin.

H. AID assistance should address itself to questions of program efficiency and effectiveness by supporting evaluation studies, the transfer of proven methods from other settings, survey and other appropriate research.

I. AID will not directly or indirectly finance the purchase, import or manufacture of contraceptive devices or materials.

J. The Agency will not conduct information, educational or promotional campaigns on family planning directed at host country citizens.

## VII. Population Program Activities, Services and Assistance Instruments

Within the constraints described in Chapter VI, all forms of AID assistance can be used in support of LDC population control programs. U.S. assistance can be channelled through bilateral agreements, consortium arrangements and under certain conditions through multilateral organizations. For

guidance or statutory, policy and procedural aspects of AID assistance, refer to the appropriate M.O.

A. Program Assistance. The financing of commodities and equipment generally would be accomplished by development loan funds and supporting assistance.

B. Capital Assistance and Private Enterprise The services described in this section can be made available to support capital and private enterprise activities where the primary and major purpose is other than the manufacture or procurement of contraceptives, i.e., where contraceptive production constitutes less than half of the total activity. Processing and evaluation of proposals will be considered in the usual way, on a case by case basis.

(See AID brochure: "Aids to Business").

1. The Catalog of Investment Information and Opportunities is designed to facilitate the movement of U. S. capital and technology into the host country.

2. Investment Surveys evaluate potential development prospects and reduce the uncertainty of investment decisions in the LDCs.

3. Investment Guaranties

a. Specific political risk guaranties against (i) inconvertibility of foreign currency; (ii) loss by expropriation or confiscation; and (iii) loss due to war, revolution or insurrection;

b. Extended risk guaranties which protect the guaranteed investor from loss from any cause, including business risks, up to 75% of his investment.

4. Local Currency Loans and Grants The use of U. S. controlled local currency for family planning programs is covered in M.O. 1018.2.1.

C. Technical Assistance Technical assistance can be applied to any planning, analytical, educational, advisory, research or other effort designed to improve human skills and competence and to create and strengthen institutions. Technical assistance has a major role in the planning of policies and programs for population control both at national and regional levels.

Financing of technical assistance is by loan or grant funds, depending upon the nature of the activity and the ability of the host country to assume and service a loan. Local currencies to cover local costs may also be utilized. (See M.O. Chapter 1300)

D. Central, Regional or USAID Funded Research

1. The Office of Technical Cooperation and Research (TCR) conducts a research program under authority of Section 241 of the Foreign Assistance Act. This centrally funded program, which utilizes PASAs and contracts, is directed toward the solution of Agency-wide and global problems. It is concerned also with the adaptation of U. S. technology for application in other physical, economic and social settings.

2. The Regional Bureaus of AID/W also finance research on problems limited to their respective regions.

3. USAID sponsored research, accomplished by PASA, contract or consultant is addressed to host country problems. This research covers the following needs:

- a. Research designed to support strategic planning and programming;
- b. Innovative and adaptive research which is aimed at a physical, social or other problem unique to the cooperating country;
- c. Research or feasibility analyses for planning and investment decision-making for large or complex projects;

d. Financial and other support of local research institutions where USAID policy calls for the creation and strengthening of a host country scientific, technological and educational base. This objective can also be pursued by incorporating a specific research component in university technical assistance contracts.

E. The Use of Food for Peace Commodities and the local currencies accruing from their sale can be used in support of family planning programs. A separate guidance message on Food for Peace is available (See AIDTO Circular XA-441, dated 8/25/66).

DRAFT # 2 -- 1/27/67  
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