

# Country Development Strategy Statement

## FY 1987

# India



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## Director's Statement

Behind the name "India" stands a vast sub-continent, one-sixth of the world's population on one-fortieth of its land, 22 states and nine territories, an industrial and scientific power, epicenter of the green revolution, home to fifteen major languages (over 1,500 mother tongues) and a rural population of almost 600 million - a large proportion of whose health, nutritional, material and productive circumstances are inadequate by any standard but which define India's opportunity for economic growth.

India reflects a very real dichotomy in Asian development. It shares features of the east Asian success story, ranking seventeenth in world industrial production and twelfth in GNP. India produces basic and heavy industrial goods, machine tools, steel, and mature technology engineering products for domestic consumption as well as for export; and it exports technology overseas by way of its own multinational firms. Other indicators of India's advanced status include its technical and scientific personnel (ranked third in the world), its food self-sufficiency, and its falling fertility rate and rising life expectancy. These characteristics create a dilemma for consideration of this CDSS. Should India continue to be placed among African and Asian states whose economies have almost no organized sector? Or should it be treated as "middle income" or "a graduate" whose next-phase development will be financed by private sector investment and characterized by collaborative relations with developed country institutions?

The south Asian aspect of the Indian system, however, clearly classifies it as a developing nation whose investment requirements constitute a continuing legitimate and high priority claim for development assistance. As much as 50 percent of India's population lives under variously drawn poverty lines - a proportion that has not changed since the 1950s. Seventy percent of the country's work force is in agriculture - a proportion that has changed very little since the first decade of the century. Moreover, in India as in other parts of south Asia, reduced mortality rates (and higher life expectancy) have countered declines in fertility. Indeed, if poverty proportions remain constant and population growth rates do not decline, as many as 500 million people may be living below the poverty line by the year 2000. It is the thesis of this CDSS that these problems are neither peripheral nor isolated but rather central to the whole of India's development agenda.

Accelerated development in India is important, then, both in terms of the claim its population makes against the society, and in terms of the global stake in its success or failure. But the diversity of the country is such, and the number of development variables and their interlinkages are so profuse and complex, that they virtually defy description, much less model building or formula prescriptions. Nevertheless, it is the hypothesis of this CDSS that an identification of the program with those few most crucial aspects of the development problem and a continued commitment to the institutional development of the USAID itself can come together in a U.S. development presence of significance.

A convincing set of political arguments can be put forward to support a significant U.S. development presence in India, but two stand out. The first arises from a shared interest in a whole set of issues such as world food supply, population growth, environmental degradation and energy conservation, the continued viability for world trade and financial systems, constitutionalism and democracy. These very real and critical U.S. global interests have no relevance without a direct and important concern with India.

The second arises from the major and spreading development achievements in India and the role that development assistance has played in that process. The list of on-balance successes is long and supports the view that the synergism has worked well. USAID is now in its fourth decade here. It is a considered and established development institution; and its own sophistication, experience and intuition have been enhanced by the growth of Agency experience worldwide. In short, the opportunity for a relevant and successful development effort in India is quite high.

January 25, 1985

## I. EXECUTIVE SUMMARY

Two structural characteristics of the Indian system, poverty and population, importantly condition its opportunity for economic growth. Fully one-third of the world's poor, some 360 million people, are Indian. India's annual population increase now exceeds 15 million people and its total population will reach beyond one billion, exceeding even that of China, by the turn of the century.

Both problem areas have been largely resistant to change. The number of rural poor according to the World Bank has varied between 53 percent of the rural population in the 1960's to 51 percent in 1980. As for population, the growth rate has remained constant or increased in virtually every decade since the turn of the century (e.g. most recently 2.20 percent for the period 1961-1971 and 2.25 percent for 1971-1981). While it is necessary to be cautious in drawing conclusions from these figures, it is possible to project that 85 million people will be added to the Indian population during the five year period ending in 1990, nearly three-fourths of whom will have to find livelihoods in the rural sector. At this pace the ranks of the rural poor will increase by eight million people each year.

The significance of this massive and seemingly intractable phenomenon for economic growth in India fits a classic description. While large pockets of economic and social deprivation - particularly among scheduled tribes and castes - exist in many parts of India, in general the persistence of poverty

appears to be more a function of low income levels and growth rates in the rural sector than of maldistribution of income or a growth process that neglects the poor. To make a significant impact on overall economic growth and rural incomes, there must be an acceleration of the pace of agricultural development and/or a reduction in the rural population sufficient to generate real growth in per capita agricultural incomes. India's rural poor sector, then, must not only be a principal target for economic policy; its' transformation is the key to the development strategy itself.

The Indian economy has recorded a steady, albeit unspectacular, compound growth rate of approximately 3.5 percent per year from 1951 to 1984. Agricultural production, carried mainly by irrigated wheat production in the northwest, increased at an annual rate of 2.5 percent during the same period. Rainfed production and production in other regions have grown more slowly or declined. Indian industry has achieved a long-term growth rate of 5.6 percent per year over the past three decades. As with agriculture, however, industrial growth statistics conceal considerable temporal and geographic variations. Indeed, industry has experienced a declining rate of growth (notwithstanding a modest revival in the past few years), and this trend has generally characterized all components of industry.

The estimated eight to nine percent increase in GDP in 1983-1984, with agricultural growth in the 13-14 percent range, contrasts sharply with the long-term trend and is the focus of some debate among economists. There is a line of analysis which suggests that this recent economic performance

represents something of a temporary phenomenon (probably no more than a rebound from recession or drought years as has happened before) and that, in the absence of fundamental structural changes in the economy, growth will return to its longer-term average. Another school of thought suggests that these structural adjustments are already underway and that a five percent-plus annual growth rate is a realistic objective for the Seventh Plan. Despite a very impressive performance in the mobilization of domestic resources with savings rising to over 22 percent of GDP in 1983, predictions of a structurally higher economic growth rate appear optimistic.

India's recent achievement in agricultural production and adjustment to world economic conditions should not obscure the fact that India is still a long way from providing adequate economic opportunities for its people. Its per capita income, at \$260, is lower than the average per capita income of sub-Saharan Africa.

India has developed a strong "self-help" capability, both in terms of mobilizing domestic resources and in terms of demonstrating its ability to manage an enormous economy effectively and responsibly. In recent years, India faced difficult problems in adjusting to increases in oil and other import prices, depressed world markets and the resultant adverse shift in the terms of trade. Despite these difficult external circumstances, India maintained the momentum of its economic and adjustment policies. Moreover, all the difficult decisions for adjustment, including significant increases in domestic oil prices, had to be taken within the framework of India's

representative and federal constitutional structure. Thus, development assistance to India is justified not only because it is one of the poorest countries in the world, but perhaps more importantly, because India effectively supports desirable policy changes, has a sound investment program, and has the institutional and managerial capability to use such assistance effectively.

The strategic objectives of the A.I.D. Mission in India are to fashion its program and influence toward:

- improvement in the rural poor sector, primarily through rapid agricultural modernization;
- definitive and near-term deceleration in population growth;
- relevant application of science and technology to development initiatives; and
- emphasis on the responsibility of individuals, localities and the market for the resolution of poverty.

The strategy includes sectoral programs in agriculture, resource management, health and population, and research and technology development. It incorporates a major initiative in science and technology and it contemplates a continuing challenge to the Agency and Mission to consider institutional and procedural adjustments in support of the strategy.

## II. ANALYSIS

### A. Overview

Two structural characteristics of the Indian system, poverty and population, importantly condition its opportunity for economic growth. Fully one-third of the world's poor, some 360 million people, are Indian. India's annual population increase now exceeds 15 million people and its total population will reach beyond one billion, exceeding even that of China, by the turn of the century.

These two structural problems are often understated. Illustratively, the focus of a debate in India is whether the number of people below the poverty line is slightly above or below 50 percent of the population; or whether the population growth rate is above or below third-world or other international averages. This kind of argumentation does not obscure the fact that poverty and population are not isolated problems but rather central to the whole of India's development agenda.

Both problem areas have been largely resistant to change. The number of poor according to the World Bank has varied between 53 percent of the population in the 1960's to 51 percent in 1980. As for population, the growth rate has remained constant or increased in virtually every decade since the turn of the century (e.g. most recently 2.20 percent for the period 1961-1971 and 2.25 percent for 1971-1981). While it is necessary to be cautious in drawing

conclusions from these figures, it is possible to project that 85 million people will be added to the Indian population during the five year period ending in 1990, nearly three-fourths of whom will have to find livelihoods in the rural sector. At this pace the ranks of the rural poor will increase by eight million people each year.

It can be observed that fluctuations in the proportion of the rural population living below the poverty line vary with agricultural production. This is a largely self-evident conclusion since 70 percent of India's employed population works in agriculture and over 80 percent of its poor live in rural areas. It does not explain, however, the apparent paradox of persistent mass poverty and malnutrition in a country which now boasts foodgrain self-sufficiency.

The answer in part lies in a slow rate of agricultural production and income relative to the growth in population. Indeed, agricultural incomes have lagged behind agricultural production and are barely sufficient to keep pace with population growth. Low per capita incomes, hence purchasing power, go further to explain this paradox. Monthly per capita expenditures are something less than Rs.80 (\$6.50) in India and the poor half of the population accounts for only 20 percent of aggregate consumer expenditures. The poor spend a disproportionately high share (up to 80 percent) of their incomes on food; yet this share constitutes only one-third of total expenditures on food. In the case of clothing or textiles, the poor's share of total expenditure is less than 10 percent. What little positive saving as does

occur among the poor is the only buffer they have against bad weather, reduced production and higher prices. Thus, while national foodgrain self sufficiency is an achievement to be applauded, the problem remains one of effective market participation by the poor.

The significance of this massive and seemingly intractable phenomenon for economic growth in India fits a classic description. While large pockets of economic and social deprivation - particularly among scheduled tribes and castes - exist in many parts of India, in general the persistence of poverty appears to be more a function of low income levels and growth rates in the rural sector than of maldistribution of income or a growth process that neglects the poor. To make a significant impact on overall economic growth and rural incomes, there must be an acceleration of the pace of agricultural development and/or a reduction in the rural population sufficient to generate real growth in per capita agricultural incomes. India's rural poor sector, then, must not only be a principal target for economic policy; its' transformation is the key to the development strategy itself.

#### B. The Economy

The objectives of Indian economic policy are unchanged through six national development plans; these are: a high growth rate, national self-reliance, full employment, and the reduction of inequities. These objectives remain a useful framework for examining India's growth and prospects as it enters the Seventh Five Year Plan in 1986.

## Growth

The Indian economy has recorded a steady, albeit unspectacular, compound growth rate of approximately 3.5 percent per year from 1951 to 1984. Agricultural production, carried mainly by irrigated wheat production in the northwest, increased at an annual rate of 2.5 percent during the same period. Rainfed production and production in other regions have grown more slowly or declined. Indian industry has achieved a long-term growth rate of 5.6 percent per year over the past three decades. As with agriculture, however, industrial growth statistics conceal considerable temporal and geographic variations. Indeed, industry has experienced a declining rate of growth (notwithstanding a modest revival in the past few years), and this trend has generally characterized all components of industry.

The estimated eight to nine percent increase in GDP in 1983-1984, with agricultural growth in the 13-14 percent range, contrasts sharply with the long-term trend and is the focus of some debate among economists. There is a line of analysis which suggests that this recent economic performance represents something of a temporary phenomenon (probably no more than a rebound from recession or drought years as has happened before) and that, in the absence of fundamental structural changes in the economy, growth will return to its longer-term average. Another school of thought suggests that these structural adjustments are already underway and that a five percent-plus annual growth rate is a realistic objective for the Seventh Plan.

Despite a very impressive performance in the mobilization of domestic resources with savings rising to over 22 percent of GDP in 1983, the predictions of a structurally higher economic growth rate appear optimistic. Four highly related economic indicators continue to cast a shadow on predictions of long-term structural improvement in Indian industrial performance. These are a rising ratio of investment to output (the incremental capital output ratio or ICOR), the low rate of return on investment in the public sector, low rates of capacity utilization in key sectors and the long gestation period for new capacity. Industry's creditable 5.5 percent increase in value added in 1983-1984 occurred despite continuing structural weaknesses. Remarkably high rates of savings and investment in India have provided the opportunity for more rapid industrial growth in recent years but are being partially offset by extensive inefficiency in industry.

Projections of higher growth rates also tend to mask the central role played by the good weather in agricultural performance. Nor do they reflect the differential nature of agricultural production in India. Variations in the performance of different regimes, crops and regions constitute a disquieting feature of agricultural growth in recent years. A slow-down in the growth rate of output has been shared by almost all crops except wheat. Among the cereals, the coarse grains have even lost area. In some areas, the shift to wheat has come at the expense of lower-priced affordable sources of protein (such as pulses).

### Self-Reliance

India's impressive performance in selected areas of agriculture is a strong domestic argument for the benefits of self-reliance. The achievement of self-sufficiency in foodgrains (indeed, with a small margin for exports in 1983-1984) stands witness to India's success in pursuit of this goal. The achievement should not, however, lead to complacency. As suggested above, performance among the foodgrains has been uneven; further, population growth continues to consume the benefits of increased production and per capita foodgrain availability still does not meet nutritional needs. India's hold on foodgrain self-sufficiency is tenuous and last year's success should not be taken as proof that India has solved the problem of feeding its own people.

Implicit in the concept of self reliance is the import substitution strategy adopted by India following Independence. The objective of the strategy, namely to produce domestically a wide variety of industrial goods required for investment, consumption and defense, has in many respects been achieved. Indian planning has had great success in the substitution of domestic products for imports. Since Independence, imports have fallen to between 2 and 20 percent of total supply in over 20 industrial subsectors including basic chemicals, fertilizer and many categories of machinery. India takes enormous pride in the changeover from a manufacturing sector dominated by textiles and food processing to one now dominated by engineering, chemicals and related industries.

In countries with vast natural resources, manpower and market potential, import substitution policies may initially assist the rapid growth of basic industrial capacities which are prerequisite to growth for all sectors.

In India, however, this policy has created a sheltered, high cost industrial sector. Quantitative restrictions on imports supplemented by high tariffs, mandatory licensing for new or expanded plant capacity, credit and other input allocation policies and administered prices in selected industries have combined to create a complex web of rules and regulations. These act as barriers to entry, reducing incentives for innovation, efficiency and quality control.

The poor performance of India's manufactured exports during the 1980's is in part a result of this strategy. Because of high producer costs, protected industries have little potential to penetrate export markets in the absence of large subsidies or significant policy changes which would make exports more competitive.

In the overall context of an economic system heavily influenced by administrative controls and public sector enterprise, a liberalizing trend has recently emerged favoring greater freedom for market forces and reliance on the private sector. Following the return to power of Congress(I) in 1980, India has enacted a variety of legislative, policy and regulatory reforms that have promoted the more efficient functioning of markets. The reforms have led to liberalization in areas such as interest rates, prices in selected product lines, industrial licensing, foreign collaborations and import controls,

duties and procedures. These reforms have occurred on an ad hoc, piecemeal or incremental basis and they are likely to continue to evolve this way. For example, most recently (November 1984), the Government announced a major liberalization program for the computer industry. The new policy should result in lower cost and increased production by opening up production of mini and micro computer manufacturing to large firms (the sector was reserved for small enterprise) and foreign equity participation (up to 40 percent), abolishing restrictions that limited total value of production per annum by a manufacturer to \$1.8 million, allowing import of systems costing less than \$0.1 million without Department of Electronics' permission, lowering import duties on components and slashing them (80 percent to 5 percent) on parts for peripherals.

Also, in the immediate post election period two important high level committee reports -- one on the substitution of financial for administrative controls and the other on measures to increase exports -- should lead to further significant steps toward liberalization of the economy. Assuming the real commitment of the new government, cumulative negative experience of the past thirty years with direct controls and public sector enterprise and the rising cadre of pragmatic technocrats within the GOI augur well for greater reliance on market forces and the private sector as means for achieving Indian development objectives.

Employment

Depending upon which measure is used, unemployment in India is put at anywhere between four and eight percent of a workforce numbering on the order of 300 million persons. The labor force is also said to be growing at a rate of 2.0 to 2.5 percent per year, a pace which requires the creation of about six million new jobs each year just to absorb the increase.

The problem with employment statistics is that they are too often taken as a proxy for the extent of poverty in India. These statistics shed some light on poverty primarily in that they show the vast majority of the poor work in low productivity jobs. However, the statistics cannot be aggregated easily and generally give a better picture of urban and industrial unemployment than its rural counterpart. The problem for the majority of the rural poor is not unemployment in an urban or industrial context but an adequate, secure and independent stock and flow of cash and food (including buffers for contingencies) throughout the year. This suggests that attention needs to be given to raising productivity and incomes from employment not just increasing the number of workers earning a marginal wage by means of employment programs.

The structure of employment in India has remained remarkably constant through the 1970s with agriculture's share of the workforce holding at about 70 percent. However, according to the 1981 census, for the first time in 70 years a shift from agricultural employment appears to be developing. This said, the broad sectoral structure of up to 70 percent of the work force in

agriculture, ten percent in manufacturing and mining and the balance in other non-agricultural activities is the framework within which employment expansion will occur. Even with differential rates of growth in agriculture and non-agricultural activity, it is evident that, for the foreseeable future, increased employment and improved livelihoods will largely be found in agriculture and, to a lesser extent, in the non-farm or industrial sectors.

#### Income Distribution

Another debate in India focuses on the issue of whether, during India's post-Independence experience with economic growth, the "rich have gotten richer and the poor poorer". This is another distinction which is probably lost upon the 360 million or so Indians below the poverty line. For the majority life remains a struggle for survival and even many above the line experience very low levels of consumption. The issue, nevertheless, is important in India since the elimination of growing income inequalities, where they exist, is a principal objective of development policy.

Several recent studies suggest that income distribution in India has not worsened under conditions of slow growth and expanding absolute poverty. It is argued to the contrary that, in relative terms, the people in the poorest 40 percent of the population are receiving a gradually increasing share of total income. The concentration of income and land in the rural sector is also said to be declining. These propositions are difficult to verify independently; whatever progress may have occurred, however, seems lost beneath the weight of increasing absolute poverty and population.

Lost in the calculations of aggregate and per capita income statistics is the size and impact of the so-called "black-money" economy. This term describes what is essentially an underground economy which has arisen in response to the heavy taxation policies of the government. Various estimates represent it as representing nine to 50 percent of GDP, the benefits of the black money economy accrue disproportionately to the relatively better off. The result is a potentially serious unrecorded concentration of assets which does not appear in available statistical analyses of income distribution.

C. The Case for Development Assistance

India's recent achievement in agricultural production and adjustment to world economic conditions should not obscure the fact that India is still a long way from providing adequate economic opportunities for its people. Its per capita income, at \$260, is lower than the average per capita income of sub-Saharan Africa.

India has developed a strong "self-help" capability, both in terms of mobilizing domestic resources and in terms of demonstrating its ability to manage an enormous economy effectively and responsibly. India's domestic savings rate and tax rates are relatively high and compare favorably with those of countries at much higher levels of income. In recent years, India faced difficult problems in adjusting to increases in oil and other import prices, depressed world markets and the resultant adverse shift in the terms of trade. Despite these difficult external circumstances, India maintained

the momentum of its economic and adjustment policies. Moreover, all the difficult decisions for adjustment, including significant increases in domestic oil prices, had to be taken within the framework of India's representative and federal constitutional structure. Thus, development assistance to India is justified not only because it is one of the poorest countries in the world, but perhaps more importantly, because India effectively supports desirable policy changes, has a sound investment program, and has the institutional and managerial capability to use such assistance effectively.

Finally, India has taken initiatives to raise the economy's growth rate from its historical plateau of 3.5 percent by putting increased emphasis on liberalized policies for imports, product licensing, prices, foreign investment, transfer of technology and commercial borrowings. The approach, however, involves risks. As India seeks to engage more in world trade, policymakers see the economy becoming more vulnerable to the course of world economic events. Reduction in development assistance could drive India back towards more rigid controls on imports and industrial policies at the sacrifice of overall economic growth.

#### D. The Sectors

##### 1. Agriculture

The structural transformation of an economy dominated by agriculture depends upon agricultural progress. Agricultural progress aids development by

producing products, stimulating demand, and transferring resources such as labor, savings and investment to other sectors which require them to support their own growth. In a simple two sector model agriculture supports industrial growth. Agriculture accounts for 40 percent of India's Gross Domestic Product and employs 70 percent of its population. Over 80 percent of India's poor live in rural areas and depend on agriculture. About half are self-employed on their own or rented land while most of the rest are landless and depend on temporary farm employment. Surveys suggest that agriculture accounts for 75 percent of rural income, with the result that non-agricultural income would need to grow at 2.5 percent to get the same increase in total rural incomes that a one percent growth in agriculture would provide. Creation of a modern, dynamic agriculture is thus central to economic growth in India and to the poor's participation in that growth.

India has made impressive strides in agriculture since Independence. Having attained a long term growth rate of 2.9 percent in foodgrains (which occupy 75 percent of the cultivated land in India and which account for about 75 percent of average spending on food) India is now able to call itself self-sufficient in this critical component of the Indian diet. Agriculture's improved performance is due primarily to the introduction of new seed and fertilizer technologies in the 1960's and the rapid growth in irrigated areas in the 1970's. These two key elements will continue to be the cornerstone of an agricultural strategy whose success depends not only upon improved labor productivity but also on achieving rapid increases in the productivity of the land.

The impressive achievements of India's green revolution have contributed to the overall long term growth rate of the agricultural sector which has maintained what the world Bank calls a "weather-adjusted" rate of 2.5 percent since Independence. Per capita gains in agriculture, however, have been largely offset by the increase in the Indian population during the same period.

Foodgrain production, dominated by wheat, has seen its greatest success in the Indian States of Punjab, Haryana, and western Uttar Pradesh where annual 6.0 percent-plus production increases have been the rule since the late 1960's. In contrast, cereal growth has barely touched one percent per year in the densely populated, rainfed eastern regions including Bihar, West Bengal, eastern Uttar Pradesh, and Madhya Pradesh.

Public debate is now beginning to focus on this imbalance, to wit a speech by the late Prime Minister Indira Gandhi "... higher yields are confined to some pockets. In other areas they continue low even though technology is available for raising them dramatically. In rice, the picture is worse. The northwest has forged ahead, but in the eastern region, where millions of small and marginal farmers work, productivity has been stagnating. The problem of poverty in all these areas is linked with low productivity. We need a plan - a breakthrough in the production of rice and dryland agriculture - the transformation that is required is all pervasive."

It is now widely recognized that the acceleration of agricultural growth will continue to depend upon progress in irrigated agriculture and the

diversification of production as well as improvements in technologies for those areas and crops by-passed by the green revolution. This new challenge has led policymakers to consider the problems of rainfed agriculture, eastern India, low land rice, oilseeds and other foodgrains.

### Rainfed Agriculture

In a fundamental sense, land constitutes the most important natural resource of a country and its proper utilization is a matter of great concern. This is particularly important with respect to agriculture since the proper usage of land can make the difference between shortages and surpluses in agriculture.

At present, about 70 percent of the net cropped area in India is exclusively dependent on rainfall. Even at full development of irrigation, about 45 percent of crop land will remain rainfed. Production from these areas, however, is greatly affected by the irregularity of the monsoons, as total rainfall fluctuates widely between years; and there are unpredictable variations in the onset, continuity and withdrawal of the monsoon. Precipitation often occurs at such high rates of intensity that substantial runoff occurs, thus reducing the potential for infiltration of moisture into the soil and increasing the danger of soil erosion and crop damage due to inadequate drainage. Furthermore, the risk of crop failure reduces individual farmers' willingness to invest in costly inputs and better crop care.

In these circumstances, farmers continue to practice low-cost subsistence-oriented husbandry and, as a result, overall production in rainfed

areas remains low and unstable; further, much land lies seasonally fallow due to lack of drainage and other infrastructure. Since these lands contribute 42 percent of the total foodgrain production of the country improvement in rainfed technology is of major importance both for increasing national food supply as well as supporting agriculture's contribution to actual economic growth. National investment priorities, however, have been consistently directed towards the development of irrigable land.

### Irrigated Agriculture

The challenge in agriculture (i.e. the need to increase yields on what is now a static resource base) is intimately connected with the second of India's most important natural resources, water. Irrigation historically has been assigned a key role in increasing agricultural production in India; it provides an assured water supply which is important for promoting multiple cropping and reducing the risks associated with the purchase of costly modern inputs such as fertilizer.

Investment in irrigation has a long history in India and has endowed the country with the largest and most ambitious irrigation program in the world. Pre-Independence system design (which accounts for about one-third of irrigated acreage) emphasized the protection of the rural population from drought, and famine and post-Independence systems opted for extensive equity-oriented design. Only relatively recently have new objectives for the sector begun to meet the more exacting requirements of water for higher

productivity and modern agriculture. Striking features of this development are the steady decline in the growth of area irrigated by publically funded major and medium surface irrigation projects through the mid-1970's, followed by a marked acceleration thereafter; the rapid growth of groundwater irrigation (mainly private) since the mid-1960s, tailing off somewhat in recent years; and the tentative revival of minor surface irrigation after almost 20 years of near stagnation. The net result has been an acceleration of the rate of increase in total area irrigated since 1951, together with a rise in the proportion covered by groundwater.

Development of irrigation remains one of India's top priorities, reaching more than 10 percent of public sector outlays; the rate of return on this investment in terms of increased agricultural production has had an important effect on the growth rate of the economy as a whole. For most Indian farmers, the transformation from rainfed to irrigated farming represents the best hope for raising productivity and farm incomes quickly. An adequate and reliable supply of water is essential if the expense of high yielding seed and fertilizer is to pay dividends through increased yields and greater cropping intensity. Public investment in surface systems and deep wells, and private investment in shallow wells, supported by institutional credit, have all played a part in India's mammoth irrigation effort since Independence. Yet with less than 60 percent of potential developed, almost 50 million hectares remain to be brought under higher productivity irrigated farming.

Nevertheless, the question of whether investment in irrigation pays an adequate return (given its heavy capital costs, long gestation period, and low

levels of efficiency heretofore achieved by some of India's irrigation systems) is a development issue of critical importance. It seems clear that there is great scope for improvement. In groundwater the factors limiting returns are those that face the farmer (such as energy and credit) in installing and using his own tubewell. Many of these factors are most severe in eastern India. Since it is here that the bulk of the unexploited groundwater potential and the greatest scope for adopting improved agricultural technologies exists, the pace of groundwater development in India will be determined to a great extent by the progress made in this region.

The main factors limiting rates of return to investment in surface irrigation are the planning, design and management of systems. In addition, the proliferation of projects spreads available funds too thinly and results in the prolongation of project construction and wasteful delays of benefits. The basic conceptual design of projects needs to be improved to provide for reliable, efficient and equitable water supply while laying the groundwork for the more flexible, demand-based systems which will be needed in the future.

## 2. Forestry

India's forests may be its most misunderstood and abused natural resource. Driven by the demands of an increasing population for food and fuel, deforestation has reduced the effective forest cover of the country to 12 percent of its total area. At one time, over half of India's land area was under forests.

Deforestation has had serious consequences for India's agricultural regime and, in turn, for the livelihoods of its poor. The soil has become easy prey to natural elements; soil erosion has been one of the major factors causing low fertility and low yields on Indian soils. Deforestation has led to some desiccation of climate and vegetation which in turn affects future agricultural productivity. Finally, the depletion of forest resources has created a serious shortage of timber, firewood and raw materials for forest-based industries.

The pace of deforestation in India has a broad impact on the economy and the lives of the poor. Actual annual consumption of wood in India, two thirds of which is for fuel, is five times (200 million cubic meters) the combined rural wood growth in the public and private sectors (40 cubic million meters). With overall demand projections for the year 2000 running in the neighborhood of 300 million cubic meters annually, the prognosis for the future is potentially catastrophic.

The "macro" impact of deforestation is also considerable. Soil erosion and the silting of rivers beneath the Himalayan watershed where over a half billion people in India, Pakistan and Bangladesh live, have created the condition for massive downstream flooding. In India alone, the cost of repairing flood damages below the Himalayan watershed amounts to \$250 million every year.

With fuelwood shortages have come rising prices creating both additional strains on and the opportunity to improve rural incomes. Forests, by

definition are located in the less developed rural and tribal areas and forestry activities are typically labor intensive. Programs which promote the growing of trees in denuded forest areas, marginal agricultural lands or other communal lands can at once provide income or assets for the rural poor and restore productivity to the soil. Viewed in this larger context, woody plants - trees - are an exceptionally important component of an overall approach to improving agricultural production, livelihood and the environment in the rural areas.

### 3. Human Development

Economic growth and human development are locked in a reciprocal, mutually supportive relationship. Growing economies are able to devote increasing resources to the improvement of educational, health, and nutritional standards. But it is also true that investment in human resources helps to accelerate economic growth by increasing labor productivity, encouraging greater physical investment and reducing the dependency burden of the population. In India, mass poverty exacerbated by rapid population growth handicaps the efforts of both government and the private sector to address these problems of human welfare:

- The population of nearly 750 million is growing at roughly 2.25 percent per year and will reach one billion by the year 2000. The crude birth rate, now about 30 per 1000 population, has been slowly declining. About 21 million children are born each year and there are over 100 million children under age five.
- The crude death rate is about 10 per 1000 population. Although children under age five comprise only 14 percent of the population, almost half of all deaths are in this age group. Life expectancy at birth is 54 years.

- Urban/rural and sex differences in mortality remain pronounced. Child mortality for the age group 0-4 has changed little in the last decade, with rural levels remaining substantially higher than those in urban areas, and female rates continuing higher than males. Although infant mortality has slowly declined, the same urban/rural and sex differences persist.
- National rates of malnutrition among Indian children as reported by the National Nutrition Monitoring Bureau have not declined over the past decade, and 74 percent of all children under five years are affected by moderate and severe malnutrition.
- Per capita food grain availability has been offset by population increases and declines in the per capita availability of other major food grains, e.g., pulses and oilseeds.
- High fertility, in itself an obstacle to development, is also a major factor in sustained high mortality. Several studies in India and elsewhere have indicated that infant mortality rates are inversely related to the length of the birth interval, that is, the likelihood of a child surviving his first year of life is substantially greater if the interval since the previous birth increases, especially beyond two years.
- The pace of progress against literacy has been slow due in considerable measure to population growth. In 1981 only 44

percent of the population age ten and above was literate; for females the figure was 29 percent. School enrollment also presents a picture of under-investment in human resources: while most boys from 6 to 11 years of age are enrolled in schools, little more than half of those aged 11 to 14 remain in school. For girls the comparable figures are 66 percent for ages 6 to 11 and 28 percent for those aged 11 to 14.

Indian statistics vividly depict differences in the status of women and men. Rates of female mortality below 35 years of age, literacy rates, skills distribution and wage differentials show women in every case to be less well off than men. These data are only a surface reflection of deep seated cultural and social traditions which applied over the centuries have placed women in a disadvantaged position.

At work to change this situation is a political tradition aimed at improving women's status. In the evolution of ideas in the women's movement, a shift in the last decade from a focus on women within the household as mothers and targets of social services to producers and sources of family income has been the major change. The Sixth Five Year Development Plan specifically recognizes the productive roles and responsibilities of both men and women (within as well as outside the household) and aims to mobilize resources which enable people to increase their productivity and incomes to meet basic needs for social goods and services. The interrelation between economic conditions of women and the achievement of other social ends such as improved health, better nutrition, or increased education is clearly recognized and women are seen as vital participants in economic development.

#### 4. Cross-Cutting Themes

##### Research and Technology

Several broad issues cut across the development spectrum (and hence USAID's portfolio) in India. Foremost among them is the importance of science and technology in sustaining technological innovation in agriculture and industry. India has achieved some notable successes in agriculture. The adaptation and rapid dissemination of high-yielding cereal varieties (HYV's) was the key factor in India's attainment of self-sufficiency in food grains. However, research has made little headway in exploring improvements in such key sectors as energy, health and population. Technologies remain largely imported and capital-intensive.

Research and technology development is affected by a wide range of policies, including those specifically directed at science and technology issues as well as those designed to affect development more broadly. Policy emphases include self-reliance for science and technology; more effective links among policy organization and application of technology to meet economic and social objectives; more attractive incentives for young scientific talent; and attention to higher payoff opportunities for technological breakthroughs.

With respect to the impact of overall policies, there is a sharp difference between the experience of the agricultural and industrial sectors. In agriculture, the shift toward a more producer-oriented pricing policy which accompanied the introduction of HYVs in the mid-1960's, along with increasing reliance on the private sector for input supplies, has encouraged the rapid adoption of HYVs and improved inputs. This has in turn generated further support for R&D effort in both the public and private sector. Thus the policy environment has provided strong reinforcement for development-oriented research and technology development in agriculture.

In industry, on the other hand, the emphasis on production controls and administered prices has reduced competitive pressures and fostered an environment within which there is little incentive to develop and adopt productivity-increasing technologies. The trend of the past three years toward liberalization of industrial and trade policies and the reduction of price distortions should gradually increase the pressures for more aggressive R&D efforts, but this will be a slow process. Nevertheless, overall policies affecting the industrial sector are clearly moving in the right direction.

Community Participation

There are limits on what government and donors can accomplish in India. Notwithstanding the government's preeminent role in many aspects of the economy, development in India will, as much as anywhere else in the world, depend upon the choices of individual peasants, small communities and private entrepreneurs both large and small. There has been too little effort by both government and donor agencies to mobilize rural initiative by stimulating and promoting community organization, private rural enterprise, the cooperative sector and other promising non-governmental organizations. There is, in addition, little understanding of an appropriate relationship between state and communities that would foster development at a local level.

The "top-down" planning syndrome haunts the implementation of effective development programs in India because it fails to take adequately into account the diversity and complexity of Indian society, an underlying theme of this CDSS. Community organization, participation and ownership should carry equal weight with resources in a partnership which emphasizes either local or national development. Many in India understand this connection; however, Indian planning has had little success in capturing meaningful community participation in its programs.

### III. THE STRATEGY

The strategic objectives of the A.I.D. Mission in India are to fashion its program and influence toward:

- improvement in the rural poor sector, primarily through rapid agricultural modernization.
- definitive and near-term deceleration in population growth
- relevant application of science and technology to development initiative; and
- emphasis on the responsibility of individuals, localities and the market for the resolution of poverty.

The strategy includes sectoral programs in agriculture, resource management, health and population, and research and technology development. It incorporates a major initiative in science and technology and it contemplates a continuing challenge to the Agency and Mission to consider institutional and procedural adjustments in support of the strategy.

#### A. Agricultural Modernization

Agricultural modernization is the cornerstone of India's strategy for rapid economic growth and the relief of poverty. The foundation and objectives of the current USAID strategy for agriculture were established in the 1982 CDSS (written in January 1980) and reaffirmed in subsequent years. Although the objectives of the strategy remain essentially unchanged, the strategy itself has undergone a transformation from a broadly-based program directed to the problems of agricultural modernization to one which is considerably more concentrated.

USAID's early program included or projected activities in no less than seven discrete agricultural subsectors and was featured by large-scale resource transfers in fertilizer promotion, agricultural credit and rural electrification. Also included in the strategy were agricultural research and education, irrigation, rural works, and a program for cooperatives. Technology transfer, then and now a complex issue in India, was not a major part of the strategy.

In 1981 significant changes in the program took place which fundamentally effected its future course. Driven by a development approach which emphasized technology transfer and institution building, the pure resource transfer components of the existing AID program were either terminated or phased-out. Left were two clusters of concentration: agricultural research and resource management. Deprived of its primary "wedge" in agriculture (the deobligated fertilizer and credit projects), USAID forfeited its opportunity to interact on broader agricultural issues such as crops, farming systems, rural financial markets, agricultural inputs and, to a lesser extent, farmer organization.

Accepting the shift from resource transfer (and also recognizing our institutional investment in research and resource management, the limitations on USAID staff and our rather modest posture in the GOI budget), the USAID nevertheless believes it important to reassert a basic programmatic concern with the problems of agricultural modernization and to seek opportunities to broaden the portfolio commitment to agriculture. This does not imply, however, that we will open a new sector during the CDSS period; rather, our program in agriculture will consist of the following elements:

- identification of a few important areas in which analysis and research might contribute to a better understanding of the constraints and consequences associated with rapid agricultural modernization. The Mission has tentatively identified three areas: agricultural production in eastern India, the growth and diversification of commercial agriculture in Maharashtra, and a look at the effects of different rates and types of agricultural growth for distribution, consumption and nutrition in rainfed areas.
- an emphasis on farming systems in the design of core programs (i.e., the introduction of command area development-type activities to Rajasthan Medium Irrigation, the inclusion of agro-forestry within the scope of the proposed National Social Forestry and Forestry Research, Education and Training projects, and the linkage of on-farm work and extension with agricultural research.)
- the organization of core programs in more defined and discrete geographical areas to permit better understanding of agroclimatic conditions and closer association with farm level institutions (e.g., a "composite" project called tentatively Chhattisgarh Activities targetted at a loose confederation of six eastern districts in Madhya Pradesh would include agricultural research, minor irrigation, social forestry and, in a new departure for USAID, agricultural and district planning. This approach will squarely face up to structural issues and permit a broader institutional association with which to tackle difficult development issues, such as community management).
- a closer integration with the Mission's portfolio of food aid programs including the PL 480 Title II NDDB/CLUSA oilseeds project and the introduction of a Title III activity based on input/output storage and marketing in Bihar. This latter project would contain strong private sector and institution-building components by strengthening the role of Bihar's cooperative movement (emphasizing the shift of input distribution activities from the public to the private sector) in procurement, storage and marketing.

### Agricultural Research

Breakthroughs in research on crop varieties over the past two decades have dramatised the potentials for yield increases and cost reductions; emphasized

the need for experimentation and other essentials of technological change in agriculture; and raised the potential of the research establishment to produce. Total expenditure on agricultural research rose almost five times from 1950 to 1980, and the size of expenditure as a proportion of agricultural production increased nearly three and a half times in that period. More important, the approach to research has been systematized and the basic outline of the coordinated research schemes is correct. Two key problems now are how to expand vigorously into those regions such as eastern India which have been historically weak in applying new technologies or lack the resources for providing financial support to agriculture; and how to increase rapidly the technical manpower supply so that it can encompass the full range of disciplines needed for a complete attack on production problems.

There are two particularly outstanding successes which illustrate the potential for an effective Indo-U.S. technological relationship in agriculture. The most important was the development of the high-yield varieties which formed the basis for the green revolution and the growth of agricultural research institutions. The major American effort to introduce in India a system of agricultural universities patterned after American land grant institutions was a key element of this program. The effort was attuned to the institutional needs for agricultural modernization, and on balance was one of the most critical inputs of an earlier period in the Indo-U.S. development relationship.

The immediate potential for USAID to support accelerated agricultural growth is the product of this past investment. USAID already has an established

program with the Indian Council of Agricultural Research (ICAR). During the CDSS period we will lend focus to that program by associating with selected components of the All India Coordinated Research Program, expanding the supply of technical manpower by a reassociation with the Indian agricultural universities and engaging selected state governments in programs of technical collaboration. The first field effort will focus on eastern Madhya Pradesh.

### Irrigation

The earlier phase-out of credit and rural electrification had the effect of shifting USAID's emphasis in irrigation from groundwater to surface (canal) irrigation. Both of these earlier interventions were aimed directly at groundwater development -- credit to finance wells and electricity to energize them. There were, nevertheless, other pressures from the GOI itself which encouraged a shift to surface irrigation, a priority subsector which has a large requirement for capital resources and, contrary to groundwater which has been predominantly developed in the private sector, is a public sector activity.

An important underlying assumption of the surface irrigation strategy is that high efficiency gains can be realized on existing and new systems primarily through improved system water management. This strategy is clearly articulated in the FY 1985 CDSS in terms of the four key AID policy objectives. The elements of the strategy are as follows: "improvements in water management through state level policy reforms, mobilization of the

creative energies of farmers and private sector suppliers of irrigation expertise and services, adoption of better technical solutions to the problems of water supply and use in surface irrigation systems, and a reorientation of the irrigation establishment toward more systematic management approaches to problems".

The strategy finds its expression in the current portfolio of five irrigation projects located in four Indian states. These irrigation projects are supported by an Irrigation Management and Training project which is designed to develop the Indian capacity to improve the general technical level of Irrigation and Agriculture Department staff and farmers in irrigation and water management; in addition the project supports action research on live systems to develop and test solutions aimed at improving canal irrigation systems performance. Five Water and Land Management Institutes (WALMI's) will be improved or established under the project.

The USAID's irrigation strategy described above was approved, in the FY 1986 CDSS, "subject to an in-depth strategy review scheduled for late CY 1984". Although the strategy review team's final report has not been completed, the field review of the USAID irrigation portfolio took place as scheduled. A two-day seminar was held in New Delhi prior to the team's departure in late December to discuss the team's preliminary findings. The team's major findings are described briefly in the following single-spaced paragraphs:

Investment in irrigation appears to be both economically appropriate and advantageous. Rates of return to investment in public surface irrigation projects, however, are low. Rates of return to groundwater development are higher, as may be the potential irrigable area.

Much can be done to increase returns to irrigation; design and management are key elements in obtaining maximum benefits from present and future surface irrigation investments. Systems management should be reemphasized and be put on a more even footing with farm management. Better systems management can be enhanced by improvements in design standards and development of professional staff who are adequately trained at all levels of the system. Many systems are scarcely manageable by modern standards and even the better systems suffer from limitations inherent in the original designs. For many systems a major engineering effort is needed to provide the physical facilities required for more efficient management and a major organizational effort is required to train and motivate staff.

Improving the distribution of water among farmers has two major requirements below the outlet: the introduction of a reliable, disciplined and equitable system of water allocation among all users so that each farmer at an outlet has the opportunity to receive his fair share of the water available, and the construction of water courses from outlet to farm to enable each farmer to receive his allocated share. To facilitate cooperation among farmers for water allocation below the outlet, the canal network must be able to provide controlled and reliable water supplies to each outlet. In addition, water distribution practices must be clearly established, recognizing the farmers' right to a share of water. On balance, the management requirements of private groundwater schemes are less onerous than public surface irrigation systems and individual or group responsibility is more assured.

The USAID will explore fully the implications of the strategy review; a final report will be submitted to AID early in February 1985. This analysis should lead to the preparation by the Mission of an amended Irrigation Strategy Statement, if required, by the end of CY 1985. The USAID, nevertheless, proposes the following approach to irrigation:

- confirmation of the two medium irrigation projects in Rajasthan and Maharashtra as the centerpiece of USAID's system management efforts; upon expiration of the PACDs for these two projects, selection of several individual subprojects from each for inclusion in new follow-on projects. The objective of the new activities would be to bring the selected subprojects to full physical completion and to full effective operation. The strategy includes a major effort at training irrigation functionaries and

introducing improved techniques above the outlet; introduction of operation/maintenance technology (i.e., staying with projects beyond construction); addition of below-the-outlet agricultural components and a longer term commitment to community participation in the ownership and operation of below the outlet works. A follow-on to both Rajasthan and Maharashtra MIPs will be proposed.

- strengthening the minor irrigation portfolio (currently including the Madhya Pradesh, Maharashtra and Himachal Pradesh projects) with a major emphasis on design criteria and rates of return at the outset, an expansion of definition to include conjunctive groundwater development and a full-scale commitment to below the outlet community and farm systems development. Our premise is that the new activity proposed for the CDSS period will be in the Chhattisgarh region of eastern Madhya Pradesh. A follow-on in Himachal Pradesh is also planned.
- USAID will explore the development of low-cost and institutionally-relevant approaches to groundwater development. While we do not now anticipate a major new effort in groundwater, we believe it important to take steps in the CDSS period to establish the base for a future generation of irrigation activity in India. Any strategy aimed at rapid agricultural modernization and India's rural poor sector must clearly engage in this important slice of the irrigation sector.
- continuation of the Irrigation Management and Training Project at five WALMI's. No further authorizations are expected.

#### B. Resource Management - Forestry

The basis for USAID's participation in the forestry sector has historically been defined in energy terms. This was an appropriate focus since one of deforestation's most serious side-effects has been to create shortages of fuelwood, fodder, and other forest products which are required for use by the rural poor. This energy rationale is the foundation of two AID-supported social forestry projects whose primary objectives are to grow trees to meet these needs.

Although the widespread concern for rural energy shortages remains valid, the Mission believes that it is important to link its present strategy with a broader range of issues related to rural poverty -- low productivity and low incomes. This linkage is reinforced by the essentially dual motivation of the rural population to acquire forest products to meet energy requirements and to supplement incomes by the sale of these products in the increasingly lucrative forestry product market.

The forces which have created these favorable market conditions have, to some extent, undercut social forestry programs which emphasize trees as community assets, the benefits of which are to be shared by all members of the community including marginal farmers and the landless. USAID's current portfolio in social forestry consists of two state-level projects (in Madhya Pradesh and Maharashtra) which seek to ameliorate the adverse effects of the market on these disadvantaged groups by emphasizing collaborative efforts between forest extension workers and local panchayats to encourage the establishment and management of small forest plantations on panchayat-managed revenue wastelands.

It is nevertheless important to recognize that large and medium-sized farmers have not been the only ones to respond to these market opportunities; small and marginal farm households and landless households have also entered the market obtaining their supplies primarily by poaching on reserved and protected forest areas. It is our view that these natural market instincts should be folded into and broaden the current energy focus of the USAID forestry strategy. In this strategy social forestry, the introduction and management of woody plants (i.e. trees) as crops, becomes another important way to promote rural growth.

During the CDSS period, the Mission plans to expand its reach to the national level through participation in the multi-donor National Social Forestry project. This project will incorporate a variety of social forestry models (e.g., panchayat woodlot, farm forestry and tree tenure) for testing and adoption during the period of the Seventh Five Year Plan. Policy interaction and institutional development strategies will also be pursued in the National Social Forestry project which will include the establishment of a "central unit" to develop national forestry policy, establish relationships with state governments and programs, and develop and test improved social forestry monitoring and evaluation systems.

Social forestry's relatively recent introduction into the Indian forestry environment was unaccompanied by a secure body of research and proven technology. While investments in recent years in social forestry have multiplied little has been done to shore-up the thin scientific foundation upon which these investments rest. USAID will take the first step to redress this imbalance in its proposed Forestry Research, Education, and Training (FRET) project. FRET will be aimed at building state-level research, education and training capacities in the State Agricultural Universities.

National Social Forestry and Forestry Research, Education, and Training are the two major initiatives which will shape the USAID strategy in forestry through the end of the decade. While it is not clear at this time whether or when the existing AID financed state social forestry projects will be folded into the national program, USAID will consider follow-on projects that

incorporate many of those elements which are found in the National Social Forestry project. USAID also intends to include a social forestry component in its proposed Chhattisgarh Development project as described above.

C. Population, Health, and Nutrition

During last year's program review, the Mission promised to include in the FY 1987 CDSS an expanded statement of the Mission's health strategy. USAID assessments confirm the interrelated nature of high fertility, continuing high rates of infant and child mortality, and the persistence of poverty in India. Accordingly, the proposed strategy recognizes the complementarity of programs in family planning, health, and nutrition. Fertility reduction and the reduction of child mortality are at the heart of this strategy.

Fertility Reduction

The Sixth Five Year Plan adopts as a target a net reproduction rate (NRR) of one for the entire country by 1995. The achievement of this target will require more than a doubling of contraceptive use from prevailing rates of 26 percent to 60 percent. The GOI recognizes that this will only be achieved by rapid expansion in the availability of temporary, reversible methods and effective promotion of information and motivation for their use, primarily among younger couples.

Numerous programs and external constraints stand in the way of achieving this ambitious goal. Program constraints include insufficient planning of

programmatic inputs and resources required to achieve these objectives; management limitations at all levels of the program; heavy reliance on sterilization; only partial staffing of the rural health infrastructure; poor quality of training and supervision of rural family planning workers; problems of contraceptive manufacture and distribution as well as an incompletely developed commercial marketing system; and limited use of operations research and evaluation at state and national levels.

USAID's strategy for fertility reduction developed over the past five years remains basically unchanged. It contains four basic objectives:

- delay first pregnancy,
- lengthen intervals between births,
- encourage desire for small families,
- reduce child mortality and support policy dialogues on other factors that influence fertility.

Bilateral efforts in population and family planning are being carried out primarily through the existing Integrated Rural Health and Population (IRHP), Private Voluntary Agencies for Health (PVOH), and Family Planning Communications and Marketing Projects. The IRHP project is expanding and improving the government's rural family planning and health services in parts of five states. U.S. resources are being used for improvement in training, management and communications systems for field delivery of basic services with a component for operations research on ways to improve delivery of family planning services and supplies. The PVOH project has similar objectives but channels resources through private sector organizations.

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The Family Planning Communications and Marketing (FPCM) Project, the centerpiece of the USAID strategy, is a broadly based family planning effort which seeks to strengthen the demand for conventional contraception through private marketing channels; increase private sector production of contraceptives; test new product related marketing strategies; develop improved communications efforts in support of the small family norm; and support operations research on community based distribution of contraceptive supplies. The project stresses application of private sector management resources to improvement and expansion of several elements of the GOI public sector fertility reduction programs.

The FPCM project has established the basis for fundamental policy discussions not found in most other USAID projects. The recent establishment of the autonomous Contraceptive Marketing Organization (CMO) is the explicit result of a dialogue on the appropriate role of the public and private sectors in contraceptive marketing.

Early in the CDSS planning period USAID will have had enough experience with the Family Planning Communications Marketing project to determine which elements of the project should be expanded or continued. USAID now contemplates a three year extension to the project with additional funding required.

Policy interaction is also planned through a series of presentations based on computer simulations of population dynamics and demographic-economic relations. New, more sophisticated models of these relationships are being

developed under an AID/W centrally-funded contract. The aim is to use these models to educate policy makers, among whom there is a high degree of turnover, as to the social and economic implications of demographic trends and the comparative effects and costs of various strategic options available for fertility control. Other joint studies will be conducted to explore the role of incentives in family planning programs.

One of the components originally included (but subsequently dropped) in the Family Planning Communications and Marketing project was support for a program in contraceptive development in certain non-controversial areas of research that would contribute to the adoption of more appropriate fertility regulation methods. The proposed research areas were to encompass the development through newly emerging immunologic techniques of contraceptive vaccines directed against either sperm or non-fertilized eggs.

Three short term studies in reproduction immunology conducted under the Indo-U.S. Science and Technology Initiative (STI) suggest that the reintroduction of this component into the bilateral AID program in FY 1985 is now appropriate. Once the agreement is reached between the GOI and AID on support for this activity, bilateral committees will be responsible for the planning and scientific oversight of the program. Should it be determined by the GOI and USAID after two years of experience with this activity that support for reproductive immunology should continue a second follow on project will be developed in FY 1988.

Mortality Reduction

The FY 1983 CDSS described in detail the GOI's model health plan representing its strategy for delivering health care to all by the year 2000. Although ambitious, the plan recognizes many key elements necessary to address high mortality in rural areas, particularly among children. These include the expansion of health care facilities, more emphasis on preventive aspects of health care, and transfer of health knowledge through increased community involvement in the primary health care system.

The USAID, through its Integrated Rural Health and Population Project (IRHP), has endorsed these objectives by supporting infrastructure expansion to increase rural coverage, manpower development, and service improvement in selected districts of five Indian states. These activities include the construction or renovation of primary health care centers, training of female health workers, and the support of operations and communications needs assessments to explore health system management issues. The Integrated Child Development Service (ICDS) project seeks to expand and improve the government's related program through growth monitoring, targetted food supplementation, better training and supervision of nutrition workers, intensive nutrition education and the establishment of a management information system. The project also has a special research component which will independently investigate the ante-natal factors leading to low-birth weight and test interventions to increase birth weight. USAID is also financing a Private Voluntary Organization for Health (PVOH) project to channel resource to PVO's which have demonstrated an interest and capability to address key health problems.

Although the objectives of the USAID strategy in health remain unchanged, the strategy itself has been refined to focus on several specific health problems among infants and children. This process will be most immediately reflected in a proposed extension of the current IRHP project, the design of a Biomedical Support project, and the preparation of groundwork for an IRHP follow-on in FY 1987.

USAID supported studies indicate that 50 percent - 60 percent of all child deaths stem from a small number of causes and inter-related conditions. The preponderant causes of child mortality (0 - 5 age group) are diarrheal diseases and immunizable diseases such as tetanus and measles whose impact is intensified by low birth weight, poor nutrition and frequent, closely-spaced childbearing. The majority of this mortality is rural.

Based upon this analysis, USAID will assist the GOI and Indian private institutions in developing, expanding and improving the quality of service programs which include high impact interventions such as ORT, tetanus toxoid, and measles and other child immunizations, family planning spacing methods, and nutritional improvements, which have the highest potential to contribute to the reduction of the infant mortality rate to 60 and child mortality (age 1-4) to ten by the year 2000. This strategy will focus not only on the small number of interventions which address the mortality problems of greatest epidemiological and social importance, but will also embrace support for strengthening key facilitating systems, without which, the selected intervention programs will have limited reach and impact.

USAID has provided major support for completing the government's planned rural health and nutrition infrastructure in five project states. In the future, USAID plans to continue working in only two, or at most three of these states, as managing five state projects -- in reality five separate projects -- does not permit adequate, in-depth attention to the spectrum of technical and managerial needs with current USAID staffing.

With the reduction in the number of states, there will be an expansion of a small number of key intervention programs beyond the current two or three pilot districts per state to state-wide, mass scale implementation serving a total population of nearly 100 million. In the present IRHP project districts, oral rehydration and measles vaccine programs are already being introduced as innovative activities. Within the one or two year IRHP extension now contemplated, programs for oral rehydration, measles vaccination, and expanded spacing family planning will be phased into a state-wide scale. A major vehicle for effective planning, implementation and evaluation of the state-wide programs will be mission support for private sector marketing technology to create and expand demand for these intervention programs, and resident technical assistance.

By moving to state-wide implementation of select programs, economies of scale will also enter, particularly in developing of marketing and media strategies to create demand and produce behavioral change. However, USAID will continue its intensive involvement in selected districts of project states, where large-scale trials of various innovative or accelerated interventions and delivery system improvements are ongoing. Capitalizing on the more complete infrastructure resulting from construction and manpower development within

IRHP districts, innovative activities will continue to focus on the limited introduction of pilot community-based training for female health workers and improvement of their status, improvement of management information system (including introduction of computerization), improved management and supervision, and expanded coverage of mothers and children with comprehensive mortality-reducing interventions.

In ICDS project districts, expansion and improvement of training, food supplementation, growth monitoring and nutrition education, and management information systems coupled with intensified efforts at improving immunization and oral rehydration, will continue.

The PVOH project, although involved in some current ICDS project states, is not limited to them. This project will continue support for private sector projects on a relatively small scale, reinforcing innovative approaches to key mortality/fertility reduction services, the results of which can strengthen the larger scale government efforts.

The ultimate goal of the intensive IRHP, ICDS, and PVOH trial area activities is to develop approaches and strategies which could lead to pragmatic program implementation approaches amenable to state-wide expansion. The intensive district area programs will be used for development of methods and materials for field testing and revision prior to wide-spread dissemination and use in state-wide intervention programs.

Over the long term, the Mission will support further investigation and development of promising biomedical technologies of relevance to priority

morbidity and mortality problems. This may include technical assistance and support for private sector production of measles vaccine or other commodities, such as ORS, in India; development and field testing of new vaccines, support for strengthening of the epidemiological training and monitoring system and its laboratory base, and support for epidemiological studies to monitor morbidity and mortality. Research on determinants of low birth weight is planned, and possible preventive interventions may be tested.

D. Research and Technology Development

Science's contribution to development has been demonstrated no more amply than in India where the seed-fertilizer revolution, accompanied by technological advances in irrigation and farm management, has brought substantial gains in foodgrains production in just twenty years. These and other advances in Indian science and technology development reflect a growing scientific and institutional maturity that is able to accommodate sophisticated research in a variety of disciplines.

AID's involvement in research and technology development in India has its roots in an earlier period (pre-1972) when it supported the establishment of eight state agricultural universities; the expansion of the All-India Institute of Medical Sciences (AIIMS); and the establishment of the Kanpur Indian Institute of Technology. During the period, AID also provided research-related assistance to other science laboratories and institutes in such areas as forestry, home sciences, irrigation, and veterinary, medical, and nuclear sciences.

The character of the Indo-U.S. science "relationship" entered a transition period in the 1970's. The establishment of the Indo-U.S. Science and Technology Subcommittee in 1975 marked a shift from what was largely a benefit-client relationship to one which explicitly recognized the mutual contributions made to the attainment of important research objectives. In 1980, an Agriculture Subcommittee was established to pursue similar objectives in agriculture.

This link was formally enhanced in 1983 with the establishment of the Science and Technology Initiative (STI) which brings together Indian and U.S. scientists to do collaborative research. A two-year effort, the STI focuses on areas of direct relevance to development, among them such topics as biological nitrogen fixation, nitrogen fertilizer efficiency, fuelwood production, and epidemiology. Several U.S. Government agencies, including AID participated in the funding and implementation of the individual research areas.

At the encouragement of the Administrator, an AID Research and Technology Development (R&TD) team visited India in 1983 to explore ways in which similar research efforts could be carried out under AID's regular bilateral program. This team recommended a ten year strategy of development research which would include an emphasis on sectorally-oriented research as well as more basic "innovative" research of a generic nature, the latter a major departure for an AID bilateral program.

AID's current generation of entirely research-based projects predate the recommendations of the R&TD team and the STI. The first is the FY 1978

Technologies for the Rural Poor project which supports seven small joint research activities in solar energy, mini-hydro development, nutritional blindness, and malaria control. All of these sub-projects were developed under the auspices of the S&T Subcommittee. The FY 1982 Alternative Energy Resources Development project supports collaborative research and professional exchange in coal technologies, energy conservation, and biomass production and conversion. The Agriculture Research project, described earlier, is the third major effort devoted entirely to developmentally-oriented research. Also underway is the FY 1983 Integrated Child Development Services project which includes a component for research on the determinants of low birth weight.

The relevant application of science and technology to development initiatives will continue to be a key strategic objective cutting across the overall USAID program in India; the R&TD team recommendations will be the framework within which this objective is pursued. This said, there are difficulties associated with a strategy which emphasizes collaborative research (particularly basic research) in India and which call into question AID's ability to sponsor collaborative research in a bilateral program. Among these difficulties is the continuing GOI reluctance to use bilateral assistance funds on U.S.-based costs. Barring a fundamental change in this position (or the development of a feasible funding alternative), it is difficult to see how funding for collaborative research can be maintained.

AID has taken some important steps to facilitate the science initiative including the creation of an Asia Bureau special regional account to fund the

costs of JCC scientists assigned to India and Mission-based support. This mechanism excludes (with the exception of STI) the U.S.-based costs of collaborative research, a fundamental component of the initiative.

A second external factor which inhibits AID's ability to support collaborative research in its bilateral program is the reluctance of the U.S. and Indian science establishments to conduct this research in the traditional bilateral project mode. Related to this concern is the difficulty USAID faces in picking research topics. These problems have been overcome to a great extent by the STI program which facilitates professional and peer exchange and limits USAID procedural intervention.

Other constraints for a comprehensive R&TD strategy are particular to AID itself. A shortage of funds in the relevant functional account, in part, prevented the USAID from pursuing some elements of its science and technology strategy in FY 85. While this is not an immediate issue for our program, it is important to understand that collaborative research, particularly research that expects results within a short year timeframe, needs a sustained, reliable source of funds if it is to be conducted effectively. The bilateral funding mode may never be able to provide this security. Finally, AID's procurement regulations impose another consideration with respect to the consistent acquisition of scientists for projects financed by AID.

Where, then, can the USAID (i.e. the bilateral program) be most effective in the area of research and technology development? Our (i.e. AID's) experience

with previous research-based projects in India indicates that, in general, AID can be most effective by focusing on research policy, management and institutional questions rather than on the research itself. By concentrating on the "systems" which conduct research we believe we may have a better opportunity to influence the direction research will take. Notwithstanding India's impressive science and technology establishment, there are important institutional weaknesses on which AID's traditional strengths can be targeted.

Nevertheless, USAID proposes a two-track approach to science, research and technology development during the CDSS period. The first track would graft the successful experience acquired by the STI on-to the mechanism developed for the support of various Mission-based costs (including partially STI). Under this proposal, USAID would agree to assume fully under the mechanism those elements of the STI which have a development orientation when its original two-year mandate expires in 1985; in support, the Mission would expect a best-efforts approach by AID/W to restore that portion of a given year's OYB diverted to the mechanism for STI. We believe that this should be capped at \$1.0 million per year. This would constitute the essence of USAID's approach to collaborative research.

Secondly, the USAID will continue to encourage a strategy which emphasizes institutional development, science policy and research management. Five new projects will form the core of this systems-oriented strategy. They include the Fund for Technology Development (FY 1985), a project directed at the development of commercial R&D in the private sector; Biomedical Research

Support (FY 1985) to strengthen the epidemiological capacities of the states and to introduce new laboratory technologies to develop rapid diagnostic techniques; Science and Technology Development (FY 1986) to support the introduction of biotechnologies in health and agricultural development research and to strengthen India's communications and extension networks to transfer to the rural population the benefits of new technologies in health, family planning and agriculture; and Forestry Education Research, Education and Training (FY 1986) to create an institutional capacity to generate appropriate technologies for use by forest managers and extension specialists. The FY 1988 Chhattisgarh Development project will also contain a component for agricultural research in eastern Madhya Pradesh. This latter project is a major initiative and perhaps best symbolizes what we mean by an institutional and policy approach. Finally, the Mission will also include research in this second track where the subjects seem clear-cut and where Indian and U.S. scientists indicate they can and will work under the AID rubric. An excellent example is the Reproductive Immunology project which encompasses the development through newly emerging immunologic techniques of contraceptive vaccines directed against either sperm or non-fertilized eggs.

Several follow-ons to current or proposed projects are also contemplated for funding in the CDSS period. These include Agricultural Research (with the addition of a higher education component), Reproductive Immunology and Technologies for the Rural Poor.

E. Mobilization for Development

The Mission has identified community organization and participation in the rural sector as fundamentally important and included components for it in all of its irrigation and forestry activities. Notwithstanding these initiatives (but recognizing the nascent status of most of our community based activities; the very real limitations inherent on any entry to the communities through government departments and agencies; and the absence of experienced USAID staff in community management) we have made only limited progress in this area. During the next year the Mission will conclude an evaluation of the Maharashtra Social Forestry project, further its case study work in Madhya Pradesh and initiate community-based activities in the Maharashtra and Himachal Pradesh minor irrigation projects.

A second area of Mission concern and involvement is Women in Development. The Mission submitted a strategy statement in FY 1984 receiving no AID/W comment to date. In terms of its stated objectives the strategy appears to be on track.

The Mission has also developed with considerable success an important sub-sector portfolio concerned with the privatization of public activity. The Housing Investment Guarantee (HIG) activity with the Housing Finance Development Corporation in Bombay has brought India's first private sector housing finance institution to maturity and the Mission is now discussing the possibility of a far reaching assessment of capital markets development for

housing finance. In a policy sense, the HIG activity has awakened government to the potential for tapping the private capital markets for social investment. The Mission has taken a first step in the capital markets area and is now discussing the possibility of a joint Industrial Finance Corporation IFC/USAID housing finance sector assessment.

Other privatization activities underway include commercial marketing of family planning commodities and advisory services, private sector research and development, and cooperative development in the agricultural marketing and processing sector. Each of these activities are new initiatives in India and take traditionally publicly funded activities and move them into the private domain. While not part of the Mission's mainline strategy this innovative use of HIG and PL 480 in conjunction with Development Assistance funds underlines an important element of the program which perhaps should be brought more clearly center stage.

Finally, small-scale enterprise is another area which was explored by the Mission during the past year; two studies in Maharashtra and Gujarat surfaced fundamental differences between the GOI and USAID over public vs. private approaches to small-scale enterprise development, appearing to obstruct further opportunities for discussion in this area. The Ministry of Finance has urged, however, that USAID alternatively consider cooperative-related activities as a 'non-governmental' opportunity to influence development programs (e.g. cooperative housing, for which the Mission financed a reconnaissance survey earlier in the year; community organization and

participation; the accommodation of shallow tubewells to difficult tenure situations in Eastern India; and input/output storage and distribution). The Mission's experience with NDDB in the oilseeds project has been good and preliminary discussions with the National Cooperative Development Corporation (NCDC), the Indian Farmers Fertilizer Cooperative (IFFCO), the Ministry of Agriculture and Department of Rural Electrification all suggest an important institutional opportunity overlooked in the current strategy. The Mission believes that the HIG and PL 480 programs provide a way of exploring opportunities in these areas, particularly with cooperatives, which represent a non-governmental institutional thrust which could offer real opportunities for our government-to-government assistance program.

IV. RESOURCES

A. Budget

1. Program Funds

USAID's AAPL for FY 1990 is \$100.00 million. While fully aware of the volatility of planning levels in these times of budget stringency we, nevertheless, believe that this level is appropriate for India and AID's stake in its development effort. It is also an absolute minimum for the proposed program. Refer to the attached tables for specific details.

Agriculture will continue to be the centerpiece of the program with over 68 percent of budgeted resources going to this broad sector during the CDSS period. This emphasis is reinforced with the addition of activities which further broaden the irrigation concentration of recent years. The new elements include the agricultural and district planning components of the proposed Chhattisgarh Development project (FY 1987); technical assistance, fertilizer imports, and PL 480 Title III aid imports associated with the input/output storage and marketing program in Bihar (FY 1987); and the higher education linkages to agriculture research in FY 1988.

Irrigation activities receive less emphasis in obligation terms than in previous years reflecting a trend established in earlier planning periods. Sixty-eight percent of our program was in irrigation in FY 1984; this will drop to 31 percent in the period FY 1987-1990. These projections do not

include the medium/minor irrigation components of the Chhattisgarh Development project scheduled for start-up in FY 1987.

Forestry will remain an important claimant for program resources although this is not reflected in out-year budgets. This is primarily because the latter half of the CDSS period will be devoted to the implementation of two existing projects, National Social Forestry and Forestry Research, Education, and Training. A follow-on to National Social Forestry could occur in 1991. Additionally, the forestry component of the Chhattisgarh Development project is not included in these projections.

Obligations for Health, Nutrition, and Family Planning activities are not evenly distributed over the CDSS period. Nevertheless, cumulatively, these will account for 16.5 percent of planned obligations during the period, highlighted by a follow-on to Family Planning Communications and Marketing in FY 1990.

The USAID's program in science, research and technology development is significant and cuts across the portfolio. There will, nevertheless, be several discrete activities in this sector which will be under implementation in FY 1987 having been obligated the previous year or earlier. These include the Fund For Technology Development and Science and Technology Development project. In addition, USAID will continue its commitment to the Science and Technology Initiative funded through the regional mechanism established for certain development activities.

2. P.L. 480

The Mission's food aid programs are fully integrated into its overall development strategy; thus, no separate section for PL 480 appears earlier in this CDSS. PL 480 is, nevertheless, a discrete funding issue and for that reason it is addressed separately here.

The Mission is well aware of worldwide pressures on Title II levels and accepts the principle of eventual phase-out of Title II programs. The recent PL 480 Strategy Team visit produced several alternative approaches to this objective in India. In order to reduce the overall program disruption implied by some of these alternatives, USAID has developed the following transitional food aid strategy for India for the period FY 1985 to FY 1990 and beyond.

Title I was the cornerstone of an earlier food aid strategy in India; this program was designed to support Indian agricultural policy and strategy during a period of serious foodgrain shortages and to buy time until the benefits of the green revolution could be realized. Title I assistance effectively ended in FY 1973 when India was well on its way to achieving this goal. India achieved market self sufficiency in foodgrains in 1984.

There is an underside to the foodgrain success story however. As described earlier in this CDSS, a large proportion of the Indian population continues to live below the poverty line, having serious nutritional consequences for specific groups including infants, small children and pregnant and lactating women. In addition, while agricultural progress has been impressive, this

progress has been selective as to crop and is concentrated in geographical terms such that other crops and regions have been relatively neglected. There is growing official concern for both of these problems.

The Title II program is designed to deal with the first of these problems. However, India continues to progress in addressing these problems and it is now possible to foresee a time when Title II will no longer be required. The most notable progress to date is in the area of school feeding where the GOI and the States have increasingly assumed the financial responsibility for school feeding programs. This has allowed USAID to reduce its support for school feeding by 30 percent during the period 1982 to 1984. We now propose to terminate this program completely by the end of FY 1990.

Assuming budget pressures reach beyond the significant cut suggested above, title II-supported Food for Work programs represent our second priority for phaseout. These programs continue to be important in supplementing rural incomes and improving the rural infrastructure; nevertheless USAID is also prepared to terminate these programs by FY 1990.

Title II-supported ICDS and MCH programs represent the most important and largest component of PL 480 and are the most closely linked to our Development Assistance program. While these are also subject to reduction and eventual phaseout, we are concerned that the timing of this process not undermine critical DA objectives. Accordingly, we propose to maintain Title II-funded ICDS/MCH programs in their entirety through FY 1990 and develop a phaseout plan for the period FY 1991-1999.

The Mission will see the CLUSA/NDDB Oilseeds project through to its expected conclusion in FY 1992.

The phaseout of Title II will represent the transition to a new, more mature food aid development relationship with India. Our proposal to introduce a Title III program takes a leaf from the CLUSA oilseeds experience and is the approach we feel is appropriate for the other of India's major agricultural problems, stagnant production of crops (other than wheat) and areas (other than the northwest). Specifically, we propose to explore the prospects for a major new effort funded with resources generated through a combined DA loan/grant and PL 480 Title III program. This program would possibly include field level agriculture activities such as village level storage facilities and improved distribution for agricultural inputs and outputs; off-grid power facilities for irrigation pumps, and basic agricultural infrastructure in the poorest areas of India. The use of cooperatives to own, manage and/or separate some or all of these facilities will be explored.

### 3. Operating Expenses

USAID's ability to deliver resources and personnel on the program side is directly related to adequate Operating Expense (O.E.) funds. Indeed, in India it is critically important to sustain high caliber technical expertise on the USAID staff. While fortunate to have a rich human resource base in India, the Mission is still 30 percent below Indian national strength and still short of critical U.S. direct hire (i.e., irrigation, R&TD and PD) and JCC (i.e.,

agricultural research and R&TD) staff. Support over the last several years has been excellent but early and firm commitment of adequate OE levels is necessary to sustain implementation momentum.

The Mission has straightlined both USDH and FNDH positions since requirements outstrip our reasonable expectations for additional positions. As mentioned above we are understaffed on the USDH side in agriculture and irrigation and in several important cross-cutting areas such as community management. A comparison of USAID/India staffing with other Asia Missions underlines this point. On the Indian national side, we have 108 approved and classified positions of which only 55 are FNDH. Our requirement, then, is clearly for some 50 FNDH additional positions. We assume we will have to continue to meet this requirement with PSCs.

It is important to state that security requirements are putting increasing strains on OE. The Mission urges that AID/W look at this worldwide structural issue carefully while allocating OE in FY 1987 and beyond.

#### B. Staffing

The proposed strategy for the period FY 1987 - 1990 will necessitate maintaining a level of 25 USDH (FTE) and 6 JCC from FY 1987 onwards and a level of 55 FNDH (FTE) in the same period. The premise upon which these projections is based was established in the FY 1986 CDSS (Page 37) and remains valid. It is also discussed in the preceding section.

The intractable problem suggested by our staffing deficiencies requires innovative and careful thinking over the next year. The Mission has had some success with contracting for engineering review, and the "mechanism" has boosted opportunities for Mission-based support. The Mission has also signed its first important technical assistance contract and the second should be signed by the time the CDSS is reviewed. During the year, we will have to find additional opportunities to program-fund personnel costs.

Secondly, it is absolutely necessary to look at the way in which we do business in India to see whether there are opportunities to sustain (or improve) our development effectiveness with existing or diminishing per-dollar personnel resources through some adjustment in mode. This issue was discussed during last year's CDSS exercise but it remains relevant as we seek ways to economize on staff requirements during the CDSS period.

FY 1987 CDSS - INDIA

TABLE I: PROPOSED FUNDING AND STAFFING, FY 1985 - FY 1990

PROGRAM AREA	Planning Levels (\$ Million and Percent)							
	FY 1985		FY 1986		FY 1987		FY 1988-90	
	\$	%	\$	%	\$	%	\$	%
<b>Agricultural Modernization</b>								
Agriculture - Regional Initiative	-	-	-	-	14.0	15%	51.0	17%
Agricultural Research/Education	4.0	5%	3.0	4%	3.0	3%	52.0	18%
Irrigation Development	29.1	34%	42.0	49%	25.0	27%	95.0	32%
Dev. Support for Title III Program	-	-	-	-	8.0	8%	18.0	6%
Food for Rural Works, Title II <u>a/</u>	(9.6)	9%	(7.0)	7%	(7.0)	7%	(19.0)	7%
Food for Cooperative, Title II <u>a/</u>	(10.9)	10%	(8.9)	9%	(8.9)	9%	(26.7)	11%
PL 480 Title I/III Commodity Support <u>a/</u>	( - )	-	( - )	-	(6.0)	100%	(18.0)	100%
<b>Resource Management</b>								
Natural Resources - Forestry	18.6	22%	29.9	35%	24.5	26%	22.0	7%
<b>Population, Health and Nutrition</b>								
Fertility Reduction	21.0	24%	-	-	1.0	1%	32.0	11%
Mortality Reduction	8.3	10%	2.6	3%	12.5	13%	19.5	7%
Food for Maternal and Child Health, Title II <u>a/</u>	(61.1)	58%	(63.1)	63%	(63.1)	67%	(187.5)	74%
Food for Elementary Education, Title II <u>a/</u>	(23.4)	22%	(21.0)	21%	(16.0)	17%	(19.8)	8%
<b>Research and Technology Dev.</b>								
Private Investment Promotion	4.0	5%	3.0	4%	4.0	4%	-	-
Science & Technology Dev.	-	-	4.5	5%	3.0	3%	6.5	2%
<b>TOTAL DEVELOPMENT ASSISTANCE:</b>								
(Loans)	85.0	100%	85.0	100%	95.0	100%	296.0	100%
(Grants)	62.1	73%	59.6	70%	68.4	72%	222.6	75%
Total PL 480, Title II <u>a/</u>	22.9	27%	25.4	30%	26.6	28%	73.4	25%
Total PL 480, Title I/III <u>a/</u>	(105.0)	-	(100.0)	-	(95.0)	-	(253.0)	-
Housing Guarantees (HIG)	( - )	-	( - )	-	(6.0)	-	(18.0)	-
	10.0	-	20.0	-	-	-	20.0	-

STAFFING (workyears)	FY 1985	FY 1986	FY 1987	FY 1988	FY 1989	FY 1990
USDH	25	25	25	25	25	25
US-JCC	3.7	6	6	6	6	6
US-IDI	-	-	-	-	-	-
FNDH	55	55	55	55	55	55

a/ PL 480 Title II and title I/III amounts are non-additive; percentages for PL 480 programs apply to PL 480 only.

FY 1987 CDSS - INDIA

TABLE II: LIST OF PROPOSED NEW PROJECTS, FY 1985 - FY 1990

<u>New Projects</u>	<u>Proposed Funding Level - \$ Million</u>			
	<u>LOP</u>	<u>Grant</u>	<u>Loan</u>	<u>Obligation Span</u>
<u>FY 1985</u>				
Biomedical Research	9.0	4.4	4.6	FY 85-87
Fund for Tech. Dev.	11.0	1.0	10.0	FY 85-87
Nat'l Soc. Forestry	75.0	10.0	65.0	FY 85-88
Reproduc. Immunology	4.0	4.0	-	FY 85-89
Total:	99.0	19.4	79.6	
<u>FY 1986</u>				
Forestry Res., Ed. & Trg.	20.0	8.0	12.0	FY 86-88
S&T Dev.	10.0	10.0	-	FY 86-89
Tech. for Rural Poor-II	4.0	4.0	-	FY 86-89
Rajasthan Ag. & Irr. Dev.	32.0	2.0	30.0	FY 86-88
Total:	66.0	24.0	42.0	
<u>FY 1987</u>				
Dev. Support for Title III Program	32.0	2.0	30.0	FY 87-91
Chhattisgarh Dev.	65.0	10.0	55.0	FY 87-90
IRHP-II	30.0	10.0	20.0	FY 87-90
Total:	127.0	22.0	105.0	
<u>FY 1988</u>				
Ag. Research/Higher Ag. Educ.	60.0	10.0	50.0	FY 88-91
Total:	60.0	10.0	50.0	
<u>FY 1989</u>				
Maharashtra Minor-II	40.0	5.0	35.0	FY 89-91
Hill Areas-II	34.0	4.0	30.0	FY 89-90
Fam. Planning C&M - II	30.0	10.0	20.0	FY 89-90
Total:	104.0	19.0	85.0	
<u>FY 1985-1990</u>				
Total:	456.0	94.4	361.6	
	=====			
		(21%)	(79%)	

V. Workplan

A. PID and PP Preparation for FY 1985-1986

USAID plans to submit three Project Papers (PP) to AID/W for approval in FY 1985. These include National Social Forestry, Fund for Technology Development and Biomedical Research Support. A fourth PP, Reproductive Immunology will be approved in the Mission.

Three PIDs (for FY 1986 projects) will also be prepared in FY 1985: Rajasthan Agriculture and Irrigation Development, Science and Technology Development and Technologies for the Rural Poor II. A fourth PID for National Social Forestry is now under preparation and will be submitted to AID/W in February 1985.

The USAID's design load in FY 1986 will also be substantial with the scheduled preparation of five PPs and three PIDs. The schedule for PP and PID development during FY 1985 and FY 1986 is shown in the following table:

TABLE III: PID AND PP SCHEDULE, FY 1985 - 1986 (By Quarter)

	FY 1985			FY 1986			
	II	III	IV	I	II	III	IV
<u>FY 1985 - FY 1986 PPs</u>							
Biomedical Research							
Fund for Tech. Dev.							
National Social Forestry							
Reproductive Immunology							
Forestry Research, Ed. & Trg.							
Science & Technology Dev.							
Tech. for Rural Poor - II							
Rajasthan Ag. & Irr. Dev.							

FY 1986 PIDs/PPs

PL 480 Title I/III & Dev. Support for Title III							
Chhattisgarh Dev.							
IRHP - II							

B. Benchmarks for CY 1985

The Mission anticipates the following actions and completions during the remainder of CY 1985:

Agricultural Modernization

Agricultural Research

- Workplans for first two subprojects, soybean processing and utilization and post-harvest technology for fruits and vegetables, approved.
- Complete design of three animal science subprojects and approval of workplans.
- Undertake preparatory work with ICAR to initiate sub-project six, integrated plant nutrient management.

- In depth review of program to identify areas for accelerating implementation.
- RFP for management services contract issued and awarded.
- Establish new relationships with Ministry of Agriculture for minor irrigation.

#### Irrigation

- Redesign Rajasthan Medium Irrigation Project.
- Put in place the project implementation cells under the Hill Area Land and Water Development and Maharashtra Irrigation projects.
- Have contractors in place and begin activities under the Irrigation Management and Training Project.
- Submission of PID for Rajasthan Agriculture and Irrigation Development Project.
- Mid-term Evaluation of Madhya Pradesh Minor Irrigation Project.
- Identify pilot projects under the Madhya Pradesh Minor Irrigation scheme and complete implementation plans.
- Complete approximately 15 socio-economic baseline studies in irrigation sector program.
- Develop approximate 40 training plans for the irrigation sector program.

#### Cooperative Development

- Complete second major evaluation of CLUSA/NDDB Project.

#### D.A. Support Title III

- Initiate design of new PL 480 Title III and supporting DA program.

#### Other

- Final evaluation of Fertilizer Promotion Project.

#### Resource Management - Forestry

- Form central forestry unit within the Ministry of Environment and Forests which initiates critical operations, research, seminars, and workshops to support state social forestry programs and develop policy guidance.

- Double the number of panchayats in six districts undertaking AID-assisted social forestry projects with participatory emphasis in management of community woodlots.
- Increase the numbers of medium, small, and marginal farmers planting and protecting seedlings.
- Identification of up to 1000 of landless households to participate in "tree tenure" schemes in four districts.
- AID collaborating with GOI and other interested donors in detailed design of GOI forestry research and education subsector program for 7th Five-Year Plan period.
- Evaluation of Maharashtra Social Forestry Project.
- Submission of National Social Forestry Project Paper to AID/W and obligation of project.

#### Population, Health, and Nutrition

##### Integrated Rural Health and Population

- Pilot introduction of measles vaccine in seven demonstration areas.
- Completion of plan for redesign and refocus of project on oral rehydration, immunization, and child spacing.
- Completion of all infrastructure development in project. Shift in focus to improved delivery of key child survival interventions.

##### Integrated Child Development Services

- Three laboratories for material infection studies established.
- Performance standards for workers and instructors developed, NHED materials distributed to anganwadis by state clearinghouses, and syllabi for training CDPOs, MS's and AWW's revised.
- All villages identified, anganwadi workers recruited, and buildings donated, revised syllabi and performance standards in use in all training centers and ICDS blocks.
- Baseline impact evaluation survey reports completed.

##### Private Voluntary Organizations for Health

- Approve 15 to 20 additional subprojects and commit most of the funds available for subgrants.

- A mid-project evaluation during the fourth quarter.
- A training workshop for project managers of the subprojects.

#### Biomedical Research Support

- Strategy and specific plan developed (with US consultant assistance) for collaboration between US Centers for Disease Control (CDC) and Indian National Center for Disease Control (NICDC) to strengthen national and state capacity and epidemiology and rapid diagnostic technology.
- Submission of Project Paper to AID/W and obligation of project.

#### Fertility Reduction and Demographic Intelligence

- Continue support to the Communications and Marketing Organization to help triple the use of temporary (reversible) contraception.
- Provide long-term technical and training support for India's Registrar General office.
- Reach an agreement with ICMR and the DST for research on contraceptive technology.
- Monitor USAID supported demographic analysis at the NCHER.
- Organize one national conference on use of incentives and other means to increase the prevalence of contraceptive use and on community organization as related to population and health intervention.
- Train two or three Indian institutions to prepare computer simulations of population and development interrelationships for presentation to GOI officials.
- Obligation of Reproductive Immunology Project.

#### Research and Technology Development

##### Fund for Technology Development

- Submission of Project Paper to AID/Washington and obligation of project.

##### Science and Technology Development

- Submission of Project Identification Document to AID/Washington. PP to be submitted in FY 1986.

Technologies for the Rural Poor - II

- Submission of PID to AID/W. PP to be submitted in FY 1986.

C. Workplan Objectives Beyond CY 1985

The Mission has established benchmarks for FY 1986 and beyond in addition to those presented for completion by the end of CY 1985. Many of these benchmarks appears in the FY 1986 CDSS and remain valid targets for 1986 and the balance of the FY 1987-1990 CDSS period. Some of the target dates have been adjusted and some new objectives have been added.

Benchmark

Period of Concentration

Agricultural Modernization

Agricultural Research

- Establishment of firm linkages and institutional support in biological nitrogen fixation, post-harvest technologies, soybean utilization, and animal sciences 1986-87
- Project evaluation completed 1986
- Design of Agricultural Research/Higher Education project 1987

Irrigation

- Organization on a pilot basis in at least one state of water user associations to manage operation and maintenance of specific project sub-systems 1986-87
- Development and utilization in four states of key technical improvements in the design of irrigation systems 1986-97
- Initial evaluation of Irrigation & Management Training Project 1986
- Design and establishment of an information system in two states for monitoring design and performance of irrigation sub-systems 1986-87
- Establishment at the Center and five states of mechanisms for transfer of lessons learned between the states 1986-87

Adoption of multi-disciplinary approach to analyze water management problems in the curriculum development in three states	1986-87
Evaluation of Maharashtra Irrigation Technology and Management Project	1986
Involvement of private contractors for planning and design of irrigation systems in at least one state where such activities are traditionally carried out by a Government Irrigation Department	1986-87
Obtain results of the studies concerning appropriate budget levels for operation and maintenance of irrigation systems and corresponding levels of water charges	1988-89
Management of distribution and maintenance of irrigation sub-systems by farmer's or water user organizations in at least one state	1988-89
Establishment of organizational set-ups in five states to impart professional development training in specialized irrigation related disciplines	1988-89
Involvement of beneficiaries in planning and design of small/mini schemes in at least one state	1988-89
Establishment of a data base and processing system in one state for improved design and operation of sub-systems	1988-89

Agriculture - General

Design and implementation of composite Chhattisgarh Development project in eastern Madhya Pradesh	
Design of DA/PL 480 Title III market/storage project and PP submission for FY 1987 obligation	1986

Resources Management - Forestry

Expansion of seedling distribution activities through increased farmer draw on project-supported social forestry nurseries	1986
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Village panchayats managing distribution of earlier benefits (grass & leaf fodder) from village forests	1986
Evaluation of Madhya Pradesh Social Forestry Project	1986
GOI Central Unit for social forestry and monitoring created	1987
State level social forestry monitoring and evaluation divisions fully staffed and operational	1987
Initial AID assistance for selected forestry research, education and training activities	1987
Indian Council for Forestry Research and Education organized	1987

Population, Health, and Nutrition

Mortality Reduction

Redesign integrated rural health activity to focus more on ORT, immunizations and child spacing in 2-3 states	1987-88
Expansion of immunization coverage of preschool children in two states; introduction of measles vaccine	1986-89
Establishment of mechanisms, commercial marketing to promote ORT, immunizations, and child spacing in 2-3 states	1987-88
Institutional linkages in place between CDC and India's NICD to strengthen latter's capacity in epidemiology	1986
Development of prototype management information system for national malaria eradication program	1987
Up to 30 PVOH subgrants to expand rural health out reach services	1986

ICDS project coverage of 2 districts and 3,844 villages complete; improved training and health education and management information systems in place. 1986

Impact Evaluation of ICDS project 1986

Fertility Reduction and Demographic Intelligence

Increase use of non-terminal contraception 1986-89

Short-Term training for Registrar General staff; TA to R.G.'s office for data collection and analysis 1986-89

Initiation of research on new contraceptive methods especially immuno-contraception 1986-89

Development of data on demographic trends and differentials for all-India sample 1986-87

Evaluation of Family Planning and Communication Marketing Project 1986

Research and Technology Development

Fund for Technology Development

Effective promotion mechanism established in India and in U.S. 1986-87

Indo-U.S. joint ventures operating in research and development. 1986-87

Binational Committee for Technology Development established and operating 1986-90

Science and Technology Development project design process completed 1986

Sub-projects in bio-technology initiated and implemented 1987-91

Information exchanges taking place in health and agriculture between U.S. and Indian institutions 1987-91

Capacity to use media in transferring knowledge of development related technologies to trainers and extension agents is enhanced 1987-91

	Planned FY 1989	Planned FY 1990	FY 1991
	-	-	
	1.5	3.0	
	2.0	15.0	8.0
	1.0	4.0	
	1.0	15.0	
	-	-	
	1.0	6.0	6.0
	1.0	-	
	-	-	
	-	-	
	-	-	
	1.0	2.0	
	3.0	17.0	
	-	-	
	-	-	
	1.5	3.5	
	1.0	13.0	8.0
	-	-	
	-	-	
	-	-	
	-	-	
	-	-	
	2.0	3.5	
	-	-	
	-	-	
	-	-	
	-	-	
	2.0	8.0	
	3.0	10.0	
	1.0	-	
	1.0	-	
	2.0	-	
	-	-	
	-	-	
	3.0	100.0	
	1.0	24.0	
	5.0	76.0	
	1%	24%	

ended through FY 1990.