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A RURAL ECONOMIC GROWTH STRATEGY FOR ASIA AND THE NEAR EAST IN THE 1990's

(DRAFT--For Discussion Only)

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I INTRODUCTION

Since the mid-1970's, AID's financial and human resources have been committed to supporting a basic human needs strategy of development. Agricultural programs have focused on improving agricultural production on land owned or operated by small or marginal rural farmers. This approach assumes that rapid increases in agricultural production lead to higher farm and rural bases incomes, increased rural employment, better nutrition and ultimately long-term national economic growth.

Over the past decade, AID has committed development assistance totaling \$6.9 billion to discover answers to problems that limit the growth in small farm agricultural production in the poorest countries of the world. In Asia and the Near East, \$2.8 billion supported activities to increase domestic and international capacity to develop and distribute new, more productive, agricultural technologies; to expand and stabilize the supply of critical farm inputs including irrigation water, fertilizer and agro chemicals; to set and maintain farm prices at levels that encouraged adoption of the new technologies and fostered growth in production and income; and to strengthen the reservoir of human capital and the institutions that mobilize that human capital for productive purposes.

This approach has met with significant successes. The widespread adoption of more productive rice and wheat technologies has led to renewal in research interest in a variety of other crops--corn, cassava, soybeans, chick peas and peanuts. Improvements in research facilities, irrigation infrastructure and input production and distribution systems are well along in many countries, and emphasis is turning to improving the management of the physical, financial and human resources associated with these capital investments. Many former subsistence farmers have progressed over the last decade to semi-commercial producers, and the timely supply of agricultural inputs, in the remotest parts of the region at prices farmers can afford, is increasingly commonplace. The technological problems that limited major cereals production have in many places been alleviated, at least for the time being, and per capita consumption and nutrition have improved.

Experience gained in formulating and administering farm price policies has led to a more sophisticated understanding of the relationship between technological innovation, input availability, production policy and macro economic policies and there is a greater appreciation for the need to understand agriculture as a part of a larger economic system when formulating agricultural policy. And finally, although pockets of poverty remain, in countries throughout the region average real per capita incomes in both rural and urban areas have improved, diets have diversified and demand for higher quality and processed agricultural product is becoming manifest.

However, while there has been significant progress, problems remain. Over the last five years, yield increases of major staples (rice and wheat) have slowed and slipped below population growth in many Asian and Near East countries. Little is known of the causes of the decline but this suggests that maintenance of yields for these cereals will be a continuing challenge through the 1990's. In addition, past increases in average per capita consumption levels, while a significant accomplishment, mask the fact that millions in the regions remain in the grip of poverty and malnutrition. Effective and cost efficient strategies targeted to the needs of these minorities need to be developed and tested. It is somewhat ironic that a majority of the malnourished in countries such as India, Nepal and Bangladesh live in or near areas of high agricultural productivity. Many, having no land, can only participate in the fruits of the "green revolution" through the provision of their daily labor, either on the farm or in the associated secondary processing and distribution systems.

In addition, inward-looking trade policies, which protect domestic agriculture input producers, maintain expensive and inefficient barriers to agricultural trade, and involve government at every step in the market chain, are commonplace in the region. Subsidies associated with food and fertilizer policies continue to place major drains on national treasuries. The increased profitability associated with the widespread acceptance of new technologies and the resultant government cost increases call into question both the continued need for and the financial sustainability of current subsidy packages. Careful analysis of the social costs of subsidies and the associated distribution of benefits, be they to farmers, output processors or input distributors or manufacturers, is required to support the difficult political choices required to implement long-term subsidy reduction strategies.

In another area, further intensification of agricultural production on prime land using modern technology, and the extensification of production into marginal and fragile areas as population grows, calls into question the sustainability of current technologies and production levels. New economic development efforts, which create productive employment opportunities outside the more fragile, low-productivity areas, are required to draw the next generation of marginal agriculturalists out of such areas. For those who remain, more environmentally sound techniques of intensified production, which maximize use of remaining labor, need to be developed.

Finally, productive employment for new entrants into the rural labor force is, and will continue to be, the problem in the 1990's. The limited demands that intensified cereal and secondary crop production will place on future rural labor pools means that the burden will fall on other, non-agricultural, sectors to absorb a major portion of this new labor. Basic education, which provides rural youth with the skills needed for entry into the non-agricultural processing and manufacturing sectors will be critical to effecting the needed out migration.

Although elements of ANE's country programs have shifted as conditions have changed, the Agency's overall agricultural strategy remains focused on the problems of increased food supply and the conditions that constrain it. The appropriateness of this focus is being called into question given the structural adjustments which are occurring in the region and the array of problems these adjustments pose for continued economic growth.

These changes and the emerging problems suggest the need to reexamine ANE's agricultural strategy. The time is right for such a review. The U.S. Government is entering a period of political adjustment and is rethinking its foreign policy and development assistance priorities and programs. ANE's agricultural strategy review will complement the assessment of foreign assistance legislation currently underway in Congress, and will provide inputs into a number of other evaluations initiated by the AID Administrator, BIFAD, Michigan State University and the S&T Bureau of AID. Last, but by no means least, the evaluation responds to concerns voiced by ANE's Agricultural and Rural Development Officers at their 1987 conference regarding changing trends in policy, technology, the social and political environment, and the human capital and institutional base. The officers called for the development of a new, responsive strategy that would allow for country specific articulation in light of the diversity of ANE countries.

This strategy represents the combined efforts of many AID and external experts, drawing heavily on the deliberations of the joint ANE-HIID Strategy Symposium held in September, 1988. It is presented in the following four chapters. Chapter II explores the extent to which structural adjustments have occurred over the last two decades and how individual countries or groups of countries have been affected in the process, proposes a three-stage typology for analysis of sectoral status and economic trends, and suggests specific development action or investments that will be required to sustain development. Chapter III examines A.I.D.'s current strategy, explores areas in which AID may have a comparative advantage, and presents a set of principles that determine the parameters for a new strategy. Chapter IV lays out the basic components of the strategy for each stage of the typology, and Chapter V explores some implications of the new strategy for Bureau and Agency implementation modalities, personnel and organizational structure.

II Twenty Years of Agricultural Growth in Asia and the Near East

During the past two decades, countries in the ANE region have witnessed varying but significant adjustments in their economic structure. Some, former recipients of AID assistance, have graduated to full status as independent players in the world economy. Others have pursued steady programs of adjustment which have led to changes in income and employment and set the stage for eventual graduation. Finally, there is a small but significant group that has, for a variety of reasons, stagnated.

This section examines this growth and draws from the emerging mosaic a set of common themes for the region. The analysis in no way substitutes for more detailed country specific reviews which are required to guide program and project adjustments in individual country programs. It does, however, allow for the verification of broad trends against which proposed adjustments in ANE regional strategy can be discussed. The analysis opens with an examination of over all economic growth and change, then explores specific adjustments that have occurred in the agricultural sector in three groups of countries, and closes with a discussion of cocommon themes within each group.

1. Structural Adjustment

For the purposes of identifying regional adjustments, fifteen countries, four in Southeast Asia, five in South Asia, six in the Near East are considered. Support for programs in these countries accounted for 22 and 50 percent respectively of ANE's Development Assistance and Economic Support Funds in FY88. In increasing order of per capita income, as reported by the World Bank, the countries are: Burma, Indonesia, the Philippines, and Thailand; Bangladesh, Nepal, India, Pakistan and Sri Lanka; and Yemen, Morocco, Egypt, Tunisia, Jordan and Oman.

Countries in the sample are diverse. Populations range from 1 million in Oman to 765 million in India. In 1985, average per capita incomes ranged from \$150 in Bangladesh to \$6730 in Oman, with a relatively smooth distribution at least up to \$1400 a year. Though significant variability exists amongst countries in the region, the economic parameters appearing in Table One suggest a common, yet strong relationship between economic structure and annual per capita GDP. As per capita income increases, the relative importance of the agricultural sector as the source of income declines and the strategic role of industry becomes increasingly apparent. For example, in 1985 annual per capita income in Bangladesh averaged \$150, with \$75 originating from agricultural activities. On the hand, in Thailand, where per capita income during the same year was \$800 only 17 per cent, or \$136, originated from agriculture. The remainder, \$664, was from economic activities in the industrial and service sectors.

TABLE ONE: MACRO ECONOMIC INDICATORS - ASIA AND THE NEAR EAST

COUNTRY	NATIONAL POPULATION (millions)	PER CAPITA 1985 (\$US)	ANNUAL GROWTH (percent)	GROSS DOMESTIC PRODUCT		
				SECTORAL COMPOSITION		
				AGRICULTURE (percent)	INDUSTRY (percent)	SERVICES (percent)
Low-income Agricultural Economies	155	161		51	13	36
Bangladesh	101	150	2.4	50	14	36
Nepal	17	160	0.1	62	12	26
Burma	37	190	0.4	48	13	39
Low-income Transitional Economies	1173	352		28	30	43
India	765	270	1.7	31	27	41
Sri Lanka	16	380	2.9	27	26	46
Pakistan	96	380	2.6	25	28	47
Indonesia	162	530	4.8	24	36	41
Arab Republic of Yemen	8	550	5.3	34	16	50
Morocco	22	560	2.2	18	32	50
Philippines	55	580	2.3	27	32	41
Egypt	49	610	3.1	20	30	53
Middle-income Industrializing Countries	64	975		15	35	50
Thailand	52	800	4.0	17	31	50
Tunisia	7	1190	4.0	17	35	46
Jordan	4	1430	5.8	8	28	64
Oman	1	6730	5.7	3	59	38

 Source: World Development Report, (Washington, D.C.: The World Bank), 1987.

The relationships between per capita income and economic structure suggest that, for purposes of strategic planning, a functional rather than geographical grouping would be more meaningful in defining a new regional development strategy. Further analysis of data in Table One suggests the existence of three basic groupings: low income agricultural economies; low income transitional economies; and middle income industrialized economies. The first includes countries with per capita incomes of less than \$250 per year, where agriculture produces more than 50 percent of income and industry less than 20 percent. The second group--low income transitional economies--includes countries with per capita incomes ranging from \$251 to \$750 per year and where agriculture contributed less than 35 percent and industry more than 25 percent to per capita income. The last group--the middle income industrializing economies--includes countries with per capita incomes above \$751 per year, where agriculture provided less than 20 percent of income and the industrial sector more than 30 percent.

Using these criteria, ANE countries fall into the following groups:

I. Low Income Agricultural Economies

Bangladesh
Burma
Nepal

II. Low Income Transitional Economies

Egypt
India
Indonesia
Morocco
Pakistan
Philippines
Sri Lanka
Yemen

III. Middle Income Industrializing Economies

Jordan
Oman
Thailand
Tunisia

The economic structure of countries in each group is different. For example, per capita incomes range from an average low of \$161 in the low income agricultural economies to \$962 in the medium income industrialized economies. Differences stem largely from the differential growth rates over the last twenty years, whereby low-income transitional and middle-income industrializing countries grew an average of 60 and 250 percent faster, respectively, than the low-income agricultural economies.

In addition, the rapid growth evident in the latter two types of economies was accompanied by substantial adjustment in economic structure. In general, as growth occurred the importance of the agricultural sector as a source of new income and growth declined and was superseded by the industrial and services sectors. As the data in Table Two indicates, agriculture's share of GDP dropped from 51 per cent in low income industrial economies to 15 per cent in the middle income industrializing economies. This was accompanied by a doubling in the importance of the industrial sector and a one and a half times increase in the importance of the services sector as sources of GDP.

TABLE TWO. ECONOMIC CHARACTERISTICS OF ANE SUB-REGIONS

<u>ECONOMIC PARAMETERS</u>	<u>LOW INCOME AGRICULTURAL</u>	<u>LOW INCOME TRANSITIONAL</u>	<u>MIDDLE INCOME INDUSTRIALIZING</u>
Per capita income in 1985	\$161	\$321	\$978
Annual growth ¹ in GDP 1965-1985	1.6%	2.6%	4.3%
Composition of GDP in 1985			
Agriculture	51%	27%	15%
Industry	13%	30%	34%
Services	36%	43%	51%
Change in composition of GDP 1965-1985			
Agriculture	1.5%	-16.9%	-20.8%
Industry	1.9%	8.9%	10.9%
Services	3.4%	7.7%	9.8%

The rate of structural adjustment in each group also varies substantially. For example, over the last twenty years (1965-1985) the changes in the proportion of GDP originating from agricultural sector activities in the low income agricultural economies remained almost constant, changing only 1.5 per cent. In low income transitional and middle income industrialized economies, agriculture's proportion of GDP changed substantially, declining 16.9 per cent in the former and 20.8 per cent in the latter. These declines were offset by substantial upward adjustments in industrial and service sector expansion.

Clearly, major adjustments in agriculture occur as economies develop and transform. The pace and ease by which countries make these transitions must be the focus of a rural sector development strategy. To develop such a strategy, an understanding of the adjustments which occur in the sector during growth is essential.

2. Agricultural Sector Adjustments

Over three decades of experience has provided a number of insights with respect to the nature of these sectoral adjustments. The first is that food availability is critical to the political stability of nations everywhere; those in Asia and the Near East are no exception. Governments that have not provided adequate supplies of basic cereals at prices perceived as fair by both producers and consumers have undergone serious social disruption. Consequently, it is not surprising to find the majority of countries pursuing policies that aim to assure food security. In most cases, this has manifested itself initially in a drive for cereals self-sufficiency. In addition to infrastructural and institutional investments in pursuit of this objective, governments apply a variety of policy interventions, including input price subsidies and import restrictions. This combination of investment and policy measures has resulted in the successes noted above, and led to the point at which structural adjustment becomes essential if growth is to continue.

The introduction of new cereal varieties combined with improvements in rural infrastructure--notably irrigation and roads--and favorable government policies have led to increases in per hectare yields, increased employment and rising per capita incomes. Surpluses generated in agriculture typically find their way into other sectors through lower urban food prices, and consequently lower urban wages, and increases in the demand for manufactured goods and services which result from higher agricultural incomes.

As agriculture continues to grow, the demand for labor declines as yield increases begin to slow. New entrants into the rural labor force, who are often better educated, tend to look to the industrial and services sectors for employment. Expansion in these sectors caused by growing domestic demand for non agricultural goods and services leads to increased employment there, and to declines, first in the rate of growth of the agricultural labor force and then in its relative size, and a decline in the proportion of net national income generated by agricultural sector activities. Increases in urban sector incomes, which continue to be supported by low food prices, lead to shifts in consumer demand away from basic cereals toward increased consumption of high quality protein in the form of meat, poultry and dairy products and greater dietary reliance on processed rather than bulk agricultural products. During this process the source of growth in agricultural employment shifts from field production to processing, marketing and transportation, initially to meet domestic demand and later to service exports.

As the income data in Table One suggest, the agricultural sectors in ANE countries are at different levels in this development process. A more detailed look at the sector in each of the three groups of countries outlined above is provided in Table Three.

(INSERT TABLE THREE)

These data suggest some very interesting relations supporting the descriptions provided above. For example, in the low income agricultural economies, annual growth over the last 20 years in overall agricultural production has just managed to keep pace with population growth. Growth in cereals production, a major determinant in rural incomes, employment and nutrition, has failed to keep pace with population growth, and per capita caloric consumption remains nine per cent below recommended levels. Fertilizer use and irrigated area, both proxies for the intensity of agricultural production, remain low. The sector continues to absorb labor, but at a rate below that in transitional economies where both total agricultural and cereal production exceed population growth. In such an economy, gains in cereal productivity represent one of the major constraints to further development. Unless constraints to increased productivity can be overcome, employment growth will be limited, consumption of non-agricultural goods and services will be below required levels, and the transfer of excess resources to the industrial and services sectors will be non-existent.

In the transitional economies, a more dynamic picture emerges. Here growth in both total agricultural and cereal production exceed population growth, increased agricultural productivity has led to increased employment and per capita caloric consumption has increased and is approaching recommended levels. Growth levels in agriculture suggest the development of a surplus, available for industrial and service sector growth.

The transfer of resources from agriculture to these other sectors, and their consequent growth, has already occurred in the middle income industrializing economies. Here the data suggest a relative decline in cereal production but an overall increase in total agricultural production. Such adjustments would be expected as incomes rise and diet becomes more varied. Also, with the rapid increase in non-cereal production, daily per capita caloric intake has increased to 106 per cent of recommended requirements and the growth in cereals has fallen behind population growth. A major portion of this population, however, is not finding employment in the agricultural sector, and growth in the agricultural labor force has declined from 1.9 per cent during the first five years of the decade to 0.7 per cent during the second half. With the decline in the growth of the agricultural labor force and the generation of excess sectoral production, it is highly likely that a substantial number of rural residents are now employed in either industrial or service sector occupations, on a part-time or full-time basis.

There clearly has been a change in the socio-economic composition of countries in the ANE region over the last decade. Currently, most of these countries benefit from surpluses in agricultural output, increasing employment in agricultural production and the beginnings of non agricultural sector expansion. Only a limited number of countries continue to have serious problems with the production of major cereals, and the majority have begun to expand non cereal production.

Growth in non-cereal production is in response to shifts in demand, where the importance of cereals tends to decline as incomes rise. Increasing daily caloric consumption and the relative declines in cereal consumption imply significant diversification in diets. These dietary adjustments are accompanied by shifts in the patterns of employment, wherein more and more new entrants into the labor force find employment outside agriculture. This, in turn, has three implications:

Growth in income and employment in transitional and industrializing economies in the decade ahead will be dependent on growth outside the traditional agricultural sector. Although agriculture will remain important, it will not be the major employer of labor in a majority of countries in the region.

As countries advance from low income and transitional agricultural economies to middle income industrializing economies, there is a clear trend toward outmigration of male labor from rural to urban areas. This changes the composition of the rural labor force towards higher female participation, as laborers as well as managers. (The percentage of females in the rural labor force exhibits a striking increase as economies develop, from roughly 20 percent in the low income agricultural economies, to nearly 50 percent in the middle income industrial economies.)

As the location of employment shifts from agriculture to non agricultural sectors, the importance of food processing and marketing will increase. The growing number of people who will be moving from agriculture will need to eat. And what they will eat will be changing away from cereals to higher protein and more processed foods.

These economic changes that are under way in the region are paralleled by significant environmental, institutional, human capital, and political changes. As noted above, the sustainability of the production gains achieved is being called into question, both in terms of the natural resource base and the institutions that have been established to promote and support agricultural development. The human capital base has broadened significantly, and there has been a substantial increase in the number and complexity of development institutions. The question at this point is how AID's regional agricultural strategy can respond to these changes and continue to influence and encourage economic development, while enhancing equity and conservation of the natural resource base.

3. Common Themes in the Development of ANE Economies

A. Low Income Agricultural Economies

Program investments in these economies tend to follow traditional agricultural investment patterns, concentrating on increasing the per capita availability of basic food grains. Common themes are coordinated investments in agricultural research and technology diffusion, input supply, rural public services, policy analysis and human capital, combined with increasing awareness of natural resource implications of production-oriented investments.

1. Research & Technology Diffusion: Improvement in agricultural research system performance in such countries is essential to: a) more effectively use the scarce physical and human resources available; b) set in place and strengthen appropriate institutional mechanisms for defining and updating research agendas; and c) increase the capability of management structures to effectively identify key problems, allocate adequate resources to their solution and move on to new problems when former ones have been resolved. Strengthening linkages between a country's research establishment and outside agencies or groups is important to facilitate research already underway, to assist in identifying new problems and required solutions and to assist in marketing new solutions.

2. Input Supply: Comprehensive agricultural development programs in these low-income agricultural countries must deal with two main input supply issues. The first is to insure that adequate supplies of key production inputs are available where and when required by farmers. Governments' recognition of the importance of input supply as a basis for expanding HYV cultivation has led to their direct involvement and control over domestic input production, importation and distribution. In many cases, this involvement has persisted, even after it has become clear that private sector involvement is almost always more effective and less prone to inefficiency.

The second issue is the efficient use of subsidies to encourage expanded distribution and farm level demand for inputs. In situations where basic input markets exist, and input use is substantially below efficient levels, price subsidies have proven effective in encouraging more wide spread and efficient use. However, subsidies, if used, need to be structured in such a way that as distribution and farm use approach efficient levels, the subsidy is systematically reduced until full cost pricing is achieved.

3. Public Services & Infrastructure: Complementing the provision of physical inputs is the critical importance of selected public services, particularly irrigation and transportation. The expansion of irrigation reduces risks associated with high input agriculture, encourages farmers to adopt technologies developed and distributed by government, results in higher yields, and dropping intensities, with two and three crops per year grown on the same acreage where one crop was grown before, and leads to the expansion of production to new areas.

There is little argument about the critical role government must play in the construction of new and the rehabilitation of old irrigation systems. There is less unanimity regarding irrigation system operation and maintenance. Preliminary evidence suggests that irrigation authorities can be more efficient if they limit their involvement to the operation and maintenance of the major structures and canals, and have water users maintain the remainder of the system. Unfortunately, acceptable models providing detailed descriptions of this division of responsibilities remain to be developed and tested.

Improvements in transportation services to minimize disruptions in input supply and to facilitate the collection, processing and distribution of basic staple grains are also preconditions to the subsequent generation and transfer of economic surpluses originating from the agricultural sector. Transportation services not only include an adequate physical network, but also effective, least cost mechanisms for maintaining existing systems, policy environments that encourage the expansion of private sector involvement in the sector and effective public tax mechanisms to assure adequate financing for expansion, operation and maintenance.

4. Policy Analysis: Support is needed initially to create and then to strengthen agencies within government to undertake policy formulation and analysis, and to establish and improve the data collection and personnel systems which support these efforts. This capacity is often essential to provide the analysis supporting a reduction in public sector control of agricultural input and output markets, to identify potential areas of new economic growth and to design the needed government incentive package to lever private sector investment, and to monitor key indicators of market performance so market failure can be identified and appropriate government interventions initiated. Capacity development efforts, some similar in design but serving the needs of different political clientel in a government-making decision system, are required to improve analysis and to raise the level of debate surrounding critical agricultural policy issues in the system.

Of particular importance in this process is the development of an effective food price stabilization program. Price stability in these economies is critical to encourage continued adoption of new technologies and to guard against the rapid deterioration in the welfare of the urban and rural poor. An effective stabilization program would maintain major grain prices within bounds established by the government and allow prices over time to mirror longer term adjustments in international prices. An agency responsible for such a program, alone or in collaboration with the private sector, would manage a combined domestic and international market intervention program, buying and selling grain as required to meet domestic consumer and producer price targets and maintain and manage sufficient "iron" stocks for use during times of national emergency.

5. Natural Resources: Confronted by problems of basic food production, limited budgets and scarce management resources, it is not surprising that governments in low income agricultural economies do not view natural resource conservation investments as matters of high priority. Officials often regard the objectives of increased production and natural resource conservation as conflicting, at least in the short run. In such cases, development assistance should focus on ensuring the environmental soundness of interventions and on setting up a program for environmental monitoring, laying the groundwork for subsequent, more focused interventions in the future. Development assistance programs and agencies should recognize that policies will be deliberately biased in favor of production; e.g., through fertilizer and pesticide subsidies. A major goal in such cases is to help assure that the true net costs and benefits of these policies are known and that decision-makers are aware of the real costs involved.

6. Human and Institutional Capital: Underlying the above is the basic need for trained manpower at all levels, and particularly in the research, analysis and management fields. There is an urgent need to enhance and sustain the effective performance of key policy, research, extension, input supply, output processing and local level institutions involved in major cereal production. This will include focused interventions that consider the appropriate mix of governmental and private entities, the increasing role of women and youth in productive activities, and the issue of self-financing to at least partially offset the increasing costs associated with new or enhanced research, infrastructure related services and governmental personnel systems. A large part of any development strategy in these economies will include substantial support for professional education and training, initially outside the country, while domestic institutions are being improved.

B. Low Income Transitional Economies

These economies have experienced limited success in their development programs. Applied agricultural research and dissemination of high yielding rice and wheat varieties has paid off, production has increased, per capita consumption is up and the agricultural sector has begun shifting from subsistence to commercial agriculture. Gains in agriculture are reflected in overall increases in per capita income, adjustments in food demand and the growing importance of the service and industrial sectors.

These relative successes have led to the need for change. Development assistance must recognize this need and focus on building the human and institutional capacity required to make the necessary policy and program adjustments. Major increases in value added from food grain production have largely played out; future increases required to keep ahead of population and income growth will be harder to achieve. New sources of rapid growth in the service and industrial sectors must be identified and manipulated if the income and employment growth process, initiated in the agricultural sector, is to continue. Past development models that rely heavily upon government intervention, and which have generally proven expensive and detrimental to private sector participation, need to be changed if the desired growth in services and industrial production is to be achieved.

The transition, from a low-productivity, largely agricultural economy with a weak commercial basis to a middle income, industrializing economy, is a period where improvements in management of existing resources rather than rapid expansion of infrastructure will provide the basis for growth. This is an area where new approaches in development assistance, both programmatic and operational, appear warranted. Common themes in effecting such a transformation are agricultural policy reform, technological innovation, agro-based industry development, expanded trade, natural resource conservation, and continued human capital development. These are discussed briefly below along with possible transformation-enhancing interventions:

1) Agricultural Policy: The policy environment established to achieve major increases in grain production needs to be carefully reviewed and adjusted to reflect current conditions. Specific programs, including input/output subsidies, the supply of infrastructure services and control of major input and output markets were conceived and implemented in periods of low per capita food availability in order to maintain political stability, to marshal limited government and managerial financial resources and focus them on key social problems, and to encourage the widespread adoption of new, highly productive yet risky agricultural technologies. These programs, while effective in raising food production, have often resulted in governmental involvement at every step in the production, marketing and distribution system. As coverage has expanded, absolute costs have skyrocketed and there is serious concern over whether these programs should or could be expanded in their present form to encompass a wider range of crops.

Investments to improve national capacity to identify outdated policies, to measure the economic and social costs of continuing existing or alternative policies, and to move economically preferred approaches through the political system are essential if nations are to develop a dynamic policy response capability. These investments include a well-articulated and up-to-date base for monitoring current conditions and testing alternative policy options, and, building on earlier investments in capacity building, strong analytical units in agencies having a major interest in agriculture--Ministries of Agriculture, Planning, Finance and the Central Bank. While duplication of effort is a concern, multiple investments in different organizations are necessary to raise the level of debate, and to fully analyze and articulate the diverse political views which are imbedded in a proposed policy adjustment. Finally, sustained

growth of institutional capacity, preferably outside government, needs to be encouraged to monitor longer term adjustments and to recommend alternative programs to meet employment and income objectives.

2) Technical Innovation: Technical innovation in agriculture continues to be a critical component of a development strategy in low-income transitional economies, especially in view of the recent evidence suggesting alarming and consistent declines in the rate of yield increase of basic cereals. There is general agreement that rates of past increases in yields, due largely to the widespread use of improved genetic material, the provision of irrigation, and the availability of adequate supplies of fertilizer and agrochemicals at the farm level, will be difficult to sustain. Increases over the next decade will likely result in large part from improvements in crop management, including more timely irrigation, the widespread adoption of integrated pest management techniques, and the use of more optimal fertilizer mixes, among others. Development and dissemination of these improved management techniques may be more difficult and costly than previous interventions, since they will be more area-specific and, thus, appropriate for a more limited number of farmers. Although marginal, increases in cereal yields associated with improved management will be essential in the medium term to keep up with population and income growth and to buy time until bio-technology research can generate longer term, non-marginal increases in yields.

Although the private sector has committed substantial investments to further bio-technology, research in this area cannot be completely ignored. Current research, conducted by large, multi-national seed production, research and pharmaceutical conglomerates, can be expected to focus on commodities that promise the highest return and serve markets which promise the most widespread and stable long term demand. Such research may or may not be consistent with the need of poorer farmers in ANE countries. Investments are required to reposition and focus international agricultural research centers to identify and carry out basic research in this area and to explore new forms of cooperation between public and private research organization, be they at the national, international or multi-national level.

The heavy emphasis placed on cereals research reflects the social, macro-economic and political importance of these commodities. This does not, however, preclude research on secondary food crops, tree crops or horticulture products. Dependent on a country or region's comparative advantage, these crops may play an important role in increasing value added, employment and income or in protecting downstream investments. Strong, integrated, management information systems need to be developed within research establishments to identify problems which are amenable to solutions, to support only research which has a high probability of significantly reducing the costs of production (increasing a crop's comparative advantage) or raising yields and to monitor the application of resources, both human and financial, to the solution of key problems. Such systems are essential in managing the allocation of resources between major cereals and secondary crop research, and between irrigated and upland secondary crop production.

3) Growth of Agro-Processing: While growth in major cereal and secondary crop production will continue to productively employ new entrants into the rural labor force in the foreseeable future, the rate of increase in labor absorption will continue to decline due to the limited area available for the expansion of cereal production, the limited increased yield potential, and the lower labor requirements associated with most secondary crop production. Rising rural unemployment appears likely, unless alternative job opportunities can be created.

Adjustments in demand which accompany rising incomes in the low-income transitional economies may provide a solution to this dilemma. Diets tend to change as incomes rise. With each additional dollar earned, less is being spent on cereals and more on high protein food, processed and prepared food products, and canned and fresh fruits and vegetables. In most instances the collection, processing and distribution of these products vis-a-vis other industries (e.g., textiles, shoes, electronics) is labor-intensive, requires lower capital investment, and uses relatively simple and easily maintained technologies.

The rapid expansion of agroprocessing and secondary support facilities could provide productive employment to under and unemployed rural labor; expand and stabilize demand for selected secondary crops, fruits, vegetable, meat and dairy products; and meet growing domestic demand while setting the technological and managerial base for future exports. Much of the labor force in these industries will be drawn from marginal agricultural areas. Out-migration from these areas in the medium to long term could lead to adjustments in cropping patterns to reflect more limited labor availability, and the less intensive agriculture which would result--i.e. fruit or forage production--would tend to be less environmentally stressful than present intensive (cereal production) uses.

To encourage the growth of agro-processing, a variety of development related investments are required. Improvement in a government's ability to plan and implement infrastructure development programs in support of agro-processing investments is essential. Promotional activities and services aimed at decreasing pre-investment and initial operating costs of agro-industries can also be effective in channeling investments toward designated locations or product lines. Consistent, clearly articulated and stable industrial policies are important in encouraging agro-processing investments and reducing pre-investment costs. Start up costs could be further reduced and selective activities (i.e. manpower development) encouraged through the use tax policies. Finally, expansion of the capital markets to increase the supply and reduce the cost of domestic equity financing should be considered.

4) Trade Liberalization: A relatively open market trading regime is essential to development of an efficient, demand-driven production, processing and marketing system. To move in this direction, adjustments in trade policies and regulatory agencies will likely be required. For example, countries in this group, having passed through a period of food scarcity, are often left with antiquated food and agriculture input supply agencies. These agencies continue to control basic agricultural and food markets through direct

management of domestic production facilities, maintenance of monopoly import rights over key commodities and inputs, management of large subsidy programs via administered input/output price systems, control of food procurement, and the maintenance of sole distribution rights over food and inputs - often down to the community level. Over time these agencies have either (1) expanded, assuming control over additional agricultural inputs or non-staple food commodities; (2) been replicated to manage the production, importation and/or marketing of other "strategic" commodities (plastic, tin plate, agricultural machinery); or (3) been augmented by the strengthening or development of new agencies to manage commodity export promotion.

These agencies have served an important function, but at substantial cost. Strong vested interests have developed which manage these inefficient collection, processing and distribution systems; limit or exclude private sector participation; and, often lobby in opposition to the enactment of market liberalization policies. In addition, many of the nations in this group have continued to follow monetary policies which isolate domestic financial markets from world markets. Overvalued exchange rates, credit rationing, and interest rate controls have constrained domestic resource mobilization, limited the availability of investment capital and have retarded the growth of domestic processing industries. As an extension of this set of inward-looking policies, many countries have established artificial trade barriers, initially to protect infant industries. Once established, it has been difficult to rescind these barriers and to wean individual interest groups from the benefits they confer.

Effecting change within these systems is difficult, but critical to establishing an efficient agro-processing sector. A number of actions, which move toward opening domestic markets and linking them to international counterparts could be considered. For example, at the macro level a review of exchange rate policy could be initiated to assess the disruptive effects current policy is having on agricultural production and agro-processing development. Similar reviews of banking policies could lead to the use by banks of interest rates more closely approaching real market rates and thus rationalize bank savings and lending policies and allow banks to provide the full range of services required by investors.

Improvements in basic import/export administration, import licensing requirements and port procedures could also prove beneficial. Reform of import and export permit systems, which confer monopoly control on individuals and/or agencies for the import and export of products, would result in the transfer of rents normally accruing to permit holders to government via tariff or excise payments, and would be more amenable to change if major distortions persisted. Finally, improvements in the management of port facilities which increase competition between cargo handlers, and reduce demurrage and warehousing fees could reduce the costs of inputs to agricultural processors.

The review and restructuring of state commodity trading operations would be appropriate given improvements in domestic markets, the increased sophistication of private traders and trading houses and more effective banking services. Restructuring of government operated state trading companies to actively involve them in price stabilization rather than commodity supply management would require maintenance of a producer/consumer price target system

through the active participation of private trading companies in the domestic and international market. Price bands maintained by this system should be set close to international-border prices and allowed to move in line with longer-run international price adjustments.

Trading companies, through the manipulation of domestic stocks purchased to protect floor prices, could buffer the domestic market from short-term international or national price fluxuation. In the long term, such market operations should be self-financing. In the short-term, however, public financing would probably be required.

Price stabilization efforts could be complemented by a reduction in the number of commodities normally managed by a state trading entity. Limiting operations to major staples, like rice and wheat, reduces both logistical and financial problems. Importation of other non-staple commodities could then be picked up by private trading houses and if necessary monitored by the state trading agency. The adjustments suggested above would require substantial donor support to define problems, assess alternatives, implement decisions and structural adjustments and underwrite a portion of the risk associated with these changes.

5) Natural Resources: Although the relative importance of the agriculture sector declines over time in these countries as industry grows, the absolute size of the sector assures that it will continue to be an important component in national economic growth. Sustained growth in agricultural employment and incomes will require careful management of the natural resource base which underlies agricultural productivity. Land, water and vegetative resources are coming under increasing pressure as production intensifies on prime land, as population densities increase in upland and marginal areas and as new areas are opened for agricultural exploitation. With major cereal production problems reduced to manageable proportions, countries in this group can and must begin strengthening legislative, planning and administrative capacity to deal with sustained agricultural productivity and natural resource conservation.

6) Human and Institutional Capital: The low income transitional economies require a strengthened human and institutional base to successfully make the necessary policy and program adjustments discussed above. The major needs include (a) more efficient inter-organizational structures for analysis, research and management of the adjustment process, (b) a strengthened institutional infrastructure of laws and rules at the central and local/urban levels, and (c) upgraded technical and managerial personnel in transitional areas such as agro-processing, export promotion and crop diversification. To support the demand-led strategy, enhanced and sustained institutions, many of them crosscutting one or more organizations, will be required to support policy analysis and implementation management, research on trade adjustments, labor force analysis, improved utilization of infrastructure, new information systems to support decision making, and better management of the natural resource base. Private and NGO institutions may be called upon to perform a number of expanded roles in employment, natural resource conservation, and education.

With adjustments in agriculture will also come the need for special consideration of gender roles, minority concerns and distributional issues. Specialized education outside the country will remain necessary, but with increasing technical and managerial training being provided in-country.

C. Middle Income Industrializing Economies

These economies typically have solved the grain self-sufficiency problem either through intensified per capita production or through food grain imports. They are well along on an industrialization policy, and are beginning to draw a large share of new entrants in the agricultural labor force in non-farm employment. The basic commercial laws and capital markets are in place to facilitate modern market operations, and trade policy has shifted from a protectionist posture to one of export trade promotion. Hidden trade barriers have been eliminated and more transparent tariff structures, generally in line with international levels, have been adopted. Also, a nascent capacity to identify and resolve trade disputes is commonly being brought to bear in bilateral and multi-lateral trade negotiations. Finally, these nations have installed the basic administration, legal and monitoring structures required to implement environmental protection legislation.

Basically, countries in this group have successfully managed the transition from a major dependence on agriculture as the prime source of growth to a more balanced growth pattern involving the agricultural, industrial, and service sectors. Their success is often mirrored in a growing sense of national identity and pride. The role of A.I.D. in these countries would be expected to be radically different from lower income countries, consisting more of support for selective national initiatives and institutions than active involvement in defining specific problems and implementing solutions.

Most of these countries, however, lack the sophisticated internal structures and external global linkages which will allow them to accelerate and sustain a rapid development process. As the agro-industry base expands and technology development becomes more capital intensive, new and more adaptive institutional structures and processes are needed to formulate and implement increasingly complex policies, to stay abreast of rapidly changing technologies in the biological and information sciences, and to respond to international trade opportunities. Also, in selective, high payoff areas such as environmental protection or biotechnology, these countries may require continuing programmatic support for new institutional development initiatives.

For such countries to continue to develop, it is essential for them to have high quality domestic institutions and networks which tie individuals and institutions together in a system of shared ideas which energizes the links between domestic institutions and individuals and various centers of scientific and analytical excellence throughout the world. Strengthening domestic networks and linking them to existing international networks should encourage and sustain the plurality of ideas and institutions that a modern state needs to deal with a dynamically changing internal and external environment.

At this stage of development, as the economy expands and more women are drawn into the labor force (both on and off-farm), these countries have the need and the opportunity to more directly and effectively address gender and equity issues. Finally, there is a need and an opportunity for these countries (for political, technical and financial reasons) to form institutional relationships with neighboring lower income economies for the purposes of technical cooperation and education.

Development assistance programs, financing and staff would be expected to reflect this growing domestic capacity. Direct involvement in institutional development activities initiated earlier in areas such as the environment, agricultural research and financial markets would phase out in favor of mechanisms for encouraging meaningful collaborative research, scholarly exchange or specific training, and enhanced trade linkages. The participation of the nation's professional scientific and managerial community in efforts to assist less developed neighbors could be encouraged, along with the use of domestic universities and other facilities to train third country nationals.

Support for the development or strengthening of a series of independent research and development institutes, possibly tied to a national science foundation, could provide an important mechanism for allocating indirect support to training, inter-university exchange and research, and would probably require substantial adjustment in the means of providing assistance--e.g., from direct loans and/or grants to endowments generated via PL 480 monitizations.

III ANE's Rural Sector Strategy--Present and Future

Over the past 20 years, ANE's strategy has focused on increasing basic cereal production in the region in ways that assured that the benefits of growth were shared by different income groups in the society. Program investments have sought to improve basic cereals research and extension, to provide physical infrastructure and policies to assure adequate and efficient supply of required inputs such as water, fertilizer and credit, and to strengthen analytical capacity within government to effectively manage a country's agricultural production system. As the analysis above suggests, these investments have in part been successful. Per capita calorie consumption, income and employment have improved in the majority of countries in the region. But problems of sustainable agriculture, hard core pockets of poverty, continued population growth and environmental degradation persist.

With growth has come new problems and the need to reassess ANE's regional agricultural strategy. Strategic program adjustments are required to: (1) assure that current regional agricultural strategy is consistent with changing economic conditions and problems in the region; (2) determine if strategic themes can be readily translated into specific field actions with measurable outputs, (3) prioritize themes so as to facilitate field level choices under conditions of declining resources; and (4) demonstrate to Congress and U.S. interest groups that development resources are being used efficiently and effectively. An ANE rural sector strategy cannot, nor should it, address all of the development problems identified. Selective programming is required, based on the impact of assistance on income and employment, what A.I.D. does best, long term U.S. political and economic interests, and the chances of success. This is an argument for marshalling the human, financial and organizational resources needed to resolve the constraints to increased income and employment growth and, if need be, to make the necessary adjustments in program staff and process to more effectively operate in the 1990's.

1. The Development Context

To continue economic growth already underway, ANE client countries will need to expand access to gainful employment and to increase incomes of populations living in both urban and rural areas. To accomplish this objective, private and public resources need to be committed to sustaining and increasing the rural employment base already established through the expansion of high-yielding cereal technologies, as well as to identifying and supporting public and private investments to develop and promote new, environmentally-sound, sources of rural sector growth.

Certainly, realization and maintenance of basic food security constitutes a priority claim on national attentions and resources. In the past, this has often taken the form of striving for self-sufficiency in basic cereals regardless of the economic merits of such a strategy. Of late there is increasing recognition of the costs involved in such a strategy and

acceptance of the idea of using the international market as a "balance wheel" in assuring national food security. However, any effective strategy must recognize and accommodate this priority objective, while retaining flexibility as to the means by which it is realized.

Both efficiency criteria and historical evidence dictate the expansion of private sector participation in rural economies. In countless instances this sector has proven that it can interpret market signals better, move faster and allocate scarce resources more efficiently, if given the opportunity, than public sector counterparts. However, the more active involvement of the private sector in development suggests a basic adjustment in the role of government, from a position of controller of economic development to the management and promotion of economic growth. Open currency exchange and banking systems, stable investment and legal environments, selected subsidization of new technologies and programs to encourage adoption, and capacity to detect and react to changing domestic and international market environments will be critical. Adjustments will neither be easy nor simple. External resources to encourage government policy adjustment in this direction, to identify the political and economic options available, and to absorb a portion of the associated risk and transition costs will be required.

The objective of increased agriculture-related income and employment through more efficient allocation and use of scarce resources leads to a number of key principles upon which a development strategy for the 1990s must stand.

First, in the decade ahead agriculture growth--especially, increases in basic cereals productivity--will continue to be a major source of new income and employment. However, agricultural expansion alone will not be sufficient to maintain acceptable rates of growth in per capita income as labor forces expand. Agriculture can be expected to decline in overall relative importance as an economy develops.

Second, efforts to maintain and improve the productivity of basic cereals production will continue to be critical because:

- Cereals production will continue to provide the single largest source of income and employment in ANE countries;
- Basic cereals will continue to be essential for national food security, price stabilization, and the maintenance of government credibility and political stability in all countries in the region;
- Cereals will continue to be the largest single source of protein and calories in the diets of poorer residents; and,
- Cereals will, for the medium term, remain the basic wage good of the region and will continue to be important in maintaining low nominal--not real--wage rates, which is critical to the expansion of private sector marketing, processing and distribution.

Third, while demand for agricultural products is diversifying and diets are changing, support for the expansion of non-staple commodity research and production should be determined more on the basis of a specific commodity's economic comparative advantage, importance as a raw material in the expansion of agro-processing, and compatibility with the diversification in effective

domestic and export demand than on production feasibility. In short, investments in non-staple commodity research and production must be led by demand, not a physical ability to produce the commodity.

Fourth, growth in higher value agricultural processing and marketing will be a prime source of expansion in rural employment, will lead to increasing incomes of underemployed rural residents, and will provide an important stimulus to marginal and subsistence farmers to relocate away from environmentally fragile, low productive areas. This will require:

Government capacity to identify product growth lines to meet domestic and foreign demand, to analyze and implement selected policy changes to promote the expansion of agro-processing investments, and to locate, plan, and implement public infrastructure investment required by processing facilities;

Expansion of capital markets to increase the sources of equity capital; Reduction in protectionist trade barriers and their replacement by tariff systems which increase and promote the use of least cost inputs by agro-processors; and

Restructuring of internal trade policies and transportation services to reduce the cost of raw and processed agricultural goods from farm to factory to consumer table or port.

Fifth, a transformation in the role of government from controller to promoter of economic development will require substantial restructuring of development institutions and a complementary expansion in the role of the private sector. Successes in certain developing countries--notably Thailand and Taiwan--in orchestrating this transformation, and the increasing costs associated with direct government interventions in rapidly expanding cereal production programs are combining to point out the economic and fiscal limitations of direct government involvement and the need for basic policy adjustments which establish an environment conducive to increased private sector investment. Governments throughout the region are beginning to realize the importance of:

Targeting interventions only when private market performance falls below prescribed expectations;

Establishing up to date legal, banking and contracting procedures which encourage the rapid, cost-effective expansion of market transactions, protect the rights of both buyers and sellers, and which quickly and effectively arbitrate disputes;

Encouraging the development of more complex marketing systems required as development occurs, not only in terms of input supply and the processing and distribution of agricultural products, but also capital markets to provide investment capital for the expansion of processing facilities and commodity futures markets to absorb a portion of the risk associated with a modern agricultural production and processing system; and

Increasing the effectiveness of taxation systems to both enhance public revenues required to carry out infrastructure investments needed to encourage industrial expansion as well as to provide incentives which channel private investment in desired areas.

Sixth, a sound natural resource management policy becomes increasingly important the long term productivity and efficient use of a nation's water and forest resources. This suggests the need for:

Strengthened capacity within the public sector to identify and respond in a coordinated manner to stop or ameliorate the adverse environmental impacts of public and private investments;
 The adoption of long term environmental and water resources policies which clearly indicate the relative roles of the state and the private sector in the ownership and management of land and water resources, prioritize resource users, establish effective methods of arbitrating disputes, and set up effective public sector institutions to manage soil, water and forest resources as components in natural eco-systems; and
 The development of an information base to support and monitor the above.

Seventh, all of the adjustments suggested above will require major additions to the stock of human capital available to both the public and private sectors. Deepening of government analytical, planning and monitoring capacity as well as expansion of private sector entrepreneurial skills are necessary. This will require:

Strengthening of governments' manpower planning capabilities to identify the specific skill areas in short supply, identify and implement policies which encourage adjustments in public and private educational institutions and programs, and to develop operational training plans to upgrade key skill levels;
 Establishing a wide range of new formal and informal training programs which specifically meet the needs of an expanding private sector. Areas likely to be in high demand might include commercial law, business management, marketing (international and domestic), investment analysis, accountancy, transportation management and computer science.

2. Institutional and Political Considerations

An action agenda to facilitate and quicken the structural adjustments facing ANE client countries is both complex and far reaching. ANE and the Agency neither have, nor will have, the staff or financial resources to assist countries in the region in facilitating change across the broad spectrum of needs. Choices have to be made which maximize the impact of scarce ANE resources in addressing the major problems constraining the expansion of incomes and employment, which meet realistic performance parameters imposed by the domestic political and economic environment within which A.I.D. operates, and which coincide with the comparative advantage (professional and organizational) of the Agency in administering development assistance.

a) The Domestic Political Environment

Articulation of an ANE rural sector strategy must consider the major economic and political adjustments which are likely to influence programing options through the decade ahead. The changing position of the U.S. in the international family of nations, the need to redress negative trade flows and

the increased emphasis that trade is likely to have in the formulation of U.S. foreign policy initiatives, and the increasingly important role that special interest groups play will all influence the types of programs ANE will be able to pursue.

A number of changes need to be considered:

The growing complexity of the world trading system and the increased role that developing countries play in it, the destabilization of the American dollar, and the persistent U.S. budget deficit all suggest the likelihood of a stable or decreasing U.S. foreign assistance budget and the need for A.I.D. to increasingly work in a cooperative rather than a unilateral mode. The increased power that special interest groups--both agricultural and environmental--have in Congress will result in continued and possibly greater Congressional interest and oversight of A.I.D. and other multinational development investments, the use of budget earmarking to assure that these outside interests are addressed in A.I.D. programs, and continued difficulties in generating the necessary political support to enact foreign assistance legislation.

The growing concern over the U.S. trade deficit, the slow pace of trade liberalization negotiations and the resulting increase in protectionist tendencies could lead to trade conflicts between major trading nations, use of restrictive U.S. trade measures, and increased pressure on A.I.D. to promote U.S. markets and abstain from any investments which might result in increased competition for U.S. exporters in world markets.

More widespread scientific and public understanding of global environmental problems--acid rain, ozone depletion, the "greenhouse effect", destruction of tropical forests, degradation of major watersheds (the Himalayas, for example)--will result in greater pressure on A.I.D. to commit resources to these problems, both in country programs and in the international arena.

While these trends will affect a broad range of U.S. programs and policies, they have particular relevance to A.I.D. and ANE's programming options. Specifically, these trends are likely to lead to;

- reduction in number and scaling back of the scope of Missions' specific program objectives;
- reduction of the number of A.I.D. program recipients;
- efforts to restore greater trust and confidence between Congress and A.I.D. in the implementation of the U.S. foreign assistance program;
- the need to strengthen the Agency's capacity to monitor and analyze commodity specific issues confronting interest groups and Congress, and to determine the most effective A.I.D. response consistent with the Agency's long term strategy objectives;
- the need to develop new ways of doing business which more efficiently use the Agency's scarce human and financial resources and maximize the Agency's ability to leverage funds from the larger donors--e.g., Japan and the multi-national banks;

In other words, during the 1990's ANE will likely be working in fewer countries, have less staff and fewer programmable financial resources, and face greater oversight by Congressional and interest groups. There will be continuing pressure, especially early in the decade, to establish effective programs which enhance U.S. trade flows and encourage liberalization of client country trade and private sector investment policy. Also, there will be increasing pressure on ANE to step up the volume of programming addressed toward the environmental problems that are increasing as development efforts intensify. Finally, there will be increased interest within the Agency in improved, more efficient management, including ways of increasing staff effectiveness, of identifying and testing innovative, high payoff solutions to development problems, and of leveraging financial resources controlled by other, larger donors to support promising solutions.

b) A.I.D.'s Comparative Strengths

With over 30 years' experience in foreign assistance programming A.I.D., and more specifically ANE, have developed recognized strengths relative to those of other multi- and bi-level donors in dealing with the economic development problems faced by client countries. The long term maintenance of a network of field offices with capable, in-country technical and administrative expertise provides both in-depth analytic capability combined with access to host country technicians and decision-makers. Through close, long-term involvement with the problems of production agriculture in the region, and more recent involvement in efforts to improve management of agricultural systems and undertake policy analysis and dialogue, A.I.D. personnel have gained both a depth of understanding of the production and administrative systems involved, and input into vital policy decision processes.

This long term involvement with host country policy makers has often led to the growth of collegial relations not enjoyed by other bi- and multi-lateral donors. Also, A.I.D.'s long term experimentation with the complex issues of institutional development has led to the formulation of common rules of thumb on the development of sustainable institutions. The lessons learned by ANE's institutional development activities are being drawn on by other donors-- notably the World Bank through cooperative rural development activities and, more recently, by Japan.

A.I.D. would not have been able to accomplish as much as it has without the unique strengths available in U.S. institutions. The U.S. agricultural research, extension and training university system has been intimately involved in international development efforts over three decades. Both as institutions and through their individual faculty members, they bring a unique capability to the agricultural development process garnered over years of involvement, from research and production to processing, policy analysis and marketing. The level of mutual trust and respect which characterize many of the relationships between these and host country institutions is a necessary condition for the difficult tasks of institutional restructuring and transformation that are required as economic structures adjust to growth. Access to this university system remains one of the primary selling points for the Agency's human resource development programs.

The presence of a large number of U.S. based private voluntary organizations, with extensive micro-level development experience, provides a unique resource to ANE to assist in defining, testing, and monitoring innovative solutions to critical private sector and rural development problems. These can be used to identify realistic approaches to rural problems, and to demonstrate how broader policy adjustments required to implement results will benefit target populations.

The strong U.S. technology base--especially in the advanced agricultural sciences, research management, communications and agro-processing and marketing--provides an unending array of proven technologies of value to client countries in their development efforts. When combined with the growing interest of U.S. manufacturers and processors in joint-venture developing country investments, well-developed U.S. based international capital markets and a focus on humanizing technological innovation, this sector processes unique capabilities for ANE development efforts in the low income transitional and middle income industrializing economies.

Finally, A.I.D. has access to a wider range of development assistance instruments and modalities than most other donors including both grants and concessional loans, the trade and development program, cash transfers, sector loans, plus PL 480 in all its manifestations. These various options combine to provide significant programmatic flexibility in responding to specific client country needs.

Although A.I.D. possesses or has access to many relative strengths, problems remain. Staff capabilities in such critical areas as macro-economic analysis and policy formulation, agro-processing development, trade, and capital market development are limited. Many of the important transitional issues faced by client countries cut across thematic and organizational lines with which the Agency is unprepared to deal. The urban-rural dichotomy which pervades much of A.I.D.'s strategic thinking, and the division between public enterprise and agricultural development activities are good cases in point. Finally, the ability of ANE, and the Agency as a whole, to formulate strategic issues and perform and/or manage first rate analysis--critical elements in innovative programming--is hampered by the absence of strong analytical staff. Dedication of staff and financial resources to this task is essential to develop programs which will remain up to date on the problems faced by A.I.D. client countries, which consolidate and transfer effective approaches between Bureaus, and which track international and domestic economic and political change and adjust A.I.D.'s strategies structure and program content accordingly.

3. ANE Rural Sector Strategy Precepts

ANE possess a unique set of qualities: long term experience in agricultural and rural development issues, an institutional presence in the countries, solid long term relationships with key development institutions, access to a unique and talented set of U.S. based professional staff, institutional and technical resources, and the availability of a wide range of assistance instruments. However, a sound strategy must be based on both current institutional strengths as well as accord with U.S. policy interests. Program areas to be emphasized in the ANE Rural Sector Strategy need to meet specific criteria. While according with overriding client country food security interests, they must:

- contribute to real increases in client country income and employment;
- meet policy parameters established by the Agency and/or Congress; and
- make maximum use of special A.I.D. and ANE strengths or capabilities (either those internal or accessible to the Agency), or potential strengths realizable through adjustments in personnel, organizational structure or procedures.

The list of possible interventions suggested will have differential impacts relative to each of the above three criteria. The impact of program investments on increasing income and employment, the overall strategic objective, will vary across activities and economic groups. For example, investments to increase or maintain staple cereal yields in both low income agricultural and transitional economies will have both direct and indirect impacts on labor force dynamics. In the latter group of countries, attainable rates of growth and labor absorption in agriculture will be lower. In these countries, growth in the industrial sector--especially rural and semi-rural agro-processing--could absorb substantial numbers of un- and underemployed rural residents. Factors which will facilitate this growth--revisions in trade policy, capital market development and infrastructure planning and management--will have a more indirect impact.

The impact of Agency and Congressional oversight is also an important factor in the selection of strategy components. Certain investment activities relate directly to these concerns, while others are more neutral. For example, focussing investments on assuring sustainable increases in per capita cereal availabilities encourages political stability, expands the buying power of poorer urban and rural consumers, and has limited impact on American producers and trade. On the other hand, investments in agro-processing, based on adjustments in domestic demand and supported by appropriate and effective research, could mean increased demand for U.S. exports. For example, the development of a modern poultry industry could lead to increased international purchases of equipment and feed, where the U.S. is a high quality and low cost producer. Finally, efforts to encourage private sector participation in marketing and processing, and emphasis on natural resource management, speak directly to U.S. interests and relative strengths. While it will be impossible to appease all interests, such efforts will go a long way in demonstrating that sound management of a nation's natural resource base is an important component of ANE's strategic objective of sustained income and employment growth in client countries.

Table Four provides a rough rank ordering of the impact of each of the possible interventions discussed earlier on the basis of their direct and indirect employment impacts, their compatibility with U.S. political and economic interests, and the availability of human or technological resources, either within or accessible to A.I.D., to bring to bear in their design and implementation. Numeric weights--a maximum of 20 points for direct, positive income and employment impacts, 10 for indirect impacts, 15 for U.S. political and economic policy compatibility, and 10 for extent of accord with A.I.D.'s comparative advantage, have been used to develop a crude rank ordering amongst possible activities.

Because of the general and overlapping nature of many of the interventions considered, and the complexity of the economic systems they will affect, the rank order presented should only be regarded as indicative of the potential importance of investment activities on achieving strategic goals. More detailed analysis, using a similar technique but based on country level analysis and more precisely defined goals, would be required to formulate country-specific investment strategies. However, the crude analysis presented in Table Four does suggest the following illustrative rank ordering of investment priorities:

1. Increased Staple Cereal Production: Investments in this area rank highest because of the relative importance of cereal production to national income growth, the relatively high impact that increased production has on direct farm employment, the degree to which production increases generate new employment in related agricultural enterprise (transportation, trade), and the significant relative strength of A.I.D. and the U.S. in cereals-related research--both technology and systems management.
2. Agro-Processing Development: The importance of activities which encourage expansion in this area, largely facilitated by private sector investments, results from the direct and indirect effects expansion will have on rural labor absorption and the prominent position of private sector development in U.S. foreign economic policy.
3. Trade and Market Development: Both components of this activity--trade reform and agricultural market development--would have a direct impact on reducing costs faced by agro-processors and consumers, and could potentially lead to expanded private sector investments in processing, growth in effective demand and, ultimately, increased labor absorption at the farm and agro-processing levels. Also, trade liberalization efforts form one of the center points in U.S. foreign policy initiatives in both developing and developed countries.
4. Human Capital Development, Infrastructure Planning and Management, and Agricultural Policy and Planning: All areas rank high because of the indirect impacts they have on the expansion of agro-processing and employment generation. In addition, A.I.D. possesses a strong comparative advantage in these areas. Agricultural policy and planning activities have more of a mixed impact; while directly influencing agricultural input/output price regimes which can favor increased production and employment, they will have relatively less impact on the private sector commercial activities on which income and employment growth strongly depend.

TABLE FOUR: IMPACT OF PROPOSED AND INVESTMENTS ACTIVITIES ON STRATEGIC OBJECTIVES

ACTIVITIES	IMPACT ON INCOME AND EMPLOYMENT		COMPATIBILITY WITH U.S. ECONOMIC/ POLITICAL INTERESTS	HUMAN AND TECHNOLOGY RESOURCE AVAILABILITY		INVESTMENT IMPACT*	
	DIRECT	INDIRECT		A.I.D.	OTHER	SCOPE	ORDER
1. INCREASED STAPLE CEREAL PRODUCTION	HIGH	MEDIUM	MEDIUM	HIGH	HIGH	51	1
2. AGRO-PROCESSING DEVELOPMENT	HIGH	MEDIUM	MEDIUM	LOW	HIGH	48	2
3. AGRO-PROCESSING INPUT SUPPLY	MEDIUM	MEDIUM	LOW	HIGH	MEDIUM	33	6
4. NATURAL RESOURCE MANAGEMENT	LOW	MEDIUM	HIGH	MEDIUM	HIGH	41	5
5. AGRICULTURAL POLICY AND PLANNING	MEDIUM	LOW	HIGH	MEDIUM	HIGH	43	4
6. TRADE AND MARKET DEVELOPMENT	MEDIUM	MEDIUM	HIGH	LOW	MEDIUM	45	3
7. HUMAN CAPITAL/INSTITUTIONAL DEVELOPMENT	MEDIUM	MEDIUM	MEDIUM	HIGH	HIGH	43	4
8. CAPITAL MARKET DEVELOPMENT	MEDIUM	LOW	MEDIUM	LOW	HIGH	32	7
9. INFRASTRUCTURE PLANNING AND MANAGEMENT	MEDIUM	HIGH	MEDIUM	MEDIUM	HIGH	43	4

Notes: *Numeric weights used in calculating scores are as follows: a maximum of 20 points for direct income employment effects, 15 points for indirect impacts, 20 points for U.S. economic and political compatibility and 5 points each of human and technological resource availability in A.I.D. and outside. Activities are assessed as having high, medium and low impact which correspond to 100, 60 and 20 percent of maximum points respectively. Maximum score for activities which receive all high marks is 65 points.

5. Natural Resource Management: While not having a direct, short-term impact on employment or incomes, sound use of a nation's productive natural resources mitigates against disruption in a country's basic agricultural production capability and ultimately assures long-term, stable growth in labor demand. In addition, activities in this area command strong U.S. interest group and Congressional support.
6. Institutional Development: This ranking results from the relatively low to medium impact it will have on employment in the medium term--viable, dynamic institutions able to respond to changing economic conditions are necessary to encourage and stabilize economic (and labor) growth--and the relatively moderate domestic U.S. interest in this area.
7. Agro-Processing Input Supply: This ranking results from the moderate impacts investments are likely to have on labor absorption, and the potential conflicts which could arise with U.S. commodity interest groups.
8. Capital Market Development: Although essential for the long-term growth in agro-processing, investments in these complex markets will be difficult to develop and relatively slow to expand. Substantial government experimentation will be required before concrete reforms are initiated.

The previous illustrative analysis and the overlap between different activities would suggest the following broad areas of ANE strategy emphasis:

- Agricultural Production Technology
- Agro-processing Development
- Trade and Market Development
- Agriculture and Infrastructure Planning and Management
- Human Capital and Institutional Development
- Natural Resource Management

In varying degrees, these themes can be incorporated into developmental programming for each of the types of economies differentiated above, and provide a focal point around which country agricultural programs can be organized. Because of the poor performance of food grain production in the low income agricultural economies, projects would continue focusing on improving basic cereal production so that per capita availability increases. In the low income transitional economies, programmatic emphasis could shift to activities that facilitate the development of the complex markets required to effectively transfer resources in and out of the agricultural sector. Finally, in the middle income industrializing economies, programmatic emphasis could move to the maintenance of host country institutions capable of carrying out the analysis required to make the necessary adjustments in internal development programs. Here, long term collegial relationships with individuals and institutions outside the host country would be extremely important. Common to all these themes in all contexts is the need for continued attention to human resource development, particularly in research, analysis and management.

IV Detailed Strategy Presentation

The actual set of investment activities comprising ANE's Rural Economic Growth Strategy will vary by the type of economy, and the unique social, political and economic environment present. The types of economies within which ANE must work and the general constraints faced in each have been discussed previously. This section explores each investment area, with specific emphasis on the type of projects or programs that might be considered for inclusion by Missions in reformulating their agricultural strategies to accord more closely with the income and employment objectives.

Needless to say, not all the activities mentioned under each investment theme will be appropriate for inclusion in a Mission's agricultural portfolio. Missions need the analytical capacity and political acumen to monitor and assess the political feasibility, the technical capability to explore feasible options to solving constraints if and when "windows of opportunity" present themselves, and the flexibility to reprogram resources, both human and financial, take action within the limited time frame afforded for change. This blending of economic, political and technical capabilities and strategic programming and technical interests into a flexible response capability will be discussed in Chapter V. Below is further consideration of strategic program themes and possible specific areas of engagement.

A. Agricultural Technology Innovation

In general, over the past two decades farmers have been "catching up" with the potential created by the innovations of the 1960s, and it will take considerable effort in agricultural technology over the next decade to ensure adequate cereal (rice and wheat) production to keep up with growing demand. The very dramatic increases in yield potential recorded up to 1965 have slowed dramatically: experiment station rice yields have actually declined since IR-8 appeared in 1965. (The newer rice varieties do have important advantages over IR-8--their yields are more stable in the presence of insects and diseases, and they mature in fewer days, thereby permitting intensification of land use. However, they do not have higher yield potential.)

There has been some increase in yield potential of wheat varieties since 1965, but this has been modest compared to the sharp increase between 1961 and 1965. Considerable effort in the form of maintenance research is required just to stabilize yields--i.e., to keep ahead of pests, diseases, and other stresses. Newer techniques, such as biotechnology, have potential in helping alleviate some of the more difficult problems facing agriculture in the areas where physical, chemical, disease, and insect stresses limit production under existing technologies. However, short of unexpected breakthroughs in yield potential, near-term rice and wheat production gains will come primarily through management--i.e., agronomic--improvements.

While a gap between potential and actual achievement in rice and wheat production remains, the prospects for closing it further are daunting. Fertilizer use is already fairly high in most countries, and efficiency of fertilizer distribution and use is not improving very fast. Irrigation investment has almost halved in the past five years, and cannot be projected as a major source of accelerated growth. Price policies for cereals are generally good throughout the region; policy reforms cannot be counted upon as a major source for increased cereal production. And environmental stresses continue to undermine the production base.

There is more scope for increasing productivity of some other crops, particularly feedgrains and oilseeds. Livestock and agroforestry are also potential growth areas. However, the comparative advantage of most ANE countries in oilseed production is questionable, and U.S. agriculture interests in the oilseed issue will also have to be carefully weighed. Economic viability (especially, the agro-processing potential) and international trade considerations must dictate the scope for A.I.D. support for research on these subsidiary crops. Agro-processing research must similarly be closely attuned to market potential and financial viability, and considered in light of U.S. trade and commercial interests.

What this implies is that future agricultural technology challenges will be at least as important as in the past. Funding levels for research must be maintained at current levels just to stay even. There is still considerable underinvestment in agricultural research in the ANE countries, and targeted A.I.D. assistance to technological innovation will be necessary at the international, regional and national research levels.

The regional strategy starts with the International Agricultural Research Centers (IARCs), as their mandates cut across all countries of the region. Regardless of the strengths of the National Agricultural Research Systems (NARSs), there is need for IARCs to do such things as germplasm collection and maintenance, basic genetic improvement, and information exchange. These functions must be protected for key crops, at minimum, at current real levels of funding. Additional tasks such as support to NARS will require additional funding. In addition, strengthened international research efforts are needed in natural resources management and basic biological improvements for the tropics, which require additional funding and, perhaps, new institutions. Country program "buy-ins" to IARCs as well as ANE Bureau support will be required.

Historically, national agricultural research in the ANE region has received strong and continuous support. Additional research infrastructure is probably a declining assistance priority, at least for A.I.D. Several of the countries in the region have large numbers of trained researchers, although in these, researchers are becoming isolated due to limited opportunities for external networking. NARSs can carry out basic problem identification/adaptive research in a number of countries, primarily in South and Southeast Asia. However, the need remains for sustained, steady assistance (not necessarily at large financial resource levels) to all NARSs, the status of which can be characterized as follows:

There are gaps in programs and trained staff in most;
 There is need for upgrading, improving human resource development in all;
 Biotechnology could be usefully promoted in many;
 Organizational management improvement is needed in all;
 Since near-future production gains are likely to come primarily from agronomic improvements--i.e., many different production variables--site-specific adaptive research and extension is increasingly important. (Research is needed on effective and efficient extension methodologies; we know what does not work but we do not know enough about what will work.)
 The private sector generally has been neglected in national agricultural research planning and management, but may have potential in some research and extension areas. Improvements in the legal environment--commercial law, regulations, grades and standards, property rights, etc.--may be the key way to create a favorable environment for private sector research and extension development.

a) Low-Income Agricultural Economies

Basic institution-building is the primary task in such countries. The most effective way to achieve this is to concentrate on developing "critical masses" of technological expertise to address production technologies for high-priority crops (in most instances, cereals). Research programming should focus on farm production problems. Human resource development and technical collaboration are the building blocks. Where basic research infrastructure is still needed, this might best be achieved by cooperating with other donors, such as the World Bank, from whom developing countries are receptive to the use of loans funds for buildings, library reference materials and research equipment. Facilitating participation in collaborative research networks, of which the IARCs and Collaborative Research Support Programs (CRSPs) are active participants, can be an effective means of supplementing and reinforcing the NARS programs.

b) Low-Income Transitional Economies

In some of the low-income transitional countries, the basic institution-building job is yet unfinished. In all of these countries, NARS institutions are fragile. Human resource development has the critical role of completing the task of building "critical masses" in key commodity and problem areas; these systems are also often in need of selective opportunities to get researchers involved more actively in the broader international research community, contributing to as well as learning from collaborative research networks. Technical assistance can still have an important role but increasingly in a "collaborative" rather than of an "assistance" mode. Research organization management (budgeting, planning, analysis) becomes increasingly important as progress is made in basic cereals production and future directions or objectives become less clear.

Post-harvest, processing, and marketing will be increasingly important in such countries. A number of specific actions may be required in support of agro-processing investment: analysis of domestic demand to identify ongoing adjustments and general classes of food products likely to be in demand in the future; identification of forward and backward market linkages which affect the cost of processed products; and steps that can be taken to reduce raw material, packaging, and/or distribution costs; and the development of effective organizational models that locate, implement, and manage facilities. Targeted investments in agricultural research, which link consumer demand for processed products, processing requirements and farm level output, could lead to substantial returns and lay the base for private/public sector research coordination.

c) Middle-Income Industrializing Economies

The basic challenge in such countries is recognition of the maturity of their NAR systems and identification of the mutual benefit that could be realized from a more mature relationship--i.e., what the U.S. could learn from as well as contribute to the countries. A.I.D. will need to explore ways to develop more productive collaborative bilateral relationships between the U.S. and these countries to achieve three specific objectives of interest to the U.S.:

- to transform our development ties with these developing countries into more mature bilateral relationships that are based more directly on mutual benefit;
- to maintain and intensify relationships, building on the large investments already made, in order to better serve broad U.S. political, economic, and commercial, as well as development, interests; and
- to forge strong and sustainable ties between the commercial, scientific, technological, and other institutions of the U.S. and these developing countries by working with the institutions supported by A.I.D.'s bilateral assistance programs.

In addressing these objectives, A.I.D. will support activities primarily within three areas:

1. Technology exchange/networking and, where appropriate, scientific collaboration, through linkages to educational institutions, research labs, product development centers, state land-grant universities, state-level (U.S.) technology incubators, and similar institutions which would yield important mutual dividends to ADCs.
2. Education and training, which might include a broad range of activities, including cooperative research, faculty exchange, joint participation in academic proceedings, and student seminars abroad which are beneficial both to developing country and U.S. institutions of higher education.
3. Commercial investment in technology generation and diffusion, through facilitating analysis leading to policy reforms and serving as a broker for joint venture private investments.

Within these areas of emphasis, A.I.D.'s strategy would rely primarily on existing and well-functioning institutions and networks for program implementation. On the U.S. side, these institutions would include, inter alia, U.S. Government agencies, business firms, private voluntary and other non-governmental organizations, state development organizations, chambers of commerce, and other associations of business firms, research and development laboratories, science and technology institutes, and both public and private universities. Well functioning, stable institutions in the client countries, supported over the long run by their own resources, are essential to such a relationship.

A number of different modalities or mechanisms could be used to implement a maturing relationship between the U.S. and the industrializing countries. These modalities all share three cardinal characteristics:

- Joint decision-making, involving representatives who might be drawn from government services, business, the university community, research institutes, private voluntary organizations, or other areas.
- Simplified, straight-forward procedures. Grants would be preferred since they are simpler and more consistent with the concept of support programs of mutual benefit.
- Joint funding. In the early stages, funding might come primarily from U.S. government sources; however the concept of shared contributions should be established from the beginning.

E. Infrastructure Planning and Management

Expansion of irrigation has been a primary engine of the impressive growth in agricultural production achieved over the past two decades; although questions remain regarding the extent to which irrigation can remain a primary instrument of growth beyond the 1990's, the ANE Rural Economic Growth Strategy continues to place a strong emphasis on increasing effectively irrigated area to increase cereals production, and facilitate crop diversification and secondary agro-processing industries. Similarly, the Strategy is predicated on the development of adequate road networks to move agricultural products to markets. In both cases, infrastructure development will consist primarily of improving technical quality and developing effective operations and maintenance programs, rather than investments in new, large scale facilities. At the same time, attention will be devoted to improving analytical capabilities to judiciously plan and develop infrastructure, as well as decentralizing maintenance functions to better assure the sustainability of facilities.

During the last two decades of rapid irrigation expansion, the principal focus of investment has been on major infrastructure development, particularly surface water facilities to expand water supplies and irrigate new land. As these sources of growth gradually became less abundant and more costly, greater attention has been given to groundwater development, in both the public and private sector, to the rehabilitation and betterment of existing systems, to investments in improved efficiency, and to improvements in the operation and management of existing systems. Groundwater development has permitted rapid

expansion of effectively irrigated area and yielded quick returns, particularly the use of shallow tubewells to supplement surface supplies. However, uncoordinated conjunctive use of surface and groundwater has wasted both financial and water resources.

Since the late 1970s, much attention has been devoted to improving the productivity and performance of existing systems. These programs commonly incorporated one or more of the following measures: introduction of new technologies; strengthening irrigation organizations; improvements in operation and maintenance--often accompanied by investment in new facilities--and increased participation of farmers in management and decision making. Such efforts have largely been confined to pilot projects and schemes, but demonstrated gains have not been expanded beyond pilot areas. One of the important challenges facing irrigation agencies is to explore ways to improve performance, sustain the gains and spread the techniques widely and rapidly, while reducing deterioration of water resources

Although some country programs may include investment in new irrigation infrastructure, the general thrust of the Strategy is to increase access to reliable irrigation water supplies by assisting irrigation agencies increase their analytical, planning and management capabilities. In essence, the Strategy focuses on field applications of a program of human capital development and institutional strengthening, on the hardware applications of irrigation "software," reflecting A.I.D.'s predominant experience and comparative advantage in the sector. The approach includes five principal elements:

- strengthen the analytical capacity of agencies and introducing new procedures to identify problems, assess remedies, appraise investment programs and plan long term investment strategies;
- improve exploitation of existing facilities, by improving management of operations and maintenance, including minor structural improvements;
- rehabilitate and modernize existing systems to overcome technical limits imposed by original designs, to respond to new water use patterns, and incorporate flexibility to accommodate future changes;
- strengthen management interventions in agencies, establish a service orientation toward user "clients," promote ongoing staff skill development and incorporate training programs into career patterns, re-define agency role vis-a-vis water users, and divest responsibilities for operations and maintenance to users;
- improve the planning and design of new facilities incorporating concepts of water resource planning and conjunctive use of surface and groundwater, introduce computer applications and computer modeling for management as well as design, explore the adaptation of new technologies, as appropriate, including pressure systems and water measurement/regulation, and involve the private sector in development and diffusion of new technology.

The particular thrust of the Strategy will vary from one country to another, corresponding primarily to ecological conditions and characteristics of irrigation development and the irrigation establishment.

a) Low Income Agricultural Economies

In these countries, where cereal production concerns are paramount, the emphasis should be on improving access and reliability with least recurrent cost requirements. This means strong emphasis on strategic rehabilitation of surface water schemes, combined with decentralized operations and maintenance programs. Where groundwater exploitation is most feasible, the program would promote private tubewell investment. Since most irrigation agencies are relatively new and weak, clearly focused institutional development strategies are in order.

b) Low Income Transitional Economies

These countries run the gamut from arid lands to wet tropics; from minimal irrigation potential to huge potential with huge, entrenched irrigation establishments; from historic to very modern facilities; from over-commitment of existing water resources to significant untapped potential. Consequently, no specific subset of strategy elements is applicable. Nonetheless, in each country, specific elements of the strategy are applicable, particularly the components which develop planning and analytical capacity, and improved management approaches.

c) Middle Income Industrializing Economies

The middle income countries can benefit most from the introduction, adaptation and diffusion of new technologies which irrigate most efficiently with limited water resources. Institutional efforts should focus on management improvements and strengthening technical competence in planning and design units. These countries offer the best opportunities to involve the private sector technicians and suppliers in irrigation development.

C. Trade and Market Development

The ability of a nation to develop efficient agricultural marketing systems complemented by effective domestic and foreign trade policies constitutes one of the basic requisites for continued real growth in agricultural production and income, the expansion of domestic demand--first for cereals then higher value added products--and ultimate entry into selected international export markets. As already noted, the role of government in trade and market development must shift over time from one of control to one of facilitation and monitoring.

The importance of basic cereal production in low income agricultural economies often leads to heavy direct government involvement. With increased production and the advent of relatively assured cereal supplies, government's role can change to promoting growth in private sector processing capacity to meet the changing composition of domestic food demand. Government actions which increase price stability for major cereals and establish a policy environment to facilitate exchange can effectively decrease the costs of further production and processing, and encourage private sector involvement.

As experience in agro-processing leads to improvements in efficiency and constraints to domestic demand are addressed, government efforts to promote exports through market identification, promotion of domestic products and simplification of export procedures become critical. The availability of foreign exchange to procure additional processing technologies and inputs will facilitate further expansion and allow industries to reduce processing costs further by providing access to the complete economies of scale associated with modern agro-processing. It will also encourage more focused attention to development of national capacity and interest in trade.

This suggested transformation in government programs is not automatic nor easy. There are, however, means by which A.I.D. can support groups and individuals who advocate change, thus facilitating the adjustment process.

a) Low Income Agricultural Countries

In these predominately cereal deficit countries, programs need to focus on strengthening two related areas; marketing systems which deliver inputs to cereal producers and collect surplus output for transfer to non-farm consumers, and cereal price stabilization. To address the first, programs should focus on improving marketing efficiency, and system monitoring.

A.I.D. could support expansion or upgrading of basic agricultural input market facilities to minimize input supply disruptions and reduce the costs of intensifying cereal production. Such efforts should focus on increasing the efficiency of distribution systems, and encouraging price competition in local markets between government and private input suppliers. Commodity import programs focusing on key inputs could be effectively used to leverage greater involvement of the private sector in input distribution.

To facilitate the eventual removal of government controls over input markets, monitoring systems will be required. Such systems should provide management entities with real time estimates of stocks at points in the distribution system, monitor input prices at the local and regional levels to identify where markets were operating imperfectly and thus pinpoint areas requiring government intervention, and track change in farm level use rates to enable planning for future offtake levels and the analysis of subsidy adjustments.

To assist governments in establishing effective cereal price support systems which make maximum use of private sector traders, A.I.D. could: establish and/or strengthen the logistical support systems required to backstop a price stabilization program; establish analytical units capable of monitoring cereal prices; establish and maintain public stocks at least cost levels thus encouraging the shift from non-market distribution systems (rationing) to more market driven systems (floor and ceiling pricing supports); and monitor changes in domestic and international cereal markets which influence the timing, volume and costs associated with required cereal imports. PL 480 commodity programs to build adequate stocks or to assure supplies during periods of rapid drawdown could be useful in absorbing a portion of the risk associated with the conversion of stabilization programs to more private sector involvement.

Finally, A.I.D. could support programs which encourage private sector investment in input and output storage and processing facilities as they relate to cereals supplies. Adjustments in government licensing procedures, the provision of credit to finance private sector equity investments and testing of new, low cost storage techniques would encourage growth in private involvement.

b) **Low Income Transitional Economies**

As countries approach the point where domestically produced cereal supplies are roughly in equilibrium with domestic demand, the political support and economic justification for direct government involvement in agricultural input/output distribution systems diminishes. While continuing government efforts to stabilize basic cereal prices remains an important issue (because of the effect these prices have on overall welfare and agricultural and non-agricultural wage structures), adjustments in government ownership of agriculture-related industries and in trade and marketing policies which effect the rate of growth in private sector investment will be required.

A number of potential areas for involvement present themselves. Building on previous efforts, A.I.D. could continue involvement in restructuring government control and/or ownership of input production and distribution systems. Support could be used to restructure state trading entities and disengage them from non-cereal markets. To encourage appropriate private sector investment to meet adjustments in the domestic demand structure for food, changes in banking procedures, private sector investment promotion and tax policy could be supported.

Establishing consistent exchange rates, investment and tax policies which favor growth in domestic processing capacity could positively effect the costs and profits of private investors. The use of market interest rates would encourage the increased mobilization of domestic capital. The increased costs associated with such adjustments could be offset by tax breaks, which would allow governments to target incentives to specific types of industries, where domestic demand is increasing rapidly or where the nation has a proven comparative advantage in processing.

Finally, adjustments in trade policies, or more specifically, how nations can use trade policy to encourage expansion of domestic agro-processing capacity, will in many instances require major changes in the Ministry of Trade and ancillary trade-related agencies. Improved analytical capacity to explore the domestic implications of changes in trade policy, revised and streamlined administrative systems which license and monitor private sector trading activities and encourage investment, and strategies which identify and plan for growth in domestic trade will be required to develop the technical and political support required to dismantle hidden trade barriers and are areas for potential A.I.D. support.

c) Middle Income Industrializing Economies

The increased use of low cost domestic and imported items to feed the expansion of the agro-processing sector should eventually lead to expanding exports. Access to foreign markets and consequently to the foreign exchange earnings required to expand imports will depend in part on private sector capacity to tailor domestic production to meet foreign tastes and preferences and in part on a country's ability to participate fully and effectively in bi-lateral and multi-lateral trade negotiations. The capacity to monitor changes in the structure of foreign markets, to identify potential new markets and encourage appropriate adjustments in domestic production capacity, and to balance reciprocal trade flows with major trading partners, and to diversify markets are essential. A.I.D. efforts could focus on trade promotion and on the development of a permanent office or agency with the ability to undertake this analysis and coordinate in-country capacity to backstop and represent the nation's trade interests.

D. Agro-processing Development

Increased AID investments in support of growth in agro-processing and related service industries can provide substantial returns in terms of increased income and employment. Shifts in program emphasis in selected countries, where conditions are favorable, also build on A.I.D.'s extensive knowledge of agricultural production systems, lead to portfolio diversification, and put ANE programs directly in the mainstream of Agency concerns for expanding the participation of the private sector in development. Missions' decisions on what activities it can support in this new area and the product lines on which support will be focused depend on the following guidelines:

1. Investment decisions must be based on real changes in domestic demand, not supply potential: In the past, too many projects have ignored effective demand, only to be faced with limited markets, excess supply and rapidly declining prices and profit margins;
2. Agro-processing investment programs will not be possible in all ANE countries. Shifts in demand which signal increased consumption of higher protein foods and processed commodities occur as incomes rise. Thus, countries with very low incomes are not likely to find appropriate private sector investment opportunities;
3. Agro-processing investment programs must involve both the public and private sectors--with the former, to encourage withdrawal from direct involvement, and with the latter, to encourage and target investment to key high growth commodity areas; and

4. Focusing agro-processing development will require a number of complementary strategic program decisions within Missions. Targeting agricultural research investments to those which support an agro-processing thrust, support for modifying contract law and commodity specifications, promoting easing of import restrictions and country-specific production programs which effect the cost of inputs used by agro-processors, and increased emphasis on infrastructure planning and management which determine the location and support agro-processing investment are examples of the needed program decisions.

Areas of program emphasis which may be considered by Missions are presented below. Because of the basic nature of growth in this area, complementary investment activities can also be found in other investment categories.

a) Low Income Agricultural Economies

Low incomes and the predominance of cereals in domestic diets limit agro-processing investment in these countries. This does not mean, however, that Missions in some countries cannot begin to pursue a limited but active program that would set the stage for future development. For example, improved domestic capacity to conduct the detailed demand and market analysis which underpins agro-processing growth could pay off handsomely in the future. Although this may vary from country to country, such capacity development efforts may be better suited for agencies directly responsible for agro-processing development--ministries of trade, commerce and/or industry and national planning boards.

Also, a thorough understanding of domestic cereal markets could provide useful insights to A.I.D. and domestic counterparts in understanding potential future developments. Knowledge of these markets could lead to greater appreciation of their comparative economic strengths, initial efforts required to improve commodity specifications, contract procedures required to facilitate transactions, and the employment and income growth potential of agro-processing development.

b) Low Income Transitional Economies

These countries are typically moving through a period of rapid adjustments in agricultural product demand, and represent prime targets for Mission agro-processing investment programs. Efforts to expand capacity to analyze market demand down to the product line level will assist in defining private sector investment emphasis. The information generated from these analyses could then direct market testing of potential products. Results again would signal potential areas for growth, provide estimates of the potential size of processing facilities required, identify areas of concentrated demand, and provide invaluable information to expand efforts to set domestic product standards.

Missions could assist countries in implementing these pilot efforts, and in establishing specific agencies responsible for defining and maintaining product standards and expanding private sector marketing and advertising capacity. Identification of potential product growth areas would also complement analytical efforts in determining the specific type, size, location and support services required. For example, if processed poultry products were identified as a potential growth area, domestic analytical and administrative capacity would need to be established or strengthened to effectively translate changes in effective demand into specific changes in private sector investment flows. Such an agency would identify the most advantageous locations of the processing industry, ancillary feed mills, breeder stock, slaughter and freezer facilities and by-product processing operations required, and the range of public services and infrastructure needed to establish the industry.

Decisions taken above could lead to supportive activities in other program related areas: a refocusing of agricultural research efforts to increase the quality and level of inputs used by the processing industry--e.g., feed production; adjustment in import restrictions which effect the price and availability of required inputs--production and processing machinery, high protein feed ingredients, medicines, and packaging materials; and the establishment or development of quasi-public authorities which would oversee public infrastructure investments and manage area operations when completed. Finally, AID support could be provided to establish or strengthen domestic promotional efforts to increase private investment. The development of incentive packages including tax and tariff deferral policies, efforts to encourage joint foreign and domestic investments and adjustments in interest rate policy might be considered.

c) Middle Income Industrializing Economies

AID efforts in these countries would focus on expanding analytical capacity to identify and promote expansion of export sales of processed products. Missions involved in these countries could assist in efforts to examine and improve government export licensing procedures, in establishing links between domestic commodity processing groups and foreign counterparts to identify mutually advantageous promotional activities, in providing access to foreign expertise, and to assist domestic processors in identifying implements and improvements in product quality, organization and production and cost control. Activities outlined in the section on Trade and Market Development would compliment the above efforts.

E. Natural Resource Management

The fundamental natural resource problem confronting most developing countries is agricultural; i.e., that of meeting the present and future food production imperatives. As long as countries are faced with basic food security concerns, natural resource conservation will be a secondary concern at best. This is compounded by the foreign exchange earnings imperative, which often virtually dictates overexploitation of renewable resources (e.g., tropical forests), and by the overall perceived dichotomy between production and conservation interests. It is thus a basic premise of this Strategy that

attainment of a reasonable degree of food security is an essential precondition to serious attention to natural resource issues, and that while it is a fact that production and conservation goals are complementary over the longer term, they may directly conflict in the short term for reasons that are sound.

A secondary consideration is that A.I.D., with its increasingly limited resources, cannot address the full range of natural resource conservation concerns in the course of implementing its programs. A.I.D. is a development agency, and will need to concentrate on those few key natural resource issues with the most significant implications for sustainable rural sector development.

Two further working hypotheses underlie the ANE strategy relative to natural resource conservation:

1. Natural resource degradation in most LDC contexts is primarily a function of poverty, the absence of economic alternatives, incomplete cost accounting and "wrong" policies;
2. The development of economically and environmentally viable farming systems for fragile areas (e.g., sloping lands, low rainfall areas) has very high costs relative to benefits. Attaining a higher level (more productive and/or more environmentally sound) of subsistence agriculture in such areas is not feasible as a long-term strategy.

The concerns being registered over the prospects for continued growth in basic cereals production adequate to meet the increasing demand, A.I.D.'s limited resources and its relative strengths combine to dictate primary program focus on striving to ensure the continued growth and long-term sustainability of agriculture in the areas of relatively higher potential. Given the above, the rural sector strategy relative to natural resources is to:

1. Through investment, employment and income growth in the relatively higher potential areas, encourage migration out of the environmentally fragile areas. (This recognizes that, as recently pointed out by Mellor, the historical answer to problems of low-potential areas has always contained a major element of migration, and accords well with the overall strategy emphasis on income, employment and food security.)
2. Develop indigenous institutions capable of fully analyzing environmental implications of specific programs and policies and presenting the results of such analyses to the wider public, as a means of breaking down the perceived dichotomy between resource conservation and production and educating the public to environmental concerns; and
3. Promote sustainable agricultural growth in the higher potential areas through careful environmental analyses and through interventions designed to enhance the productive viability of such areas. Specifically, this will consist of efforts (policies and programs) designed to ensure the continued viability of watersheds, and to conserve and upgrade soil and water resource quality.

What this suggests, in effect, is that in most LDC contexts the strategic focus will not be on natural resource conservation per se, but rather on natural resource conservation as a means of insuring countries' continuing ability to meet agricultural objectives. This could lead to similar interventions, e.g., promotion of agro-forestry in upper watershed areas, but with different objectives and different evaluation criteria.

A wide range of specific intervention options exists for implementing such a strategy, from data collection and monitoring to reforestation, pilot/demonstration projects, resettlement, price policy reform, tenurial reform and public education. The determination of the interventions to be pursued in specific country contexts at any particular time would be the provenance of a mission in mapping out its country strategy, but would be expected to accord with the overall strategic goals of income driven development/agricultural transformation and sustainability. A program of natural resource monitoring to identify priority problems combined with conservation education programs could be introduced at relatively early stages of development, and watershed planning and protection measures could be integrated with irrigation development or other infrastructure projects. Specific interventions aimed at resource conservation problems (e.g., policy analysis and reform, specialized institutional development, tenurial reform, resettlement, off-farm employment, reforestation) could follow as more information became available and progress was made on such other fronts as agricultural research and production.

The commercial agriculture orientation of the strategy does not mean that A.I.D. proposes to ignore the fragile and rapidly degrading regions, e.g., hill agriculture and sloping land agricultural technologies. It is clear that in many highly stressed areas large-scale out-migration is not a viable option over much, if not all, of our planning period. It does, however, recognize that there are resource limitations and comparative strengths that must be factored into country agricultural strategies. A.I.D. must continue to publicize the problems of such areas, and A.I.D. resources may be useful in leveraging other donor or host country investments in such cases. Also, the strategy is subject to country-specific interpretation and application--it is conceivable that as a country moved through Phase II ("Low Income Transitional") into Phase III ("Middle Income Industrializing") it would have both the interest and resources to more directly tackle natural resource and environmental interventions as such (e.g., Thailand).

Finally, an effective strategy must not only deal with current problems, but establish mechanisms to reduce or control natural resource degradation in the future. And, although population considerations per se do not fall within the purview of natural resource management policy, without an effective mechanism to limit the growth of populations in fragile or marginal areas and encourage out-migration to higher potential areas, the impact of other interventions will be diminished. Increased growth of agro-industries could, in the medium to long term, moderate population pressure in fragile, low-productivity areas by attracting labor from low-paying agricultural employment.

a) Low Income Agricultural Economies

As noted above, countries in this group tend to be absorbed with the production question--natural resource issues tend to be accorded lower priority. In such cases, an appropriate strategy is to concentrate on laying the groundwork for subsequent, more-focused interventions through (1) assessment and monitoring of natural resources; (2) identification of the environmental costs and benefits of policies and projects, in order to promote improved cost accounting; (3) promoting awareness of environmental issues, both in government policy circles and the wider public; and (4) ensuring the environmental soundness of specific interventions. All of these can be undertaken with a relatively minor commitment of resources, and are compatible with relative Agency strengths. Where serious problems exist and other donor resources are available, A.I.D. may be able to play a valuable brokering role, perhaps including some demonstration or pilot efforts.

b) Low Income Transitional Economies

The overall strategy for low-income transitional economies is more active, and is based on two premises: the need to ensure the continued viability and growth of agriculture in the higher potential areas, and the importance of water resources. Complementing these broader issues are a number of resource specific actions. For example, improved management of forest resources, especially the reform of policies regarding tenure and forest leases or direct reforestation programs, may be required to ensure protection of vital watersheds. In areas where mixed upland farming is prevalent, interventions could take the form of promoting agroforestry, and include introduction of new, mixed farming and terracing systems specifically designed to both limit soil erosion and increase farmers' incomes. Given the low incomes prevalent in such areas, access to credit may prove an essential part of any such program. Almost all types of program, however, will require a clear understanding of the rights and responsibilities of concerned parties (especially the local residents) if they are to have a chance of success.

Since watersheds typically do not follow national administrative lines, new models of organization which coordinate local, provincial and national efforts will frequently be required to effectively implement watershed-wide initiatives. To effectively carry out their coordinating role, watershed management activities need to be based on a national water resources plans and institutions that clearly set out the various riparian rights, priorities and mechanisms for resolving disputes.

One user group--possibly the most important at this stage of a country's development--requires focused consideration. Within countries in this group, irrigation systems represent the largest single user of water. Programs which improve the efficient use of this water, encourage the conjunctive use of both surface and subsurface water resource and limit agricultural based pollution and public health problems will be critical to continued growth in agricultural production, rural incomes and employment. Questions of improved design and management (especially in areas of limited supply), of ownership and control (among farmers, irrigation authorities and the state) and of long term financing (of operations and maintenance efforts) will continue to receive

substantial attention in the years to come. Pilot programs which test alternative solutions to these and other equally pressing questions will continue to command a substantial portion of government as well as donor interest and investment.

Project design under these conditions needs to avoid various pitfalls: (1) programs need to be targeted, for example, not to areas where erosion is most evident but where continued erosion will have a significant impact on agricultural productivity; (2) farming systems research must be designed to absorb not current but future, and possibly reduced, labor forces; and (3) coordination between agencies having responsibilities for upland management cannot be assumed and usually must be explicitly included as a development objective in project design.

While continuing and expanding the environmental monitoring and impact assessment activities mentioned for the low-income agricultural economies, price policy and tenurial reforms are also likely targets for intervention for transitional economies where the cereal production imperative may not be so great. In these situations, solid policy analysis capability is essential in highlighting the social and economic costs and benefits of specific policies, programs and projects. Such countries may, depending on their overall food security situation, be in a position to begin diversifying their research effort to include work on appropriate production technologies for more fragile (arid, sloping) lands. Such countries may also be in a position to consider development of specialized institutions concentrating on environmental issues, both in terms of monitoring and analysis, and education.

Finally, with the development of agro-processing and increased commercialization comes the possibility of encouraging out-migration from the most environmentally vulnerable, low-productivity areas. Assistance programming will want to carefully consider the employment and indirect natural resource aspects of micro-industry, agro-processing and related infrastructure investments.

c) Middle Income Industrializing Economies,

In such economies arises the possibility for direct environmental or natural resource conservation interventions as such. For A.I.D. this might take the form of expanding the roles and capabilities of environmental protection institutions, and involving such institutions in global networks, and of collaborative work on common problems (both methodological and technical), combined with support and involvement with agronomic and policy research and analysis systems.

E. Human and Institutional Development

A recurrent theme in each of the substantive areas is the critical importance of a strong human and institutional base in each country's continuing ability to meet its development objectives. For each group of economies there is a fundamental need for responsive, flexible, public and private institutions supported by appropriate laws and guided by an educated

and committed management cadre. The key issue is not whether a strong ANE program involvement is needed and justified, but rather how to appropriately select and diligently pursue specific human and institutional development program activities for the three categories of economies in light of expected resource limitations and the long time horizons involved.

Several considerations can assist in selecting and implementing appropriate activities in this area. First, the ultimate test for success of human and institutional development efforts is the extent to which they create and leave behind the capacity for continued performance of key analysis, research and management functions (e.g., the institutional sustainability). A second consideration is that the appropriate human and institutional development response should be appropriate to the type of economy and the nature of the specific problem. (For example, institutional development activities are more likely to take place within individual organizations for low income agricultural economies as compared to interorganizational settings in low income transitional economies.) The third consideration is that a considerable knowledge base on the relative effectiveness and costs of human and institutional development approaches has been assembled over the last 10 years which, if systematically applied, can greatly increase the sustained benefits associated with these efforts.

Given the above, ANE's strategy relative to human and institutional development is to:

- Incorporate human and institutional development dimensions as integral dimensions of the other program areas.
- Structure the human and institutional development program for a particular country according to the generic focus areas and strategies related to each of the three groupings of ANE of economies.

a) Low Income Agricultural Economies

For these countries, ANE's human and institutional development strategy for the 1990s will undergo several shifts. These include:

- Moving from the strengthening of the reservoir of human capital to an emphasis on the strengthening of organizational capital;
- Moving from capacity building to an emphasis on enhancing and sustaining the performance of agricultural institutions; and
- Moving from the pursuit of many human and institutional development objectives, mostly through the public sector, to a selected set of objectives in both public and private sector organizations.

The primary human and institutional development focal areas and associated approaches for these economies include:

- Enhance and sustain the effectiveness of the range of agricultural institutions involved in cereal production, with emphasis on their research, analysis and management functions. The approach should include a focus on the legal and procedural institutions that facilitate agricultural transformation.

- Develop the critical mass of technical and management skills in key cereals-related institutions, continuing to support U.S. and in-country education and training for scientists and administrators/managers.
- Upgrade basic skills for the rural labor force, with particular attention to the increasing number of females as farm laborers and decision-makers, and prepare the labor force for off-farm employment. This will involve increased basic and job-related training.
- Upgrade the capacity to trace policy effects from the national or sectoral to the household level, with particular emphasis on responses of individual producers to alternative policies and resource availabilities, and analysis of welfare impacts on specific household members.

b) Low Income Transitional Economies

The human and institutional development strategy for the transitional economies will also see several major shifts in the 1990s. These include:

- Moving from the strengthening of the reservoir of human capital to an emphasis on the strengthening of inter-organizational capital;
- Moving from capacity building in agricultural institutions to an emphasis on enhancing and sustaining the efficient performance of program structures and processes; and
- Moving from the 'project' mode, accompanied by micro-management at the field level, to the expanded use of 'program' modes accompanied by more removed, indirect management by A.I.D.

The primary focal areas and associated approaches for the human and institutional development strategy in the transitional economies include:

- Enhancing and sustaining the efficiency of inter-organizational processes dealing with policy analysis, research and management of the adjustment process.
- Enhancing agricultural and rural sector institutional systems that can positively influence productivity and employment, including: (a) central functions of personnel, information and financial management and (b) local/urban functions of service delivery, maintenance, cost recovery, interest articulation, etc. This will involve investments in 'institutional infrastructure' at the central, regional and local levels, and include, e.g., information systems, financial management systems, and infrastructure planning and maintenance. etc.
- Upgrading specialized education in new technical and management fields via a continuation of U.S. and in country education and training programs. This may include the strengthening of governmental and private educational institutions.

The human and institutional development strategy for the transitional economies involves a broader array of institutions than the strategy for the agricultural economies. To handle this increased complexity, A.I.D. will need to more closely identify interests and institutional roles and capabilities, and play a more indirect, facilitative role in which major ownership for planning, implementation and results resides with the country.

c. Middle Income Industrializing Economies

ANE's proposed human and institutional development strategy for the 1990s represents a major break from the current approach. Specifically, the contrasts can be viewed as follows:

- Moving from a pursuit of the LDC 'graduate' approach, where assistance is gradually phased out, to a long range 'mutual benefits' approach, where A.I.D. remains actively involved in a mature set of relationships albeit with a much reduced and reoriented in-country presence. Moving from an emphasis on the strengthening of the reservoir of human capital to the strengthening of key scientific and executive leadership capital in cooperation with major U.S. universities, corporations and other international institutions.

The major human and institutional development focal areas and A.I.D. approaches encompassed by this shift in strategy include:

- Providing long-term support for selective, mutually beneficial transnational networks for technical and managerial exchange.
- Providing selective, long-term support for high priority institutional development initiatives related to specific agricultural program areas such as environmental protection, biotechnology, information systems or trade liberalization.
- Developing technical assistance and training linkages with neighboring low income agricultural and transitional economies to support their development and support the U.S.'s long term economic interests. In select cases, A.I.D. would provide program funding to strengthen a middle income country's performance and capacity to provide technical cooperation and training services for other countries on a cost recovery basis.

Implementing the human and institutional development strategy in the middle-income economies will require a different, more collaborative posture on the part of ARDOs. It will also involve a new set of diffuse networking roles with a range of highly competent individuals and organizations.

V STRATEGY IMPLICATIONS

This strategy goes far beyond the traditional borders of the agricultural sector, to include (especially for the low-income transitional and middle-income industrializing economies) natural resources, trade, agro-business, finance, institutional sustainability, policy dialogue, rural-urban linkages. The primary focus on employment and incomes, and "demand driven" structural transformation in agriculture, rather than the traditional production orientation, has significant implications for the Agency in terms of personnel, implementation modalities and organizational structure, as does the increasing emphasis on "development coordination" versus "development assistance", especially in the transitional and industrializing economies.

A. Implementation Modalities

- Resource limitations dictate that AID will generally no longer be able to finance major infrastructural and institutional development projects. Instead, AID will need to increasingly play the role of sectoral analyst, innovator and catalyst, leveraging host country and other donor resources. Where AID does get involved in infrastructural and institutional development efforts, the focus will increasingly be on management and maintenance.
- In order to perform this role, AID has available to it a wider range of assistance instruments than any other donor: grants, loans, PL 480 in all its manifestations, Trade & Development, and access to a large and effective PVO/NGO network and the U.S. agricultural research and analysis network. It also has an established field presence and good access to both HC decision-makers and technocrats, demonstrated strengths in the area of sectoral analysis and sector-specific policy dialogue. The challenge will be in effectively marshalling these strengths and resources.
- The Agency will need to resolve the dilemma between economic soundness as a major criteria for investment decisions and the need to be innovative and undertake some of the more risky interventions that the Bank and other donors cannot or will not. What this suggests is that economic analysis will become even more important, but not in the sense of traditional benefit-cost analysis. Instead, analysis will be needed to identify developing markets and areas of investment opportunity and high potential, explicitly assessing risk factors. Further methodological work in this area will be required.
- Food aid, because of the domestic production incentive and self-help considerations, will need to be fully integrated into sectoral programming and implementation at the Mission level.
- Domestic U.S. agricultural considerations--pressures from U.S. agricultural interests will continue, and field officers will need to continue to work to integrate development and agricultural trade. AID/W, for its part, will need move from attempting to respond to specific commodity group interests toward dealing regularly and effectively with representative groups that can play a brokering role among the disparate commodity groups; e.g., the Farm Bureau Federation, possibly in conjunction with the USDA.

B. Personnel

According to the recent ARDO personnel analysis, the current staff in the Agency backstop specialties relative to food, agriculture, rural development and natural resources have impressive academic credentials and seem well qualified to manage current programs. While personnel levels are stable, the slower intake of new employees coupled with new and complex program initiatives dictate an Agency training emphasis on the creation of a cadre of multi-skilled employees capable of managing a variety of innovative activities. Unfortunately, the Agency has no cohesive work force planning which relates program directions and needs to recruitment and training.

The foregoing analysis and discussion point to the following conclusions regarding Agency personnel:

- Implementation of the new strategy will call for staff with extensive analytical, conceptual, integrative and management skills.
- Specific skill areas in which increased in-house Agency capability will be required include trade, natural resource economics, agricultural policy, higher agricultural education, agri-business and marketing.
- The Agency can obtain these skills either through mid-level recruitment of highly experienced individuals, or through a lower-level entry program and more intensive employee development and in-service training. In any event, significantly increased training for personnel now in-service will be required to meet the program needs of the next ten years.

C. Organizational Structure

- It is obvious that a management structure fragmented into separate agriculture, private enterprise, food for peace and natural resource/environment offices cannot hope to be responsive to the Agency program needs of the 1990's for the more rapidly developing economies.
- While specific organizational determinations will be made by individual missions, task or program oriented integration in accord with the mission's development strategy will be essential. At the minimum, one would expect to see integrated agricultural, rural development, natural resource and food for peace offices.
- Where offices are not structurally integrated, Missions will have to assure effective integration through committees and task forces in which agricultural and rural development officers play leadership roles. Because commercial agriculture and agri-business would be important programmatic areas in many, if not most, countries, the need for private sector expertise and familiarity with relevant Agency programs must also be explicitly addressed.