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AN OVERVIEW OF PAKISTAN'S  
CURRENT AGRICULTURAL DEVELOPMENT POLICY OPTIONS

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The contents of this report reflects  
the professional views of the author  
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## I. INTRODUCTION

The Government of Pakistan has operated a planned economy since the mid-50's. In line with planning objectives, Pakistan has successfully expanded an industrial sector and has been more successful than many developing countries in generating employment for its rapidly growing population. Nonetheless, agriculture remains the dominant sector, supporting about three-fourth of the population and providing the majority of the food requirements and export-generated development capital utilized in the non-agriculture sectors. It comes as no surprise, therefore, that each succeeding five-year plan has pointed to the critical role of agriculture in Pakistan's economic development process and called with increasing urgency for the need to rapidly expand its production capability. Yet, the value added growth rate in agriculture has not met the expectations of the planners and, except for the Green Revolution dominated 1960 decade and the 1977-81 period, has not kept up with the national population growth rate.

While the population growth rate has increased from about 2.5 percent in the 1950's to about 3.0 percent at present, the annual growth in agricultural output during the 1970-77 period was back down to 1.5 percent, the same level as that of the 1950's, after reaching a peak of 4.1 percent during the Third Plan period of 1965-70. Since 1977, major policy reforms have occurred in an effort to revive the overall growth rate of the economy and since then Gross Domestic Product has averaged about 6 percent in real growth per year, while value added in agriculture reached an annual growth rate of about 5 percent during this period. According to the latest figures available (State Bank of Pakistan report for fiscal year 1981-82), however, the Gross Domestic Product had increased at an even higher rate of 6.3 percent this past year while the value added in agriculture had dropped by 1 percent from the previous year to about 3.4 percent. The 2.6 percent increase in the real per capita income continued to lag behind the population growth rate.

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The recent divergence in output and growth trends between the overall economy and the agricultural sector has not gone unnoticed by the national planners. Efforts are being accelerated to implement remedial policies recently set forth in the National Agricultural Policy statement of February 1980. In conjunction with this effort, the U.S.A.I.D. Pakistan Mission is now expanding the policy analysis work authorized in part under its Agriculture Commodities and Equipment Program, 391-0468, approved for implementation in March, 1982. This overview report is one of these policy analysis activities.

## II. TERMS OF REFERENCE

On March 29, 1982, A.I.D. Administrator Peter McPherson approved the Program Assistance Approval Document (PAAD) for the Pakistan Agricultural Commodities and Equipment (PACE) Program. a/ This PAAD provided an initial authorization for \$ 60 million as the first tranche of a proposed \$ 300 million program over the five year period of 1982-87. The primary purpose of this funding is to finance the foreign exchange costs for the importation of commodity support for public sector agencies which provide agricultural services; agricultural inputs such as fertilizer and improved seeds; and equipment and machinery for farm use. For the first year of operation loan funds for import of \$ 34 million of di-ammonium phosphate (DAP) and use of grant funds of \$ 26 million to finance importation of equipment for use on a major irrigation canal rehabilitation program were planned. At the present time these two major components of the program are proceeding on schedule.

The PACE Program has created as well a major opportunity to cooperate with the GOP in considering new policy options and in implementing those previously set forth in the GOP's National Agriculture Policy statement.[2]

This most recent policy is directed towards improving the "quality of life of the Pakistani people" by (a) increasing agricultural production for domestic self-reliance and export; (b) expanding employment opportunities; (c) ensuring equitable access to productive resources; (d) providing basic amenities in rural areas such as water and sanitation; and (e) preserving the natural environments. As noted in the PACE Program document,

"the (GOP) policy also recognizes that the transformation of the agricultural sector hinges not only on the provision of additional physical (inputs) and human (skills) assets but also on the overall economic

a/Per the Prefatory Statement in the PAAD: "It should be noted, of course, that this program is not designed, by itself, to carry the policy dialogue with the GOP. It is one, a major one, of the transactions with the GOP in the policy areas." [1.p.1]

environment that permits higher private and social returns on additional assets. ... In general the (GOP) strategy continues to be supply oriented, along with upward adjustments of output prices, reduction in subsidies, and increased private sector participation in marketing and agro-industrial activities."

The PAAD also specified activities in three policy areas, as follows:

"During the five year program, at least three major policy areas will be examined: (i) financial (subsidy, tax, pricing, and credit); (ii) physical (water, fertilizer, seed, pesticide, and mechanization); and (iii) institutional (balance between public and private sectors, land reform, and policy planning capabilities). ... to facilitate this dialogue, special studies will be commissioned to explore policy and policy implementation options. ... In the first year, it is expected that a research program will be developed to explore fertilizer issues." [1, pp. 13-14].

In support of this effort the work of a TDY policy Analyst was provided to A.I.D. Pakistan Mission under an indefinite quantity contractual arrangement with the Consortium for International Development, for the period November 29 - December 18, 1982. Dr. K. C. Nobe, Chairman, Department of Economics and Director, International School for Economic Development Studies at Colorado State University was selected to carry out this TDY assignment in Pakistan.

Specific terms of reference for this assignment were transmitted by cable from the Mission, as follows:

"Mission concurs with Dr. Nobe's three week service starting in November 1982 as a Policy Analyst. The specifics of the task that the Mission expects from Dr. Nobe are as follows:

### A. Introduction

The services of the Policy Analyst will be directed towards analysing current trends in Pakistan's agricultural development policy. The focus of the contractor's task will be to identify specific agricultural policies, their relative importance in achieving stated GOP goals, critical issues, and develop recommendations for follow-on analytical work required for policy implementation.

### B. Background

In the context of the IMF reform program, GOP is attempting to make several policy adjustments designed to increase agricultural production and productivity: increase supply of inputs, higher farm gate prices, reduce subsidies, and increased private sector participation are the four major apparent thrusts of this policy.

### C. Scope of Work

The contractor will prepare overview paper on recent policy developments, highlighting issues requiring further investigation and based on available evidence, indicate the rank order of policy issues, that is, policies that should be addressed first because current policies represent a major constraint to obtaining stated objectives of the project. This should entail examination of subsidies (consumers as well as producers); pricing (input-output price relationships); taxation (land revenue, water rates, agricultural income tax, etc.); mechanization (employment, crop intensification, standardization, etc.); and private sector participation in agricultural development.

The contractor in the allotted time will not be expected to produce detailed examination of this policy set, rather, the contractor will identify critical issues, and based on material readily available, his professional knowledge and prior work experience in Pakistan, will produce the required rank of order of policy issues with supporting justification for his selection.

#### D. Information Sources

The contractor will rely for his investigations on published and unpublished research work and interviews with academia and key officials of the government, international organizations, and the private sector. The contractor will work with the staff of the Office of Agriculture and Rural Development (USAID) and draw on collected information and work already completed."

Throughout the study period, a close day-to-day working relationship was maintained with Mr. Shahid Perwaiz, Project Specialist in the Office of Agriculture and Rural Development (O/ARD) of U.S.A.I.D. In addition to numerous personnel contacts made in Islamabad, field trips were made to Lahore, Faisalabad and Karachi. A partial list of personnel with whom various aspects of agricultural policy were discussed is provided in Annex II-A.

References

1. Program Assistance Approval Document (PAAD), Pakistan Agricultural Commodities and Equipment, 391-0468, Department of State, Agency for International Development, Washington, D.C. 20523, March 1982.
  
2. National Agricultural Policy, Food and Agriculture Division, Ministry of Food, Agriculture, and Cooperatives, Government of Pakistan, Islamabad, February 1980.

ANNEX II-A PARTIAL LIST OF PERSONNEL CONTACTED BY  
AGRICULTURAL POLICY ANALYST, DECEMBER  
2 - 15, 1982

In Islamabad

Mr. Saeed Qureshi  
Secretary  
Ministry of Food, Agriculture & Cooperatives

Dr. Sayed Nawab Haider Naqvi  
Director  
Pakistan Institute of Development Economics

Mr. I. A. Imtiaz  
Secretary  
Ministry of Religious Affairs

Mr. Anwar-ul-Haq Raazi  
Joint Secretary  
Food and Agriculture Division  
Ministry of Food, Agriculture and Cooperatives

Dr. Javed Azfar  
Chief Economist  
Planning Division

Dr. Amir Muhammed  
Chairman  
Pakistan Agricultural Research Council

Mr. Shafi Niaz  
Chairman  
Agricultural Prices Commission

Mr. Jamil Nishtar  
Chairman  
Agricultural Development Bank of Pakistan

In Lahore

Mr. Muhammad Parvez Masud  
Secretary  
Agriculture Department  
Government of Punjab

Dr. Jamil Khan  
Acting Director  
Punjab Economic Research Institute

Dr. Ghulam Rasul Chaudhry  
Managing Director  
Punjab Agriculture Development & Supplies Corporation

Mr. John S. Brims  
Consul General  
AmConGen

Mr. Mohiyuddin Khan  
General Manager (Planning)  
Water & Power Development Authority

Mr. Muhammad Afzal  
Director (Agriculture Economics)  
Water and Power Development Authority

Chaudhry Sultan Ali  
Former Advisor to the President

Mr. S. M. Ayoob  
Member (Water)  
Water and Power Development Authority

Dr. Bashir Ahmad  
Joint Chief Economist  
Planning and Development Division  
Government of Punjab

In Faisalabad

Mian Mumtaz Ali  
Vice Chancellor  
University of Agriculture

Dr. Sajjad Haider  
Professor of Agricultural Economics  
University of Agriculture

Dr. Ali Mohammad Chaudhry  
Dean of Agriculture  
Economics and Rural Sociology Faculty  
University of Agriculture

Dr. Zakir Hussain  
Assistant Professor of Farm Management  
University of Agriculture

Dr. Bashir Ahmad  
Assistant Professor of Farm Management  
University of Agriculture

Dr. S. A. Qureshi  
Director General  
Punjab Agricultural Research Institute

In Karachi

Mr. Manzar Akbar  
Additional Secretary (Development)  
Planning and Development Department  
Government of Sind

Mr. Heshamul Haque  
Vice President  
Pakistan Central Cotton Committee

Messrs. Naseer Jaffer, Haamid Jaffer  
and Dr. Ziauddin  
Jaffer Brothers Limited

Messrs. Khalique Zuberi and M. B. Naqvi (Editors)  
Pakistan Economist

Dr. Ashfaq Kadri  
Director  
Applied Economics Research Center  
University of Karachi

Dr. Shahid N. Zahid  
Applied Economics Research Center  
University of Karachi

Mr. Hussaini Jagirdar  
Applied Economics Research Center  
University of Karachi

Dr. David Seckler  
Program Officer  
Ford Foundation  
New Delhi

### III. CURRENT STATE OF THE ECONOMY

#### A. General Indicators of Change

A World Bank team writing in April 1982 about Pakistan's general economic performance, stated in part:

"Pakistan's economy has continued to achieve a broad-based expansion across all sectors, reflecting improved economic policies as well as favorable weather and increased migrant remittances. Having inherited an extremely difficult economic situation in 1977, the Government of Pakistan has moved firmly and effectively to re-establish fiscal discipline and economic stability as well as restoring private sector confidence. Tight financial management has been combined with a wide range of price adjustments aimed at gradually correcting the distortions in the economy. The government has also embarked on a program of longer-term reforms, including steps to revitalize the development planning and to improve policies in the key productive sectors of agriculture, energy and industry... With some qualifications prospects are good for a continuation of rapid growth during FY 82." [1,p.i]

Performance data for 1981-82 prepared by the State Bank of Pakistan have been reported recently in the local press. An editorial in the December 2, 1982 edition of The Pakistan Times, "State of the Economy", emphasised the more positive aspects of the economy's performance. It stated in part:

"The annual report of the State Bank of Pakistan for fiscal year 1981-82 paints the picture of an economy that is making the best of a difficult situation and registering steady growth. The year once again witnessed all-round progress and an increase in the strength of the plus factors for the economy.

The State Bank report calls the economic performance in 1981-82 "generally better than in the preceding year." The gross national product grew by 5.6 percent as compared to 5.1 percent in the previous year. While the comparative figures

for GDP are 6.3 and 5.1 percent. Going to sectoral performance, commodity production went up to 7.1 percent from the preceding year's 6.1 percent, while the gross investment at current prices moved up 10 points to reach the rate of 21.1 percent. The manufacturing sector maintained its growth momentum: 12.1 percent as against 9.9 percent in 1980-81.

These figures become all the more significant when we take into account the fact that there was a deceleration in the rate of monetary expansion and inflation. While the former came down from 14.1 percent in 1980-81 to 10.5 percent, the combined consumer price index, which shows the extent of inflation, was contained at 11.5 percent in 1981-82. Similarly the wholesale price index rose by 9.7 percent which compares favorably with 1980-81's 13.3 percent. On the other hand, the sensitive price indicator covering 38 essential items increased by 8.3 percent as against 15.3 percent in the preceding year. The economy is generally a picture of health, but some areas of weakness still remain which call for still greater efforts both by the public and private sectors....

....There will be general agreement with the view expressed in the State Bank report that the national economy has over the past few years achieved a great deal of stability and, with the expected improvement in the international economic situation will make further gains in the days to come." [2]

The following day, an editorial in The Muslim, "The Negative Features of a Positive Year", presented a far less optimistic view, in part as follows:

"The growth figures for Pakistan in 1981-82 are very impressive. The State Bank of Pakistan's annual report for the year says that Gross Domestic Product exceeded the Annual Development Plan target of 6.1 percent and reached 6.3 percent. And that compared too favorably with the growth in GDP of the non-oil developing countries in that year by 2.7 percent and of the low income countries by 3.8 percent....

..... Gross National Product, too, rose by 5.6 percent compared to the previous year's 5.1 percent. Per capita income, however, recorded a very modest increase of 2.6 percent because of the heavy increase in population, but even that was better than the preceding year's per capita income increase of 2.1 percent. The sector-wise production figures, too, are very impressive. If the commodity producing sector expanded by 7.1 percent compared to 6.1 percent in the previous year the growth in the service sector was 5.4 percent. The manufacturing sector recorded a growth rate of 12.1 percent, says the State Bank report, compared to 9.9 percent in the previous year, and large scale manufacturing increased by 14 percent compared to 11 percent in the preceding year....

All that resulted in the gross investment increasing by 21.2 percent compared to 11.7 percent in the previous year and the gross fixed investment increasing by 17.5 percent compared to 6 percent in the preceding year. But why was it that while the public sector investment rose by 20.2 percent compared to only 1.5 percent in the previous year, private sector investment dropped down from an increase of 15.1 percent in 1980-81 to 12.6 percent last year? Why has the increase in output all round and the increasing profit from the 14 percent rise in large scale industrial production not spurred the private sector to invest more? If a good growth year for the country is not an excellent year for private sector investment as well, the omens for the future are not good. For a year of such an excellent growth rate, though, diluted by the population growth, it has far too many negative features that are too disturbing. The external trade deficit rose by 24.5 percent to touch a record of 3,400 million dollars. The deficit was larger than the total exports of 2,319 billion dollars by 1,121 million dollars. And while the exports fell in that year by 17.2 percent, imports rose by 3.5 percent to establish a record of 5,759 million dollars. The rising imports were about 150 percent more than the falling exports.

Inevitably the country was left with a staggering balance of payments deficit on the current account of 1.6 billion dollars, compared to 1 billion dollars in the previous year...

... Fall in national savings was inevitable when the budgetary deficit of the federal and the provincial governments rose by 24 percent over the budget estimate to Rs 18.4 billion, compared to Rs 14.6 billion in the preceding year. The government had then to resort to deficit financing to the extent of Rs 5.4 billion compared to Rs 2.4 billion in the preceding year.

A basic question that arises now is that if the government could not have control over its budget in reportedly a year of excellent growth and all round increase in production, and it cannot even stay within the budget deficits it had provided for, when could the finances of the country be husbanded better? And if the growth of national savings goes down even in such exceptionally good year for growth when will the picture become really more encouraging ?

Evidently the country cannot sit back and gloat over its growth figures. It has a vast range of deficit and disturbing economic trends to shake it up. Nor is the increasing reliance on external aid healthy or dependable in this uncertain international economic climate when some of the aid-giving countries themselves are in serious trouble. The country can neither afford staggering trade deficits nor alarming balance of payments deficits. Nor can the country permit such a low rate of national savings and a rate domestic savings which is as low as five percent of the GDP and stand in the way of increasing private sector investment..." [3] a/

a/Although a copy of the State Bank report was not readily available to the author, an extensive analysis of its content was provided by M.B. Naqvi in a Special Report Section of the December 11-17, 1982 issue of the Pakistan Economist. The highlights of the report appearing in this Section are reproduced on the following page.

## HIGHLIGHTS

- The G.D.P. growth rate at constant factor cost of 1959-60 was provisionally estimated at 6.3 per cent in 1981-82 as compared with 6.1 per cent in 1980-81.
- The GNP increased by 5.6 per cent during 1981-82 as compared with 5.1 per cent in the preceding year.
- The real per capita income, which had increased by 2.1 per cent in the preceding year, rose further by 2.6 per cent in 1981-82.
- The growth rate of the commodity producing sectors (comprising agriculture, manufacturing, 'mining and quarrying', construction and 'electricity and gas') moved up from 6.1 per cent in 1980-81 to 7.1 per cent in 1981-82.
- The services sector recorded a growth of 5.4 per cent as against 6.0 per cent in 1980-81.
- In the agricultural sector, the growth in value added was estimated at 3 per cent in 1981-82 as compared with 4 per cent in the preceding year.
- The value added in the manufacturing sector increased by 12.1 per cent as compared with 9.9 per cent in 1980-81. Value added in large-scale manufacturing increased by 14.0 per cent as compared with 11.0 per cent in the preceding year, while in small scale manufacturing the growth at 7.3 per cent in 1981-82 was the same as in the preceding year.
- Gross investment at current prices increased by 21.2 per cent in 1981-82 as compared with a rise of 11.7 per cent in 1980-81.
- National savings increased by 10.0 per cent in 1981-82 as compared with a rise of 22.1 per cent in 1980-81.
- The overall budgetary deficit of the Federal and Provincial governments, according to the revised estimates for 1981-82, amounted to Rs.18.4 billion or 23.7 per cent higher than envisaged in the budget estimates and compared with a deficit of Rs.14.6 billion for 1980-81, as per the provisional actuals.
- The rate of monetary expansion, which had decelerated from 18.5 per cent in 1979-80 to 14.1 per cent in 1980-81, came down further to 10.5 per cent in 1981-82.
- The rate of inflation decelerated in 1981-82. The G.N.P. deflator recorded a rise of 9.4 per cent during the year as compared with 12.1 per cent in 1980-81.
- The 12-month average of the Combined Consumer Price Index (1969-70=100) increased by 11.5 per cent in 1981-82 as compared with a rise of 13.9 per cent in 1980-81.
- The 12-month average of the Wholesale Price Index (1969-70=100) rose by 9.7 per cent in 1981-82 as against 13.3 per cent in the preceding year.
- The export performance of the country suffered a serious setback during 1981-82 due to continued world recession and a sharp decline in terms of trade.
- The balance of payments came under increased strain during 1981-82 due mainly to a fall in export receipts in the face of an increase in import payments. The deficit on merchandise account increased by 24.5 per cent to \$3.4 billion.

**B. Performance of the Agriculture Sector**

In contrast to the high and still rising growth rates in most of the non-agricultural sectors, growth of value added in agriculture, which peaked in 1979-80, has declined significantly in the past two years. (Table III-1). Until recently, the decline recorded in 1980-81 relative to 1979-80, was considered temporary: the rate of increase for 1981-82 was projected to rebound to 5.1 percent but instead increased only at a rate of 3.4 percent. This in turn suggests that the projected increase of 6.1 percent for major crops is unlikely unduly optimistic; it may in fact have dropped below the 1980-81 rate of 4.8 percent but this has not yet been verified.

TABLE III-1

GROWTH OF VALUE ADDED IN AGRICULTURE, 1969-70 - 1981-82  
(Percent per Annum)

	1969-70 to 1975-76 <u>a/</u>	1976- 77	1977- 78	1978- 79 <u>b/</u>	1979- 80 <u>b/</u>	1980- 81 <u>c/</u>	1981- 82 <u>c/</u>
Overall	1.7	2.5	2.5	2.9	6.9	4.4	5.1 <u>e/</u>
Major Crops	0.7	1.4	2.1	2.5	9.3	4.8	6.1
Minor Crops	1.9	4.4	1.4	3.1	4.0	3.5	3.8
Others <u>d/</u>	1.5	3.7	3.3	3.8	3.9	3.9	8.0

a/ Average annual growth rate

b/ Revised

c/ Government estimate

d/ Livestock, fisheries and forestry.

e/ 3.4 percent, based on more recent data from the State Bank of Pakistan as reported in The Pakistan Times, December 2, 1982 and Pakistan and Gulf Economist, December 11-17, 1982.

Source: Planning and Development Division; reported in World Bank report No.3802-PAK, April 14, 1982.

Production levels for major crops, wheat, rice, cotton, and sugarcane, have continued a modest upward trend for a number of years (Table III-2). Near self-sufficiency has now been achieved in sugar and wheat and stocks have reached the point where limited exports (e.g. the recent agreement with Iran) are now possible. But the aggregate production levels mask the fact that Pakistan crop yield levels are still extremely low, relative to world standards and potentials in Pakistan. Total yield increases in recent years have been primarily the result of acreage expansion, with the exception of

wheat (Table III-3). Given the long-term and successful efforts to increase the availability of fertilizer and related inputs, these production increase responses are most disappointing.

TABLE III-2  
PRODUCTION OF MAJOR CROPS, 1969-70 - 1981-82

Crop	Unit	1969-70 to 1975-76 a/	1976- 77	1977- 78	1978- 79	1979- 80	1980- 81	1981- 82
Wheat	'000 Metric Tons	7,144	9,144	8,367	9,950	10,805	11,475	12,200 b
Cotton	'000 Bales	3,450	2,446	3,233	2,662	4,096	4,018	4,200 c
Rice	'000 Metric Tons	2,368	2,737	2,949	3,272	3,216	3,120	3,204 c
Sugar- cane	'000 Metric Tons	22,874	29,523	30,077	27,326	27,498	32,360	34,060 c

a/ Average for the period.

b/ Government target.

c/ Preliminary estimates.

Source: Planning and Development Division; reported in World Bank Report No. 3802-PAK April 14, 1982

TABLE III-3  
INDICES OF ACREAGE AND PER-ACRE YIELDS OF MAJOR  
CROPS, 1969-70 - 1981-82  
(1969-70 = 100)

	1969-70 to 1975-76 Average	1976- 77	1977- 78	1978- 79	1979- 80	1980- 81	1981-82 Estimates
<u>Acreage</u>							
Wheat	97.3	102.6	102.1	107.3	111.0	111.0	121.1
Rice	95.9	107.9	117.1	124.9	125.5	119.3	122.6
Cotton	107.3	106.2	105.0	107.7	118.5	120.1	122.4
Sugarcane	100.5	127.0	132.6	121.4	114.9	133.1	134.5
<u>Yield Per Acre</u>							
Wheat	104.9	122.0	112.6	126.8	135.0	131.6	144.4
Rice	102.9	105.6	104.3	108.7	107.1	108.6	115.4
Cotton	106.6	75.8	103.0	81.8	115.0	111.4	119.6
Sugarcane	86.4	88.1	86.0	85.4	90.1	92.3	94.5

Source: Planning and Development Division; reported in World Bank Report No. 3802-PAK April 14, 1982.

References

1. Pakistan: Economic Developments and Prospects,  
Report No. 3802-PAK, World Bank, April 14, 1982.
2. Editorial: "The State of the Economy, The Pakistan Times, December 2, 1982.
3. Editorial: "The Negative Features of a Positive Year," The Muslim, December 3, 1982.
4. M. B. Naqvi, Special Report: "State Bank Report 1981-82: Sunny and Cloudy Patches," Pakistan and Gulf Economist, December 11-17, 1982, pp. 11-14.

#### IV. FUTURE EXPECTATIONS WITH PARTICULAR REFERENCE TO AGRICULTURE

With only six months remaining of the current Five Year Plan period and with the Sixth Five Year Plan document not yet released, there is at present a shortage of reliable data about future GOP expectations from the agricultural sector. A recent report by a World Bank team, Pakistan: Economic Development and Prospects, [1], however, does provide an indepth analysis which clearly demonstrates the magnitude of the task ahead and the critical role that the agricultural sector will be expected to play. The report summarizes the situation, in part as follows:

"While improved demand and supply side policies--fully implemented and adjusted to changing circumstances over time--would significantly improve the prospects for long-term growth, the adjustments that Pakistan requires are substantial. The Government has committed itself to policies which should reduce population growth but in the medium term population expansion will continue to be rapid. Since population is likely to continue to grow at rates of 2.5-3% p.a., economic growth of 5.6 p.a. would be needed to bring about minimum acceptable improvements in welfare. With the level of imports presently about double the level of exports, with fuel a substantial proportion of imports, and with little prospect for a substantial improvement in the external terms of trade, rapid economic growth--even with export volumes growing significantly faster than imports--could quickly lead to large current account deficits and to unsustainable external capital requirements. That is, substantial improvements in export and import substitution performance are necessary to improve long-run growth prospects. [1, p. 93].

This World Bank report includes a section on alternative scenarios of long-term growth (chapter II). Three cases are presented--the "initial case" and two alternatives in which major adjustments are made in

underlying assumptions in order to deal with major problems suggested by the "initial case." The "initial case," however, will be sufficient to illustrate the critical role of agricultural performance and the totally unacceptable negative balance of payment problem that could emerge, even if the excellent rates of growth evidenced in the agricultural sector in the recent past are maintained only at these historical levels.

The mechanics of the "initial case" are presented as follows:

"Table [IV.1] details the explicit assumptions behind the projections in the "Initial Case." Table [IV.2] shows the resulting behavior of some of the important national accounts variables for the period FY 83-90. The projected 5.5% p.a. rate of growth of real GDP (for the period beginning FY 83) is based on projections of 4.2% p.a. for agriculture, 7% p.a. for industry and 5.5% p.a. for services. Achievement of such an aggregate growth rate will not be easy. The projected agricultural growth would be equal to that of the past four years; the difficulties of maintaining such a growth rate should not be underestimated since it would follow four years of fairly steady increases in the output of all major crops, most particularly wheat and cotton. Failure to sustain such performance would have serious implications not only for growth but also for the balance of payments, since rice and cotton make substantial contributions to exports and since increased wheat and sugar production are essential to the maintenance of self-sufficiency. While the projected growth for industry is somewhat slower than recent experience (e.g. FY 77-81 growth was 8.2% p.a.) expansion is still rapid and some slowdown would be expected following the recovery from the depressed conditions of the mid-1970s. The growth rate for services is similar to that of recent years and equal to the growth in aggregate GDP.....

The projected growth rates for volumes of key export items [see Table IV.1] lead to an aggregate growth rate for goods and non-factor services of 5.7% p.a. during FY 83-90, faster

TABLE IV. 1

ASSUMPTIONS UNDERLYING "INITIAL CASE" PROJECTIONS OF PAKISTAN'S  
BALANCE OF PAYMENTS, FY83-90

Variable		Assumption	
Exports:	Raw cotton	Real growth rate FY83-90	1.6%
	Rice	"	5.2%
	Cotton yarn	"	4.0%
	Cotton cloth	"	5.0%
	Manufactures	"	7.5%
	Others	"	7.5%
	Non-factor services	"	5.0%
Export Price Index:	Raw cotton	Average growth rate FY83-90	14.1%*
	Rice	"	11.2%*
	Cotton yarn	"	6.5%
	Cotton cloth	"	6.5%
	Manufactures	"	6.5%
	Others	"	6.5%
	Non-factor services	"	6.5%
Import Price Index:	Wheat	Average growth rate FY83-90	8.7%*
	Sugar	"	8.0%*
	Other food	"	8.0%*
	Other consumer products	"	6.5%
	POI	"	8.6%*
	Fertilizers	"	8.6%*
	Other intermediate goods	"	6.5%
	Capital goods	"	6.5%
Balance of Payments:	Interest payments on private foreign investment	Growth rate FY83-90	10.0%
	Workers' remittances receipts	"	11.0%
	Net current transfers	"	10.0%
	Net direct foreign investment	"	10.0%
	Change in reserves	After drawdown in FY81-85, a buildup of US\$350 million p.a. thereafter.	
Foreign Capital Flows:	Official grants	Special support for Afghan Refugees constant in real terms; other grants expand moderately in real terms.	
	Official loans	IDA, IBRD lending program data FY83-85; increases at the same rate as IPI in nominal terms FY86-90. Commitments of 0.1% of official loans increase at the same rate as the IPI FY84-90.	
	Private loans	Equal to financing gap FY83-90	
Inflation:	International price index	Average growth rate FY83-90	6.5%*
	GDP deflator	"	8.0%
Imports:	Wheat, sugar	No imports after FY82	
	Petroleum	Real growth rate FY83-90	4.0%
	Fertilizer	Average real growth rate FY83-90	4.7%
	Other imports	See paragraph 6	
Value Added:	Industry	Real growth rate FY83-90	7.0%
	Agriculture		4.2%
	Services		5.5%

\* Based on commodity price projections of the World Bank.

Source: [1, p. 95]

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TABLE IV.2

INITIAL CASE - GROWTH OF GDP AND ITS COMPONENTS AND EXPENDITURE/  
SAVINGS RATIOS, 1980/81-1989/90

	1980-81	1981-82	1982-83	1983-84	1984-85	1985-86	1986-87	1987-88	1988-89	1989-90
<u>Growth of GDP</u> <u>a/</u> (% p.a.)	5.7	6.2	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Agriculture	4.4	5.1	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2
Industry	9.2	9.5	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Other	5.4	5.7	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
<u>Expenditure and Savings</u>										
<u>Ratios (%)</u>										
Consumption <u>b/</u>	92.5	92.8	94.5	94.6	94.3	94.1	93.7	93.3	93.2	93.0
Investment <u>b/</u>	17.9	18.6	17.7	17.6	17.6	17.6	17.7	17.7	17.7	17.7
Exports (goods and non- factor services) <u>c/</u>	13.0	12.9	12.9	12.9	12.9	13.0	13.0	13.1	13.1	13.2
Imports (goods and non- factor services) <u>c/</u>	23.0	24.1	25.2	25.3	25.2	25.0	24.7	24.2	24.1	23.8
Gross domestic savings <u>b/</u>	8.0	7.2	5.5	5.4	5.7	5.9	6.3	6.7	6.8	7.0
Gross national savings <u>d/</u>	13.1	13.2	12.9	12.5	12.3	12.2	12.3	12.5	12.4	12.4

a/ At constant factor cost.

b/ Calculated as shares of gross domestic income. Gross domestic income is real gross domestic product corrected for changes in the external terms of trade.

c/ Calculated as shares of gross domestic product.

d/ Calculated as shares of gross national income.

Source: [1, p. 96]

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than the expansion of GDP or the volume of imports. The overall rate of export growth is somewhat higher than that for the FY 72-81 period (4.7% p.a.) but substantially lower than that for FY 77-81 (13.2% p.a.). Since good weather and the recovery of manufacturing were important contributing factors over the last four years, some slowing of export growth could be expected, but the resulting figures are still broadly consistent with the expansion of output in agriculture and manufacturing. The aggregate growth of import volume is the sum of growth behavior for individual categories of imports [see Table IV.1]. Since Pakistan has achieved self-sufficiency in wheat and sugar in FY 82 which is expected to be maintained thereafter, imports of these commodities are projected at nil throughout the following period. Fertilizers and POL imports are projected to grow at 4.7% and 4% p.a. Imports of other food, non-food consumer goods, other intermediate goods, capital goods and non-factor services are all related to the expansion of GDP through import elasticities (the elasticities being 1.0, 0.9, 1.0, 1.0 and 1.0, respectively). These assumptions yield a real growth rate of aggregate imports of goods and services about 5.2% p.a....

The implications of the above assumptions are shown in balance of payments projections for the FY 82-90 period contained in Table [IV. 3]. The projection shows the serious adjustment problems Pakistan faces in the mid and late 1980s. Even with exports of goods and non-factor services growing more than 10% faster in real terms than imports of goods and non-factor services, the resource gap would increase about 2.7 times between FY 82 and FY 90 [Table IV. 3]. While the continued expansion of remittances (at 11% p.a.) would help to cover part of this deficit, the current account deficit would still grow from 4.4 to 5% as a share of GDP, increasing nearly 3.4 times.

On the above assumptions, the unfinanced gap rises very quickly to unmanageable levels. It starts at US \$550 million in FY 84, rises to US \$1,700 million FY 86 and reaches US \$4,500 million by FY 90. For the purposes of this projection (and all the remaining projections that follow below) it is assumed that any unfinanced gap would be covered by external borrowing on commercial terms. In this case, this assumption is illustrative only, for it would not be possible for Pakistan to borrow the amounts required in the mid and late 1980s nor would it be desirable to do so. The debt service ratio, starting at 15.4% in FY 82, would fall temporarily to 12.7% by FY 85 and then quickly accelerate to 22.7% in FY 90 and even higher levels thereafter. Clearly the above assumptions do not lead to a viable balance of payments scenario for the 1980s". [1, pp. 94-100].

Given the extremely adverse balance of payments situation projected in the "initial case," the other two alternative scenarios presented in the World Bank report were based on assumptions that call for even more response from the agricultural sector. But, this is a serious question as to whether even the assumptions presented in the "initial case" can be accommodated. For example, it is assumed that growth in agricultural value added will continue at a 4.2 percent rate, the average rate of the 1978-79 - 1980-81 period; yet this rate was exceeded only twice since 1969-70 (in 1979-80 and 1980-81). The 1981-82 rate which was projected at 5.1 percent had, according to recent State Bank of Pakistan figures, declined to only 3.4 percent. Note should also be taken of the projected rate of increase in fertilizer imports of 4.2 percent per annum, an expansion that will be increasingly difficult to achieve since it will necessarily apply to an ever increasing base level and given the policy shift now underway to removing the subsidy level to near zero in the near future. Similar heroic assumptions about increasing and/or maintaining recent historical levels of agricultural exports at favorable prices are open to question in the face of increasing competition in the world market for Pakistan's major export commodities.

TABLE V.3

INITIAL CASE - BALANCE OF PAYMENTS PROJECTIONS, 1980/81-1989/90

(millions US\$)

	1980-81	1981-82	1982-83	1983-84	1984-85	1985-86	1986-87	1987-88	1988-89	1989-90
<u>Trade Balance</u>	-2,765	-3,055	-3,230	-3,900	-4,800	-5,400	-5,710	-6,070	-7,120	-7,800
Non-factor services (net)	-125	-199	-275	-356	-410	-464	-523	-592	-668	-756
<u>Resource Gap</u>	-2,890	-3,254	-3,505	-4,312	-5,294	-5,872	-6,436	-6,956	-7,794	-8,630
Workers' remittances	2,097	2,155	2,370	2,735	3,099	3,409	3,750	4,125	4,537	4,991
Interest payments	-357	-453	-524	-510	-534	-678	-868	-1,052	-1,222	-1,401
Other factor services (net)	159	163	177	171	158	170	210	246	283	318
<u>Current Account Balance</u>	-991	-1,389	-1,482	-1,916	-2,571	-2,972	-3,345	-3,647	-4,196	-4,722
<u>Long-Term Capital (net)</u>	601	819	751	1,333	1,925	2,647	3,115	3,646	4,197	4,722
Grants	108	269	210	247	330	342	353	366	379	393
Loans: official	848	844	1,010	1,020	1,049	1,158	1,276	1,362	1,458	1,552
private <u>a/</u>	-	-	-	550	1,075	1,726	2,190	2,870	3,677	4,538
Amortization: official loans	-355	-294	-469	-484	-529	-579	-597	-630	-651	-656
private loans <u>a/</u>	-	-	-	-	-	-	-107	-322	-667	-1,105
IMF purchases (net)	331	358	399	67	-	-	-	-	-	-
Other capital (net)	369	94	130	516	646	675	580	350	349	350
Change in reserves <u>b/</u>	-310	118	202	-	-	-350	-350	-350	-350	-350
<u>Memorandum Items</u>										
Current account balance (1980/81 prices)	-991	-1,362	-1,346	-1,610	-2,032	-2,295	-2,346	-2,412	-2,621	-2,783
Current account balance as % of GDP	3.5	4.4	3.9	4.4	5.2	5.3	5.2	5.0	5.0	5.0
Financing gap	-	-	-	550	1,075	1,726	2,190	2,870	3,677	4,538
Reserves as months of imports of goods and non-factor services	1.9	1.6	1.1	0.9	0.8	1.0	1.2	1.4	1.5	1.6
Debt service ratio (1) <u>c/</u>	26.6	25.5	21.4	23.3	19.6	20.9	24.0	27.5	30.4	33.7
(2)	16.2	15.4	13.3	14.6	12.7	13.7	15.8	18.3	20.3	22.7

a/ Figures in this row include only loans incurred by the financing gap. Other private loans are included under "other long-term capital (net)." Amortization of private loans refers to amortization of loans incurred by the financing gap only.

b/ A negative value indicates an increase in reserves.

c/ Debt service ratio (1) is debt service over exports of goods and non-factor services. Debt service ratio (2) is debt service over exports of goods and factor and non-factor services. Both ratios include interest charges and repurchases on IMF programs.

Source : [1, p. 99]

The purpose of presenting these adverse conclusions is not intended to indicate that the rather best targets are unachievable. The World Bank team members, at least, indicate that in their view that targets yielded by the "initial case" (as well as those of the even greater growth rate assumptions presented in their two alternative scenarios) are achievable. The point to make is that it will be critical that the set of generally desirable agricultural policies recently adopted by the GOP are implemented as soon as possible. Certainly, as a minimum, those related to increasing farmer incentives, such as increasing output product prices, insuring availability of factor inputs, and extension of covered technical and management knowledge are critical, along with promoting a larger role for the private sector from which a higher level of efficiency of operation than has been historically provided by the government, can be expected. In sum, the situation is not necessarily hopeless but even partial success in the years immediately ahead will be very heavily dependent upon significantly improved performance of the agricultural sector.

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Pakistan Economic Development Prospects, Report  
No. 3802-PAK, World Bank, April 14, 1982.

## V. CURRENT CONSTRAINTS TO AGRICULTURAL GROWTH

Current levels of agricultural production and income generation in Pakistan are extremely low by world standards. Yield levels have been estimated to be only 25 to 30 percent of potential demonstrated in research trials and achieved on some progressive farms. Farm incomes are correspondingly low with a high proportion of the smallest farmers still operating at or near subsistence levels. There is ample documentation that, in the recent past, aggregate increases in agricultural output have been due primarily to expansion of area cropped per year rather than increased yield levels; wheat production is the only notable exception.

GOP expectations from the agricultural sector during the forth-coming Sixth Five Year Plan period will be of such orders of magnitude that the responses will necessarily have to depend on significantly expanded production efficiencies rather than on acreage expansion. Implementation of agricultural policy actions will therefore increasingly have to focus on alleviating current constraints to agricultural growth that lie in the production efficiency arena. Among the more significant constraints in this context are: (A) lack of adequate producer incentives, (B) lack of adequate producer security, (C) imbalance of inputs, (D) limited access to knowledge, and (F) an inadequate infrastructure for a rapid expansion of agricultural production, marketing and distribution.

### A. Lack of Adequate Producer Incentives

The structure of any agriculture sector is such that unless there are large amounts of basic resources to be mobilized such as new irrigation water supplies or new lands to be brought into cultivation, increased output is primarily dependent on the individual producer decision maker--the farmer on the land. Farmers the world over operate as micro-level decision makers in a macro-system in which such producers cannot individually affect the prices of inputs and outputs. Such decision makers can and do respond to incentives or dis-incentives, however, that are generated by the economic system in which they operate. From their perspective it would follow that government planners desiring production efficiency responses must necessarily place highest priority on policy actions that

will stimulate positive rather than negative responses from individual farmer decision makers. Farmers in Pakistan are not unique in a likelihood of positive response to significant price spreads between their output products and their purchased inputs. Given a recent GOP decision to phase out subsidies on major factor inputs such as fertilizer, pesticides and irrigation water, it is of critical importance, therefore, that upward movement of farm output product prices appear great enough to farmers so that a positive output response will be facilitated.

While price incentives are of primary concern, farmers do respond as well to indirect incentives or disincentives. For example, the status a society awards to being an agriculturalist is important. The degree to which a farmer is asked to sacrifice for the common good and how he perceives other members of society share in this responsibility can be of even greater importance. And, the commonly held views about such things as profit, ownership of property and accumulation of capital do make a difference. In regard to these indirect considerations, planners would be ill-advised to ignore the fact that emergence of an Islamic State in Pakistan brings with it fundamental changes in its economic system. Therefore, the probable impact of Islamic Law on the agricultural sector will necessarily have to be understood and taken into account in the development planning and policy implementation processes.

#### B. Lack of Producer Security

Production decisions taken by farmers, even under the best of circumstances, necessarily entail considerable risk and uncertainty. To a degree, government policy actions are taken to minimize such risks and uncertainty. And, if such efforts are successful, farmers generally respond favorably in the same way as they respond to direct incentives such as farm product prices. From the farmers perspective, actions taken that will improve his security of tenure on the land, delivery of inputs in a timely manner and at dependable levels, and information as far in advance as possible on input and output prices are not the only factors affecting his security but they are the most important for generating a positive output response.

In the irrigated areas of Pakistan, by far the most important elements relate to the timely availability of a known amount of irrigation water because all other production decisions and especially those affecting other factor input levels depend on water security. To those who still may doubt this conclusion, one need only note the rapid expansion of private tubewells in Pakistan which, above all, provide farmers with their water input on demand (e.g. risk and uncertainty reduced to near zero).

### C. Imbalance of Inputs

Achieving an appropriate balance of production inputs at the farm level affects not only the level of possible output but, more importantly, the cost of production and ultimate profitability levels. By analogy, crop and soil scientists are concerned not only with the availability level of a given nutrient component, such as nitrogen, but also with the balance of all the nutrients utilized for plant growth--also phosphate, potash and trace elements. To carry the analogy further, it is well known that yield responses to fertilizer and irrigation water are complementary if applied in balance; e.g. the yield response to fertilizer and water is greater than that achieved separately from water or fertilizer alone under most farm production conditions of importance to farmers. Such desired balances of inputs are of even greater importance to achieving economic efficiencies at levels of magnitude sufficient to motivate farmers to utilize greater levels of inputs.

The great debate in this regard is whether the existing economic system reserves decisions on supply of input availability to government at one extreme or total reliance on the private sector on the other. Recent GOP policy decisions have opted to move to greater reliance on the latter on primarily cost to government and efficiency grounds. Of equal or perhaps greater importance to motivating farmers to increase input use will be whether or not the private sector can provide timely delivery of a desirable balance of inputs at competitive prices. While many government planners remain dubious about this matter, economists are nearly unanimous in their support of such policy decisions, based on the preponderance of favorable evidence on a world-wide basis.

#### D. Limited Access to Knowledge

There is a deep seated conviction among personnel in agricultural universities, ministries of agriculture and government planning agencies the world over that the necessary scientific information for modernizing agriculture must be supplied by government. There is an economic rationale, at least initially, for this conventional wisdom because one cannot expect the private sector to expend funds for a "product" for which it cannot expect to obtain a property right so as to extract a profit for its efforts. But, it is also true that as the agricultural sector of a given country modernizes opportunities for private sector involvement increase as well. For example, fertilizer and seed companies do engage in research and development efforts to improve their product lines, independent of government support or sanction, and their advertising and promotional efforts can and do entail important "extension" elements. Logically, it should then follow that the mix of government research and extension efforts should change as this expanding role of the private sector evolves.

Turning first to the extension component within this context, it is proposed that three types of government delivery activities could usefully be expanded. These are: (1) providing information on necessary producer skills for using a greater and more complex package of inputs with focus on filling gaps left by the private sector; (e.g., information on size of tractor and types of attachments for using various combinations of fertilizer, seed and pesticides, each of which is being "promoted" by the private sector supplier); (2) management skills (e.g., assistance to farmers in using farm management type data and skills for improving the "mix" of cropping patterns and/or livestock elements of their total farm enterprise); and (3) information on comparative advantage (including altering the ratios of the sizes of various farm enterprises and on the advantages, if any, of diversification; e.g., shifting to fruits and vegetables or oil seed production so as to take advantage of favorable comparable product prices). It is readily apparent that the present system of activity specialization in extension, such as fertilizer experts, livestock experts, pest management experts, as well as the established heavy emphasis on physical and biological aspects will require major reorientating

and retraining efforts within the extension service if the above listed recommendations for shifts in emphasis are to be implemented.

Treating the research component after the extension component in this discussion was done deliberately to make a point. If a shift to production efficiency is accepted as a necessary change to achieve additional large output increases at this point in time, then it follows that a higher research priority should be given to dealing with agricultural growth constraints, particularly at the farm level. Extension workers can be more effectively utilized than they have been in the past in identifying research problems for scientists in this regard. Granted, such a reversal of the presently well entrenched system will not be easy nor would it be desirable unless the above suggested shifts in extension education are implemented. Unless they are, extension will be ill-equipped to advise on agricultural constraint issues that really matter in a production efficiency framework. That the implications of the above argument as to discipline orientation changes for extension workers is applicable to agricultural research organizations as well, should be self evident.

#### E. An Inadequate Infrastructure

Infrastructure improvements provides broad-based benefits to rural areas in terms of general improvement of social well-being and a better quality of life. But in the case of the impacts on the agricultural sector such efforts are more specific and directly conducive to expanding output and income levels, if activities are selected that will help alleviate present constraints to growth.

Among others, three activities appear to be particularly important at the present time. These are: (1) rural electrification programs; (2) road improvements, and (3) provision of locational facilities for local agro-business centers, including storage facilities. There is ample evidence throughout Pakistan that once one or more of these services are made available to farmers, a more rapid adoption of appropriate technology and greater use of factor inputs such as fertilizers, improved seeds and pesticides is facilitated. At this point in time when large increases in production efficiency will be needed, in the short-run, provision of these and related infrastructure elements is particularly critical.

## VI. CRITICAL ISSUES FOR POLICY ANALYSIS

An on-going analysis of agricultural policy issues in Pakistan must necessarily be undertaken within the context of three major elements of reality. These are: (A) recent adoption of Islamic Laws; (B) the present condition of the agricultural sector vis-a-vis expectations during the forthcoming Five Year Plan period; and (C) present GOP agricultural policy and the degree of implementation thereof. The following discussion will focus on a selected set of major issues, taking these three major elements into account. No ranking of importance is necessarily intended by the sequential order of the material presented.

### A. A Badly Needed Base Study--Impact of Islamic Laws on the Agricultural Sector

One of the major socio-political events in the history of Pakistan was the recent adoption of Islamic Laws. It is a significant event if for no other reason that it differs in a number of important ways from all other major socio-economic political systems found throughout the world at the present time. Leading Pakistan economists have recently examined the economic aspects of Islamic Laws as presently implemented in Pakistan through various GOP administrative actions.<sup>a/</sup> Important elements for the economy as a whole include: (1) shift to an "interest-free" economy; (2) the impact on private ownership of property; (3) implementation of the Zakat and Ushr system; and (4) a changing role of the state vis-a-vis an emerging GOP sanctioned role for the private sector. While the impact of these factors on Pakistan's rural-based agricultural sector has not yet been fully investigated,<sup>b/</sup> some broad effects on the economy as a whole can be ascertained from recent publications by Naqvi, Nazeer,

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<sup>a/</sup> See for example, the following: Mian M. Nazeer, The Islamic Economic System: A Few Highlights, Essays in Islamic Economic Philosophy No. 2, Pakistan Institute of Development Economics, Islamabad, August 1981; and Syed Nawab Haider Naqvi, On Replacing the Institution of Interest in a Dynamic Islamic Economy, Essays in Islamic Philosophy No. 3, Pakistan Institute of Development Economics, Islamabad, 1982.

<sup>b/</sup> One preliminary study of Ushr that is an exception to this generalization is: Shahid N. Zahid, USHR: A Theoretical and Empirical Analysis, Applied Economic Research Centre, University of Karachi, January 1980.

Ghaffar and others. The following summary of these major elements draws heavily from these sources.

1. An Overview

"When, by adding up all its elements, the balanced social vision of Islam is seen in its totality, it turns out to be a prescription for a social revolution, instead of just an egalitarian tilt in the scale of ethical values." [1, p. 4] There are 6 guiding principles of an Islamic economy which are as follows:

- a) The principle that man is only a trustee of all God's bounty. This principle permeates both the motives behind social action and the use that is made of the means of production;
- (b) the principle of social responsibility, which implies that the care of the poor and the needy is the responsibility of the society, and for this purpose, a right (Haqq) is created in favor of such groups and individuals in the wealth of the community;
- (c) the principle of social equality, which sets an Islamic society free of special privileges for a particular class or individual;
- (d) the principle of economic cooperation, which reflects the social balance of an Islamic economy and manifests itself in social harmony;
- (e) the principle of the widest possible circulation of wealth so that it does not gravitate towards the rich only; and
- (f) the principle that all economic choices must be ethically consistent. Ethical validity is what separates the economic from the selfish. [2, pp. 16-17]

In the final analysis, the overall economic impact of Islamic Laws centers on the role of the state in the distribution of wealth. "What is new about the Islamic Concept is that it creates a 'right' for the needy to a

share in the wealth of a community. . ." [3, p. 203] From this follows the conclusion that the focal point of an economic system operating under Islamic Laws is an overriding concern with an equitable distribution of income and wealth. [4, p. 185] The economic mechanisms for fostering these objectives in Pakistan concentrate primarily in four areas, as outlined above, for promoting economic development in general and expanding the growth in output of the agricultural sector in particular. These four areas will be discussed in turn.

## 2. Shift to an "Interest Free" Economy

The point of departure here is that the collection of interest is clearly forbidden in Islam. (Such prohibitions, incidently, were also set forth in the early writings of Judaism and Christianity as well.) Given the functions that interest performs in a modern economic system such as Capitalism, it is not simply a charge that can be abolished, nor is this expected as Pakistan moves towards implementation of Islamic Laws. It is fully recognized, for example, that capital will not be available free of cost in an "interest-free" economy. Therefore, "if it is not permissible to retain interest in the system, it will have to be replaced by such alternatives as will perform these functions without the evils accompanying interest." [2, p. 27]. A theoretical discussion of what mechanisms are available and how they can be implemented has recently been provided by Naqvi [5] so will not be outlined herein other than to mention that the recent decision by GOP to provide small-scale interest free (up to Rs. 6,000) loans to small farmers is one such example.

## 3. Private Ownership of Property

The basis for private ownership of property in Islam is that "both nature and logic... demand that man may be permitted to appropriate for himself such a share of these free gifts of Nature as he can manage and make use of." [2, p. 28]. In the broad context, therefore, adoption of Islamic Laws will not interfere with the current legal structure governing ownership of real property in Pakistan. However, Nazeer has raised a note of caution in regard to ownership of agricultural land. He states in part:

"Now a special word in respect of agricultural land. As remarked earlier, the right to private ownership is limited by a person's capacity to utilize it fully and to manage it properly. This insistence on utilization and capacity to manage has a two-fold function. It places a limit on the size of ownership as well as discourages "ostentatious" investment in land. Thus, if a piece of cultivable land is not utilized for three consecutive years, the right of keeping it in ownership is liable to be lost. Again, this utilization is linked to the owner's own efforts. It is this last condition which has been the spring of the controversy concerning certain categories of land-tenure arrangements such as share-tenancy and lease of bare land against a fixed sum paid in cash. While some jurists have tried to hold a brief for share-tenancy on the ground of practice (i.e. al ta'amul) and analogy between al-muzara'ah and al-mudharabah, others (including Imam Abu Hanifa) have termed both lease and share-tenancy as contrary to the spirit of Islam". [2, p. 29].

The point to make is that further policy and legal pronouncements affecting land tenure arrangements will likely lean increasingly on Islamic Laws for precedence. And, considerable activity in this area of concern as it affects the agricultural sector will likely continue for some time to come.

#### 4. Adoption of Zakat and Ushr

The President of Pakistan promulgated the Zakat and Ushr Ordinance in 1980. Zakat is a basic principle of Islam that provides for the collection of surplus income for redistribution to the needy. In Pakistan, agricultural producers are subject to Ushr which is a collection of surplus income tied to a fixed percentage on quantity of agricultural output, less some specified exemptions. Collection of Zakat began soon after adoption of the 1980 ordinance and collection of Ushr will come into force with the Rabi crop of 1982-83.

The mechanics of Zakat collection and distribution have been specified by the GOP in the form of The Zakat Manual issued by the Central Zakat Administration [6] A condensed explanation of Zakat and Ushr and its administration is provided in a recent paper by I. A. Imtiaz, Secretary, Central Zakat Administration. [7]

The Zakat system will impact agriculture primarily through how it affects the role of the private sector in the agro-industry component while Ushr will, of course, directly impact farmers. The system is new and little is known about its probable impacts. For example, only one theoretical paper by S. N. Zahid about Ushr is readily available [8].

At the present time, there appears to be considerable disagreement among interested observers in Pakistan about the impact of Zakat and Ushr on the agricultural sector. To this author, only one thing appears certain--once this system is established it is not likely to be removed, given that Pakistan is an Islamic State. For this reason, and others, it would be highly desirable to monitor the implementation of this system because further development options for the agricultural sector will surely be affected in significant ways by it.

#### 5. Role of the State vs Role of the Private Sector

Again, Nazeer provides an excellent summary of this area of concern, as follows:

##### "Extended Role of the State"

An Islamic economic system can not crystallize without individual action or an enlarged and extended role of the State. This extended role is not to be evaluated in terms of the jargon of modern political theory where every extension of the role of State is an infringement of individual liberty. The political system of Islam has a variety of in-built checks on the powers of the State, whereas individual liberty has been bounded by the requirement that the exercise of such liberty be in harmony with the interests of the society.

An Islamic State derives its role from the need to give legal authority to the enforcement of a just social and economic system which guarantees the basic needs of all the members of the society and ensures their economic rights, such as the right to a minimum standard of living, the right to work and freely associate in socially acceptable activities, and the right to receive their due. The duty of an

Islamic State does not end simply with the furnishing of opportunities to work. It must enlarge and improve the capacities of the individual citizen by means of education, vocational guidance and technical training. It is only in this way that an Islamic State can enable people to discharge the divine mission of trust and responsibility.

The State, by virtue of its overall view of the economy and society, should be in a better position to keep the productive effort of the society in consonance with the hierarchy of social needs and requirements. Public opinion must be informed with the teachings of Islam, and the machinery of production and distribution must be regulated to bring about a socially desirable allocation of resources....

... By its very nature and function, an Islamic economic system implies an enlargement in the role of the State. This role is derived from the need to give legal authority to the enforcement of a just social and economic system, guaranteeing the basic needs of all the members of the society and ensuring their economic rights." [2, pp.30-31].

#### B. Pricing and Trade Policies for Inputs and Outputs

One of the more visible areas of implementation of the February 1980 National Agricultural Policy statement has been in the area of prices and trade. In rapid order, subsidies have been significantly reduced on fertilizer, water rates were increased, and procurement prices for selected major agricultural crops were increased. In the trade area, a number of changes were made to facilitate a phased movement towards a more open foreign trade regime including a recent GOP decision to delink the Rupee from the Dollar. These and related GOP actions are being undertaken in accordance with the terms of a three-year structural reform program designed to deal with the balance of payments problems as set forth in the Extended Fund Facility Agreement between the GOP and the International Monetary Fund (IMF) signed in November, 1980. [9, p. 8].

Considerable discussion is currently underway among government policy makers, administrators and economists about the timing and level of future changes in price and trade policy. As would be expected, there are differences of opinion as to the timing and magnitude of recent rather large increases in fertilizer and water rates and how future changes should be made. Among the foremost concerns are the determination of future procurement prices and the role the newly established Agricultural Prices Commission therein, particularly in regard to how cost of production studies for various agricultural commodities will be carried out and by whom.

In the water area, there is vigorous debate on whether rate increases should be limited to covering operation and maintenance costs or whether some or all investment capital of future (and/or existing) projects should be recovered. Finally, there is a concern about how to adjust long-term procurement prices in the face of widely fluctuating prices in the international market. Needless to say, this area of policy will continue to garner considerable attention and debate in the months and years ahead.

### C. Supply Levels and Distribution of Inputs

The major factor inputs can be broadly grouped into four categories: (1) the agricultural land resource base; (2) water for irrigation; (3) fertilizer and related purchased inputs, and (4) mechanization and equipment. Expanded credit availability will likely be a critical factor in order to expand input use in the latter three categories, particularly in regard to gaining far greater participation of the small farmers than has been the case in the past.

#### 1. The Land Resource Base

In the aggregate, expansion of acreage cropped annually is expected to remain more or less constant during the next Five Year Plan period, with new acreages added to be offset by acreages lost to salinity, waterlogging, erosion and urban expansion. In the irrigated areas, shifts in cropping patterns to accommodate emerging priority needs, such as for oil seeds, will necessarily be at the expense of acreage levels presently allocated to various other crops. Comparative advantage, as impacted by relative procurement prices and as

perceived by farmers will be the key consideration. In the barani (dry land) areas, the relative price for wheat, the rate of crop land expansion and the livestock prices and range land management policies of the GOP will be critical variables. As noted earlier, major GOP policy emphasis will likely be on activities designed to improve production efficiency with efforts to increase acreages in production of crops of major importance on a local or area basis, rather than for the nation as a whole. An example of the latter is the Left Bank Outfall Drain Project which is already under construction by WAPDA.

## 2. Water for Irrigation

GOP planners and key decision makers are actually aware of the critical role that irrigation water will have to play in achieving agricultural production targets on a sustainable basis. Preliminary indications are that irrigation water projects will continue to receive heavy emphasis during the Sixth Five Year Plan period. These include the Left Bank Outfall Drain, a major project encompassing the total Indus Basin system, and expansion of on-going work in on-farm and command area water management. The Kalabagh Dam project is also a high priority item but its impact will not be felt in the short term and will be more in electrical power generation in any case. Finally, high priority is being given to encouraging the expansion of private tubewells, including activities such as expansion of rural electrification, easing access to credit and even a proposal to divest the WAPDA SCARP tubewells in the fresh water zones. In the aggregate, mobilization of proposed water development and management programs will require huge amounts of investment capital that will involve GOP budget, donor community and the private sector sources. Given that the funding needs for these projects in the aggregate will likely exceed available resources, major action in the policy arena will likely concentrate in the areas of prioritizing and timing considerations.

## 3. Fertilizer and Related Inputs

With the rapid adoption of the new high yielding crop varieties from the mid-60s onward, e.g. IRRI-6 rice and Mexi-Pak wheat, demand for commercial fertilizer began a steady rise. The 1970-71 -1980-81 decade witnessed a four-fold rise in fertilizer consumption or an

annual off-take average increase of about sixteen percent. Yet, per acre use is still relatively low, relative to recommended levels. Although fertilizer prices have recently been increased substantially, the impact of the reduced subsidies is not expected to significantly affect the rate of use, provided the input cost and output product prices remain favorable. Therefore the policy issues of major concern will likely continue to focus on the in-country delivery mechanism and the problem of low use rates on crops, relative to recommended levels, and the role of the private agro-business firms.

While Pakistan has more or less reached self-sufficiency in the production of nitrogen fertilizer, imports of substantial tonnages of phosphate fertilizers will be necessary for the foreseeable future, given projections of limited increases in domestic production. The Federal Directorate of Fertilizer Imports (FDFI) arranges for all fertilizer imports. FDFI also arranges in-country transportation and bills the provinces and the Fauji Fertilizer Company Limited at GOP established rates, less allowable "incidentals."

Although most of the nitrogen fertilizer is now handled by private sector firms, phosphate is distributed largely through public sector provincial bodies (Punjab Agricultural Development Supplies Corporation in Punjab, Sind Agricultural Supplies Organization in Sind, Agricultural Development Authority in NWFP, and Agriculture Department in Baluchistan). According to the October 1982 A.I.D. consultants report prepared by Spiegelfield, McAllister and Dunn: "Currently the distribution system at the Provincial level is a financial drain on the national economy. We [the authors] thoroughly agree with the premise that the private sector can distribute fertilizer much more cheaply and efficiently..." [10, p. 1]. The above referenced report also included a set of recommendations that relate to the privatization of fertilizer marketing in general and to the fertilizer imports under A.I.D. Agricultural Commodities and Equipment Program in particular, since the PAAD for this Program gives an estimate of A.I.D.-financed fertilizer imports to be about 27 percent of Pakistan's estimated 1982-83 phosphate requirements [10, p. 24]. One other issue related to fertilizer supplies raised in the PAAD [9, Annex G.6. p.4] concerns present fertilizer reserve levels. "The GOP requires that

25 percent of the year's offtake in nitrogen and 50 percent of the year's offtake in phosphate and potash be held in reserve at all times... Current reserve policy results in excessive reserves for most of the year" which suggests that storage costs could be reduced if lower reserve levels were adopted.

Other important purchased production inputs are seeds and plant protection. Most of the seed industry, including not only research, but certification and distribution as well, was in the public sector until quite recently. "In view of the serious deficiency of good quality seed, a seed industry project has now been launched with help from the World Bank." [9, Annex G.2, p.4]. One element of this expanded effort is the provision of incentives to the private sector to enter into this program. Several GOP policy shifts have also recently occurred in the plant protection area. Specifically, (a) aerial spraying has been terminated, except in Baluchistan; (b) subsidies have ended in Punjab and Sind and are being phased out in NWFP and Baluchistan; and (c) procurement and distribution of pesticides in Punjab and Sind has been turned over to the private sector. [9, Annex G.2, p.2]. These changes are too recent to allow a complete assessment of impact on aggregate levels of use and quality control, although government administrators at the provincial level have expressed concerns that use levels are declining, availability has been adversely affected in remote areas and several cases of severe environmental damage due to mis-use have been reported. Further GOP policy action in this area is therefore anticipated, particularly in regard to the environmental issue.

#### 4. Mechanization and Equipment

Use of seasonal labor has long been prevalent in Pakistan's agricultural sector, particularly during the harvesting season. Although a detailed analysis of the farm labor situation would likely still show disguised under employment in agriculture on an annual basis, most government personnel contacted claim that seasonal labor shortages now exist. Causative factors appear to be non-farm employment options, both in-country and abroad. The most visible impact of this employment impact has been a continued heavy demand for tractor imports (current imports exceed 20,000 annually) and, more recently the rapid proliferation of mechanical threshers.

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The GOP has recently established a Farm Mechanization Board to advise on mechanization policy. Implementation of a policy decision to allow importation of small tractors in the 20 to 30 horse power range is underway. This decision has sparked considerable debate because the impact is unknown. At the present time owners of large tractors engage in considerable custom work, including significant amounts of hauling in urban areas, if the number of tractors seen on the streets of Faisalabad, Lahore and other urban centers is any indication. There is also considerable disagreement on whether the smaller farmers, the group now targetted for increased production efficiency, will buy these smaller tractors, or continue with custom hiring and/or bullock power. In any case, purchases of tractors (of whatever size) by small farmers will be heavily dependent on credit availability.

A.I.D.'s PACE Program has a large potential level of funding to finance purchase of tractors and other mechanized equipment. Imports during the first year of Program was limited to equipment needs in support of the World Bank funded Irrigation System Rehabilitation Project but imports in future years can shift significantly to farm level equipment but specific requirements are extremely uncertain at this time, as noted above. Further study of this issue would, therefore, be desirable.

#### D. Management of Agricultural Resources

Critical unresolved problems are prevalent in the agricultural resources area. These can be grouped for discussion purposes into the following: (1) soil erosion control, reforestation and range management; (2) water resources management; (3) on-farm organization; and (4) marketing strategy at local level.

##### 1. Soil Erosion Control, Reforestation and Range Management

Problems in this area of concern are limited primarily to the barani areas of the country. Relatively little GOP attention, at least as reflected in the level of budget allocations, has been directed to these problems in the past. This is understandable, given that so large a share of Pakistan's agricultural output is derived from lands served by its extensive Indus Basin irrigation system. But this does not mean that the barani lands are not important from a national perspective--a significant amount of wheat, for example, is grown under

non-irrigated conditions and the life of major water projects such as Mangla and Tarbela are directly dependent on erosion control measures for the catchment areas. And for the provincial governmental units of the NWFP and Baluchistan where most of barani lands are concentrated, they are of paramount importance. Finally, as Pakistan moves towards a greater utilization of all its agricultural resources and as livestock products in particular gain a greater importance in the future, the barani lands will increasingly have to be addressed.

The major policy issues in this area of concern do not bear directly on the objectives of the PACE Program so will not be dealt with further in this report. Suffice it to say that the GOP is aware of problems and issues unique to the barani areas and several U.S.A.I.D./Islamabad activities and preliminary investigations are focused on this problem set.a/

## 2. Water Resources Management

Given Pakistan's overwhelming dependence on its large area of irrigated land, agricultural policy issues related to the irrigation water resource base will continue to be given extremely high priority. But, as noted earlier, the shift in emphasis from expansion of the physical supply level to management of existing systems, begun during the decade of the seventies, will necessarily increase by several orders of magnitude during the forthcoming Sixth Five Year Plan period and beyond.

A large amount of published material about Pakistan's irrigation system and its problems is readily available and could simply be referenced in this report. For the sake of completeness, however, and because of the high priority placed by the GOP on dealing with its irrigation problems, some discussion will be included. Material developed earlier by Mr. Perwaiz is, in the author's opinion, a precise and accurate summary of this subject and is, therefore, presented below.b/

"Pakistan's current cultivated area is around 50 million acres, of which about 35 million is

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a/ See, for example, [11].

b/ Internal note prepared by Shahid Perwaiz for the Chief, Office of Agriculture and Rural Development, USAID/Pakistan, 1982.

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classified as irrigated. Of this 35 million acres about three-fourths are irrigated by canals. The surface irrigation system consists of about 45,000 miles of canals; over a million miles of watercourses; and a series of dams, barrages, and headworks which control the diversion of the river flow into the canals. In addition, about 12,000 large public sector and about 200,000 small private sector tubewells exploit the groundwater. Total groundwater pumpage accounts for about 25 percent of the total farmgate water supply, around 80 percent of which is through the private sector tubewells.

The efficiency of Pakistan's vast irrigation system is very low - about one-fourth of the water delivered to major canals, or 25 million acre feet (MAF), is lost through seepage and leakage and about 46 percent or 51 MAF, is lost in watercourses. The canal system has deteriorated considerably over time. Currently, an estimated 12 percent of a given canal command area is adversely affected each year by breaches and canal closure. Silt deposits have raised the water flow line resulting in disproportionate water delivery to watercourses at the canal head and leaving less water for discharge at the tail. The present capacity utilization of the publically owned and operated SCARP tubewells has been measured at around 40 percent.

The irrigation system has developed, historically, as a surface water routing mechanism with little regard to crop requirements and integration between the available ground and surface water. Given the inherent uncertainties in the canal water supplies, farmers tend to practice "extensive irrigation" rather than trying to apply water in accordance with crop requirements.<sup>1/</sup> These uncertainties in the delivery of irrigation water generate a high degree of variability in the productivity of fertilizer required by the existing high yielding seed varieties. This increases the farmers' risk of using modern production inputs and inhibits adoption of new technology. The net

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<sup>1/</sup> This insures some production if rains are late or insufficient."

result is a reduced productivity of water per unit of land as measured by the yield per acre at the farm.<sup>1/</sup>

The management objectives of the irrigation system need to be reassessed. The historical water spreading injunction to avert famine or floods should give way to a management philosophy which places first priority on meeting minimum crop requirements in irrigated areas. The objectives of the system should be to increase water supplies by improving canals and watercourses and improve reliability and timeliness of the deliveries. This requires: completion of deferred maintenance to avoid any serious mishap; structural modifications in the system including downstream storage to provide greater management flexibility; strengthening water research and planning; and, re-examination of current policy and practices which provides insufficient funds for operation and maintenance while distorting the pricing framework which shapes farmers' decisions.<sup>2/</sup>... The capital requirements of the system for O&M and new construction are immense; alternative financial mechanisms are needed to respond to these requirements. Special revenue generating and management schemes should be explored, e.g., taxing districts, bond issues for capital projects, dedicated funds for irrigation O&M from water revenues, and uniform water rates to reduce accounting inefficiencies and provide an incentive for efficient water use ..."

### 3. On-Farm Organization

Previous discussions and published reports dealing with Pakistan's on-farm organizational problems have almost always been limited to problems inherent in its land tenure system. As in most countries, land tenure problems continue to constrain agricultural

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"<sup>1/</sup> Inefficient water delivery can also lead to cases of excessive water forced through some canals. Application of excessive supply also adversely affects crop yield."

"<sup>2/</sup> Privately owned and operated tubewells charge significantly more for water which can be delivered on demand."

production far below its potential. In the recent past most of the increases in commercial production have come from medium sized farms because many of the owners of very large farms are reported to have non-farm interests and sources of income, hence their cropping intensity is extremely low while the largest category, the small farmers, at present do not participate significantly in the market economy. Both the significance of the land tenure issue and its political sensitivity is recognized in the following excerpts from the PACE Program:

"Land distribution patterns are markedly uneven, and according to the 1972 Agriculture Census, only about 12 percent of ownership holdings cover 59 percent of the farm area. Land reforms were introduced in 1959, 1972 and 1977 to reduce concentration and to safeguard the interests of tenants. However, only about 1.75 million acres or 3.5 percent of the total cultivated area have become available for redistribution. Even these figures appear to be overstated since large-scale evasions of the reforms are believed to have occurred through land transfers among heirs and relatives. Fragmentary evidence appears to support the view that the true impact of these land reforms will be felt only with a time lag of one generation. When the head of the family dies (father or elder brother), the nominal owners of the land will insist on cashing in their inheritance. Thus pressure will build for independent management of the farms, and, in some cases, sales to outsiders.

Available evidence on the production, employment, and income distribution effects of land distribution programs is inconclusive. What is certain is that the skewed land distribution pattern supports a highly stratified social structure and manifests itself in the control by the landed aristocracy of the rural cooperatives program and with some exceptions, inequitable access to physical inputs and support services. Not surprisingly, land reform is a highly political and sensitive policy area." [9, p. 15].

From this particular vantage point in time, it does not appear likely that the skewed distribution of Pakistan's land ownership will be adjusted, even after a generation time lag, as the above quote has suggested. Indeed, the GOP has recently issued an Ordinance to relax the application of the Land Reforms of 1972, with regard to the maximum size of land holdings. While this change is too recent to allow a full assessment of impact, it does appear that, initially at least, it will be applied to livestock farms where the prior 300 acres limit for barani lands precluded any economic unit in this extensive-type farming enterprise. Some Pakistani observers are of the opinion, however, that this shift in policy may lead eventually to a third component of the agricultural sector in the form of corporate farming, without much direct impact within the small and medium-sized farm components [12 p. 12].

Regardless of what may eventually emerge as to changes in Pakistan's land tenure pattern over the longer term, it should be clear that the small and medium size farms are the only sources from which significant additional production responses can be extracted in the short run. These farm operators then are the necessary focal point for policy consideration at this time. One of the major objectives of such policy will be to motivate the small farm operator to move more directly into the market system.

With increasing attention being given to bringing the small farm group more into the market economy and with increasing availability of purchased production inputs for the agricultural sector as a whole, the day to day management options available to farmer decision makers will become increasingly more complex. Farmers will need information for making management decisions that go far beyond mere physical production responses to rates of fertilizer applications and related inputs. Information on costs of production compared to gross returns at varying price levels will be sought by more farmers. To a degree such data and analysis thereof is being carried out in agricultural economics departments at the agricultural universities and in economic research organizations at Islamabad, Lahore, Peshawar and Karachi. While such information will likely become a key input in national price policy decisions, it is

presently not being transmitted to most farmers in Pakistan in a form in which it can serve as a basis for choosing among alternative production pattern options. The process is severely constrained by the low literacy rate in the rural sector and by the current staff of the Extension Service which is almost totally staffed with personnel trained in the physical and biological agricultural sciences. To the limited degree that necessary information for economic decision making now reaches farmers, private firms involved in distributing fertilizer and plant protection materials, have been largely responsible.

#### 4. Marketing Strategy at the Local Level

Heretofore, with government responsible for procurement of the major crops, little attention has been paid to marketing strategy at the local level. As the private sector becomes more heavily involved in marketing and distribution of inputs, however, it seems likely that it will also be more heavily involved in the marketing and distribution of the agricultural products produced. And, farmers will be responding more directly to increased options for both purchase of inputs and sale of outputs that will result. Such an increase in options will significantly affect resource management at the farm level, ranging from changes in cropping patterns from year to year to varying levels of inputs and the marketing pattern on a year-long rather than only at the harvest-time basis. As in the case for increased need for reliable economic data for production decisions, as noted above, there will be a corresponding need for economic data on which to base marketing decisions at the farm level as well.

#### E. Increasing the Role of the Private Sector

One of the major elements of GOP agricultural policy is the encouragement of private sector involvement in agriculture. Given that production has always been in the hands of private entrepreneurs (farmers), this broad policy statement by definition is focussed primarily on the agri-business components of the agricultural sector. A major exception to this generalization is in the area of on-farm water management by farmers to include not only better utilization of water in the command area level of the surface distribution system but expansion as well of private tubewells.

### 1. Supplying and Distributing Fertilizer and Related Purchased Inputs

Implementation of the new GOP policy on encouraging greater involvement of the private sector is most evident in the area of distribution of fertilizer and related purchased inputs. Distribution of plant protection materials is now almost wholly in the private sector, as is nitrogen fertilizer and some of the phosphate fertilizer. Efforts are underway to shift the distribution of improved seeds to the private sector as well. If private sector involvement in agriculture is to be significantly expanded beyond present levels, however, opportunities will have to be provided to enter the supply area, including not only in-country production but importation as well. Experience in other countries provides strong evidence that private firms are more cost-effective than government agencies in reaching an efficient balance between internal production and importation of farm production inputs. In the final analysis, however, private sector involvement in supplying and distributing production inputs to farmers will be constrained by the degree to which government will allow the prices of such inputs to be determined by the international market.

### 2. Marketing, Storage and Distribution of Output

Private sector involvement in the output side of agriculture is greatly in need of modernization and will offer rapidly expanding opportunities for further involvement as Pakistani agricultural output diversifies. Cost effectiveness related to timeliness and efficiencies in the delivery system will be greatest in perishable products such as eggs and poultry, meat and dairy products, vegetables and fruits. And, in order to compete successfully in the international market, quality control in these products will be critical. Current barriers to entry as a result of government policy and control will have to be examined and modified, including such things as rationing of major food stuffs, price controls, import duties and meatless days. Not to be overlooked is the fact that the efficiencies from private sector involvement depend a great deal on diversification of activities and the cost spreading

it allows. In this regard, allowing expansion simultaneously in both supplying inputs and involvement in distribution of output offers great opportunities for encouraging the expansion of Pakistani agricultural output at competitive prices.

### 3. Maintenance and Services

The third major area of expansion possibilities for agri-business firms is in provision of maintenance and service facilities at the local level. There is a strong likelihood that if barriers to entry are removed in this area, the private sector will respond by developing a network of agri-business centers at the local level where farmers can obtain not only fertilizer and other factor inputs and where they can sell their produce, but where they can also buy and get their machinery serviced and maintained. Finally, such centers can provide valuable production and marketing information to farmers and facilitate a demonstration effect that can supplement and in some cases replace in a more efficient manner such efforts now carried out primarily by the Extension Service.

### 4. Water Management at the Micro-Level

Pakistani farmers provided with irrigation water by the canal system have always been responsible for distribution facilities below the canal outlet. Constraints to efficient field level use have long been recognized by government and several large scale research and training projects designed to improve on-farm water management have been underway in Pakistan since the late 1970s.<sup>a/</sup> And, recently, legislation has been adopted at the provincial level to facilitate the organization of farmer water user associations. There is ample evidence, however, that known technical information in this area of concern is not being adopted very rapidly by farmers. Therefore, new projects are in the formulation stage with support from both A.I.D. and the World Bank which will focus more directly on improving the extension linkage so that the farmers themselves will take a more active role in adoption of improved on-farm water management practices.

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<sup>a/</sup> For a summary of these efforts, see "Special Report: On-Farm Water Management," Pakistan Agriculture Karachi, August, 1982, pp. 18-32. [13].

The other major effort leading to more direct involvement of the private sector has been in the installation of private tubewells. Where fresh water zones are available, there has been rapid proliferation of such wells but is now constrained from further development because of unavailability of electricity links and high cost of diesel fuel. WAPDA reports that major emphasis will be directed to extension of rural electrification programs during the Sixth Five Year Plan period but they also note that severe power shortages are also likely to occur during this period. This presents a dilemma, given the high cost of diesel fuel which precludes it as an economically competitive power source.

In this regard, an experiment presently underway in India is worthy of note. With a small grant from the Ford Foundation, a proto-type wood to gas converter has been developed that allows a diesel engine to operate on this fuel. Seckler from the Ford Office in New Delhi has estimated that by using some of the rapid growing tree varieties now being promoted under a social forestry project, a small farmer can produce enough wood for fuel to pump his irrigation water requirement by allocating only three percent of his acreage to tree growing. The fuel converter is simple enough in design that it can be replicated by a village blacksmith and preliminary study indicates that pumping irrigation water using this wood gas as fuel can be cost competitive. There are no publications yet available on this experiment but further information can be obtained from Dr. David Seckler, Ford Foundation, New Delhi, India.

A final area of private involvement in irrigation management at the micro level relate to the maintenance of electrical and pumping equipment. Such efforts are already underway to service existing private tubewells but will gain added importance if the GOP follows through with plans to divest itself of all WAPDA SCARP wells in the fresh water zones. And, in the future, drilling of wells for public funded projects, such as deep wells in ground water areas of Baluchistan, by the private sector could also prove to be a viable option.

## F. Major Roles for the Public Sector

All of the above noted efforts to expand the role of the private sector in agriculture will not, of course, allow disinvestment of government responsibilities in support of this sector. The nature and extent of its involvement, however, will most certainly be affected, more so in some activities than in others. The following discussion will focus briefly on some of these relationships.

### 1. Planning, Policy Formulation and Analysis, and Capital Resources Mobilization

Government activity in these areas of concern cannot be diminished as a result of expansion of the role of the private sector in agriculture. Rather, its role will necessarily become larger and more complex, for two reasons. First, given the shift toward agriculture anticipated in the Sixth Five Year Plan, there will be a greater portion of the total budget allocated to this sector. Second, an expanded role for the private sector will provide new opportunities for reducing many and in some cases eliminating agricultural support activities formally provided by government. While the mechanics of the resulting shifts are too numerous and complex to deal with here, one can make nonetheless a general observation that the agricultural policy formulation and analysis will necessarily play a critical role.

### 2. Food Security

In a centrally planned economy such as Pakistan, responsibility for the nation's food security will continue to be of dominant concern.<sup>a/</sup> While presently the focus is on the local production short fall in edible oils and its adverse impact on foreign exchange, one cannot deal with this matter on a crisis basis in isolation of the "big picture" of long-term food security. Policy makers should become more keenly aware of the degree to which GOP actions taken in this area affect not only the agricultural sector directly but other areas of the economy as well. Simulation of alternatives and their consequences as a basis for deciding on specific policy actions can be substantially improved in Pakistan, given the state of the art on an international basis.

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a/ See, for example: Riaz Ahmad Khan, Issue of Food Distribution in Pakistan, Staff Paper AE-101, Social Sciences Division, Pakistan Agricultural Research Council, Islamabad, September 1982. [15].

### 3. Prices and Import/Export Adjustments

Of all the tools available to government, control of the pricing and import/export mechanisms offers the greatest opportunity for stimulating not only output increases but also the mix of output in the short run. Government is well aware of this fact and is therefore making strong efforts to improve its performance record. The recent establishment of the Agricultural Prices Commission is a case in point. While these kind of efforts are laudable, government should also be aware that the degree of success in this effort will be heavily dependent upon the availability of the kind of skilled manpower needed and the adequacy and reliability of the necessary data base.<sup>a/</sup>

### 4. Macro Level Management of Irrigation Water Supplies

As noted previously, provision of adequate supplies of irrigation water in a timely manner will continue to be the key to the rate of adoption of other factor inputs by farmers. And, increasingly government activities in support thereof are necessarily shifting from efforts that expand the supply to those efforts that will more efficiently utilize the supplies already in hand. WAPDA has greatly expanded its irrigation planning and evaluation capabilities from the meager level it had when this author was working in that activity during the mid-sixties. Its expanded capability was amply demonstrated by successful completion of its plan for a Revised Action Program for Irrigated Agriculture in 1979. [14]. This master plan provides major inputs for the water, power and agricultural components of the Sixth Five Year Plan documents. Implementation of policies to put the key elements in place will continue to be of high priority concern for years to come.

### 5. Development Support for Dry-land and Livestock Agriculture

Expansion of agricultural output from barani areas has heretofore been constrained not only by

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<sup>a/</sup> See, for example, Riaz Ahmad Khan, A Suggested Approach for Developing Pakistan's Agricultural Statistics, Staff Paper AE-102, Social Science Division, Pakistan Agricultural Research Council, Islamabad, October 1982. [16].

adverse climatic and locational aspects but also by lack of adequate government attention and budget resources. There now appears to be ample recognition in government that such areas have undeveloped potential and if the recent activity in project identification within the donor agencies is a reliable indication some positive gains in this relatively neglected sector may finally materialize.

#### 6. Development of Transportation and Rural Infrastructure

While provision of an improved transportation network and a modernized rural infrastructure will have positive economic and social benefits for the nation as a whole, their most direct impacts will likely be felt most in the agricultural sector. There is keen interest in this area of concern not only in Federal Government but at the provincial levels as well. Payoff from additional investments will be directly affected by the sequence and timing of scheduled improvements. Therefore effective coordination of national, provincial and local efforts will be particularly critical. Finally, it must be kept in mind that many such activities are extremely capital and labor intensive and the opportunity costs of other government investments foregone within limited investment funds and the available labor pool are not to be taken lightly.

#### 7. Provision of Regulatory Services

Most government administrators and other observers contacted by the author expressed strong support for GOP efforts to encourage private sector involvement in agriculture. They also expressed concern, however, that such involvement will also lead to a greater need for certain kinds of regulatory functions by government; e.g. quality control in pesticides, standardization of all kind of agricultural inputs, grading and quality control of agricultural produce, etc. The present capacities to perform these services do not appear adequate to accommodate a rapid involvement of the private sector in the agro-business aspects. Yet such capacity will have to be developed concurrently with expansion of private sector activity if concerns with public health, confidence of producers and a competitive position in the international market are to be achieved and maintained over time.

### 8. Education, Research and Extension

For the agricultural sector at least, dominant and in some cases monopoly government activity will necessarily remain. Given the huge professionally trained manpower needs anticipated, even in the short-run, this should be an area of greater government attention than it presently appears to be.<sup>a/</sup> Given the experience worldwide, as the agricultural sector modernizes, and as the private sector involvement expands, the private sector increasingly competes successfully for larger numbers of trained professionals and inevitably they hire the best of the group available. Such a natural evolution is inevitable and an appropriate government response should be to expand the quantity and quality of newly trained professionals.

In Pakistan, as in any other country with a large agricultural sector, the primary sources (and for some disciplines, the only source) are the agricultural universities. Data were not readily available nor did time limitations permit even a cursory assessment of the supply/demand relationships for trained agricultural professionals. But, it was amply clear from observation alone that the quality of the manpower produced has slipped over time as compared to worldwide standards and experience. It is the author's opinion (with a bias perhaps but undenied) that a major causative factor leading to this undesirable state of affairs has been the deliberate delinking of extension and much of the research activities from the educational function of Pakistan's agricultural universities.<sup>b/</sup> Local observers argue quite strongly and convincingly that, in this regard, "humpty dumpty cannot be put back together again." Perhaps not but one thing is

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<sup>a/</sup> For an extensive review the current situation, with particular reference to research, see Carl E. Pray, et. al, The Agricultural Research System in Pakistan: The Report of the Minnesota Reconnaissance Team Bul. No. 82-1, Economic Development Center, Department of Economics and Department of Agricultural Economics, University of Minnesota, Minneapolis/St. Paul, March 1982 [17].

<sup>b/</sup> This action of course ignores the demonstrated success of the land-grant approach to training of agricultural professionals which originated in the U.S but which has since been adopted by many LDC's as well, most notably in India in this part of the world, where agricultural conditions and problems similar to those found in Pakistan exist.

certain--provision of an adequate supply of agricultural professionals to carry out the nation's agricultural administration, research and service functions is so critical to success in modernizing agriculture that no substitutes for this input can be accepted. Thus, in the opinion of this author, either the three traditional functions of an agricultural university--teaching, research and extension--will have to be re-established or an effective coordinating mechanism that creates the same result will have to be found. Continuation of the present situation, in which neither option exists, is a sure blueprint for disaster. a/

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a/ Recognition of the problem by the A.I.D. Mission is duly noted, per efforts currently underway (PID number 391-0477, "Agricultural Education, Research and Extension.") And sincere wishes for success in this venture are herewith extended.

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## VII. A PRELIMINARY "RANK ORDERING" OF POLICY ISSUES

This section will attempt to address the following specific charge set forth in the Scope of Work: ". . . the contractor will identify critical issues and . . . will produce the required rank order of policy issues with supporting justification for his selection." The preceding section has dealt extensively with the subject of critical issues for agricultural policy analysis in Pakistan on a macro-basis so as to present a comprehensive view of the current situation. Policy actions, however, tend to be narrower in scope, must relate to political reality and are always constrained by availability of budget, manpower and time. And, recommendations for action must be workable in view of the objectives to be achieved, both in the short and the longer term. It is within this rather subjective framework that a preliminary "rank ordering" of policy issues will be attempted.

Morgan and Yetley have stated these circumstances more formally, as follows:

". . . The policy formulation process needs to be guided by a clear sense of "what should be" (normative assumptions) and an equally clear understanding of facts about "the way things are" (positive knowledge). Normative decisions ultimately interact with the very core of the political process. Indeed, no policy need be given serious consideration if it is politically infeasible. Positive decisions, however, deal only with the consideration of facts as observed and agreed upon by reasonable people. Unfortunately, the policy formulation process involves considerably more than separating normative and positive judgements." [1, p. 3].

### A. Justification Statement

Turning first to the "supporting justification" portion of the charge, it is deemed desirable to call attention to the opposing polar positions that have emerged in the literature in regard to the question of the appropriate relationship of agrarian structure to achieving agricultural development. These are generally referred to as the "technocratic" and "structuralist" schools of thought. From the viewpoint of the technocrats, the major constraint to rapid growth is not the existing agrarian structure but the lack of adoption of modern technology, either due to

unavailability of inputs or lack of adequate incentives for farmers to do so, or both. Proponents argue that LDC farmers are "poor but efficient" and that the marginal rates of return to traditional inputs are too low to generate growth inducing investments. Therefore, they argue that government policy should focus on efforts to make modern inputs more readily available within a framework of favorable relative input/output price relationships as perceived by farmers so that they are more willing to assume the risks of adopting these desired inputs. This approach was most strongly advocated by Schultz over two decades ago and has been restated countless times since by others (but only marginally improved upon). [2]. In contrast, "structuralists" focus on such constraints to development as high levels of tenancy, skewed distributions of ownership that favor large landholders and a set of institutional arrangements that present solid barriers to entry, to credit markets and the like, for a majority of small landholders and tenants. (See for example, Griffin [3]).

Given the current situation in Pakistan, proponents from both schools of thought can find evidence to bolster their positions. For example, a recent comprehensive analysis by Mahmood Hasan Khan, Underdevelopment and Agrarian Structure in Pakistan (1981), appears, on the surface, to favor the structuralist's position. He viewed a time specific historical framework of the 1960-76 period and most of his conclusions were drawn from performance data for the 1971-76 period. Khan does not fully commit himself to the structuralist position, noting only that "agrarian structures affect agricultural development in many and significant ways." [4]. Farrukh Iqbal, in reviewing Khan's book observes, however, that some of these "ways" are directly contrary to the expectations of the structuralist position. [5]. For example, he notes that Khan's inter-provincial comparison suggests that the Sind's relatively "bad" agrarian structure was associated with relatively "good" agricultural performance in recent years while the Punjab with its relatively "better" agrarian structure fared worse during the seventies after a burst of rapid growth in per unit output per unit of input in the late sixties. [5, p. 114].

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In defense of Khan's actual position, however, note should be taken of the fact that the analysis in his book was for a time period preceding the present government and its new agricultural policy stance. More recently, he has commented in a policy prescription context which favors the technocrat's position for the short-run while advocating giving increasing attention to institutional and structural constraints over the longer term. In this regard, he recently stated in part:

"There is considerable potential for increased agricultural production in Pakistan, notably through the more efficient use of available resources and technology. In the short to medium term, increased inputs, especially fertilizer, combined with better timing of water release and improvement in farm practices such as regular weeding and increasing plant densities, can substantially increase crop output. In the long-term, however, major efforts to strengthen the institutional framework for incentives, research, extension, and water management will have to be part of a strategy to transform the agricultural sector....

Land reforms of 1959 and 1972 have not radically altered the high concentration of land ownership in most areas, although they have given to the tenants increased security of tenure on land. The small plots cultivated by sharecroppers, as in many areas of Sind and in some areas of the Punjab, suffer from the imposition of high ground rent by landlords, who are by and large absentee landowners. The small landowners are also under pressure by large landowners, who have enjoyed a visibly high place in the development programs of the government and exert the most influence in markets and public sector activities. Small and marginal landowners also face a serious problem of land fragmentation, and the consolidation schemes have not been quite satisfactory. Increasing fragmentation due to rapid population growth and the Muslim laws of inheritance poses serious threat not only to the owners but also represents a considerable economic waste for the society.

Since a radical readjustment in the land tenure system is not at present a priority issue, the target groups of small farmers (owner-cultivators

and the landless) will have to rely on the institutional support available within the present social system." [6, pp.1 and 11].

This author's current stance on opposing schools of thought in regard to agricultural development strategy leans toward the "technocratic" view in terms of philosophy and to the short-term and long-term stance of Khan (as quoted above) in terms of policy implementation. The author's views notwithstanding, the current agricultural policy stance of the GOP is necessarily the over-riding factor when prioritizing Pakistan's agricultural policy issues (although the apparent complimentary between the two does at least make the task more comfortable). Specifically, the National Agricultural Policy statement of February 1980 clearly opts for the "technocratic" point of view, but with the added caveat that a deliberate effort will be made to increase private sector participation in the input delivery and output marketing processes. [7]. It is anticipated that this GOP stance will be reflected in the strategy statements and budget allocations that will appear in the forthcoming Sixth Five Year Plan document. This then provides the author's justification statement in support of the policy priority listing which follows.

## B. Priority Listing

Taking the GOP broad-based policy statement as given, the recommended priority listing focuses on elements which, if expeditiously implemented, appear to have positive indicators of success for achieving the stated GOP policy objectives, in both the short-run and over the longer term. a/

### 1. Short-Run Considerations

#### (a) Pricing and Import/Export Adjustments Specific Actions

(i) Improve the analytical capability of the GOP so that alternative adjustments can be simulated in order to determine probable consequences of alternative

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a/ Long-run priorities will most likely change depending on the degree of success resulting from short-run actions of policy implementation.

options in advance of implementation. Rather than re-invent the wheel, use of the econometric model of Pakistan's economy, supplemented with a basic set of Lieontiff type input-output tables, developed recently by the Pakistan Institute of Development Economics should be seriously considered.

(ii) Development of a reliable data base for use as long-term time series information will be needed in order for the new Agricultural Prices Commission to effectively carry out its functions. Again, duplication should be avoided and every effort should be made to incorporate on-going work on cost of production and analysis underway at the agricultural universities, the Punjab Economic Research Institute in Lahore and at the Applied Economic Research Center at Karachi University.

(iii) Continue with removal of remaining subsidies on non-water agricultural inputs such as fertilizer as expeditiously as possible but adjust timing to points in the annual farm production cycle so that negative responses from farmers will be minimized. In the case of water, increase water rates in the short-term sufficient to cover only operation and maintenance costs.

(iv) Consider acquisition of buffer stocks for major crops so that floor prices can be stabilized rather than raised to current international levels and then allowed to fluctuate thereafter. Announce floor prices far enough in advance so that farmers can make supply response decisions in a more rational manner.

(v) Simulate the effects of comparative price adjustments for raising oil seed production prior to making any major price shifts in that direction.

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(vi) Consider elimination of consumer rationing of major food crops and meatless days which presently distort the market demand picture for these commodities.

(b) Water for Irrigation  
Specific Actions

(i) Use all means available to assist farmers to develop private tubewells in all fresh water zones where full pumping capacity does not now exist. Conversely, delay divesting of WAPDA tubewells in fresh water zones until institutional mechanisms for group farmer control and management of such wells have been demonstrated--all possible options should be pilot tested before large-scale divestiture actions are implemented.

(ii) Mobilize Extension Service capability to provide farmers, on a watercourse by watercourse basis, with known technical information to deal with location specific (within individual watercourses) constraints to increasing production. By definition, a major retraining effort of present staff, and/or major expansion of numbers, will be needed to implement this recommended change in extension delivery procedures.

(iii) Improve delivery capability of the main canal system so that water will become available in a more timely manner and unplanned closures are reduced to the maximum degree possible, i.e., focus on improving the managerial capability of the canal operators.

(iv) Phase rural electrification programs with levels of power availability--no need to get the cart before the horse.

(c) Availability of Purchased Inputs  
Specific Actions

(i) Continue with current efforts to turn over the fertilizer delivery function to the private sector with due deliberate speed; as a related issue consider conversion to a system of offering blended fertilizers to farmers as has been advocated by the private firms with prior experience in selling fertilizer.

(ii) Concurrent with (i) above, take government out of both the fertilizer production and distribution business.

(iii) Assist the private sector to establish agro-business distribution and maintenance centers in rural areas. Consider making of facilities now used by government for storage and distribution in rural areas available to private sector entrepreneurs, as well as credit availability for financing these assets.

(iv) Shift government's role in the purchased input area to one of quality control for protection of public health and welfare.

(v) Continue with the current farm credit program for small farmers, but allow as well for longer-term repayment periods for capital improvements such as tubewells and on-farm storage facilities; further monitoring of the reported high repayment rates is advised because the high levels reported are inconsistent with rates experienced elsewhere.

(vi) Initiate a mechanization study with focus on smaller vs larger tractors, per recent GOP consideration to import smaller tractors.

(d) Improved Marketing and Infrastructure Specific Actions

(i) Encourage private sector involvement in marketing of outputs concurrently with the expansion of its role in distribution and marketing of inputs. Particular emphasis should be given to non-major food commodities including poultry, dairy, meat livestock, fruits and vegetables.

(ii) Establish grading standards for these non-major food commodities.

(iii) Select infrastructure improvements to be developed to facilitate marketing; e.g., roads first.

(iv) Begin development of a product prices information network that can reach to the farm level, including both daily and seasonal fluctuations for the non-major food commodities.

2. Longer-Term Considerations<sup>a/</sup>

(a) Initiate a professional agricultural manpower needs study to meet government and private sector requirements to the turn of the century.

(b) Initiate steps to strengthen the existing network of agricultural universities, encompassing teaching, research and extension functions, using the so-called "land-grant system" as it is presently operating in other IIC's as a model.

(c) Continue the present shift in the policy stance in irrigation water supplies which is moving to better management of the existing resource base rather than relying so much on efforts to expand the base.

(d) Accelerate research and development efforts for increasing the utilization of Pakistan's non-irrigated land resources -- establishment

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a/ Includes efforts that can be initiated in the short-term but from which a time-lag in benefits is to be expected.

of a range management agency and promotion of a range based livestock industry merit due consideration.

- (e) Continue with the agriculture product diversification efforts, both to tap readily increasing demand potentials in-country and to improve flexibility and comparative advantage in selected international markets.
- (f) Continue to use infrastructure development efforts in rural modernization of the agriculture sector as a first priority.
- (g) Begin a comprehensive study of the land tenure situation so that if future changes are considered, the consequences of alternative courses of action will at least be partially known in advance, including the option of retaining the status quo.

C. Policy Areas of Primary Concern for the PACE Program

1. Improvement of the GOP's data base for simulation of input-output pricing options, particularly as these efforts will involve consideration of a wider range of alternative crops in a comparative advantage context.

2. Exploring possibilities for utilization of GOP savings from subsidy reduction on fertilizer for development of infrastructure in rural areas with activities which can also support agricultural growth in varying degrees.

3. Follow through on privatization of the fertilizer industry.

4. Initiation of a program to encourage private sector agro-service centers in rural areas (concept already approved in principle by the GOP).

5. Carrying out a series of basic research efforts to provide a more complete data base for making future policy decisions and/or implementation of existing policy, including but not necessarily limited to:

- (a) The "mechanics" involved in the privatization of the fertilizer industry.
- (b) Ways for increasing the efficiency of on-farm fertilizer use.
- (c) A tractor mechanization study that compares small and large tractors, with attachments, on a total investment basis so as to identify probable end users and for what purpose.
- (d) Probable impact of Ushr on farmers and on the rural agricultural sector in general.

D. Concluding Note

It should be self evident that the preceding list of priority policy decision items does not constitute a rank ordering in the strict sense of the term. In the view of this author, to have done so would not have been particularly useful. The focus, rather, was placed on policy implementation priorities within several broad-based categories of policy concerns. Ideally, implementation of selected activities in each category will be carried out simultaneously, but recognizing that some actions will have quicker or higher payoff than others and that there are significant linkage effects among individual actions to be taken into account. This state of affairs will not make policy implementation less difficult but recognition of this reality will hopefully reduce the prospects of making second-best choices.

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## VIII. RECOMMENDATIONS FOR UTILIZATION OF PROGRAM FUNDS

The scope of work for this agricultural policy analysis did not specifically request comments on the overall use of the Program funds which supported this effort. Nonetheless, in the view of the author, the report would not be complete if such comments were omitted. Hence, the following observations are provided, for what they may be worth.

First, there can be no question about whether the Program objectives are appropriate, given the discussion of policy priorities vis-a-vis the current agricultural policy stance of Pakistan.

Second, the first year's allocations to fertilizer and machinery for the irrigation canal rehabilitation program are supportive of GOP policy objectives, although it could be argued that the allocations to fertilizer will likely more directly meet short-term production goals while the machinery purchases are geared more directly to longer-term considerations. Both are valid and the only issue would be one about a desirable balance between the two.

Third, each of the four components (fertilizer, tractors, irrigation equipment, and drilling rigs for groundwater pumping) that the U.S.A.I.D./Islamabad is considering currently for funding in the next FY 1983 tranche of the PACE Program, relate to one or more of the policy action priorities set forth in the preceding section and, therefore, appears to be valid.

Fourth, the attention given to emerging policy concerns, from initial consideration of the Program through to this report, is, in the opinion of the author, most commendable. The policy emphasis of the Program has helped to create a greater policy awareness, not only in the GOP but within A.I.D. and other donor agencies as well. If such early awareness would indeed lead to policy analysis on a continuing basis, the efforts expended thereon will have been worthwhile.