

billion. Of this increase of Afs. 10.1 billion, debt service accounted for Afs. 4.3 billion as compared with Afs. 1.9 billion in the First Plan.<sup>20</sup> Over the same period while revenues increased from Afs. 16.9 billion to Afs. 25.3 billion, the increase was entirely from indirect taxes and the sale of gas to the USSR; direct taxes did not increase at all. Of this Afs. 8.4 billion increase, 68 per cent came from higher import duty collections that resulted from higher commercial imports rather than more strict customs enforcement and 32 per cent of the increase came from gas exports.<sup>21</sup>

Similarly, the anticipated share of foreign contributions to finance the plan is too high. What is questionable is not the RGA's capability to get commitments but its absorptive capacity for new project aid. There is no chance that Afghanistan can provide the necessary domestic financial resources required to attract foreign project aid. In early 1972, \$90 million in committed foreign project aid had remained unused as long as five years.

Likewise, the private sector investment cannot be expected to double over the next five years. Many of the enterprises founded in the past five years face serious difficulties. Even though the legal mechanisms to encourage private investment are now written into law, the present burdensome administrative procedures must be drastically revamped if new private enterprise is to be spawned.

To summarize, an analysis of the Fourth Five Year Plan and comparisons with the Third Plan show that if completely realized, investment in the Fourth Plan would at best equal the Third Five Year Plan; (See Tables 19 and 20) and if past experiences are any guide, the Fourth

Five Year Plan would not represent any breakthrough in Afghanistan's development.

By the 1970's, Afghanistan had clearly lost its isolation from the world. After 16 years of development planning and hundreds of millions of dollars of foreign material and technical resources, Afghanistan could boast several major modern roads, electrical, irrigation, and communications systems, but little more. A relatively large volume of aid (when measured on a per capita basis) sustained high levels of investment to little purpose in terms of higher standards of living for the vast majority of the population. Afghanistan's attempt to modernize and transpose its traditional society and economy had not been successful. Contact with the outside world had put strain on the existing traditional system, but the dynamics of change had never received the necessary momentum to alter the critical traditional static relationships which thwart the national development effort.

Instead, the results of the recent development investments contradict expectations. Both the political structure and recent development experiences of Afghanistan tend to reinforce the effort to maintain the delicate equilibrium between these various traditional groupings rather than to lend support to the opposing efforts toward modernization and the upsetting of the existing equilibrium. Today this balance of social, cultural, and political forces tends to leave relatively limited latitude for actions which encourage economic development.

The numerous conflicting patterns which permeate the society tend to reinforce the existing equilibrium and the tendency to maintain the balance in fact appears to have something of the nature of a mandate. It seems clear that most or all important decisions are made primarily with reference to maintaining these

balances (or, in some instances to regressing to some status quo ante). Benefits are distributed in terms of entitlements within the framework of balances, rather than on the basis of what would optimize economic growth and thus contribute to increasing the national welfare.<sup>22</sup>

An Evaluation of Capital Intensive Investments on the Afghan Economy

The "infrastructure as a precondition to development" approach has not only been proven insufficient but has actually been shown, in the case of Afghanistan, to be an impediment to development. This implies that the longer the government and foreign donors follow this approach, not only will development be delayed, but it will become more difficult to effect the necessary institutional changes critical to development. This statement goes one step further than the classic argument of balanced versus unbalanced growth as an approach to development. It states that while Afghanistan's particular unbalanced investment approach over a period of years has removed some constraints to development, it has at the same time delayed the removal of certain key constraints, ossified some other existing constraints, and introduced a whole new set of constraints making present development more difficult.

The major foreign donors must bear a large proportion of the responsibility for the present stagnation of the Afghan economy. The massive foreign investment was concentrated almost exclusively on providing an adequate infrastructure as pre-condition to economic take-off without fully comprehending the social and political environment in which it was working.<sup>23</sup> Wherever the institutional constraints were observed, adequate effort was not expended to remove the real barriers inimical to modernization. Foreign donors must bear the major portion of the

responsibility since their role was undeniably significant.<sup>24</sup> Some economists<sup>25</sup> would argue that the infrastructure investments were a necessary pre-condition for any subsequent development. When Afghanistan was first exposed to the modern world, it had a rudimentary transportation, electrification and communication system, and was thus unable to sustain any long-term development effort. They argue that Afghanistan had had the correct policy all along, only the methodology was in error. Instead of facing squarely the social costs of building an infrastructure, they have relied too heavily on extensive foreign borrowing, postponing the strains to a future when debt repayment of loans and debt service would paralyze development efforts. The conclusion to be drawn is not that infrastructure investments should be abolished or never should have been started, but rather that necessary infrastructure investments which do not yield early results should be largely financed by domestic saving.

It is impossible to disprove that the infrastructure investments were not a necessary condition. Any criticism becomes salient only when the impact of the capital-intensive investments is analyzed by sectors. For any given sector, it can be asked what is a minimum infrastructure and how can this minimum be measured? For example, about 25 per cent of all investments (Afs. 15 billion) went to the construction of 2,700 kilometers of paved highway that still requires about Afs. 4 billion to complete. Although the highway had undoubtedly contributed to faster and cheaper road transport, encouraging commerce and tourism, the design standards were far higher than necessary. The costs were commensurately high, and the construction of feeder roads connecting production centres to the main trunklines has so far been neglected.

The same argument for large continued infrastructure investments, can and has been applied to the power requirements. Thus:

The large unused capacity in the existing power plants makes it certainly a good proposition to put more emphasis on transmission lines. But this does not imply that the construction of power plants should be discontinued. The existing capacity may be fully utilized after some years and power stations are not erected overnight. Planning and construction take a long time, the country will sooner or later run into power shortage.<sup>26</sup>

The realities of present-day Afghanistan seem to push that power shortage well into the future. Actual power consumption (1972) is only about 40 per cent of generation capacity, partly because of an inadequate transmission-distribution network and partly because of the slow growth in demand. As a result of low-capacity utilization and poor collection practices, the revenues are not even sufficient to meet recurrent costs.

The degree to which Afghanistan pursued an unbalanced investment package has made present development more difficult. By concentrating on large capital investments with long gestation periods, the government has built in an inability to demand expenditure performance. Since the projects, by their nature, were not expected to be quickly implemented, the RGA never initiated a tradition of relating expenditures to performance criteria. No one was held accountable for the use of development funds. In such a climate it is impossible to effect the necessary institutional changes to accelerate development. The German economic advisory group observed:

The experience with the first three development plans clearly shows that the public administration was unable, and still is so, to induce the social, economic, and technical progress of the country. Especially during the last years an increasing decline in discipline can be noticed everywhere. The hope that the public administration would be able to accelerate the development of the country further declined. In our opinion, the low efficiency of the public administration is the most momentous obstacle of the country's development. If the efficiency of the public administration is not increased there will be no chance for a fundamental improvement in the country's performance.<sup>27</sup>

Such an environment is fertile ground for increased corruption and development resource leakages.

Corruption is perhaps defensible in any development scheme so long as some degree of responsibility (or accountability) remains so that the project will in fact get implemented. It may be more costly and late, but it will get implemented. In such cases where the leakages are predictable, it is easy to build into a development model a factor for diversion of funds into non-productive channels.<sup>28</sup> In this case only marginal projects are eliminated. But in Afghanistan's case the proportion of misdirected funds in many projects has risen to unsupportable levels.

There are large leakages in both the ordinary and development budget expenditures, with some Afghan estimates varying up to 10 to 50 per cent of these budgets. Some projects which were supposedly underway during the Second Plan, have not yet been completed, even though the total allocation of funds to such projects has exceeded by far the amount which was originally estimated as required. The slow progress of implementation and the override of Afghani expenditures would suggest that a considerable part of the development budget is drained off into non-development purposes; i.e. diverted to private pockets.<sup>29</sup>

A good case in point is the fertilizer plant at Mazar-i-Sharif financed by the Russians and now several years beyond the planned

completion date. In examining the approved development allotment versus the actual expenditures, there were always several hundred million afghanis unspent over the years. This surplus was occurring in a period when development budgets across the board were either frozen or cut back. The Russian financial adviser<sup>30</sup> stated that although there was no shortage of funds at the fertilizer plant (Mazar Technicum), he could not trace where the money was going. It became evident that the funds were being misused by the Afghan project manager and the Afghan administration higher up was unwilling to assume the necessary responsibility to complete the project.

A point has been reached where additional foreign capital investments should be greatly curtailed. In Afghanistan there will always be a shortage of financial resources so long as projects are not completed. As a consequence of the past development approach, the only remaining alternative for future development seems to be that proffered by the German economic advisory group:

The Fourth Plan will become a failure like the Third Plan if it will be started in the present situation and in the present version. The preconditions for the implementation of a new investment program seem to us worse than ever before . . . . We hold that Afghanistan needs at least a two year period of consolidation in order to create the prerequisites for a new Five Year Plan, which would have better chances to be implemented than its predecessor.<sup>31</sup>

Afghanistan would be ill-advised to embark on a new five year development programme. Rather efforts must be exerted to change the present institutions so that they may effectively implement the ongoing projects and efficiently utilize the existing resources already in place. "The emphasis needs to be less on expenditures than on new policies, new

institutions, and new administrative procedures."<sup>32</sup>

Too many of the foreign aid projects funded by foreign donors were accepted by RGA as much on strategic and political considerations as upon sound economic feasibility studies. That too many projects were financed on non-economic considerations has resulted in certain externalities which hamper present development.

The RGA was very effective in solicitation of foreign assistance, to the neglect of internal resource mobilization. The donors were dealt with individually and, to a certain extent, played off against each other to elicit the greatest possible contributions to the development programme. The technical assistance teams from the respective donor governments were used by the RGA as channels of entree to their governments rather than as advisors whose primary purpose was to assist the RGA in building institutions of effective planning and implementation. For new projects the reviews related almost exclusively to resource (especially foreign aid) availability, and not to how the different elements merged together into a co-ordinated approach. Large turnkey projects held strong appeal for donors because they could implement them rapidly by providing their own nationals for engineering and construction, supervision, and even execution. The Afghans for their own particular reasons relinquished much of their responsibility for development by permitting the donors considerable latitude in identifying and financing projects. So long as the project helped buoy up the present establishment by the injection of foreign resources and did not disturb the status quo, the effectiveness of project implementation became of secondary importance.



Initiation of the projects was an easy task compared with completion and efficient use of the assets created. By the Fourth Plan draft, carry-over projects amounted to 55-60 per cent of the total planned development expenditures. Ongoing projects, by their very existence, dominate in the competition for funds, and as they increase their domination of the development budget, less and less latitude remains for other projects and stronger and stronger efforts must be exerted to develop projects that promise to yield large returns quickly from little investment. Foreign donors found themselves progressively locked into projects founded upon non-economic criteria. The commitments grew for finance and manpower, both for capital and current expenditures, to realize even their modest potential returns. Donors persisted in permitting these expenditures for a variety of reasons (national pride, regional presence and influence, and the attitude that we're just around the corner, were among the reasons given for not abandoning seemingly unfeasible projects) to the exclusion of other necessary activities.

The utilization of foreign project loans and grants rose from \$210 million in the First Plan to \$355.4 million in the Second. But by the Third Plan the crunch began, and foreign project loans and grants started falling steadily and sharply, amounting to only \$217.1 million for the last five years. The decrease in gross aid is directly attributable to the decline in the absorptive capacity of the economy. At present (1973) there exists unused project aid commitments of \$90 million. Where the Russians and Americans have gradually pulled back their commitments, the multi-lateral organizations have filled the

vacuum with project proposals; however, Afghanistan has at present only enough funds to finance its current budget and the ongoing projects. As a second indicator of the declining absorptive capacity for project aid, it is worth noting that commodity assistance has grown as a share of development aid. During the Second Plan commodity assistance as a percentage of development was 15 per cent, during the Third Plan it was 28 per cent, and for the Fourth Plan it is proposed to rise to 34 per cent. The donors, in an attempt to see their projects to the implementation stage, have financed an increasing share of the costs. Not only have the domestic contributions in financing development expenditures declined, but because the commodity assistance consists primarily of products that can be produced domestically (wheat, sugar, edible oil), it follows that the rate of self-sufficiency in essential food stuffs has similarly declined.

As successful as Afghanistan was in negotiating large inflows of foreign resources, so was she delinquent in mobilizing domestic resources. The ease with which foreign capital was available minimized the pressure necessary to mobilize internal resources. Development demands austerity. The foreign aid approach has diminished the need for austerity and has made Afghans accustomed to development sans douleur. But the inevitable can only be stalled so long. It is clearly evident that the debt has been continually rising and by the end of 1971-72, amounted to \$744 million (Afs. 6 billion). Of this amount \$533 million was due the USSR and \$85 million was due the USA. The increasing debt service is both a drain of foreign exchange (thus disturbing the balance of payments), and a constraint on development financing. Debt service rose from an

annual \$7 million six years ago to about \$26 million last year, and will (without rescheduling) rise to \$43 million by the final year of the Fourth Plan.

The failure to increase foreign exchange earnings sufficiently to make the increasing debt service payments is directly related to the past strategy of development that focused on increased expenditure as such, rather than on quick and high-yielding projects and programmes as development targets.

During the period 1957 to 1969, Afghanistan's annual exports increased by \$27 million from a level of \$52 million to \$79 million, whereas annual commercial imports for the same period rose from \$23 million to \$48 million.<sup>33</sup> But what seems fairly favourable at first glance (exports growing at an average annual rate of 3.6 per cent versus 3.2 per cent for imports), changes if the export of natural gas to the USSR is excluded; natural gas exportation began in 1967, and by 1970 accounted for 17 per cent of the total exports. Excluding natural gas, the exports have risen at an average of only 2.2 per cent. The value of natural gas exports may rise another \$3 to \$4 million over the next few years, but this increase will not offset the increasing commercial imports which have risen sharply in recent years. Assuming that there will be a debt rescheduling and subsequent relief to the balance of payments deficit, there still remains the problem of finding ways to increase substantially the wholly inadequate level of foreign exchange earnings. The problem becomes critical as Afghanistan attempts to accelerate the growth of gross domestic product through quick yielding projects and programmes. As raw material and capital goods requirements increase for

the new industries which are being established, either at present or in the future, under the Foreign and Domestic Private Investment Law, so also will imports rise. In addition, as an accelerated agricultural development programme is introduced, import demands for pumps and tractors and new farm inputs will rise. Similarly, aggregate domestic demand for imports will rise with gross domestic product. These factors will continue to raise the annual rate of increase in imports for the next five years at an estimated five per cent<sup>34</sup> versus the 3.2 per cent for the previous twelve-year period. More debt will have to be incurred, but the requisite funds will not be forthcoming unless foreign exchange earnings rise and give promise of further and more sustained increases.

Because of these deficiencies in resource allocation, implementation, and utilization, the resistance to increased domestic savings through taxation is extremely high. Why should the population (e.g. large landowners) favour increased taxes when there is such a poor utilization of revenue already at the disposal of the government?

After 16 years of five-year plans, this sense of participation by a significant number of people in the various regions of the country is notably lacking. This is particularly distressing when the Government should be asking for increased contributions from the people to support a continuing program. Certain people in certain areas of the country have profited enormously, but the Government finds it unfeasible to attempt to increase the taxes only for these people. On the other hand, it finds great resistance to a general increase in taxes when most Afghans can rightfully say that they are paying for the exclusive benefit of a privileged minority in privileged areas of the country.<sup>35</sup>

No one has more succinctly summed up the present situation than Louis Dupree in his recent treatise on Afghanistan.

"No matter how one viewed Afghanistan's economic problems, the outlook at first glance certainly appeared bleak. With most major infrastructure projects completed, with few real resources capable of earning vast sums of hard currency, with smuggling and corruption steadily eroding income from customs (a major source of government revenue), with little statistical data for intelligent planning, with minimal overall increases in agricultural production (and two years of drought, disastrous to men, livestock and crops), with small success in attempted fiscal reforms, with debt repayment on foreign loans coming due, with annual budget deficits of about 500 million afghanis, with few of the country's limited industrial and power plants operating at 50 per cent capacity, with a bureaucracy oriented toward perpetuation rather than innovation, Afghanistan offers any economist -- free enterprise, socialist, or mixed -- extreme challenges.<sup>36</sup>

Reference to Chapter 7

1. Hirschman, op.cit., p.8.
2. Ibid., p.26.
3. Ibid.
4. See Robert Redfield, Peasant Society and Culture (Chicago: University of Chicago Press, 1963), p.63. A comparative study among peasants of Nineteenth Century England, present-day Yucatan, and ancient Baeotia.
5. From conversation with R.B. Scott, an anthropologist with extensive experience in Turkey and Afghanistan.
6. Jon Anderson, "Pushtoon Social Organization: Notes", University of North Carolina, Chapel Hill, N.C., 1972.
7. Some historians argue the point and prefer to place the birth of Afghanistan as a modern nation in 1747, when Ahmad Shah Durrani rose to power in the Kandahar area. The writer considers his reign another example of continued political fusion and fission which characterized middle eastern dynastic history from the death of Mohammed well into the Twentieth Century.
8. There are no accurate published surveys on the ethnic population characteristics of Afghanistan. The Royal Government of Afghanistan (RGA) regularly promulgates estimates of 50 per cent or more, but from personal travel and conversations, the writer finds no possible support for such a claim. The reticence of the Royal Government of Afghanistan to allow an ethnic survey suggests that the statistics are being manipulated. Possibly the Pushtuns account for 30 per cent of the population; the writer would not be surprised if an official census showed that either the Tajik or Hazara populations would almost equal 30 per cent themselves. Other smaller ethnic pockets including Nuristanis, Baluchis, Brahurs, and the Pamir people live in far too isolated areas to be included in the list of major ethnic groups.
9. Musa Shafiq, Prime Minister, in a speech at the opening of the Preparatory Committee of Non-Aligned Nations, as printed in the Kabul Times 12, no.42 (14 May 1973): 1.
10. Ibid.
11. Louis Dupree, "Tribal Traditions and Modern Nationhood: Afghanistan," Asia (Spring 1964): 11.

12. Robert Manly, Afghanistan: Report and Tables to Accompany Recommended Revised Customs Tariff Based on SITC Codes (Kabul: U.S. Agency for International Development and Checchi and Co., April 1973), p.31.
13. The United States offered an excellent market for Afghan karakul (misnamed Persian Lamb), the major export of Afghanistan. Growth in commercial ties was one of the factors influencing the choice of the United States as the most likely source of development assistance, but political factors also weighed heavily in the choice. The United States was at once the most distant and removed of the major developed nations (as compared to Britain and Russia, both of whom at various times in the Nineteenth Century had interfered with the internal policies of Afghanistan), and was among the victorious allies (Japan and Germany were both war-torn and disgraced in post-war opinion). Moreover, the Royal Government of Afghanistan's prime minister in the early post-war period, Sultan Mahmud Ghazi, cousin of the king, while professing neutrality, was decidedly pro-western. This made approaches by the United States very attractive.
14. Royal Government of Afghanistan, Ministry of Planning, First Five Year Plan [1956-57 to 1961-62] Afghanistan, reprint (Ruhr University, Bochum Institute for Development Research and Development Policy, Federal Republic of Germany, 1967).
15. For a more complete history of the early U.S.-Russian rivalry see Nake Kamrany, "United States and Soviet Union Aid Rivalry in Afghanistan", Ph.D. dissertation, UCLA, 1967; Marshall I. Goldman, Soviet Foreign Aid (New York: Praeger, 1967); Eberhard Rheen and Ghani Gaussi Die Wirtschaftliche Entwicklung Afghanistans, 1880-1965 (Oplanden: C.W. Leske Verlage, 1966).
16. Goldman, op.cit., p.115.
17. Robert R. Nathan Associates Inc., Economic Advisory Services Provided to the Ministry of Planning, Royal Government of Afghanistan, September 1961 to June 1972, Final Report (Washington, D.C.: R.R. Nathan Associates, Inc., July 1972), p.10.
18. Royal Government of Afghanistan, Survey of Progress: 1961-62, op.cit.
19. Royal Government of Afghanistan, Ministry of Planning, Third Five Year Plan, 1346-1351 [1967-1972] (Kabul: Government Printing House, 1967), p.14.
20. Royal Government of Afghanistan, Ministry of Planning, Fourth Five Year Plan, 1351-1355, Draft, (Kabul: Government Printing House, May 1972).
21. Robert R. Nathan Associates, Inc., op.cit., p.41.

22. Ibid., p.2.

23. At the same time we must recognize the reluctance of external aid contributors to become involved in projects that are highly culture-oriented.

24. "Afghan development to date has been dominated, if not overrun, by foreign money and foreign ideas. Foreign commodities, credits, cash and services account for at least three quarters of the investment already made." Richard S. Newell, "Afghanistan: The Dangers of Cold War Generosity," Middle East Journal 23 (Spring 1969): 169.

25. See Bent Hansen, "An Appraisal of Economic Development in Afghanistan 1960-70," Final Draft (Berkeley, Calif.: Institute of International Studies, University of California at Berkeley, July 1971), VIII, pp. 1-9.

26. Ibid., VIII., p.5.

27. German Economic Advisory Group, "Measures to Promote Socio-Economic Progress in Afghanistan," (Kabul: March 1972), p.1.

28. See literature on corruption in development: J.S. Nye, "Corruption and Political Development, A Cost-Benefit Analysis," American Political Science Review 61 (1967): 417-27; Hirschman, op.cit., pp. 107-12 and 130, a discussion on the latitudes for corruption; Myrdal, op.cit., pp. 937-958.

29. Glen Parker, Industrial Economist RRNA, in correspondence to Marvin Brant, Party Chief RRNA (May 2, 1972).

30. Mr. Nunkov, Russian Financial Advisor, Mazar Technician (source R. Foster).

31. German Economic Advisory Group, "Comments on the Draft of the Fourth Five Year Plan (1351-1355) with the Ministry Submitted in May 1972 to the Higher Economic Council." (Kabul: June 1972), p. 1. A three-year moving average is used.

32. International Bank for Reconstruction and Development, International Development Association, "Current Economic Position and Prospects of Afghanistan" (Washington, D.C.: 12 January 1971, 1 vol.; and February 1972, 7 vols.), p. ii.

33. German Economic Advisory Group, Afghanistan's Foreign Trade, 1336-1348 and Prospective Development During the Fourth Five Year Plan, 1351-1355. (Kabul: German Economic Advisory Group, April 1972). A three-year moving average is used.

34. Royal Government of Afghanistan, Ministry of Planning, "A Request to the Governments of France, the Federal Republic of Germany, Japan, the United Kingdom and the United States for Relief in Servicing of Debt Due Them." (Kabul: Fall 1972).



35. R.R. Nathan Associates, op.cit., p.56.

36. Dupree, Afghanistan, op.cit., p.755.

## CHAPTER 8

### THE TRADITIONAL AGRICULTURAL SECTOR: A CLASSIC STUDY OF A FAILURE TO REMOVE CRITICAL INSTITUTIONAL CONSTRAINTS

#### Introduction

In no sector were the failures of the post-war development efforts more apparent than in the agricultural sector. Despite massive capital investments, the rate of growth of the agriculture sector has been very disappointing. The two years of successive drought in 1970 and 1971 revealed how precariously close the country is to subsistence when threatened by short crops and excessive slaughtering of livestock. In the approach to agricultural development, water has been regarded as a unique resource. Assigning supreme priority to this one resource has had a deleterious impact upon agricultural development. Not only were other constraints almost wholly neglected, but even the water constraint was not effectively removed. The problem of water shortage has never been wholly one of technical inability to supply a given area with an adequate and assured supply of water. Rather the problem has been and still is institutional in nature. Until the traditional institutions of water distribution are fully understood and altered in specific ways, the technical assurance of water supply to a given area will not yield the projected area increases in production.

#### The Physical Framework of the Agricultural Sector

Afghanistan to date has few economically exploitable natural resources. Its economy is largely dependent on the production and export

of crops and livestock. Any development plan for Afghanistan must be based on improving the productivity of the agricultural sector if it is to affect the living standards of the vast majority of the people.

The area of agricultural statistics is not well developed. The annual value of production is largely a matter for conjecture, as it is impossible to assess with any degree of accuracy how much is consumed on the farm of origin, how much passes into the commercial channels, and how much is smuggled out of the country unrecorded.<sup>1</sup> Most of the country's population is rural. Using the scanty statistics which exist, it is estimated that about 75 per cent of the labour force<sup>2</sup> is directly engaged in agricultural or livestock activities which produce about 50 per cent of the gross domestic product and provide indirectly the livelihood of many more families and workers. The most reliable statistics in the agricultural sector are exports which clearly show the relative importance of agriculture in the Afghan economy. Of the major export commodities, only natural gas is not of agricultural origin (See Table 21).

Afghanistan's semi-arid climate and mountainous terrain has led to agricultural development based primarily on irrigation and grazing, with dry-land production an uncertain component of the grain supply since growing conditions are highly variable from year to year. The mountains are intersected by a few large and many small valleys, elevations varying from a few hundred meters to over six thousand meters with corresponding wide climatic variability. Of the total land area of about 63 million hectares, 22 per cent or 14 million hectares are considered arable. Of this, an estimated 7.8 million hectares are cultivated and six million hectares are in permanent meadows and pastures. With present irrigation

TABLE 21

AFGHANISTAN'S EXPORTS BY COMMODITY: 1966-1970

(in millions of \$ U.S.)

Commodity	1966-67	1967-68	1968-69	1969-70 <sup>a</sup>
Natural gas to USSR <sup>b</sup>	-	2.93	9.03	12.01
Casings (sheep guts)	1.45	1.28	1.11	0.98
Dried fruits and nuts	15.26	18.01	18.96	19.45
Fresh fruit	6.65	8.15	8.01	8.94
Fresh and dried vegetables	0.21	0.04	0.16	0.34
Oilseeds	1.02	0.90	2.80	2.73
Qarakul skins	11.71	14.06	8.32	12.46
Other hides and skins	2.38	2.38	2.26	2.94
Wool	4.98	4.86	6.99	6.72
Raw cotton	11.90	7.86	5.88	5.65
Medicinal herbs	0.98	0.31	2.85	1.81
Carpets and rugs	8.00	5.17	4.52	6.30
Other commodities	0.23	0.46	0.91	1.10
<b>TOTAL</b>	<b>64.77</b>	<b>66.41</b>	<b>71.80</b>	<b>81.43</b>

SOURCE: Royal Government of Afghanistan, Ministry of Planning,  
Department of Statistics, Survey of Progress, 1969-70  
(Kabul: Government Printing House, October 1970) S-14.

<sup>a</sup>Estimates

<sup>b</sup>1967-68 first year natural gas exported to U.S.S.R. via pipeline  
under Amu Darya.

facilities only about 2.5 million hectares can be irrigated; but in any given year with the present incidence of double-cropping, effective cropland would rise to some 3-3.5 million hectares. Another 1.3 to 2.5 million hectares of wheat and barley are dry-farmed in years with normal precipitation.<sup>3</sup>

Aside from the small dry-land wheat culture, Afghanistan is heavily dependent upon irrigation. For centuries farmers have diverted water for irrigation from rivers, streams, and springs, usually by surface canals, but in some cases by underground canals (karezes) and most recently by an increasing incidence of deep wells. Most irrigation facilities are constructed with hand tools, locally available materials, and traditional skills. By modern engineering standards these traditional schemes are not certain to supply an adequate or assured supply of water. In many cases the shortage of irrigation water is due to the inefficiency of the irrigation system, i.e. many of the diversion structures are unable to stand high water levels and must be repaired or rebuilt annually. In this sense the mountains are both an asset and a liability. They are an asset in that they provide a reservoir of snow which feeds the rivers in summer, and a liability in contributing to heavy and destructive flows in the spring. Although the flow of water into canals is relatively ample and sometimes excessive in the spring for a portion of the land which is irrigated in any one year, irrigation water is in short supply before the end of the crop season. The degree to which this shortage is a function of inefficient and/or inequitable water distribution systems will be considered later in this chapter.

The production potential of agriculture on irrigated lands in

Afghanistan is high. The temperature and the quality of sunlight allow a wide variety of crops. New crops introduced in recent years have succeeded well, under both experimental and actual conditions. Even though current yields are low and most of the water supply systems are traditional and inefficient, the lack of any national population pressure (i.e. a generally low population/arable land ratio) makes self-sufficiency and surplus creation technically attainable. Assuming a minimum requirement of 160 kilos. per person per year, the country would achieve minimum self-sufficiency in wheat today if only 30 to 40 per cent of the irrigated cropland were farmed with high-yield varieties of wheat and were fertilized,<sup>4</sup> other factors assumed constant. While the statistical base for this statement leaves much to be desired, the fact still stands: Afghanistan does not presently face a land-shortage problem. At the same time it is not the intention of the writer to leave the impression that Afghanistan can readily become a grain exporter. A national wheat surplus programme is technically possible, but in fact will be very difficult to obtain while the country's marketing infrastructure, storage facilities and credit system remain inadequate.

Almost all Afghan farmers produce food grains, principally wheat. With prevailing low levels of productivity, the base for increased growth in gross domestic product has not yet been established. In the past ten years in spite of the large investments in the agricultural sector, production of food grains has increased only by 1.4 to 1.5 per cent annually.<sup>5</sup>

The official estimates of value added amounts to almost complete stagnation of agricultural production during the sixties, and even if we accept the slightly more optimistic

FAO index, the annual rate of increase of total agricultural production was only 1.8 per cent from 1960-69, against 1.4 per cent for food production. Both of these growth rates are clearly below the population growth rate.<sup>6</sup>

Very low growth rates also apply to the industrial crops -- cotton, sugar cane and sugar beets. Vegetable and fruit production has increased significantly, largely through expanded cropland; unfortunately the spread effect has been insignificant, with few farmers exploiting these high-value crops.

As late as the 1960's, Afghanistan was consistently a wheat, meat and fruit surplus area. (Russia made a gift of 2,500 tons of wheat to Afghanistan in 1961 which is reported never to have been unloaded in Afghanistan but immediately trans-shipped to Pakistan). However, certain trends in the recent past have slowly encroached upon this national surplus.<sup>7</sup> Not only was the population growth rate greater than the increase in production, as stated above, but the urbanization growth rate was even higher.

In addition, the partially completed transportation system has had a deleterious effect. The road construction programmes of the past three Five Year Plans have concentrated on trunk lines connecting the major cities, thus giving the country two all-weather roads to Pakistan and one to Iran. Since the road construction efforts virtually ignored the improvement of feeder roads, the movement of agricultural surplus to the major urban areas and out of the country was given the competitive advantage over the movement of this surplus toward the inaccessible interior areas where a wheat deficit prevailed.

The experience of the writer in traveling within the most

isolated areas of the country, however, contradicts the generally held official contention that the two-year drought (1970-72) seriously cut the supply of available wheat. Whereas the writer agrees that there may have been a global deficit, the magnitude was grossly overestimated. Several questions remain unanswered: (1) In a year of normal precipitation how much wheat is imported into or exported (unrecorded) from Afghanistan? In the two years of drought did this figure rise or fall? Since the drought conditions did not stop at the borders but spread over into northwestern Pakistan and western Iran, why should it be assumed, a priori, that portions of regional surpluses were not exported out of the country? (2) What is the grain storage capacity of the traditional farm population? Do farmers keep small or large reserves? (3) In one of the most remote areas of the country the writer personally saw the impact of two years of deprivation. There was uncontested evidence of starvation and out-migration. When relief arrived, how is it that local wheat suddenly appeared in the bazaars, forcing prices down from 70 Afs./ seer to 10 Afs./ seer.<sup>8</sup>

Thus it may be concluded that because of unknown traditional storage capacity, hoarding, speculation, and illegal exportation of grains, national estimates of wheat deficits in any one year are of questionable validity.

#### Government Investment in the Agricultural Sector

As in other sectors, the government's role in agricultural development has manifested distinct and critical deficiencies. These are in the performance of functions necessary to introduce, implement and complete programmes essential for accelerated economic progress.



On one hand, the failure of development policy is partially related to the low level of expenditures specifically aimed at improving production in the agriculture and livestock sectors. About one half of the Afs. 12.5 billion invested in the agricultural sector since the First Five Year Plan was allocated to large irrigation land development projects - The Helmand-Arghandab Valley Authority and the Nangrahar Valley Development Project.<sup>9</sup>

On the other hand, government investments failed to remove the critical institutional constraints to the transformation of the traditional agrarian environment. The noticeable lack of any effective legislation to facilitate the transition from feudal agrarian relationships fits very closely the government's pattern of executing only those programs that did not disturb the status quo. There has been no legislation concerning water regulation and distribution laws, nor tenancy registration and standardization. Who owns what, and who pays how much in taxes is still not resolved. Nor has there been any legislation passed which would allow farmers to organize into co-operatives.<sup>10</sup>

The expenditure in 1969-70 put clearly into perspective where the emphasis among different types of agricultural development expenditures lies (See Table 22).

The 2.5 billion afghanis represents nearly 30 per cent of total public expenditures including the contribution of foreign governments. Of this 2.5 billion afghanis, nearly 45 per cent of the expenditures were for resource development, mainly irrigation; at the same time roughly one third of the funds spent for "agri-business" actually went for construction of feeder roads and bridges in rural areas, and the remainder was for the

TABLE 22

DISTRIBUTION OF AGRICULTURAL EXPENDITURES  
IN AFGHANISTAN, 1969-70

Agriculture and Related Sector Expenditures	Afs. (millions)	\$ U.S. (millions)*	Per Cent of Total
Improving agricultural production	295	65	11
Natural resource development	1,070	237	43
Agri-business and rural development	460	101	18
Export market development	230	51	9
Education and rural development	330	72	13
Administration of agri- cultural sector programme	145	32	6
TOTAL	2,535	558	100

SOURCE: Asian Development Bank, Sectoral Planning Study of  
Agriculture in Afghanistan (Kabul: Asian Development  
Bank, 1971), Chapter 2.

\* Foreign assistance has been converted at the official rate of  
Afs. 54.3/ U.S. \$1.

construction of the urea plant at Mazar-i-Sharif (mentioned earlier and still not in production). Thus as an approximation, only 20 per cent of the investment in the agricultural sector was directed toward short-term surplus creation.

Coupled with misdirected investment was a poor record of administrative organization. It is not uncommon for Third World countries to manifest a notable degree of administrative mismanagement. The RGA's approach to the organization of agricultural development has been unco-ordinated and overlapping. The Ministry of Agriculture and Irrigation (MAI), the major government instrument for agricultural development, concentrates solely on irrigation and on-farm productivity. There is virtually no expenditure for agri-business improvement nor for such improvements as farm credit, market news, market and price research, national standards for market regulation, or enterprise development. These activities, among others, are diffused among eight independent agencies, institutions and ministries. The table presented on the following page divides the total development budget among these various action agencies. (See Table 23).

#### Evaluation of the Government's Role in Agricultural Development

Most of the past government investments have been directed at increasing and/or assuring the supply of water. The implicit economic assumptions to justify these large investments were:

(1) Afghanistan is an arid country with a relatively high population/irrigated land ratio. Unless the amount of irrigated land is increased, the country will never be able to break the vicious grip of subsistence.

TABLE 23

ROYAL GOVERNMENT OF AFGHANISTAN:  
APPROXIMATE EXPENDITURES FOR AGRICULTURALLY-RELATED PURPOSES<sup>a</sup>  
BY MAJOR MINISTRIES AND AGENCIES, 1969-70.  
(millions Afs.)

Agency or Ministry	Agricultural Productivity	Natural Resource Development	Agri-Business and Export Market Development	Education for Rural Development	Administration	TOTAL
Agriculture and Irrigation	240	810	5	25	50	1,130
Mines and Industry	...	...	300 <sup>b</sup>	2	3	305
Education (Rural)	...	...	...	265	5	270
Interior (Civil)	...	...	130	2	23	155
Planning <sup>c</sup>	20	45	25	6	20	116
Finance	5	...	230 <sup>d</sup>	...	20	255
Helmand-Arghandab Valley Authority	30	215	...	...	25	270
Kabul University	...	...	...	30	4	34
TOTAL	295	1,070	690	330	130	2,535

SOURCE: Asian Development Bank, Agricultural Sector Study, Kabul, 1971, Chapter 4, p. 8.

<sup>a</sup>Includes ordinary, development and foreign assistance expenditures. Since accounts are not kept on this basis, the estimates are only rough approximations.

<sup>b</sup>Consists entirely of the Mazur urea plant.

<sup>c</sup>Includes Paktia Development Program.

<sup>d</sup>Exchange surrender refund.

(2) The present traditional irrigation structures are generally inadequate for double-cropping and shifts to high-value crops. Also, the annual repair and maintenance of the system consumes much of the farmer's time.

(3) If a modern infrastructure were laid in place, the farmers would be able to see the advantage of substituting modern distribution systems for the traditional ones. With an increased and assured supply of water, farmers would be able to accept that water no longer would be a scarce factor and would voluntarily share the increased supply with their neighbours.

The past chapters of this study have shown that these assumptions are unsupportable.

One further assumption, never to be actually tested, was implicit in the development of the Nangrahar Valley Project: The Russians proposed in 1960 to introduce state mechanized farms on newly reclaimed land in order to alleviate the traditional water distribution problems. This method of completely circumventing the problem by not distributing the land to small individual farm holdings was technically feasible; but given social and political realities, unacceptable to Afghanistan. Instead of viable mechanized collectives producing export crops, the land was irrigated, levelled and developed only to be distributed primarily to small independent farmers who could be expected to grow little more than grain crops for subsistence.

A review of the development of all agencies, institutions and ministries involved with improving the agricultural sector does not support the claim that the pursuit of improved agricultural productivity has been a dominant goal of the government. The most effective means

available are not being employed.

Many analysts have emphasized the narrow scope of past government investments and have listed various policy alternatives to accelerate agricultural growth. In the Current Economic Position and Prospects of Afghanistan<sup>11</sup> it is observed that because there has been in the past an overemphasis on infrastructure investments and on large-scale, slowly maturing projects, what is needed now is investment in a series of short-term and quick yield projects.<sup>12</sup> Present government agencies lack the technical capabilities to identify such projects.

Among impediments to growth are:

- (1) inadequate supply and distribution of input factors (i.e. fertilizers);
- (2) shortage of water and imperfect irrigation systems resulting each year in a high proportion of fallow land;
- (3) inadequacies in the extension services, combined with a failure to communicate effectively with farmers;
- (4) failure to devise a strategy for development and undue emphasis on large-scale, long-term projects in successive five-year plans;
- (5) failure of government to give adequate recognition in the past to the importance of the livestock sector;
- (6) high cost of credit;
- (7) systems of sharecropping in which the landowner has little or no obligation to the tenant, as well as the ubiquity of fragmentation of holdings;
- (8) government pricing policies which discourage higher production;
- and
- (9) failure to develop co-operative associations.<sup>13</sup>

Although the list is not exhaustive, it is illustrative of the factors which conspire against the Afghan farmer's improvement of production.

The IBRD assesses the existing facilities for agricultural education, extension training and in-service training as "seriously deficient".<sup>14</sup> These deficiencies need to be reviewed and programmes introduced for upgrading standards of proficiency at all levels. The government must also be urged to introduce legislation to expedite the removal of constraints on production and provide a necessary legal basis which is consistent with development needs.

Legislative actions are needed to improve landlord-tenant relations, as a first step in a more comprehensive reform of the land tenure system, to establish cooperatives to regulate water rights, to provide chattel mortgage, etc.<sup>15</sup>

In the Agricultural Sector Planning Study<sup>16</sup>, the most comprehensive sector analysis of the agricultural economy of Afghanistan, the recommendations primarily stress increasing wheat production since it ranks highest among crops in contributing to the Royal Government of Afghanistan's objective of a self-sufficiency in grains. As the study was written during the second year of severe drought, the emphasis on wheat production is understandable. But with the drought past and wheat self-sufficiency realized in 1972 and projected for 1973, it is the other major observations and recommendations that are of particular interest here.

The Asian Development Bank notes the need for reorientation of irrigation and land development programmes by shifting emphasis to high, quick payoff projects. Resources for rehabilitation and improvement of existing irrigation systems need to be increased. Urgently needed is

basic survey work to determine water-balance conditions for both surface and ground water resources. This basic work has priority over irrigation construction work. The Asian Development Bank suggests that a concentration on on-farm improvements and government-farmer communication is urgently needed. Governmental access to farmers should be increased by enlarging field staff, improving mobility, modernizing demonstration capacity, and by increasing the farmer's confidence in rural extension in general.<sup>17</sup>

In the RRNA Final Report<sup>18</sup> the agricultural sector is the area to be granted highest priority. The strategy of agricultural development should include a phased programme that sequentially emphasizes:

- (1) the adoption of fertilizer and improved seeds (especially for wheat and cotton) on all existing irrigated land;
- (2) the improvement of on-farm irrigation systems;
- (3) the adoption of double-cropping and improved agricultural practices;
- (4) the introduction and adoption of higher value crops and new varieties;
- (5) the construction of storage and distribution systems with priority to small-scale and quicker-yielding local projects;
- (6) the improvement of marketing facilities and practices needing special emphasis in all phases; and
- (7) the design of an agricultural research program to support the strategy at each stage and to anticipate the move from phase to phase.

As self-sufficiency in wheat is imminent,<sup>19</sup> production and marketing programmes should be designed to maximize the flow of products to export



markets. Priorities in irrigation should be focused for at least the next five years on the following:

- (1) utilizing to the maximum existing storage and distribution systems;
- (2) improving existing river irrigation systems;
- (3) supplementing present systems with shallow tube wells,
- (4) educating farmers to use water supplies properly; and
- (5) setting a general optimum use of water on land now under water command.

When this phase has progressed satisfactorily, attention can then be turned to construction of additional water storage and distribution systems and new land development.

The various critiques of planning for the agricultural sector have been in accord in their broad conclusions as to what is necessary to transform the agricultural sector, but at the same time their project recommendations have been very general. With all the studies published on the agricultural sector, surprisingly little has adequately described the social and economic environment of the traditional feudal agricultural system of Afghanistan. The present study is a modest attempt to remedy this situation.

In the remainder of this chapter specific constraints will be identified to help policy makers approach the problem of water supply in a more effective way. Whereas the writer does not attempt to outline the steps required for a modernization of the traditional agricultural sector, the constraints identified although critical to efficient and equitable distribution of water are applicable to a wide range of agricultural

problems in Afghanistan. Similarly, this preliminary analysis can provide guidance for future work in the agricultural sector.

It is generally accepted that the traditional farmers in Afghanistan, as in other countries, are responsive to economic stimuli. Although the Afghan farmer manifests certain social and economic behaviour patterns that are barriers to the transition from traditional ways, the writer agrees that the responses of farmers in Afghanistan to improvements in economic opportunities are generally rational in economic terms. Their responses to changes in product and factor prices are significantly positive. Moreover, the observed lags in these responses (e.g. in the acceptance of the new improved seeds and fertilizers) compares favourably with the observed lags in other Third World and in Western countries. The increase in vegetable and fruit production over the past ten years at a rate substantially greater than the growth rate in total national agricultural production clearly shows the potential for getting agriculture moving. Significantly, this increase was a farmer response to market opportunities free of government controls and essentially unaffected by government programmes.

In a recent study, The Afghan Farmer: Report of a Survey<sup>20</sup>, Whiting and Hughes in collaboration with Afghan professionals undertook a survey of seven villages. The villages selected were not representative nationally in geographic terms, as the western and northwestern areas were not included in the sample. Nor were the farms representative of land tenure configurations. The farms chosen were strongly skewed in favour of areas of high agricultural potential, favourably located relative to land and irrigation resources, roads, markets, and agricultural extension

centres. The results of the study clearly support the generally held opinion: ". . . in our sample, at least, attitudes toward technological change are already highly positive, farmers do not appear to suffer mental inflexibility and their personal characteristics do not seem the important impediments to the spread of innovations."<sup>21</sup>

Yet most farmers still have not attempted many innovations. Some complained about lack of supplies, credit and/or information. The study concludes that whereas general conclusions may be made about the necessary conditions to modernizing the agricultural sector, what is eminently lacking is knowledge of the particulars. "We believe that the clearest result of this study is the paramount and prior importance of knowledge of the situation in which the farmer must operate."<sup>22</sup>

It is this general lack of information about the traditional agrarian environment that has made past investments in the agricultural sector yield such poor results. The total socio-political framework of the country has been overlooked by foreign donors in the implementing of projects directed at changing traditional agricultural production methods. For the irrigation projects in particular a major constraint to agricultural development has not been the inadequacy of water nor the inefficiency inherent in traditional irrigation structures, but the feudal agriculture relationships which perpetrate inefficient and inequitable water distribution.

A Preliminary Analysis of the Economics of  
Traditional Water Distribution in Afghanistan

Neo-classical economic theory would propose the following agricultural production functions for a modern agricultural system (See Figure 6) with relation to one factor input, water (OW), and output

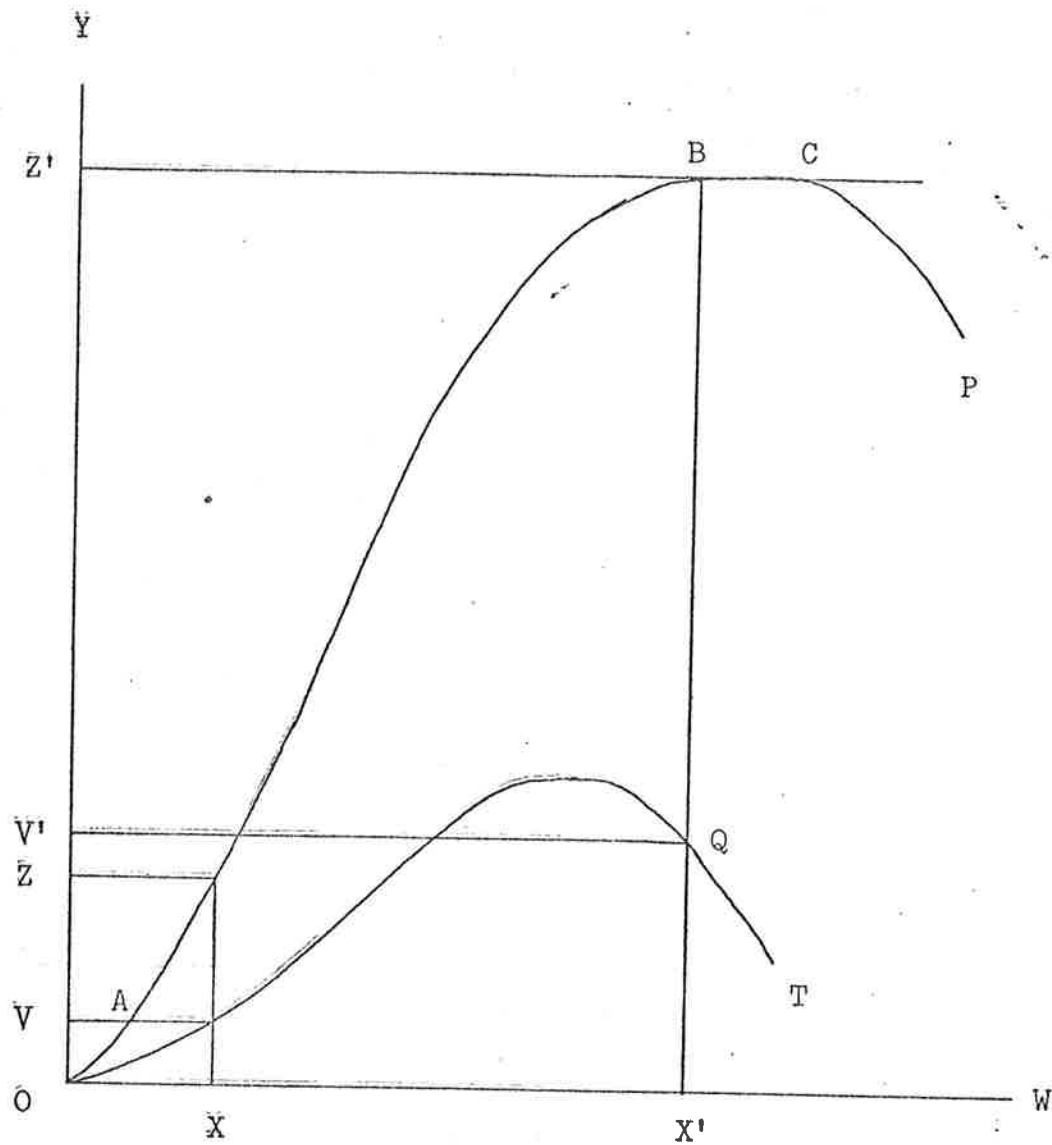


Figure 6. The Neo-classical Production Function for Water with Modern and Traditional Irrigation Systems

(OY) in this case agricultural product. The varying slopes of OP, the production function, divide the standard areas of production: at first OA manifests increasing returns to water, then AB has diminishing returns, BC has constant returns, while CP has negative returns to incremental additions of water to a given area of land.

Within Afghanistan, OT would more closely approximate the traditional functional relationship between water and agricultural output. The production function (OT) associated with a traditional system resembles the production function associated with modern practices (OP) in its division into areas of increasing, diminishing, and negative returns as a result of incremental additions of water to a given area of land. However, at OX units of water,  $OV < OZ$  by the extent that the traditional system is less efficient in its use of water (other factors being equal). The differences in the marginal productivity of water become more striking as additional water is added to both cultivation systems.

If the water supply to a given area of land increases  $XX'$ , assuming a modern agricultural system is operating, the neo-classical production function exhibits an output increase of  $ZZ'$ . The marginal product here is:

$$\frac{dY}{dW} = \frac{ZZ'}{XX'}$$

For the traditional production function, an equal increase in water would increase output  $VV'$ ; the marginal product equals  $\frac{VV'}{XX'}$  which is substantially less than  $\frac{ZZ'}{XX'}$ .

The critical point to note is that the water supply ( $XX'$ ), assuming a modern agricultural production function, is calculated to achieve a maximum gross return and minimum wastage; i.e., water supply is increased to point B, where the marginal product of water is zero. The same increase in water applied to a traditional production function results in wastage and less than maximum output; at Q, the marginal product of water is negative.

It may be assumed that OX is the amount of water that has customarily been available. The capital-intensive irrigation projects have increased the physical water supply to  $X'$  and only a small increment in total output has occurred. In the case of Afghanistan the divergence between the traditional production function OT, and the neo-classical model of OP may be explained as a function of feudal relationships, traditional customs and poor cultivation practices. More specifically, with reference to water supply as our one variable input, the loss in productive potential may be accounted for by:

(a) concentration of water rights within the traditional agricultural sector of Afghanistan;

(b) the non-productive demands for water;

(c) weak central authority that refuses to impose required water-use taxation;

(d) the lack of administrative infrastructure and knowledge of traditional agrarian society; and

(e) poor cultivation practices that result in misuse of a previously scarce factor of production which has suddenly become abundant.

The concentration of water rights within the traditional agricultural sector of Afghanistan has never actually been calculated. It remains a most critical and most sensitive area of information.

In Afghanistan, as in most arid countries which comprise much of the Mediterranean Muslim cultural area, the ownership of water rights and not the ownership of land determines the distribution of wealth. Dry-land (Lalmi) normally belongs to the community.

If any villager takes the risk and plows and seeds an area of Lalmi any harvest that is reaped is his, irrespective of his status within the community. On irrigated land (aubi), the ownership of land only has meaning if the farmers can be assured of an adequate supply of water. Technical considerations imply that the land closest to the diversion is most likely to get an adequate supply (other factors being held constant), while the land furthest from the diversion would be the most likely to be short of water. This is not the situation in Afghanistan. The owner of the largest share of the water rights on any given diversion determines the distribution pattern, regardless of where his lands may be in relation to the main juie.

Actual statistics on the distribution of water rights for any area do not exist. Attempts have not even been made to sample certain areas. The only means to estimate the concentration of water rights holdings and its effect upon agricultural productivity is to look at estimates of the concentration of land holding.

Several estimates of land ownership concentration have been made within Afghanistan. The most widely quoted is from Russian sources. Table 24 shows that by this one survey, only one-fifth of one per cent of the farmers own 50 per cent of the land. Another recent German study<sup>23</sup>

TABLE 24

DISTRIBUTION OF LANDED PROPERTY IN AFGHANISTAN BY SIZE OF HOLDING

Size of Holding (in jerib)	<u>Owners</u>		<u>Area of Holdings</u>	
	Number	Per cent	Million jerib	Per cent
0-2	257,872	42.0	0.3	1.6
3-20	265,243	43.0	3.0	15.8
21-30	32,344	5.0	0.8	4.2
31-50	26,240	4.0	1.0	5.3
51-100	22,484	3.6	1.5	7.9
101-500	13,832	2.2	2.9	15.2
501-15,100	1,208	0.2	9.5	50.0
TOTAL	619,223	100.0	19.0	100.0

SOURCE: A.D. Davydov, [The Development of Kapitalism in Afghanistan Agriculture] Moscow, 1962, p. 147; table reproduced in Max Klimburg, Afghanistan (Vienna and Munich: 1966), p. 70.

estimates that within one particular area (assumed to be less concentrated than the national average) 98 per cent of all the farmers own only 33 per cent of the land.

The reason a clear estimate of land-ownership and water distribution patterns remains blurred is that farmers are reluctant to divulge to the government the actual amount of land and water rights individually owned, and the government, for its part, has been reluctant to press the matter.

Registration of land and water rights within Afghanistan, as in most traditional agrarian environments, is not an easy task. Farmers have an inbred fear of government meddling. They fear increased taxation



and a land reform programme which could lead to loss of land held. This barrier of suspicion is aggravated by conditions that are typical to the Muslim feudal agrarian system of Afghanistan.

There are numerous disagreements between farmers on land ownership and water rights stemming from inheritance patterns, sales, leasing, and the grau system of lending money in exchange for the use of fields (long term). Many such disagreements, like feud situations, remain dormant for years with one or the other party in possession of the field. As occasion arises to gain an advantage, a move will be made by one of the parties. Those involved are hesitant to take their claims to court because, as noted before, the uncertainties of court justice are normally tempered by bribes; once an official decision is made, one party is bound to lose its position of argument; and village communities generally prefer to maintain their disagreements within the group, guarding their own flexibility. They certainly do not wish to involve the government. Clearing titles in the process of land consolidation and implementation of water users' legislation would subject the farmers to the uncertainties of legal intervention.

On a more general level, interaction with the government always involves uncertainty. The normal processes of registration or any other official paperwork requires unofficial payment to officials. These payments are expected and accepted as part of the system by both government and farmers, but if there is no real advantage to come of the process, what is the point? Further, farmers feel a fundamental distrust of government and consequently, hesitate to submit the basis of their livelihood, their farm land, to the uncertainty of government scrutiny.

The government, on its part, is reluctant to press land registration too aggressively since the greyish areas of contested land claimed by both landowners and government would finally be resolved; this would remove a source of unofficial income to government officials who can claim payment from landlords where either no clear claim is available or it is publicly accepted that the extra land farmed by a landlord is officially government owned.

Land and water rights registration can be best understood in the context of two distinctive characteristics of the present social milieu in Afghanistan: i.e. the desire of both landlords and government to maintain the status quo, and to avoid excessive legislation that might eliminate flexibility and legislate away sources of income for petty government officials.

The non-productive demands for water combine with the excessive concentration of water rights to result in a misallocation of an incremental supply. The utility function of farmers for water is not determined solely by the limit of the physical requirements of crop production.

The government contends that the increases in agricultural production which will augment government revenues will cover the incurred direct subsidy to farmers from construction, maintenance, and irrigation operation. But this subsidy encourages inefficient and non-economic water use and must be curtailed (i.e. water user charges implemented) if any project is to operate efficiently. The imposition of water taxes, the government attests, however, is far too complicated and requires a degree of meddling in local affairs that is not customary.

After so many years of investment in improving irrigation structures,

surprisingly little is known about the actual mechanics of water distribution institutions. What is known is that the basic rules for water distribution between the users have been outlined in the Shariat, (the Muslim code of law). Some of the principles in the water usage laws are handed down from generation to generation and are more or less identical in all the provinces of Afghanistan. During the flood period the farmers and big landlords receive a constant flow of water. During the low-water period, there is supposed to be a strict adherence to rotational systems between irrigation systems, villages, individual farms and holdings.

Local administrators helped by mirabs supervise the distribution of water, repair and maintenance of irrigation systems. There is a permanent supervisor (Bandban) at the headwork of an irrigation system on main canals and he is paid by the people whose land is watered by the given system or canal. There is another supervisor (Mardicar) at the head of each main distributory.

Water is distributed among the watercourses in proportion to the area of land to be irrigated on a time basis. Special supervisors (Saatchi) regulate the time during which water is delivered to a village and they are also paid by the landowners. Sequence of irrigation and water circulation is by Koranic law and supposed to be very strictly adhered to.

All disputes over water should be settled depending on the amount of land which is owned by the parties. This is the major principle of the Shariat: "the right of land for water". The Shariat says, "the basis for water distribution is the area of arable land" and the "land belongs to a man who has irrigated it".

The divergence between the religiously decreed normative situation and the actual is revealed by frequent and violent altercations in periods of water shortage. At the margin ethical values give way to the assertion of brute power.

The usual order of distribution and utilization of water for irrigation is determined by the owner of the canal. He invariably is a large land owner (in some cases water is owned communally by a village or group of farmers) who determines the amount he will use for himself first, how much to distribute to his tenants and how much finally he must share with the other farmers. As long as he is not charged for an additional supply his utility maximization subject to zero cost restraint (above the productive demands for water) is the measure of social loss.

The lack of an administrative infrastructure and insufficient knowledge of traditional agrarian society inhibit the establishment of some mechanism able to alter or regulate the present distribution system.

The major irrigation and land development projects require a centralized authority not only to complete the physical infrastructure, but also to co-ordinate the effective running of the system, to organize and teach the farmers how to use their new supply of irrigation water as well as to collect the taxes. This authority has never existed in Afghanistan, for while the government structures may seem highly centralized and vertically integrated, the reality of the functioning system is quite different; the existing political system is one which allows a relatively great degree of autonomy at every level of government as long as the order of the system is maintained.

What seems to be a relationship of strong central authority

between government and farmers is functionally a system of paternalism and distance. At the regional level this balance between central authority and local autonomy is seen in the role of the governor, whose potential of great power and a paternalistic orientation is tempered by social distance which reduces the potential for situations in which power must be exercised.

The governor holds the chief paternalistic role to which farmers, large and small, turn for final decisions on events, usually government actions or orders which will affect some aspect of their lives. This is not to say that the governor will always make himself available for such confrontations; his involvement is not predictable. The range of topics brought to the governor is also likely to be highly selective, village communities normally preferring to keep internal issues to themselves. For some major issues of government, farmers have pointed out that they have refused to deal with lesser officials but have gone directly to the governor for a decision. And to some unknown degree, the governor is the final authority in the provincial bureaucracy. To varying degrees, lower level government officials take on the trappings and attitudes of the paternalistic role but with much less power. The paternal relationship is one that combines potential power and respect, producing social distance. This distant relationship between provincial authorities and locals is maintained on both sides. Villages are left to a great extent on their own in terms of control of most everyday activity. In the case of the Pushtoon farm areas, local Khans or large landowners in the villages hold the power and control through various systems of patronage and economic dependence. They also control the necessary level of force to back up

their position. They tend to control much, if not most, of the land either directly through ownership, or indirectly through control of the irrigation water. They either appoint the mirab (the indigenous water-master who controls the irrigation water distribution system and who receives compensation from the farmers for his activity), have a strong vote in his selection, or hold the office themselves. The same pattern applies to the selection of the malik (village headman), whose role has the function of representing the village or any of its members in all situations of official contact vis-à-vis the government. The villages frequently carry the name of the local Khan. To some degree, those Khans are held responsible for the actions of their "neighbours", i.e. those who are under some form of patronage by the government. They are also allowed a great deal of freedom in their indigenous political activities, i.e. perhaps misuse of the water distribution system which they employ to their own advantage or as a weapon against others, as long as order is generally maintained and the functioning system of taxes, etc. is not disrupted. A threat to the larger system of government authority and the maintenance of order would be dealt with rather harshly. Little official interest is shown on the part of the government in the everyday activities of village life and organization because many such activities would call for official action and thus a confrontation with local power structures, and perhaps an embarrassment to all parties concerned. We should not assume that provincial officials are well informed about local village events.

The civil servant and the farmer are, in a sense members of different cultures, maintained by social distance. Farmers basically view the government agent as an outsider, and the agent has difficulty

identifying with the farmer. They hold different values and orientations and lead different lives.

The relationship between the provincial and central governments is similar to that between the provincial government and the farmers; that is, a system of relative autonomy exists. Officially the country has a highly centralized form of government, a situation which, when seen by foreign advisers, is considered disfunctional to initiative and innovation. Functionally and unofficially the central government allows a great deal of power to rest with the governor, and to a great extent success and failure are probably measured in terms of maintaining order, the status quo, i.e. no trouble. The central government will support his actions directly or indirectly on this basis. If order is maintained, taxes are collected and forwarded, and soldiers recruited (not necessarily from all segments of society): the province is successful. This order closely parallels the expectations of the Ottoman bureaucratic system of the past which the Afghans apparently used as a model.

In any case, this functional autonomy takes the form of the central authorities not monitoring provincial events very closely in the same way the provincial authorities only become involved in village affairs when they are asked or when order is disrupted. Many proposed changes such as water control (under government authority), water charges, land registration, co-operative promotion and moves in the direction of land reform are viewed as clear threats to the Khans and the established system of power and order. These issues, along with others of a similar nature, are problem areas which government officials would prefer to leave alone.<sup>24</sup>

If experiments in the transition of the agrarian production techniques are to succeed, aggressive means must be employed to extract information about the social, political and economic environment of the target groups of Afghanistan. Accurate information is not voluntarily relinquished, nor are problems openly aired before strangers. Precise information makes the group vulnerable to attack. This vulnerability applies to farmer-Khan, Khan-governor, provincial government-central bureaucracy, and probably most of all to Afghan civil servant-foreign advisor relationships.

Given all these factors of local protectiveness and government distance, implementing agricultural projects based upon official sources of information is tantamount to working without information. Projects directed at transforming the agricultural sector by grafting modern infrastructure and techniques upon an enigmatic traditional society will not result in realizing developmental expectations.

Other unforeseen factors have thwarted development goals as well. Poor cultivation practices have resulted from increased water supply's diminishing potential yields and causing water logging and increasing salinity.

Afghan farmers have for many centuries learned to adjust their cultivation practices to the constraints of a limited water supply. Irrigation projects immediately changed this situation for some. Unaccustomed as they were to an increased supply of water offered by the government as a kind of manna they applied water to the point where marginal productivity was negative (area to the right of Q in Figure 6). The short-run result was a loss in yield due to water logging. The long run result was a rising of the water table and consequent salinity, producing a



further decline in yields.

### Conclusion

Until the critical constraints to on-farm water distribution are removed or at least alleviated, additional investments in irrigation infrastructure will not solve the water problem within Afghanistan. They will result, instead, in gross misallocation of scarce investment funds.

Information is needed about how an increased water supply affects the production function of traditional agricultural society. When ample water is assured to a traditional soil crop complex, the relative importance of every other factor in the system changes, and consequently a new system of farm management and social relationships is required.

An additional requirement is that the increased supply must be accompanied by a mechanism to discourage wastage. Several possible water user taxes could be implemented to increase water use efficiency. One possible method is a discriminating scale of descending prices as the quantity taken, but subject to the guiding rule that each customer must end up paying the same marginal price, and that this marginal price equals marginal cost. A variation of this method, and the one most commonly used, is a discrimination by classes of consumer so as to separate the market into two or more sectors, with prices varying from sub-market to sub-market. A single unit price would be another alternative, with a required lump sum charged to the consumer for the privilege of use.

In Afghanistan all such methods face major difficulties of implementation. It is really questionable at this point whether any method would work unless accompanied by a major land reform programme.

### References to Chapter 8

1. The only agricultural series which are relatively reliable are those covering the production of sugar beets, karakul and cotton.
2. As in most Third World countries, there is a considerable degree of under-employment in farm households compounded by the seasonal unemployment of agricultural workers. Alternative employment opportunities do not exist and the productivity of labour is low.
3. In the spring of 1973 an exceptionally heavy precipitation occurred; this precipitation, plus the increased presence of tractors in the rural countryside, has had a significant impact on the dry-land cultivation of wheat. The short-term impact in drastically deflating wheat prices is already predicted. Since it is unlikely that the government will intervene with an effective wheat price support program, many farmers will be adversely affected by depressed prices. Similarly, increased dry-land cropland is encroaching on traditional pasture land. Although at present it is too early to predict, the added cropland may have a positive impact on fodder supply, depending on the amount of wheat straw that is produced. This increased proportion of wheat produced on the dry land will similarly increase the range between the peaks and troughs in national wheat supply (assuming no effective government programmes). But the projected decrease in dry-land wheat yields and the possible erosion effects from excessive use must also be taken into account. However, the impact of these long-term changes cannot be quantified as yet.
4. The range of 30 to 40 per cent is dependent on a high population estimate in the range of 12-16 million. Yields of improved wheats with fertilizer use are assumed to be 2,500 kg./ha. The results are conservative because dry-land farming and double-cropping are excluded. In the calculations the estimate implicitly assumes the minimum cropland necessary in a dry year. If the recent unreleased estimates of the RGA Demographic Studies (by a USAID contract team) of less than ten million inhabitants are used in the above calculations, the conclusion that Afghanistan has a relatively low irrigated land-to-population ratio is undermined; rather, these figures suggest that technical self-sufficiency even above the minimum (assuming 200 to 250 kg./capita) instead of the 160 kg./ha. can be attained with present irrigated cropland.
5. Robert R. Nathan Associates, Inc., Final Report, op.cit., p.48.
6. U.N. Food and Agricultural Organization, The Monthly Bulletin, quoted in Hansen, op.cit., p. V-2.

7. Afghanistan has imported an average of 75,000 tons a year over the past decade, according to unpublished documents of the U.S. Agency for International Development.

8. One seer equals approximately seven kilos.

9. Refer to Robert R. Nathan Associates, Inc., Final Report, op.cit. p.47.

10. A UN-FAO development project, PACCA, which was instrumental in creating the first credit co-operatives, is proving their effectiveness in increasing vineyard yields and production. But even after five years of operation, the project has not been successful in forcing the necessary legislation for the first national co-operative law.

11. International Bank for Reconstruction and Development, "Current Economic Position and Prospects of Afghanistan," op.cit.

12. Recently the government with the help of IBRD financing began some small-scale irrigation measures. The problem of farmer acceptance, however, is still critical: they are reluctant to incur debt for water supply improvement.

13. Current Economic Position, op.cit. p.i.

14. Ibid., p.ii.

15. Ibid., p.iii.

16. Hughes, et al., op. cit.

17. Ibid., p.40.

18. Robert R. Nathan Associates, Inc., op.cit.

19. This report was written after the drought 1970-1972.

20. J. Whiting and R. Hughes, The Afghan Farmer: Report of a Survey (Kabul: R.R. Nathan Associates, 1970). This research was conducted under contract from the U.S. Agency for International Development, Afghanistan.

21. Ibid., p.53.

22. Ibid.

23. Paktia Development Administration, a major agricultural development project under German assistance.

24. R.D. Scott, "The Socio-Political Constraints in the Helmand Valley," Draft report (Kabul: U.S. Agency for International Development, 9 January 1973).