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# **AGRICULTURAL GROWTH PRIORITIES FOR AFGHANISTAN**

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## **SUMMARY OF PRIORITIES**

This paper concentrates on priorities within agriculture. However it is notable that compared to its immense weight in GDP and dominance of employment and employment growth, agriculture is underemphasized by foreign aid donors and by the government. This under emphasis includes inadequate attention to physical infrastructure as well as to the requirement of smallholder agriculture for services provided by the government (public goods.) In a fast growth strategy, agriculture and its multipliers to the rural non-farm sector account for three-quarters of all the employment growth in the Afghan economy. That requires attention to the agricultural priorities and substantial financial allocations.

The proposed priorities have the following objectives:

- a. Obtain agreement on a set of priorities, in the context of the Ministries strategy, that will be feasible to implement for a very short staffed Ministry
- b. Provide a basis for the Ministry to focus foreign aid resources on obtaining an aggregate impact on growth and poverty reduction
- c. Accomplishing the above and still obtain interest group and national coverage

The priorities may seem narrow at first, but on second thought they will be seen to include more than can be accomplished with the limited resources. The latter is the real worry; but sights should be set high. The list is expanded from the single first priority in order to widen the national coverage as well as in recognition that some of the necessary resources already exist. The secondary priorities have a narrower focus within the priorities than does the first priority.

## **FIRST PRIORITIES**

1. Development of a complete and complex plan and implementation steps for rehabilitation and further rapid growth of perennial horticulture complete with a high level in charge; and priority to irrigation development and road rehabilitation in this context. This is the sector that can have the largest aggregate impact on growth and poverty reduction. Donor coordination and filling revealed gaps by the Ministry, in this context, is critical to aggregate success.
2. Develop an immediate plan for development of agricultural research with a high level in charge and narrow priorities, and attention to how to bring technical competence to extension. Agricultural research is central to all agricultural

- growth; importing technology requires an indigenous system to make it work, and globalization constantly increases the relative importance of constant improvement in technology. It is technology that drives globalization. Donor input into horticultural research priorities is important.
3. Develop an immediate plan with a high level in charge for Planning, complete with a training program and staffing pattern. Given donor importance, building Ministry strength requires a planning department that can plan and coordinate donor efforts as well as those of the Ministry itself. This will require substantial technical assistance, training effort, and workshops for developing stakeholder support.
  4. The Ministry of Finance ensure significant budget for these priorities to send a message to donors about commitment and begin the process of Afghan government ownership of priority activities.

### **SECONDARY PRIORITIES**

1. Develop a plan and program for full national veterinary coverage as the first thrust in animal husbandry
2. Develop a plan and program for breed improvement and improved practices for cereals – led by ICARDA and CG system
3. Develop a plan and program for raising cotton yields and privatizing the cotton textile industry, with priority to the gins.
4. Develop a complex watershed management plan and program including forestry and range management activities. Although it would now seem premature, future increases in costs for setting aside biodiversity reserves argue for immediate attention to that issue as part of the watershed management program.

### **IMPLICATIONS FOR FOREIGN AID DONORS**

1. The first priority is to diagnose the elements of the perennial horticulture priority that can be met by foreign aid, and then to implement those elements e.g.
  - a. Irrigation rehabilitation will continue to be a major priority – investment should follow a look at the varieties map, and concentrate on areas with high potential for perennial nuts and fruits, the level of water control necessary for them, keyed to the specific water requirements.
  - b. Tertiary road rehabilitation will also continue to be a major priority; again the road investment should be keyed to the irrigation investments that are in turn keyed to the perennial fruit and nut investments. Thus, there develops a package of water, roads, and investment in the highest priority productive activities.
  - c. Analysis of the value chains for specific perennial fruits and nuts for which Afghanistan is shown to have a comparative advantage, with emphasis on South and Central Asia markets as the best bets for large volume in the short run. Increasing value added and targeting real buyers will be central to that operation. Cold storage and hence reliable rural electrification will be vital to this effort and must be conveyed to those

- planning electric power supplies and grids. They normally neglect the rural sector.
- d. Build the research system and technically competent extension services for perennial horticulture. This is critical to even intermediate term competitiveness.
  - e. Analyze and act on immediate supply sources for the varieties deemed most appropriate from the quick value chain analysis, identify sources of supply, and facilitate building the private sector distribution system.
  - f. Build a rural credit system specifically pointed at lending for intermediate term investments in perennial crops. That system can later be broadened to cover other needs.
  - g. Build the support systems for the high value annual horticulture crops that may be inter cropped with the perennials
  - h. Support the donor coordination mechanism in the Ministry of Agriculture
2. Support the specific elements of each of the secondary priorities
- a. Support the CG system in providing high level assistance for cereals research, best current practices and building the technically competent extension system
  - b. Support development of short-term capacity for livestock health and movement towards a private system of veterinary services in the context of rapid, complete coverage of the country
  - c. Support cotton research and technical extension to raise yields and privatize the cotton textile industry
  - d. Support watershed development, including associated grazing lands and forests
  - e. Support overall development of the agricultural research and technical extension system.

## **BACKGROUND**

The Ministry of Agriculture has a strategy for development of agriculture. This paper is intended to help move to the next step of establishing short run priorities within that strategy and then to detailing the measures required to implement those priorities. The latter requires intensive interaction with all stakeholders, including the principle financiers within the foreign assistance community.

In the short run, impact on agricultural growth, employment, poverty reduction, and a shift to socially responsible cropping patterns requires concentration on a small number of critical priorities. Such a short list is required because no government is able to implement a large number of priorities at once. In a sense it is useful to see short run priorities as the first in a sequence of activities that will implement over time the full strategy. As the first priorities are met emphasis can move on to a larger set of priorities. The priorities must provide not only a short-term impact on growth and rural prosperity, but broad geographic coverage as well.

At present, a high proportion of the finance for agricultural and rural development comes from foreign donors who provide much of the money directly to local and international contractors and NGO's. While initial conditions may have required such an approach, aggregate impact from those efforts requires that they be assessed, coordinated, and modified to fit into an aggregate effort that will efficiently reach national objectives for growth and participation in that growth. The Ministry's strategy provides the broad framework for bringing together the diverse foreign donor efforts into a cohesive effort to reach national objectives. This statement of priorities is intended to initiate the discussions that can lead to an agreed upon cohesive effort within the Ministries strategy.

This statement is a first step to present a set of priorities and a statement of action needed to implement those priorities. The next step is discussion and modification of the priorities, first within the Ministry of Agriculture, and then more broadly amongst national and international stakeholders. With broad agreement on priorities and how the many components fit, a detailed plan of action must be developed. This paper attempts a start on that need.

Because of the limited, but hopefully growing Ministry capabilities, much of the implementation will be carried out in the private sector. However, some critical functions will not be taken up by the private sector and many private sector activities will be profitable only when the government provides critical complements. This paper starts the process of stating how the Ministry and the government more broadly as well as public goods providers from the donor community can best complement, encourage, and facilitate the myriad private sector activities that are needed, and where necessary fill in while those private sector activities develop. In this context and of broad efforts to foster private sector activities it must be remembered that smallholder agriculture, the world over, requires public goods and hence government activities to a far greater extent than does manufacturing. Finance Ministries, and increasingly foreign aid donors fail to recognize this key feature of the agricultural sector.

This paper commences with a brief presentation of how agricultural growth stimulates employment growth in the rural non-farm sector and hence its vital role in employment growth, poverty reduction, stimulation of market town growth and narrowing of rural urban income disparities. In this context it is important to recognize that poppy production is presently a major source of farm income and that farm income drives the current prosperity in the market towns and the rural non-farm sector. Thus, it is even more important than normal that agricultural growth generate the large increases in farm incomes necessary to drive the rural non-farm sector.

The priorities are driven by the need for aggregate impact. This has two important implications to setting priorities. First, little attention is given to commodities that are not of substantial importance in the base. Such commodities might grow with such astounding rapidity that they make a major contribution to aggregate growth, but that is very unlikely in a 5 to 10 year time span. Second, in essence past revealed comparative advantage weighs very heavily in the analysis. Commodities that have been important were so because Afghanistan had a comparative advantage in those commodities. That is,

they competed effectively on world markets and for domestic markets. Of course, a careful check should be made as to whether that demand still exists, but in all cases in this analysis global demand is not only still there but is demonstrably growing rapidly.

The place for supply chain analysis and analysis of final demand is important within the context of being a low cost producer. There is no point in finding huge markets for commodities in which Afghanistan cannot match costs with other major producers. Within the context of what Afghanistan can compete in it is essential that markets be carefully analyzed as to the best geographic destinations and as to the precise form, which the market demands and is willing to pay for. That must then be compared with Afghanistan's costs in providing those forms. The section on implementation will dwell further on these issues.

### **AGRICULTURAL GROWTH AND EMPLOYMENT**

Afghanistan was historically, is now, and for sometime into the future will be a dominantly agricultural country. That agriculture has always had a substantial commercial component, in that farmers produced not only for the domestic urban market, but also for a large export market as well. Most manufacturing was based on agricultural inputs

Commercial production came in substantial part from relatively small farms the managers and owners of which lived in the rural community and drove the rural non-farm sector with their expenditures. Horticulture, particularly perennial fruits and nuts, livestock, particularly hides, skins and wool, and cotton all entered the export market. At present poppy production is the dominant element in the commercial part of agriculture.

Similarly the rural non-farm sector has been and remains a sector of considerable size and employment potential. That rural non-farm sector produces tradables, carpets and other labor-intensive artisan products for export and a large non-tradable component that depends on rising farm incomes for its growth. The segment that depends on local demand is far larger than the export dependent sector.

Priorities for agricultural growth must ensure that agriculture will be a driving force in the rural non-farm sector, which encompasses the bulk of the poor. Table 1 provides a picture of the GDP and employment composition of the Afghan economy. It is derived substantially from data for the 1970's and is a reasonable reconstruction of what the economy will look like in an immediate post recovery situation.

National income statistics, unfortunately, do not divide the GDP or the rural labor force according to rural farm and non-farm nor the urban GDP and labor force into the large scale and small-scale sectors. Table 1 makes such divisions on the basis of current data for Afghanistan, adjusted by relationships from the 1970's, data from comparable other countries, and extrapolations. The adjustments are intended to correct the present situation for temporary dislocations and thus to present a post recovery picture.

The share of labor force to agriculture may seem low. That is because available statistics tend to count everyone with a piece of land as a farmer. In these data an estimate is made of principal occupation. A person with so little land that neither half the employment nor half the income comes from farming is counted as rural-non-farm – that is the principal source of employment and livelihood. The handicraft, rural non-farm and urban small scale are all depicted as highly labor-intensive sectors. Agriculture has much higher output per worker than the rural non-farm sector because land is an important source of income and a farmer has income from labor and from land. Similarly the urban large-scale sector has considerable capital, including human capital as investment in education, and has an output per worker higher than that of agriculture.

The relation between growth and employment differs very much among these sectors. Agricultural growth tends to occur through higher yields that substantially raise labor productivity. Urban large-scale industry similarly grows in a competitive global market, which requires constant increases in labor productivity. The handicraft and rural and urban small-scale sectors expand in response to increased demand and maintain labor productivity. Thus growth in these latter sectors creates much more employment relative to output than growth in either agriculture or urban large-scale activities.

The rural non-farm sector grows in response to rising farm incomes with high-income elasticities of demand for that sector. Hence one can compute a growth rate for the rural non-farm sector for any given growth rate for agriculture. The impact of growth in farm income on the rural non-farm sector is a function of the per capita income, and hence growth rates close to the labor force growth rate have very little effect on the rural non-farm sector. Acceleration beyond that level has an increasingly larger impact. That is, agriculture must grow rapidly to have any impact on employment.

From these data the impact of alternative growth rates on employment can be computed. That is done in Table 1. Fast and slow growth rates for agriculture are compared in their impact on growth of the rural non-farm sector and on employment.

It can be seen that the difference between a slow (3 percent) and a fast (5 percent) growth rate in agriculture is the difference between an overall growth rate for employment of 3.9 percent, which is far above the growth rate of the labor force, and 2.6 percent which is roughly comparable to the labor force growth rate. Fast agricultural growth creates jobs so rapidly that wage rates will rise. Slow agricultural growth does not provide that upward pressure on wage rates. In the one case poverty declines, in the other it does not.

**Table 1. Relative Importance of GDP and Employment, by Sector, High and Low Agricultural Growth Rates, Post Recovery Period**

Sector	Share GDP	Share Employment	Output/worker	Growth Rates – Fasts low	Employment Growth Rates –fast	Employment growth rates - slow
Agric	(51)	(33)	1.5	5 3	2.5	1.5
Handicraft	(8)	(14)	0.6	3 3	3.0	3.0
Rural non-farm	(14)	(33)	0.4	6 3	6.0	3.0
Total Rural	73	80	0.9			
Large-scale urban	(22)	(10)	2.2			
Small scale urban	(5)	(10)	0.6			
Total Urban	27	20	1.7	7 7	3.5	3.5
TOTAL	100	100	1.0		3.9	2.6

NOTE: Employment elasticity in agriculture and large scale urban = 0.5 = employment grows slowly; all other sectors = 1.0 = employment grows quickly.

Table 2 converts the data in table 1 to shares of GDP growth and employment growth. With a fast agricultural growth rate (5 percent) the rural sector accounts for about 2/3rds of GDP growth, but a dominating 82 percent of employment growth. What matters to employment, poverty and rural urban disparities is the agricultural growth rate. Note that agricultures importance to employment is much greater than its importance to GDP. Concern with poverty issues must center on getting the agricultural growth rate up.

**Table 2 Shares of Increments to GDP and Employment, By Sector, High and Low Agricultural Growth Rates, and Post Recovery Period**

Sector	Fast			Slow		
	Gr.Rate	%Incr. GDP	%Incr. Employ	Gr.Rate	%Incr GDP	%Incr. Employ
Agric	5	46	21	3	38	19
Rural N-F	6	15	50	3	10	38
Handicraft	3	4	11	3	6	16
Rural		66	82		54	73
Urban	7	34	18	7	46	27
TOTAL	5.5	100	100	4.1	100	100

Four critical lessons are drawn from this analysis:

1. The agricultural growth rate must be pushed up to a high level, e.g. on the order of 5 percent if poverty is to be reduced.
2. Since the agricultural impact is through farmer expenditure in the rural non-farm sector, it is the small farmer, resident in the rural area that is critical. Big, absentee owners do little for rural employment.
3. It is high agricultural growth rates that matter so emphasis must be on the commodity groups and the geographic areas that respond to improved technology and can shift to high value commodities. Rapid growth comes from those two sources.

### **PRIORITIES FOR RAPID AGRICULTURAL GROWTH**

Agricultural growth is complex, with many interacting, complementary components. Of course private farmers and business people perform much of what is needed for rapid agricultural growth. They are essential to the process. But, especially for smallholder agriculture, public goods, provided by the government are critical complements to those private activities.

In early stages of accelerating agricultural growth a higher proportion of required activities have a government component than will be the case as the processes proceed and the private sector expands in size and capability. Unfortunately, just when the role of government is quite substantial, it is also quite limited in its capacity to develop and implement complex programs. That is why an initial very small set of priorities must be defined.

In the early stage of accelerating agricultural growth, when government capacity is quite limited, it is normal to establish commodity priorities. The set of public and private sector activities are somewhat different for each commodity set and fairly similar within a set. Also modern supply chain analysis is always commodity specific.

At a later stage of development the emphasis will switch from commodity priorities to functional priorities that can serve the full set of commodities. Thus, the questions for establishing priorities are the relative importance of the major commodity sets, and the complexity of the requirements for accelerating growth of the most important commodity sets.

Choice of commodity priority should be based on the importance of the contribution of that commodity to aggregate growth in a rapid growth strategy. That importance is a function of the base weight of the commodity set and the expected growth rate. The latter is a function of technological potentials for growth and growth in demand. Table 3 represents an effort to give an indication of those magnitudes.

The first problem in constructing such a table is determining the base weights. The data are somewhat questionable, but more important the commodity composition is still in flux. The data used are roughly current for 2004. They represent sizable recovery of the perennial horticulture sector, but not full recovery. Thus some growth for future years can occur from replanting of lost trees and vines.

**Table 3 Commodity Sources of Growth (excluding Poppies), Notional for 2004**  
(All figures are percents)

Commodity	Value added	Growth rate	Share of Growth
Perennial Horticul	17	8	27
Annual Horticul	6	8	9
Cereals/Misc	34	4	26
Cotton	4	6	5
Intensive livestock	20	6	23
Range livestock	14	2	5
Irrigated forage	4	4	4
Forestry	1	3	1
Total/Weighted Ave	100	5.2	100

Source: Constructed from current FAO and MAAH and 1970's World Bank data.

Cereals have a higher weight at present than they will in the long run, while the other commodity sets will be increasing disproportionately in the base weight. Cereals have a heavier than normal weight because of the demand by farmers for food security and an understandable current lack of trust in markets. In addition, there are vastly more complex recovery requirements for expanding the high value commodities and consequent delayed growth in those areas. In a relatively few years, the weight of cereals will decline substantially. Poppies are not included in the presentation, but are probably somewhat more important than the sum of perennial and annual horticulture.

The livestock percent is consistent with the 1970's situation and therefore may be too high for the present. If that is true it means that the livestock recovery has lagged considerably behind the recovery of other commodity groups. In that case a full recovery proportion is represented and in the short run growth could be much more rapid than shown in Table 3 as that recovery is actually achieved.

The likely growth rates are given for each commodity set and then the share of incremental growth is calculated. These are not the current growth rates. They represent what can be achieved by major efforts on the production and marketing fronts.

Afghanistan's agricultural production takes place largely on irrigated land – on the order of 90 percent of the total value of production is on irrigated land. The irrigated land in general has high sunlight intensity and favorable temperatures for high value crops. Thus, historically Afghanistan has exported substantial quantities high value commodities and has a weight for those commodities much higher than could be derived from domestic demand or than is common in low-income countries. Some of the delay in recovery of trees and vines is due to the loss of irrigation capacity. The same is true of the livestock proportion.

The 5.2 percent over-all growth rate for agricultural GDP is the weighted average of the growth rates for the several commodity sets. That is a comparatively high growth rate. It falls in the middle of the 4 to 6 percent range typical of high growth rate middle-income countries (Mellor 1995.) Such a high growth rate is possible for Afghanistan because of

the already high weight to high growth potential commodities such as horticulture and livestock. Of course, for another year or two the growth rate may be higher due to continued recovery, and the rate will fluctuate substantially from year to year with weather.

The growth rates presented are those that it is assumed can be sustained for a considerable period. The exception to that is cereals, for which the growth rate will come down as yield growth slows from the present catch-up phase and area declines as transfers are made to high value commodities that have a much stronger comparative advantage on Afghanistan's irrigated land.

The highest growth rates are assumed for horticulture at 8 percent. This commodity set has elastic demand, so that a high growth rate in per capita incomes in Afghanistan will generate on the order of a 6% growth rate in demand. The export markets have traditionally been excellent and presumably can be revived, as is already happening.

Thus, to assume that one quarter of incremental output will be exported seems reasonable. That provides an 8 percent growth rate in demand, given attention to marketing needs. That is a high growth rate to achieve on the production side. Land is of course not limiting for a long time into the future as land can be transferred from field crops, given the small area currently in high value commodities. Plans are being prepared to meet the several needs for reaching the yield requirements of this growth rate.

The next highest growth rate at 6 percent is for livestock. Again, domestic demand, when growth gets well underway in Afghanistan will provide a 6 percent growth rate in demand. The production requirements are for some transfer of land from extensive field crops to high value fodder crops. Several other requirements are being analyzed and the strategy developed. In the short run animal health is the overriding problem. It should be noted that in high-income countries, irrigated resources such as those of Afghanistan are entirely in high value horticulture, cotton, and forage. Little or none is in cereals. Thus it is reasonable to expect the area in high quality forage to increase substantially.

Cotton is also shown with a high growth rate that partly reflects unusual scope for recovery, now slowed by bad policy, and later potential to expand area and yields.

The 4 percent growth rate for cereals could be substantially exceeded in the very short run with an integrated program for raising yields. However in the long run area of cereals will contract quite rapidly with transfers to higher value commodities. It will require a high growth rate in yields to accomplish an overall rate of 4 percent in view of decline in area. Thus the longer-term growth rate will be more nearly 3 percent or less.

Range livestock may also grow a bit faster in the short run, but limits to range carrying capacity and the difficulty and cost of increasing rangeland output will restrain the growth rate. The range livestock are of course also complementary to the intensive livestock production. They along with forestry are important to development of watersheds that are vital to irrigation agriculture.

From the foregoing follows a set of priorities. First priority should go to horticulture and particularly to perennial horticulture – vineyards and tree nuts and fruits. The latter alone provide well over one-quarter of growth in the near term, and probably more nearly one-third in the longer run. Horticulture in total will provide well over a third of incremental growth in the short run and that will pick up to closer to half in the long run. In the long run the base gets larger and some of the other sectors will slow.

The intensive livestock production comes in next, which with the high quality forage, represents over one-quarter of incremental growth and deserves high priority. However the strategy may be simpler in the short run in that health is a most pressing need, suggesting a priority to veterinary services and other aspects of animal health. Also rapid growth in domestic demand requires that the whole economy be growing rapidly. So there may be some delay before the demand for livestock will grow as rapidly as shown.

Cereals will decline substantially in importance over time - eventually declining to between 5 and 10 percent of incremental growth as the result of declining potentials for catch-up growth in yields and declining area. But in the short run it is an important commodity set. Again the short term strategy is relatively simple, building from applied research results to raising yields - most probably obtaining more than a 50 percent increase in average yields over a several year period. This will of course reduce the cost of production significantly.

It is the horticulture sector and especially perennial horticulture with its potentials for large recovery growth rates, and complex public goods requirements that should gain special emphasis.

### **PERENNIAL HORTICULTURE -- IMPORTANT AND COMPLEX**

The principal arguments for a first priority to perennial horticulture are four:

1. This is the commodity set that will dominant incremental output – well over one-quarter of incremental output will come from this category.
2. While the impact will be large, the complexity of the requirements is great, thus, it requires a special focus if all the pieces are to be put together for an aggregate impact.
3. This is the major commodity set that offers hope of an income competitive with poppies.
4. The seven most important individual commodities in this set comprise 96 percent of the total production and are widely distributed geographically.

The special problems that must be dealt with are four:

1. The income stream is 3 to 5 years into the future – but farmers understand this and will be thinking in terms of the rehabilitation and the future income stream. They will require credit support.
2. The labor requirements are much less than for annual high value crops. This requires some special attention

3. Because of the capital requirements and the foregone income while trees and vines come into bearing small farmers may be left out. This requires special attention. There may be some added tendency for absentee owners to respond more than others and hence the multipliers to the rural non-farm sector will be diminished.
4. The security problem is large – that probably calls for planting in large blocks, preferably of small farmers. Of course, historically security was managed.

The complexity and importance of the issue calls for a special administrative arrangement to ensure high-level attention to problems as they arise. Perhaps a special office reporting to the Minister.

### **Key Tasks**

1. A map of areas of concentration of each major perennial horticulture crop. The purpose of this task is two-fold. First, to see how full the geographic coverage is so that some other priorities can be brought up to fill out the geographic coverage; and Second, to guide the implementation efforts –what should be emphasized where. Historically Afghanistan has had substantial geographic concentration of Pomegranates, Citrus, Grapes, and so on. That emphasizes how important it is in global markets to play to comparative advantage and being the low cost producer.
2. Calculate cost of production and Domestic Resource Costs (DRC) of major types of perennial fruits and nuts. The purpose of this is to ensure that emphasis is going to commodities that have a clear comparative advantage vis a vis global competitors. It is a check on the historical record as an indicator of comparative advantage and the DRC's will give an indication of the relative strength of that comparative advantage. With that knowledge one can move to examining the details of markets and ensure that Afghanistan will be competitive in quality and other characteristics that are important in today's dynamic markets. In that second stage analysis, due note must be made of major shifts in global income distribution and for Afghanistan, particularly the rise of the Indian market as newly prosperous, massive in size, and nearby. Obvious commodities to examine include (in order of importance): almonds, grapes/raisins, pistachio, apricots, pomegranate; mulberry, apples, and walnuts. Special attention might be given to citrus in Nangohar.
3. List each donor agency, geographic area in which they work, and type of activity in perennial horticulture. The purpose of this effort is to find gaps in coverage in the donor efforts, which have not been driven by an attempt at aggregate impact. From this effort will come plans to fill gaps, perhaps by encouraging some shift in donor effort.
4. Special attention needs to be given to security concerns – how to avoid theft of fruits, perhaps by emphasizing large coverage in contiguous areas.
5. List existing nurseries with capacity. Donors will have developed nurseries; others will have come up on their own. One needs to see what existing capacities are, how they were developed with what type of donor or other support, and what gaps exist. From that plans need to be made with donors, with the private sector and for possible public action to fill gaps. From this must be developed an

- understanding of the total supply chain from foundation material, to nurseries, to the ultimate farmer. Develop a priority list for preferred varieties for each major type. Develop what roles the government will fill in what time periods. In this context import regulation must be analyzed and appropriate protections put in place.
6. List financing operations of donors relevant to perennial horticulture. Perennial crops require intermediate term financing. That will be particularly true of the smaller farmers. A full analysis must be made of how financing can be expanded to facilitate rapid growth. This is the heading to deal with subsidies. If institutional structures for credit cannot be developed immediately then consideration needs to be given to subsidizing the planting. That sets undesirable precedents, but there may be no alternative if the program is to move quickly to aggregate impact. Financing investment over operating expenses or consumption; and long-term investment over short-term investment is always in the right direction. Consideration also needs to be given to the extent to which donors are already subsidizing in their own programs and the implications of that to the future and the impact on a current national scale effort.
  7. List marketing activities –domestic and international. The value chain needs to be delineated from inputs to the producer all the way to the ultimate consumers, both domestic and foreign. Where are there gaps, to what extent can the private sector fill those gaps, what is needed to facilitate private sector activity and in those contexts what role should the government play. That would include market information. Diagnose government support needed for private sector marketing, for example: information systems, analysis of foreign markets; what donors can help
  8. List research stations and what they are working on, and especially their capabilities for testing. This must be a comprehensive listing of availabilities of improved varieties as well traditional varieties. The collections in other countries, particularly Ucal –Davis, as well as Pakistan and Iran and other surrounding countries need to be included. From this need to come short-term plans for determining best varieties, and providing for them, and the longer term development of the research system with priorities (that will determine future comparative advantage.) Develop a program for the research stations with activities to each.
  9. Diagnose extension needs, how they can be filled and relation to research stations.
  10. All the preceding must be integrated into an action plan in detail covering: the high level person in charge, the administrative structure, and liaison with local bodies, coordination of donors, and monitoring and evaluation.

## **LIVESTOCK**

Livestock is important, in the long run will be a fast growth element in aggregate agricultural growth, and a complex support system needs to be built. In the short run, some of the export markets can be rebuilt and need attention and there can be significant import displacement. In the long run, as the Afghan economy prospers domestic demand for livestock products will grow very rapidly. In the long run major efforts are needed in health, nutrition, and breeding. In view of the need for short run priorities, it seems

logical to concentrate within the livestock sector on the most immediate problem, namely animal health. The major complexity is building for the long run a privatized veterinarian service. Phasing in such an effort while having a broad immediate impact will be a major concern. As progress is made on health, increasing attention should be given to phasing in major work on animal nutrition and eventually to breeding. Of course the modest level of existing work in these areas should be maintained.

The two primary sources of feed for livestock are extensive range and intensive irrigation. The latter is much larger in total than the former. However, rangeland, which currently seems to be in good condition, is not only important to livestock, and particularly some of the export markets, but also to watershed management. A note is presented below on watershed development including range management as part of that.

For animal health, the following are priorities areas of attention: Inventory the veterinarian supply, with details on location, type of livestock worked with, relation to various agro-ecological zones. The objective is to get as rapidly as possible national coverage with veterinarian services and within that to work towards privatization. In the latter, analysis is needed of participation by small farmers and poorer geographic areas as well as areas in which veterinarians do not want to serve. From that comes a national strategy for veterinarian development.

For coordination purposes, inventory the extent to which NGO's are doing local area efforts, analyze how it fits into the over-all strategy, and provide a strategy for effective use of NGO's.

### **CEREALS AND FOOD SECURITY**

Cereals are important to family food security while markets are not operating well. Hence in this interim period productivity in cereals production must be raised in order to release land for high value commodity production. Since increased cereals production must be realized in the context of decline in area (as area is transferred to higher value, more profitable activities) the thrust of the priority must be on the research and technically competent extension service that will raise yields. The CGIAR system is not only very strong in these commodities, but has experience in situations similar to those of Afghanistan and a continuing direct experience in Afghanistan. That effort must be continued as the core of the priority to cereals. Increasingly the effort must concentrate on building the national cereals research system including setting priorities as to what research will be done where. The research should emphasize on farm trials and lead from that to close interaction with the extension system.

Given the present importance of wheat a wheat campaign designed to bring about a widespread, major increase in wheat yields is desirable. Such a program must cover the full range of activities, and leave in place a self-sustaining system. If such a campaign were successful it would probably require a minimum support price scheme. If that were done it must set the minimum price below the prevailing Pakistan price so that it does not end up attempting to support the Pakistan price inadvertently. It must also be set low enough to be certain that the financial and physical storage facilities will be adequate to

the task. A failed support program is worse than non at all. The underlying problem is that there is potential for a successful campaign to bring such a large increase in production that it brings temporary market failure and collapse of prices. Such an event would send a very bad message to farmers.

### **COTTON**

There are two key elements to reviving Afghanistan's comparative advantage in cotton production. First well paying buyers must be competing for farmer's output. That requires immediate privatization of the cotton textile industry, with the highest priority to completely free operation of a competitive system of private gins. Second, to preserve comparative advantage, cost of production must be decreased by research that raises yields and improves quality.

### **RANGE MANAGEMENT, FORESTRY AND WATERSHED MANAGEMENT**

Water is critical to long-term growth in agriculture, especially in Afghanistan. It is perhaps best to see management of rangeland and forestry in the watershed management context. Both must be protected and self sustaining with complex issues of community organizing, and application of appropriate technology. Similarly, expansion and protection of biodiversity reserves might also best be seen as part of a total integrated watershed management plan.

Biodiversity protection requires not putting physical infrastructure into such areas or significantly on their perimeter, while provision is made for gradual decline in population and for increased incomes for remaining families in the context of biodiversity protection. Agricultural growth in the high potential areas will expand job opportunities in the market towns of those areas and leave jobs in major cities for migration out of the areas being protected providing a long run solution to the income problem of those areas. Given the relation to high productivity areas it is best to see the totality of watershed management from the beginning, hence giving a high priority to this effort.