Summary and Conclusions

Some of the findings above paint a remarkable picture of farmer-adaptation to changing circumstances in a rural economy that has only recently become integrated with national markets for food, labour, and livestock. Some specific recommendations based on the experience in Northern Pakistan are listed below.

Incorporating Traditional Institutions in Development

The fragility of the natural environment in the mountains of the Northern Areas has contributed to the development of institutional structures which are extremely efficient in managing their meagre productive resource base. Thus, traditional systems embody well-defined regimes for the management and maintenance of common property (highland pastures, forests, grazing lands, irrigation channels etc) and for the settlement of issues of resource-ownership and division (water rights, land distribution, etc.). While these institutions are very efficient in managing the existing resource base of the village, they are not oriented towards increasing their productive resource base. Thus, there was very little development of new land and no new irrigation channels were constructed in the Northern Areas prior to the intervention of AKRSP.

The pattern of management and development outlined above is typical of mountain areas. A major reason for this is that the isolation, lack of communication, poor physical infrastructure, and fragile and unstable ecosystems do not allow them access to new inputs or techniques which help them enhance their productive base. Risk aversion traits are also more pronounced in these unstable environments where food security is the predominant issue and farmers are slow in adopting new varieties and techniques even if they have access to them. In such an environment the extension, training, and input supply questions assume an added significance and call for a more vigorous delivery system. This system will be potentially more resilient and responsive to local conditions if it incorporates the traditional regimes of management and maintenance.

Transaction Cost Approach to Programming

The way development practitioners perceive and define the problems of the client or target population, has very important implications for the solutions they propose. Unfortunately, the special problems of mountain environments are little known or studied and the policy in one area is uniformly applied in another. The credits, fertilisers, seeds, extension training systems, and

delivery mechanisms are all based on a lop-sized view of the problems of small farmers. In such a situation they cannot even begin to cope with the special aspects of mountain regions.

For instance, the credit policy in Pakistan, as in most other developing countries, is based on the premise that the interest cost of the loans to farmers are too high and credit will be made available to them if this cost is reduced. The fact, that the interest payment is only a part of the cost to the farmers and that the transaction cost of the loan is often the more substantial cost in assessing credit sources, is not well understood. For mountain areas, the transaction cost is even more significant due to the underdeveloped nature of the information networks and the poor physical transport infrastructure. However, the credit policy is designed without attention to the delivery system. This is the reason why the interest free credit facilities offered to small farmers in the Northern Areas of Pakistan were not availed of even by one farmer.

The same applies to the policy regulating the supply of crucial inputs such as fertilizers, seeds, saplings, etc. The Government pursues a policy of subsidizing these inputs without improving the delivery system which would ensure timely delivery of these inputs to the farmers. Reducing their cost does not improve their inaccessibility to the farmer. Ensuring that he receives these time sensitive inputs at his door-step will be more beneficial. The problems of inaccessibility are enhanced manifold in mountain regions where roads are closed for a part of the year. A policy of storage depots and transport facilities will be more effective.

Similar issues surround the marketing of production surpluses of farm households. The small and scattered nature of land holdings and the small resource base of each farm household does not allow either specialisation or economies of scale in marketing the small surpluses. The marketing of small amounts of fruits and vegetables was done by individual farmers on an infrequent visit to the main town on some other business. It was not worth the farmers' time to bring a regular supply to the main town. The central markets, as a result, depended on an erratic but more regular supply source from down-country which further depressed the local prices. The aspects of on-the-spot bargaining became more important when the information system was non-existent and did not allow agreement before the farmer brought his produce for sale. The wholesalers take great advantage of this fact in negotiating the price further down.

A transaction cost approach to instituting a marketing system, credit, and an input delivery system can address some of the more immediate problems surrounding farmers in high mountain valleys. This approach argues for a change in policy as well as physical and institutional infrastructure to allow the farmers to gain access to some of these crucial inputs. A village-level institution can help in reducing some of the transaction cost of loan disbursement; input delivery and the production of individual households could be collected and processed in one central place and transported jointly to markets. This model also allows for the establishment of an effective extension training system. Most of the suggestions given here entail a two-tiered structure, patterned on the lines being followed by AKRSP.

Agro-ecological Variation and Commodity Sub-systems

The agro-ecological variation in mountain areas allow several different farming systems. The range of commodities produced require different marketing strategies. Marketing experience indicates that it may be productive to examine each of the commodity sub-sectors separately. The major production systems in mountain areas produce several distinct commodities such as fresh fruits, dry fruits, livestock and dairy products, fuel, forage, and grains. The marketing characteristics of each of these commodities is somewhat different. Fresh fruits are highly perishable and entail a considerable amount of risk. They require very efficient coordination on

a vertical-level. Processing, semi-processing, and collective bargaining would be crucial issues in the marketing of such perishable commodities. Dry fruits are high-value crops and their value can be further increased by transporting and storage methods. Livestock, fuel, and fodder crops also require special consideration because of different characteristics.

From Subsistence Production to Market Exchange Production

The transition from subsistence to market exchange production, is frought with additional problems in mountain areas. Thus, while the opportunities for input supply and agricultural marketing expanded as a result of the construction of the Karakoram Highway, it also became cheaper to transport subsidized flour from the plains to Gilgit. Simultaneously, the opportunities for employment in tourism, construction, commerce, public sector agencies, and other non-agricultural activities have multiplied. As a result of such changes, it is possible that, after an initial improvement, there has been a significant decline in the relative profitability of wheat and other commodities' production in recent years. Anecdotal evidence from farmers suggests that, recent increases in flour purchases from outside the region have occurred simultaneously with an increase in the maize and fruit sold outside the region.

In addition to a possible decline in the relative profitability of grain production, there has also been a large increase in the numbers of livestock (particularly cattle) shipped up the HKH for marketing in Gilgit. At the same time, the Government has continued to enforce price controls for beef and mutton. There is, therefore, reason to believe that the demand for wheat-straw for livestock may have weakened in the recent years. Livelihood systems which are restricted by their resource base to a certain farming system cannot make adjustments to changing price signals even if they are allowed adjustment lags.

Selected Innovations and Techniques for Extension

In choosing information for dissemination and techniques and inputs for distribution in the mountain areas, one has to be specially mindful of the special needs of mountain farming systems. For example, innovations that mostly concern the farmers in the region are not just in terms of varieties that give bigger yields than local varieties, but in terms of innovations that help the most with the combined returns to labour and land within the multi-enterprise livelihood system. The same is true of cultivation techniques and new skills. It is not much use recommending a labour intensive harvesting technique to improve fodder yields in an area which has labour shortage.

Alternative Government Policy and Structures

By and large, the government policy does not distinguish between isolated mountain areas and the more accessible, central plains. Considerations of security and national unity sometimes persuade it to develop communication infrastructure, oriented towards defense (jeepable roads, airports etc.) and subsidise air and road travel for people and goods as well as grant tax concessions. Government pricing policy, development strategy, and factor and product delivery systems are uniformly applied country-wide. There is no mechanism which makes the framing of policy sensitive to the fragile resource management and production systems of high mountain areas. Even when there are some concessions granted to these areas, it is because of their classification under the general category of "rural areas" that their features as a distinct and fragile ecosystem are disregarded. The policy of credit and input supply agencies are characterised by a similar uniformity in their policy.

Not only is government policy in mountain areas indistinguishable from its policy in the plains, but the government implementation strategy and management structure is also similar. Thus, no special considerations are made to allow the government extension training department, agriculture department, credit institutions, and other line departments a different and more effective extension or delivery system for improved inputs. If a Field Assistant of the extension training department is given one union council to manage in the plains, he is given the same in the mountain areas, regardless of the communication problems in these areas. Thus, the few available services become even more inaccessible for people whose needs are often more immediate in view of the fragility of their natural environment.