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A STUDY ON THE SUSTAINABILITY OF VILLAGE-BASED COOPERATIVES AS AN INSTITUTIN OF DEVELOPMENT

BY

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The existing social and institutional structures at the village level are so occupied with immediate issues of survival that they have been unable to divert much of their energy to long term development goals. The situation is characterized by the existence of "social traps"[1] which lead people to adopt short term solutions and ignore the long term consequences of their action. At such low income-levels future expected returns are also likely to be discounted at very high rates

It is a reflection of this state of affairs that very little new land was brought under cultivation since independence. Individually, the farmers lacked the resources which could enable them to develop new land. Prior to independence, land development was controlled by the local rulers to a considerable degree. A typical sequence of land development would start with the traditional ruler, the Mir, conferring ownership of a distant tract of barren land on a certain number of households. The settler families would slowly start to develop and irrigate their land. The process took several years and during this time, the settler families would be supported by those members of the family who had stayed behind. Once the new land was cultivated the Mir was paid a **malia** (tax) on the produce. Once these institutions disappeared, traditional mechanisms were able to perform some important functions like the definition of property rights, the stipulation of sanctions and settling village level disputes, but they were unable to prescribe the means of adding to the productive capital of the region in a continuing and systematic manner.

The opening of the Karakorum Highway has created new economic opportunities. Technical inputs such as chemical fertiliser, improved

seed varities and other mechanical technologies are now available in the Gilgit District. However, to fully exploit these new opportunities, in the Northern Areas, there is a need for additional inputs such as, new institutional arrangements, productive physical infrastructure at the village level, credit, reliable transport facilities and investment in human capital. This process requires long term planning, large capital outlays and the need to work with the government. One way to approach the problem would be to investigate the feasibility of programs working to complement government efforts. To focus on those projects which have sufficient flexibility to accomodate coordination with the government and analyze their strategy in developing the area. This will help identify development policies which are able to increase productivity at the village level.

One Programme which is helping in this development is the Aga Khan Rural Support Programme (AKRSP). This programme started its operations in the Northern Areas in 1982 and gradually expanded the scope of its activities to cover the Districts of Gilgit, Chitral and Baltistan. AKRSP identified the problem as one which needed a restructuring of economic incentives, increasing village productivity, providing crucial inputs and creating a village cooperative. Its underlying premise is that the creation of a broad-based, self-reliant and development oriented institution at the village level can help address the complex issue of development in the area. Some of the principles and implementation methods which it adopted were first articulated by Raiffesen and contributed to the success of the "institutionally based development of German agriculture"[2]. These ideas were adapted and followed in Japan, Taiwan and the Republic of Korea. These principles were first introduced in Pakistan by Dr. Akhter

Hameed Khan. He employed them in the Comilla project[3] in 1959 and subsequently in the Daudzai project[4] in the North West Frontier Province.

The village cooperative, as a form of economic organisation, combines the principles of individual ownership and collective management of resources. This aspect of the cooperative makes it valuable for policy makers in the Third World. However, economic theory of collective management of rural enterprises is not well developed. This study will attempt to make a contribution to development entrepreneurs search for workable models. The relatively egalitarian base of society in the Northern Areas encourages the belief in the cooperative endeavour. In designating the Village Organisation as the vehicle of development, AKRSP has tried to draw on its advantages of scale, capacity for collective bargaining, reduction in transactions costs and its scope as an effective mechanism for preference articulation.

By the end of June 1985, AKRSP had been instrumental in the creation of 456 such Village Organisations (VO)[5]. At this juncture, it is important to investigate the future of this innovation. Is it reasonable to expect the VO's to become a viable vehicle for village level development ? Are the factors which led to the creation of these institutions different from those that will help to sustain them. A great deal of time, effort and resources have been invested in these organisations and the crucial question is what is the pay-off to this investment. Are the villagers likely to continue to use these organisations for village level planning and development purposes ?

2. Operational Objectives

The objectives of this study are classified as follows; (i) to examine how the village Organisation's established by AKRSP work in practise; (ii) identify functions which the Village Organisation's can undertake successfully (iii) identify factors which will contribute to the increased effectiveness of these structures and (iv) assess the sustainability of these cooperatives at the local and regional levels

3. The Conceptual Framework

The cooperative institution is a mechanism devised to respond to aspects of the environment more adequately by attempting to provide new opportunities for more productive behaviour. The objective is to introduce new institutional arrangements in villages that will help accelerate the rate of economic growth. More specifically, in the case of AKRSP, the objective is to increase incomes of the farm households without debilitating those basic conditions which have ensured a measure of equity in the village. The theory of development which will be used in this paper is the Induced Innovation theory[6]. This theory is particularly useful for this discussion because it treats technological and institutional innovations as endoegenous variables. Briefly, the theory asserts that through the price mechanism, resource scarcities affect the pattern of technological change. Thus, the technology which is induced utilizes the abundant resources more fully while economizing on the scarce resources. The new opportunities which are opened up by this technological change, in turn, induce institutional innovations designed to better capture the benefits of the technology. The focus of this paper is on the direction and pattern of institutional change in the Northern Areas and this theory will help us understand this process.

The conceptual device for identifying important variables will be the Environment-Behaviour-Performance[7] (EBP) paradigm. This framework incorporates a systems approach and highlights a system as an evolving and dynamic concept driven by the three term sequence and traces feedbacks. In describing this process, Shaffer explains that " each participant responds to his environmental situation and the aggregate consequence is a change in environment". However, the process does not stop here and " changes in participant's perception of the environment and appropriate behaviour follow from the change in environment."[8]

The EBP framework incorporates the dynamics of the learning process and offers more analytical flexibility than the traditional Structure, Conduct and Performance paradigm. The learning process is crucial to the issue of cooperative formation and is dependent on implicit and explicit reinforcement mechanisms. One of the most important tasks for the Programme implementers is to identify the reinforcements in the system and modify them to the extent necessitated by desired behavioural responses. The EBP paradigm allows a discussion of this process.

The Farming Systems Perspective[9] can be incorporated within the EBP approach as it includes factors such as "pervading uncertainty" which help in better understanding the farmers economic response. The EBP framework also helps in clarifying seemingly enigmatic responses which traditionally caused the farmers behaviour to be labelled irrational. The EBP approach focuses on the farmer as an economic agent trying to cope with risk and "bounded rationality" and thus responding to minimize that risk. This corresponds well with the insights provided

by development theory and reinforces the Shultzian[10] hypothesis of "poor but efficient" in describing farmer decision making.

One of the basic assumptions of the EBP approach is that, "individuals search narrowly selected portions of the environment and identify patterns of behaviour consistent with their perceptions of that opportunity set which satisfy them[11]". It would be worthwhile to investigate which part of their opportunity sets individuals respond to more readily and to affect changes in those portions of the sets. This has significant implications for policy formulation at AKRSP. This theoretical approach implies that AKRSP should confine itself to strategic interventions in priority areas and not overextend itself in directions which are unlikely to have much affect on behaviour.

In describing goal formulation the EBP paradigm suggests a distinction between individual preferences and indivdual societal preferences. The latter are "articulated within the opportunity structure"[12] of the organisation and are influenced by such factors as peer pressure and organisations other than those which dominate individual choices. Thus individual decisions are modified by the collective structure and are different from the decisions an individual would have made outside the collective entity. This hypothesis could have serious implications for aspects of the AKRSP intervention. In particular, insight into such behaviour could help in designing the Programmes credit policy, its collective land development scheme and areas where it expects to encourage collective as opposed to individual effort.

4. Formulation of Specific Hypothesis:

The approach of this analysis is to identify those hypothesis which are especially important for policy formulation at AKRSP. Considered from this pragmatic standpoint, a major hypothesis which could address some essential policy issues is whether the incentives which led to the formation of the Village Organisations are different from those which will be required to maintain them. AKRSP has had enormous success in the creation of these institutions which leads to the possibility that the structuring of incentives, in the first phase, has been appropriate. The issue is whether these institutions have long term sustainability. Here sustainability is defined as the ability of a system to continue operating under a shock or continuing stress. The formation and consolidation of these Village Organisations depends on (i) its members perceptions of benefits in relation to costs (ii) and on the mechanisms which it evolves to distribute those benefits. Thus, this paper will focus on productivity and equitability as the two performance criteria which are likely to determine the future of the Village Organisations. Hence the hypothesis of the paper is that in order for them to continue, the VOs have to contribute to increased productivity and provide reasonably equitable benefits to members

In studying farmers incentives to take collective action via cooperatives, John Staatz[13] applied the transaction cost approach. He discussed the issues in the context of four basic principles of that approach: (i) the asset fixity principle (ii) the uncertainty principle (iii) the externality principle and (iv) the hierarchical decomposition principle. He looked at incentives of formation and those of maintenance and concluded that the two may differ because, "Once a cooperative firm is in business, its assets generally become fixed, in

the sense that the return to them in the cooperative exceeds the return they could earn in alternative uses."[14] Some of the incentives which Staatz has outlined (transaction cost savings , uncertainty, asset fixity and externality) as motivating cooperatives are very pertinent to the situation in the Northern Areas. These will be looked at and the relevance of his conclusions will be tested against the findings of this study.

The course of events in the Northern Areas will be examined keeping in view the suggestions offered by relevant development and institutional models. In outlining the logic of collective action, Mancur Olson argues that," unless the number of individuals in a group is quite small, or unless there is coercion or some other special device to make individuals act in their common interest, **rational, self-interested individuals will not act to achieve their common or group interests**"[15]. Olson bases his assertion on the fact that large groups are always faced with the free-rider problem. The relevance of this contention in the working of the Village Organisations will be examined.

5. Data Collection and Methodology:

Two broad categories of information were required for the purposes of this paper. The first is information about the Northern Area villages and the second concerning programme components. There were severe problems in obtaining data. No formal comprehensive survey had been conducted in the region and official sources, those susceptible to elicitation, revealed very little and fragmented information. AKRSP staff have taken different data sources and through an iterative process attempted to reconcile them to present an area

profile. These data sources were relied on heavily. With reference to data for the programme components, two major sources of information were accessed; (i) information obtained by the monitoring section of AKRSP and (ii) field surveys. The Monitoring, Evaluation and Research (MER) section of AKRSP issues quarterly progress reports and it has set up well defined channels which allow information to flow in regularly from the field. The Management's heavy requirements of operational planning over a large area necessitate effective coordination with the field units. This is facilitated by mechanisms like the Monthly Review Workshops which are held as development seminars where current issues are discussed and future policy formulated. The minutes of these meetings were an invaluable source of information. The Programme is well documented in another aspect i.e. the monthly diaries of the Social Organisers in the field. These are daily narratives of their interaction with village members and residents. These documents provide a wealth of information on progress, problems and solutions which were deviced. They provided an effective monitoring device.

For an indepth analysis field surveys were conducted in twelve villages in the summer of 1985. These villages were purposively selected to represent a range of conditions. For example, Sherquilla was studied because it was the first in which a land development scheme was initiated. Shahtote is one of the poorest villages in the area and its inclusion is meant to highlight the incentive structure given a very meagre resource base. Risht was included because of its great distance from the centre of the valley and its specific problems of cultivation. Chatorkhand was included because of the opportunity it provided to study the VO dynamics in the presence of a dominant and

wealthy local religious leader in the village. Gupis was selected because it is a good representation of villages where pathan traders, from Chilas and Swat, have settled in the last 10 to 15 years and are attempting to buy land to supplement their present incomes which are derived from shops they own in the villages.

In collaboration with the MER section a preliminary questionnaire was designed, field tested and modified for use in other villages. A detailed croocut survey had been conducted by the MER section. This survey included the five villages on which case studies were prepared for the purposes of this paper. From this larger sample, 318 farmers were interviewed randomly (a team of enumerators and AKRSP researchers would interview people they randomly met during village visits) on resource ownership, participation in the VO's activities and actual and percieved benefits of the Programme. Information collected by surveys was supplemented by discussions conducted in the open setting of village meetings. This method facilitated the study of village dynamics

6.Plan of The Paper:

The first chapter defines the problem and introduces the conceptual and theoretical model which will be used to examine it. The operational objectives of the study and data sources have also been outlined here. Chapter II introduces the approach of the Aga Khan Rural Support Programme. It specifies the manner in which the Programme has concieved and identified the problems. It then lays down the principles on the basis of which it is helping to solve them. In keeping with the methodology suggested by the EBP framework, chapter III describes the environment which is being studied. It outlines the pecularities of the

physical environment, the farming system, the institutional strucures and technological aspects. Chapter IV is a micro-level study of the behavioural responses to the insitutional and economic changes introduced in the area. More specifically, it is a study of five villages in the Gilgit district. The chapter records the response and reactions of the villagers to different components of the AKRSP package. Chapter V analyzes the sustainability of the Village Organisation using profitability and equitability as the two performance criteria. Chapter VI presents a summary of conclusions, it suggests some recommendations and outlines some areas for future research.

TABLE I.1

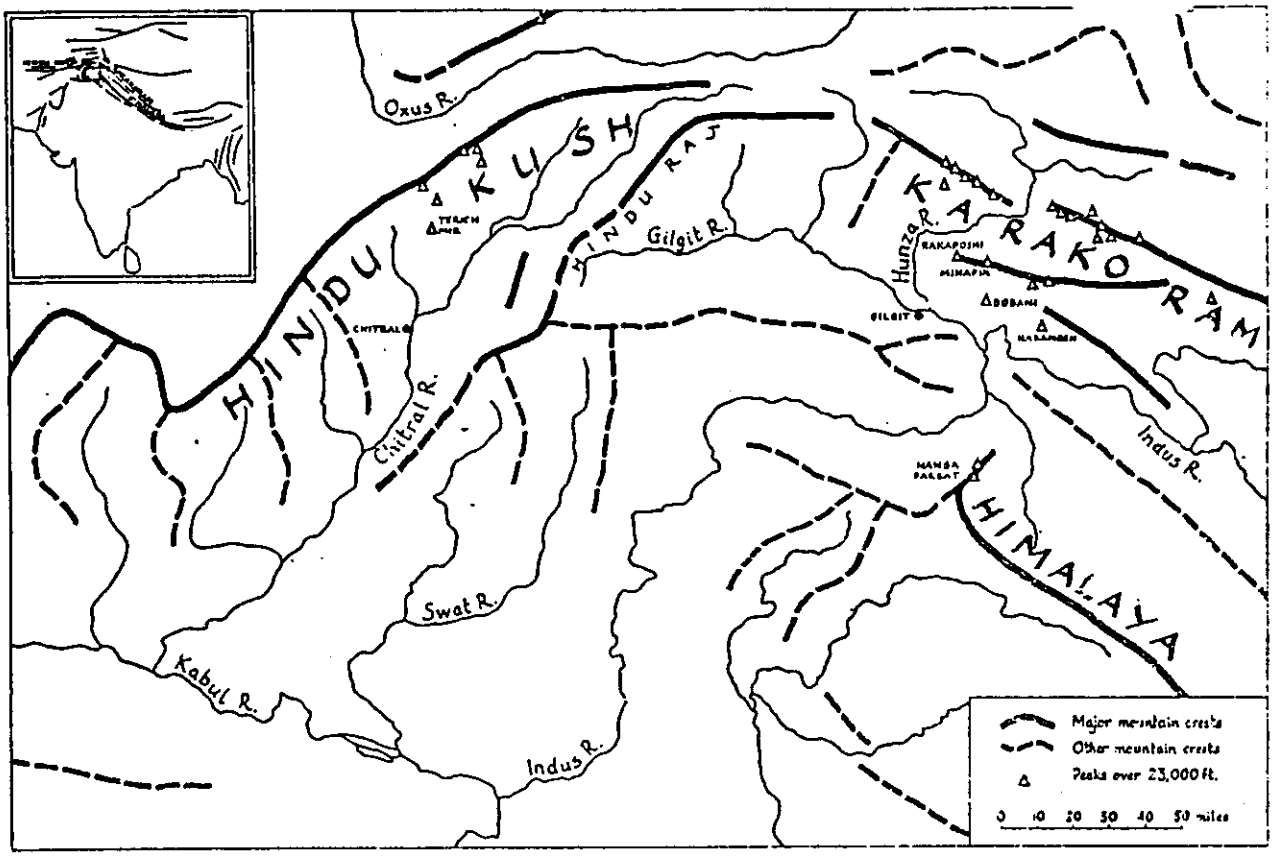
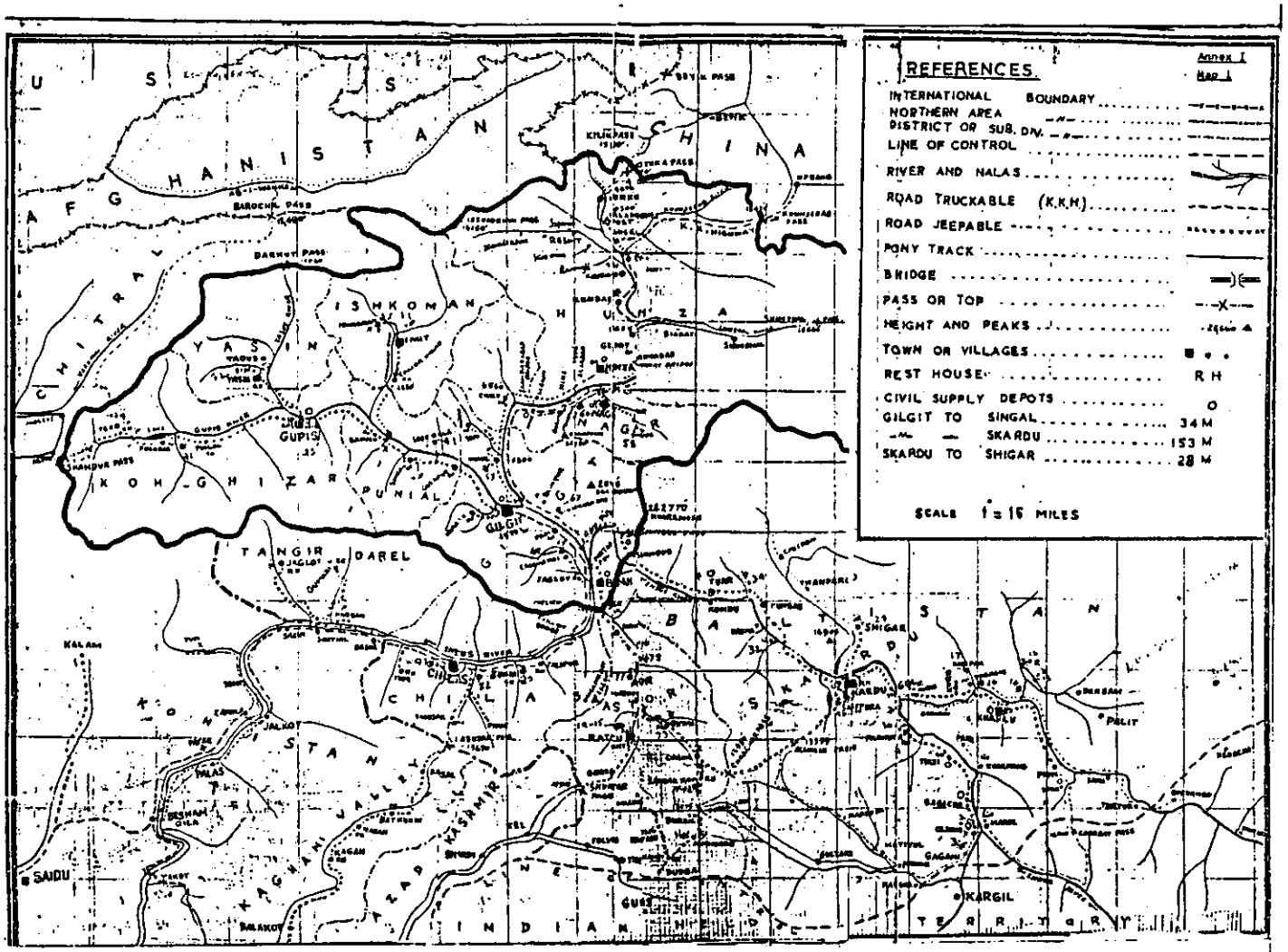

Oxus R.
HINDU KUSH
HINDU RAJ
KARAKORAM
Gilgit R.
Hunza R.
Chitral R.
Swat R.
Kabul R.
Indus R.
HIMALAYA
Major mountain crests
Other mountain crests
Peaks over 23,000 ft.
0 10 20 30 40 50 miles

TABLE I.2


REFERENCES
Annex I
Map I
INTERNATIONAL BOUNDARY
NORTHERN AREA
DISTRICT OR SUB. DIV.
LINE OF CONTROL
RIVER AND NALAS
ROAD TRUCKABLE (K.K.H.)
ROAD JEEPABLE
PONY TRACK
BRIDGE
PASS OR TOP
HEIGHT AND PEAKS
TOWN OR VILLAGES
REST HOUSE R H
CIVIL SUPPLY DEPOTS
GILGIT TO SINGAL 34 M
SKARDU 153 M
SKARDU TO SHIGAR 28 M
SCALE 1" = 16 MILES
AFGHANISTAN
CHINA
CHITRAL
YASIN
ISHKOMAN
HUNZA
NAGAR
KOHGHIZAR
PUNIAL
TANGIR
DAREL
GILGIT
CHILAS
BALTISTAN
SKARDU
KARGIL
KOHISTAN
KAGHAN VALLEY
AZAD KASHMIR
INDIAN HELD TERRITORY
SAIDU
PALAS
JALKOT
KALAM
GUPIS
BARUCHAL PASS
DARKOT PASS
SHANDUR PASS
KILIK PASS
BEYIK PASS
KHUNJERAB PASS
SHIGAR
PELIT
GAGAN
BALAKOT

CHAPTER II

1. The Background of AKRSP:

The Aga Khan Rural Support Programme (AKRSP) is a small non-profit affiliate of the Aga Khan Foundation. It was established in August 1982 with the broad objective of increasing income generation in the Northern Areas of Pakistan. The Programme is managed by a small core of professionals called the Management Group . This Group includes a General Manager, a Senior Engineer, an Agriculturist, a Training Specialist and an economist. The expertise of this team is supplemented by consultants trained in a wide variety of disciplines. In the field, the Management Group is supported by Social Organisation Units (SOU) consisting of a sub-engineer, an agriculturist and a Social Organiser. These units are spread throughout the project area and are a vital link between the programme staff based in the main office in Gilgit and the farmers in four hundred villages spread over very difficult terrain.

The Management Group is given wide authority in day to day decision making and in laying down the guidelines for future Programme policy. This contributes to overall flexibility of the Programme and enables it to incorporate field experience effectively and efficiently into policy formulation. The more general policy and budget decisions of the Programme are made with the approval of a Board of Directors. The Board consists of representatives from the Northern Areas, senior Pakistanis experienced in various aspects of agriculture and rural development and representatives of the Aga Khan Foundation in Pakistan and Switzerland. The core funding is provided by the Aga Khan Foundation. A rapidly growing list of international donors which include, CIDA, Ford Foundation, OXFAM, and ODA provide the rest.

2. The Conceptual Framework:

The Programme was founded on the premise that government capacity to effect the stimulation of development was constrained by a combination of factors. The chief among these were shortage of funds, lack of qualified staff, inadequate infrastructure, absence of an effective input delivery system and inadequate marketing facilities. AKRSP was structured with the realization that a small, professionally qualified and flexible organisation should be able to act as a "development entrepreneur" to make strategic interventions, promote local initiative and to mobilize outside resources to assist in development.

One of the objectives of the Programme is to evolve an innovative and replicable model of development for small farm households. Towards this end, AKRSP has adopted a strategy in which three interdependent principles of village level development define the scope of activities sponsored by it[1]. The first principle is that Productive Physical Infrastructure (PPI) projects should usually precede any other development effort. This principle is a recognition of the importance that farmers everywhere attach to permanent increases in their individual and jointly owned stocks of physical capital. By the villagers definition, these projects, in the context of the Northern Areas, include irrigation channels, link roads , protective spurs, and sedimentation tanks. These projects help induce the kind of broad-based participation which is so essential for reaching the longer run objectives of the Programme. The second principle is that there should be an administrative infrastucture which assures the provision of an effective input delivery system and sound technical advice on the use of the inputs supplied. This interim activity is required in the context of

a developing country where government resource constraints are unable to ensure such supplies, and private entrepreneurs are unwilling to undertake the tasks because of the lack of economic incentives to do so. The third principle states that smallholders can overcome some of the handicaps of their subsistence holdings only by collective action through broad-based, multipurpose cooperatives. This involves the creation of village cooperative organisations that help small holders fully utilize the available physical and administrative infrastructure.

3. The Programme Componenets:

AKRSP strategy has led to the identification of components which can be classified under five general headings:(Annexure II.1 gives the statistical abstract for the entire project area.)

(i) The Village Cooperative Organisation:

These cooperative organisations are envisaged by AKRSP to be the principle vehicle of development. By the end of June 1985, 456 Organisations[2] had been formed in the programme area in as many hamlets and villages. An Organisation is formally established when a majority of village residents agree to form a "partnership" with AKRSP and undertake to abide by its terms. This involves electing office bearers for management and record keeping, starting a process of collective savings, working with AKRSP staff to identify village priorities, initiating a process of long term village development planning and nominating village residents for specialized courses in livestock development and plant protection. All these measures are designed to increase productivity at the village level. The modus operandi of the Organisation is conceived as being hinged on the

egalitarian principle of one man one vote. Its most important functions are seen as that of a coordinating agency, reducing transaction costs, capturing scale economies and assuming collective responsibility in an environment where it is difficult to impose legal sanctions.

(ii). Productive Phsical Infrastructure:

This aspect of the Programme entails helping villages identify their need for improvements in physical infrastructure and then extending technical and financial assistance in their construction. These schemes serve the dual purpose of increasing productivity and providing incentives for the strengthening of the Village Organisation as a development oriented institution. Typical projects include irrigation channels, link roads, protective works, storage reservoirs and land development schemes. By the end of March 1985, 226 irrigation schemes had been identified, 79 link roads and 68 protective works[3]. In recognition of the fact that most of these projects require complementary investments before they yield their maximum potential (e.g provision of irrigation water is the first step in the development of new land). AKRSP has instituted a system which makes further investments in development projects possible. For the first project AKRSP extends a negotiated grant based on the cost estimates prepared by the Programme engineers. For the second or more projects, AKRSP offers a negotiable long term loan on very soft conditions. The costing of these projects includes labour payments, as AKRSP does not put much credence on the concept of self-help which relies on free labour and ignores the income constraint. However, the Programme does require that each village build up its equity capital for use as collateral in loaning from development banks and other financial institutions in the future.

The most important aspect of this componenet is putting in place the mechanisms for long term village development planning. AKRSP survey teams help villagers conduct a comprehensive technical survey of the village and prepare blueprints for future projects. It is hoped that these plans will instil a vision of future development, help identify bottlenecks and make it easier for the villages to approach funding sources of the government and the donor agencies.

(iii). Agriculture Extension and Supplies:

This component is designed to improve farmer's access to information on the availability and use of new technology embodied in inputs and to assure an adequate input delivery system. In its emphasis this component has moved from the prevention of losses to varietal seed and breed testing in the different agro-ecological zones of the project area. A principal aim of this component is to make the village self-reliant in disease prevention, both in livestock and plants. This is being done by upgrading the technical skills available at the village level. By the end of June 1985, 21 regular and 10 refresher courses had been organised on plant protection, livestock disease prevention and poultry training. A total of 513 trainees from 366 Village Organisations participated in these courses.[4]

In keeping with its belief that training in the use of technical inputs would be meaningless without ensuring regular supplies of those inputs, AKRSP is playing a coordinating role in helping to establish links between suppliers and farmers. This ensures farmers, timely delivery of fertilizer, pesticides, vaccines and improved seed varieties.

(iv). Equity Capital and Credit:

A major bottleneck to development in the area is the absence of well developed financial institutions which can help ease seasonal liquidity problems as well as provide long term capital for development purposes. Moreover, the incentives to induce indigenous generation of capital are also missing. AKRSP has helped create these by making savings an essential aspect of its "terms of partnership" with the villagers. Each farmer brings his individual savings to the Village Organisation. The collective savings of all the members in one Organisation are kept in one account at the local bank in Gilgit. These savings are meant as a collateral for future development loans or any collective activity which the village undertakes. Each member is given an individual passbook for him to maintain a record of his personal account. The local banking institutions welcomed this aspect of the Programme as it entailed substantial reductions in transaction costs for them. This component has also helped to set aside some of the misconceptions about farmers ability to generate equity capital. In order to allow this process time to establish itself, AKRSP has played an active role in helping the Village Organisations to obtain short term credit for the supply of essential inputs.

By the end of June 1985, the combined equity capital of all the Village Organisations in the Programme area totalled about Rs. 8.7 million. During the quarter (April-June 1985) fertilizer loans amounting to Rs.2.32 million were disbursed to 214 Village Organisations.[5]

(v). Marketing:

AKRSP's marketing strategy is based on the premise that this

activity requires a package of complementary investments which include training, credit, improved access to information, facilitative links with wholesalers and retailers, processing facilities, improved transport and research. The problem of the Northern Areas is compounded by the fact that fruit, which is the major surplus, is highly perishable and variable in quality. No standardized grades or packaging techniques have been developed. There are no storage facilities and it is extremely difficult for the fruit to reach the central markets which are at a great distance from this area.

AKRSP envisages marketing to be a major activity which could contribute substantially to the development of the region. By the end of June 1985, 22 representatives from 11 different Organisations had been provided training in grading, packing and other aspects of marketing.[6] In addition, field trips to major marketing centres had been organised to facilitate information gathering and gain first hand experience of market operations. A fruit tree census was undertaken in 30 villages as part of the process of building a data bank for the estimation of production figures.

4. The Progamming Cycle:

The programming cycle covers five broad phases; (i) identification (ii) preperation (iii) appraisal (iv) implementation and (v) completion. Annexure II.2 outlines the AKRSP programming cycle. The first three phases of activity proceed through a series of interactive dialogues between villagers and AKRSP. Together, these first three constitute the Diagnostic Survey. This begins with a visit by the Management Group to a vilage whose residents have agreed to meet with AKRSP staff. The First Dialogue is initiated by an explanation of the

Programme objectives and methods. The villagers are invited to identify an income-generating project which would benefit a majority of the households in the village. This project must be one which can be constructed by the villagers themselves. Almost invariably, the villagers are able to agree on a project of overriding importance to all. Thus the outcome of the First Dialogue is the identification of a small, income generating project by the residents of a village. This is followed by what is called the Second Dialogue. This involves a feasibility survey in consultation with the villagers. Blueprints and cost estimates of the identified projects are prepared by the Programme engineers.

In the Third Dialogue, the finalized scheme is taken to the villagers by the Management Group. AKRSP outlines the terms on the basis of which it would form a partnership with the villagers. These terms include the formation of a Village Organisation, regular meetings, generation of savings and collective responsibility for maintenance of the village project. These basic terms have, more recently, expanded to include aspects such as a "minimum level" of savings prior to the AKRSP intervention. As an inducement to adopt these terms AKRSP offers the village a grant for the first physical infrastucture project. The amount of the grant is negotiated with the villagers. In addition, AKRSP undertakes to arrange for extension training and supplies which the farmers need.

TABLE IL1

QUARTERLY STATISTICAL ABSTRACT
Programme Area
December 1982 - June, 1985

	Chitral	Gilgit	Baltistan
I. Project Area			
1. Area (Sq. Km)	12,300	31,100	25,587
2. Population	240,000	200,000	251,321
3. No. of households (approx)	28,811	30,617	31,400
4. No. of villages (approx)	500	306	224
II. Overall Coverage			
1. No. of villages in which projects identified	210	298	11
2. Projects as % of I.4	42%	97%	5%
3. No. of villages surveyed	119	254	11
4. ..... As % of II.1	57%	85%	100%
III. Social Organisation			
1. No. of village organisations	132	313	11
2. Membership	10,992	24,546	543
3. Savings (Rs. million)	1.29	6.41	0.09
4. % of households of project area covered by VOs	38%	83%	2%
5. % of rural households covered by VOs	40%	95%	2%
IV. Productive Physical Infrastructure			
1. Total No. of Projects identified	356	432	13
2. Estimated cost of projects identified (Rs. million)	43.75	57.7	2.1
3. No. of projects initiated	77	206	8
4. No. of beneficiary households	6,524	24,546	463
5. Cost of initiated projects (Rs. million)	11.4	26.9	1.3
6. Physical Progress (%)	57	85	21
7. No. of projects completed	27	130	-

TABLE II.1 (Continued)

	Chitral	Gilgit	Baltistan
V. Agricultural Credit			
1. Amount of loans (Rs. million)	0.92	6.44	-
2. No. of group loans for VOs	82	477	-
3. No. of beneficiary Farmers (including multiple loans)	4,428	27,480	-
4. Amount overdue (Rs.)	-	25,196	-
5. % of amount in default (overdue by 12 months)	2.39%	0.34%	-
VI. Extension Training			
1. No. of courses	1	20	-
2. No. of kits distributed	34	314	-
3. No. of refresher courses	-	10	-
4. No. of trainees	34	479	-
5. No. of VOs and WOs represented	34	332	-
6. No. of managers' conferences	-	14	-
VII. Marketing			
1. No. of participating VOs	-	25	-
2. No. of loanee VOs	-	20	-
3. Total amount of loans (Rs.)	-	366,000	-
4. Amount overdue (Rs.)	-	-	-
5. Total receipts (Rs.)	-	533,215	-
6. Total expenses (Rs.)	-	458,460	-
7. Total Profit (Rs.)	-	74,755	-
VIII. Women's Programme			
1. No. of women's organisations	-	93	-
2. Membership	-	5,092	-
3. Savings (Rs. million)	-	0.98	-
4. No. of poultry courses	-	5	-
5. No. of poultry refresher courses	-	1	-
6. No. of WOs procuring polyester	-	68	-

Figure II.1

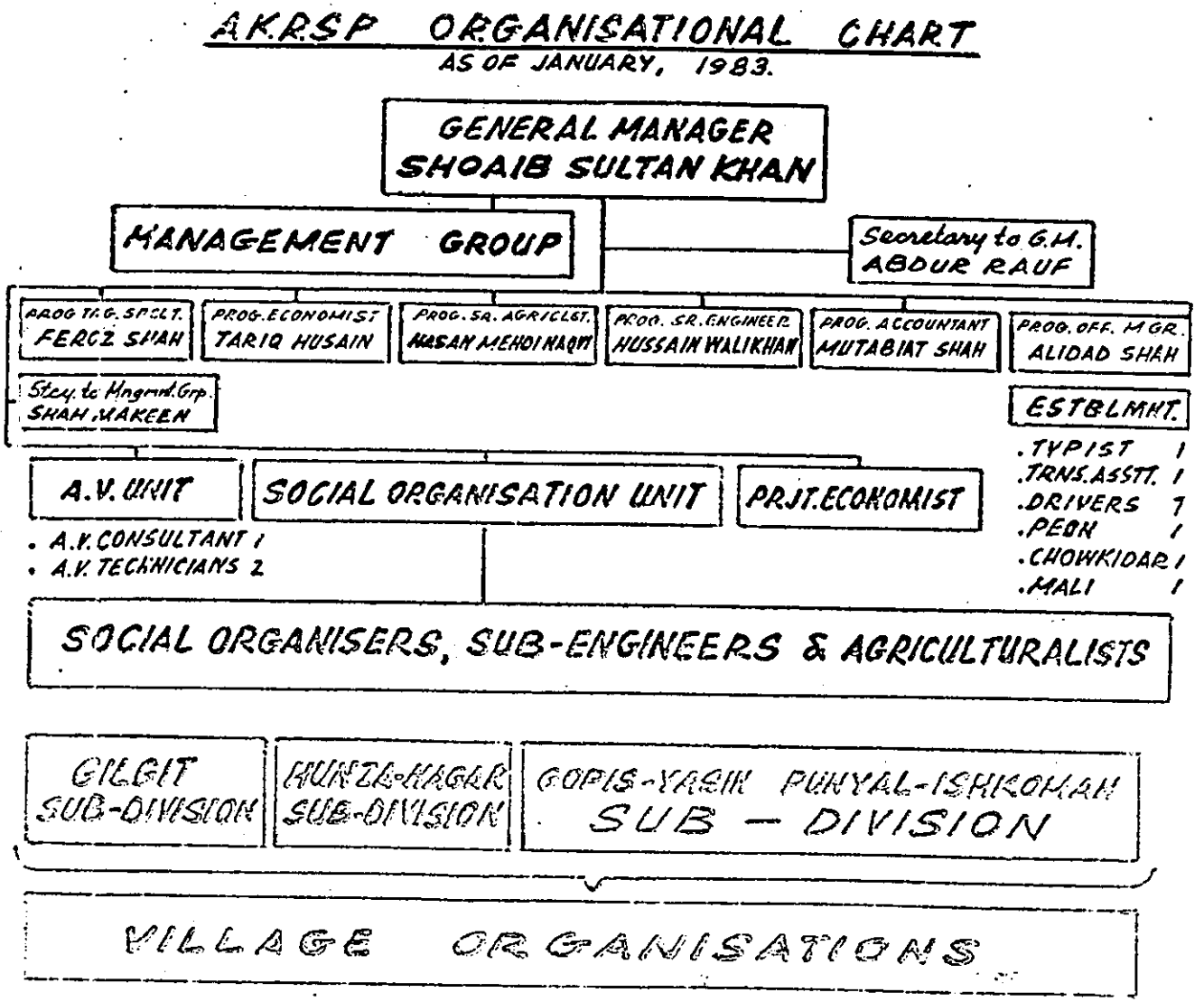

AKRSP ORGANISATIONAL CHART
AS OF JANUARY, 1983.
GENERAL MANAGER
SHOAIB SULTAN KHAN
MANAGEMENT GROUP
Secretary to G.M.
ABDUR RAUF
PROG. TNG. SPCLT.
FEROZ SHAH
PROG. ECONOMIST
TARIQ HUSAIN
PROG. SR. AGRICLGT.
HASAN MEHDI NAQVI
PROG. SR. ENGINEER
HUSSAIN WALIKHAN
PROG. ACCOUNTANT
MUTABIAT SHAH
PROG. OFF. MGR.
ALIDAD SHAH
Secy. to Mngmnt. Grp.
SHAH MAKEEN
ESTBLMNT.
.TYPIST 1
.TRNS. ASSTT. 1
.DRIVERS 7
.PEON 1
.CHOWKIDAR 1
.MALI 1
A.V. UNIT
SOCIAL ORGANISATION UNIT
PRJT. ECONOMIST
• A.V. CONSULTANT 1
• A.V. TECHNICIANS 2
SOCIAL ORGANISERS, SUB-ENGINEERS & AGRICULTURALISTS
GILGIT SUB-DIVISION
HUNZA-NAGAR SUB-DIVISION
GOPIS-YASIN PUNYAL-ISHKOMAN SUB - DIVISION
VILLAGE ORGANISATIONS

Figure IL2

A.P.C.
AKRSP PROGRAMMING CYCLE

ACTIVITY	RESPONSIBILITY
[I] DIAGNOSTIC SURVEY	
PROJECT IDENTIFICATION, PREPARATION AND APPRAISAL THROUGH VILLAGE DIALOGUES	
1. IDENTIFICATION: FIRST DIALOGUE	
a) Explanation of AKRSP Methods & Objectives	*General Manager*
b) Identification of Productive Rural Projects	*Villagers*
2. PREPARATION: SECOND DIALOUGE	
a) Feasibility of Physical Infrastructure Works or Social & Economic Infrastructure Scheme	*Prog. Sr. Engineer or Prog. Sr. Agriculturalist with Prog. Trg. Specialist and Villagers*
b) Preparation of Blueprint or Objective Plan	
c) Cost Estimation.	
3. APPRAISAL: THIRD DIALOGUE	
a) Explanation of Terms of Partnership	*Prog. Training Specialist*
b) Acceptance / Rejection of Terms of Partnership	*Villagers*
c) Assessment of Range of Benefits of Project / Scheme Implying Acceptance or Rejection	*Mngmnt. Group*
[II] IMPLEMENTATION	
1. Base-line Survey for Evaluation	*Prog. Economist*
2. Execution of Project / Scheme	*Village Organisation*
3. Monitoring of Village Organisation	*Prog. Training Specialist*
3. Training and Supervision of Village Organisation	*Mngmnt. Group*
[III] COMPLETION	
1. Management of Project / Scheme. Including Maintenance, Monitoring and Evaluation	*Village Organisation with Prog. Trg Specialist*
2. Post-project Survey for Evaluation	*Prog. Economist*

CHAPTER III

1. The Physical Environment:

The project area of AKRSP consists of the Gilgit and Chitral districts. Together with the Diamer and Baltistan districts they comprise one of the most rugged and remote regions in the world. This region lies at the intersection of four of the highest mountain ranges in the world, the Himalayas, Karakorums, Pamirs and the Hindu Kush. The area is famous for its glaciers and mountain peaks. Glacial movements and frequent landslides make the region very unstable. The fast moving rivers of the region change directions frequently and cause massive soil erosion. The area is connected with the rest of Pakistan by the Karakorum Highway which is subject to frequent landslides due to the precarious physical environment. The project area, in the Gilgit district, extends over 31,000 square kilometres and its population is estimated at about 200,000. Population estimates are given in Anexure III.1.

The physiography of the area is hilly with steep slopes which require terracing for cultivation. The soil is mixed with stones and boulders which makes the development of new land for cultivation very difficult. The pressure on land has been aggravated not only by the rapidly growing population but also by soil erosion. Frequent changes in river courses makes this a serious problem. Moreover, the soil is low in organic matter, and under irrigation, it is susceptible to leaching and has a low water holding capacity

The Northern Areas are located just outside the monsoon zone in a partial rain shadow area. The region recieves an average of about five

inches of precipitation per year, mainly as snow during the winter months. There is a tremendous shortage of water for irrigation during the winter months. In summer, the glacial snow melt eases the problems of irrigation.

2. The Farming Systems:

Agriculture is the predominant economic activity in the Northern Areas and forms the principal source of livlihood for 85-90 % of the population. The region supports a range of farming systems all of which contain common elements. Wheat, maize and barley are the principal cereals. In addition, grain legumes, vegetables, fodder crops and fruit are grown throughout the region. All household own some livestock and due to the acute fodder shortage in the area, it is difficult to raise animals for commercial sale. Some very rough estimates of land use and livestock population are given in Annexure III.2 and III.3.

The area is dry and the climate is continental. It dictates both the potential length of the growing period and the types of crops that can be grown on it successfully. Another factor of crucial importance is the altitude. The settled part of the region varies in altitude from 4,000 ft to 10,000 ft. Double cropping is possible upto an altitude of about 7,500 ft. Beyond this the short growing season allows only a single crop. Annexure III.4 gives the relationship between potential growing period and the altitude.

Agricultural productivity of the farming systems is low. For the Northern Areas, as a whole, it was estimated that the yields of staple grain are about 1.63 tons per hectare. In the livestock sector, disease and poor quality breeds are a major problem. There is a shortage of meat

and dairy products, most of which are imported into the region. Fod er shortage is a main bottleneck in this regard and it has led to a system of free grazing with all its attendant problems. The area is surplus in fruits like apricots, apples, mulberries and almonds. Most of these are of poor quality stock and frequently infested by disease. The perishability of the fruit and the wide variation in quality add to the marketing problems in an area with very tenuous links with outside markets.

In general, there is little commercialization and no specialization in production. Farming in the region is characterized by all the symptoms of an economy caught in the poverty trap. For years, equilibrium has been established at low levels of productivity and there have been no external shocks to induce change in the region. Due to geo-political considerations the area was deliberately insulated by governments concerned with an external threat. The opening of the Karakorum Highway offers considerable potential for change in the area. However, to be fully realized this process of change requires substantial complementary investments.

3. The Institutional Structures:

The average farm family of Gilgit consists of about 8 members who live off a cultivated area of 0.62 hectares. Per capita incomes are in the range of $120 - 150 per annum.[2] This is about one-half the national average of Pakistan. The extended family is closely knit and shares responsibility on the farm. There is sexual division of labour. The men are primarily responsible for sowing, harvesting and irrigation. Women look after weeding, threshing, vegetable gardening, fruit gathering and processing, poultry, livestock, and wood gathering. This

is in addition to their responsibilities within the home. In households where men have gone outside in search of better jobs, the sexual division of labour begins to erode. In such cases, the women's role is extended to include sowing and harvesting. Women are, generally, excluded from wage labour. On an average, a village consists of about 100 households. Farm families within a village are invariably related to each other. As such, there is a special familial bond in almost all the villages. There are very few landless people in the area and the distribution of property is relatively egalitarian. There is a well established traditional method of distributing land which ensures that each village household will recieve an equal share. These customary mechanisms are extremely important as the Government has endorsed them and it does not interfere in their operation.

Over the years, a strong tradition of mutual help has been well established. Any family in need of help with harvesting, house building, grazing animals or any other activity is assured of help from the village. The local shopkeeper also provides important credit facilities by extending loans to families until the next harvest. It is not unusual to hear of shopkeepers closing down due to the villager's inability to repay their loans on time. This happens more in the secluded and remote villages where the ties among villagers are stronger.

People in the area are all muslims but there is sectarian and linguistic diversity among them. Generally, people in one village tend to belong to one sect and speak the same language. There are, however, many villages where two, or all three sects live together. There is traditional rivalry among these groups and they prefer not to intermarry. The reaction of these three groups to AKRSP has been quite

different. The Shia Imami Ismailis percieve the Village Organisation as one which has been religiously ordained (The Aga Khan is their religious leader) and their participation has been the most enthusiastic. The non-Ismaili Shias participate in AKRSP's activities with more of an economic orientation and are indifferent to AKRSP's perception as an "Ismaili Institution". The Sunnis have recieved it with mixed feelings. Some have accepted its help with guarded caution while others have reacted to it with open hostility, while still participating in most of the Programme activities. The reasons for these reactions are traceable to the complex historical inter-relationships between these three schools of thought.

There are two distinct classes of people in the Northern Areas who have not traditionally owned land in the area. The animal grazers locally called the **"Gujar"** and the gold panners. Socially, both these professional categories are considered outcasts and marriage with them is virtually taboo. This is illustrative of the respectability that accompanies ownership of land. Over the years, these people have acquired some land and have taken to farming in an attempt to enhance their social acceptability. There are very few large landowners in the area now and thus a majority of the people belong to the same economic class. This is in sharp contrast to land ownership patterns in the rest of the country.

Due to the remoteness of the area, its difficult terrain, and lack of governmental administrative infrastructure, there has never been any formalisation of land ownership. No one who owns land can produce a legal title to it. His only proof is that his family has been living on it and farming it for centuries. There are very few disputes

over land precisely because it is the most important resource. This is partly due to the well developed consensus on the system of dividing new, marginal and grazing lands. Any new land opened to the prospect of cultivation is equally divided into as many parts as there are households in the village, and then, lots are drawn to establish ownership. All village residents have an equal right to grazing land and collecting firewood from it. The theory of Induced Institutional Innovation provides a theoretical explanation for this phenomenal consensus. The theory suggests that economic opportunities induce institutional mechanisms designed to profit from those opportunities. As such, the customary use rights which the people evolved recognized their mutual economic interdependence. The Institution of "Common Property" enabled the entire village to use uncultivated land for grazing and wood gathering without dispute.

Each family cultivates its own land. There are virtually no tenants in the region. The constant division of land among the male heirs in a family has led to fragmentation of the larger holdings. When land is not enough to sustain the family, it is normal for the male members to leave in search of opportunities elsewhere. The army is a particularly popular outside employment as it requires a minimum of qualification and provides social status in the village.

4. The Technological Environment:

Technological change in the Northern Areas has had a mixed history. The isolation of the area and its impassable mountain walls have kept it relatively well insulated from the technological improvements in the outside world. The implements and tools which are presently being used in the area have been used here for centuries. The

wooden hoe, the watermills, and the irrigation technology have been passed from one generation to the next with hardly any change.

However, wheat farming is one of several activities characterized by some technological change[3]. Seed has been exchanged between people and brought from other regions whenever existing varieties lost their vigour, or new varieties appeared with improved characteristics. Before this, the British introduced potatoes in the region in the 1890s and maize in the 1930s. A British officer also introduced trout into the Northern Areas. During the construction of the Karakorum Highway, the chinese introduced some innovations of their own. A wheel barrow and a new variety of chinese spinach. More importantly, sometime before the road was built, the fast growing poplar tree was first brought into the region from China. This has transformed the house building activity in the region by substantially reducing construction costs. Chemical fertilizers have been known since the early-sixties, although their use spread only in the late-seventies. Tractors and threshers became popular in the early-eighties.

The aggregate time trends in the adoption of new varieties, fertilizer, tractors and threshers are given in Annexures III.5 to III.8[4] indicating frequency of adoption, over time, from the sample of 318 farmers. The diffusion curves indicate that all four of the innovations are close to their ceilings under existing conditions. One possible explanation for these stagnant and declining rates of adoption could, paradoxically, lie in the possibilities opened by the Karakorum Highway. The chronological pattern of diffusion suggests that, initially, improved supply conditions (for almost all inputs) dominated the period between the opening of the Highway and roughly

1982, while the declining relative profitability of wheat farming (due to subsidized flour from other regions to Gilgit) has affected investment in all inputs.

TABLE III.1

GILGIT DISTRICT

ESTIMATES OF POPULATION

1. Aggregates:

		Orders of Magnitude	% of Total
Children (under 15)		72 780	36.4
Men		66 940	33.5
Women		60 340	30.1
Total Population	say	200 000	
Number of Households		24 000	
Number of Villages		400	

2. Averages per Household:

Children (under 15)	3.03
Men	2.79
Women	2.51
Size of Household	8.33

Source: AKRSP estimates based on five sets of data - WAPDA Survey (1981), AKRSP Diagnostic Survey (1982-83), LB & RD Survey (1978).

TABLE III.2

GILGIT DISTRICT

AGRICULTURAL LAND AND ITS USES

	Hectares	% of Total
1. Aggregates:		
Cultivated Land	14 925	35
Orchard	3 290	8
Forest	3 340	8
Uncultivated Land	20 945	49
Averages per Household:		
Cultivated Land	0.622	
Orchard	0.137	
Forest	0.139	
Uncultivated Land	0.873	

Source: LB & RD Survey of the Northern Areas (1978).

TABLE III.3

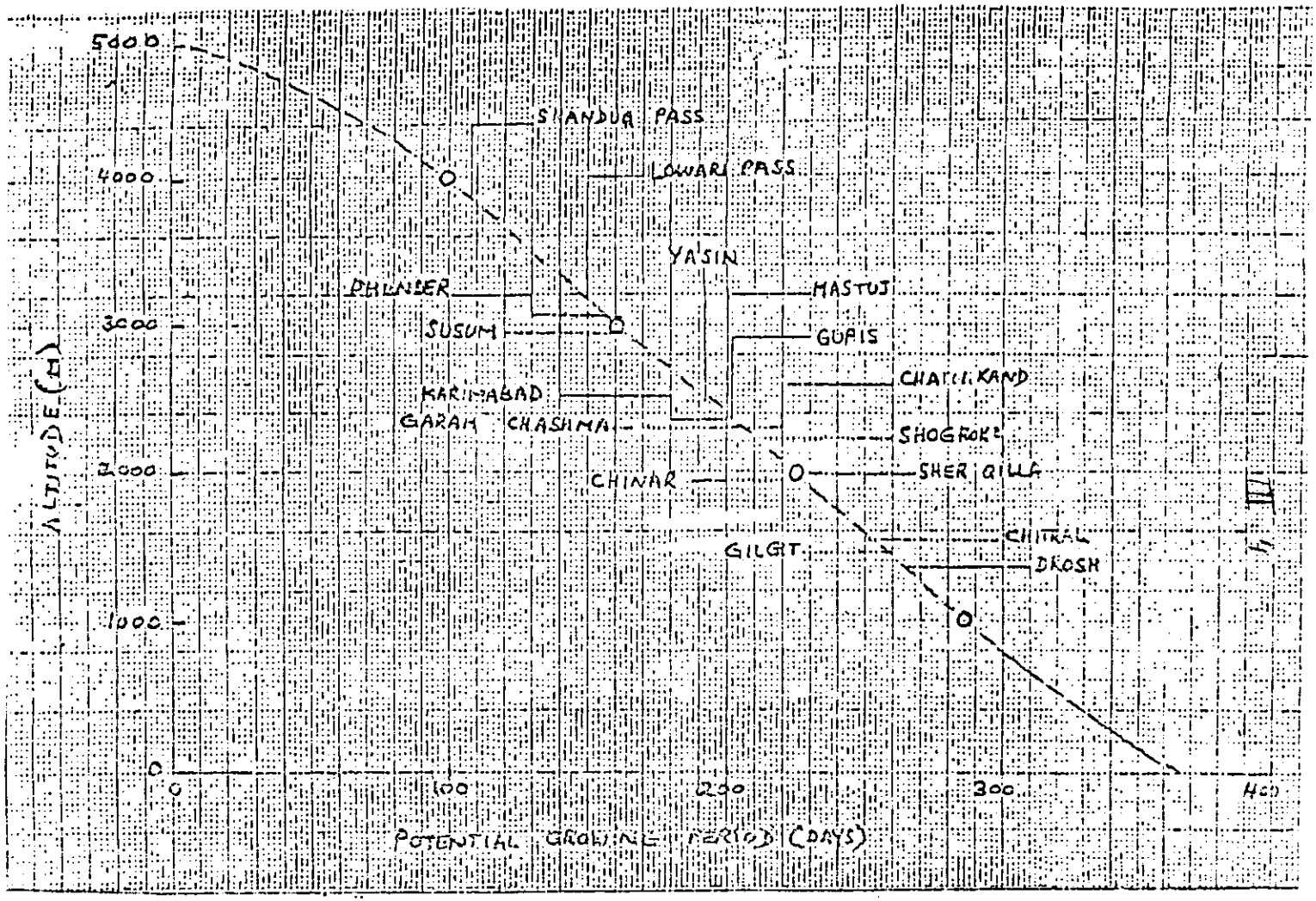
GILGIT DISTRICT

LIVESTOCK POPULATION (ORDERS OF MAGNITUDE), 1978

	Aggregates	Per Household
Cows	49 000	2.04
Bullocks	18 000	0.75
Sheep	110 000	4.58
Goats	173 000	7.21
Poultry	61 000	2.54

Source: LB & RD Survey of the Northern Areas,(1978).

Figure III.4



Relationship between potential growing period and altitude.

Figure III.5

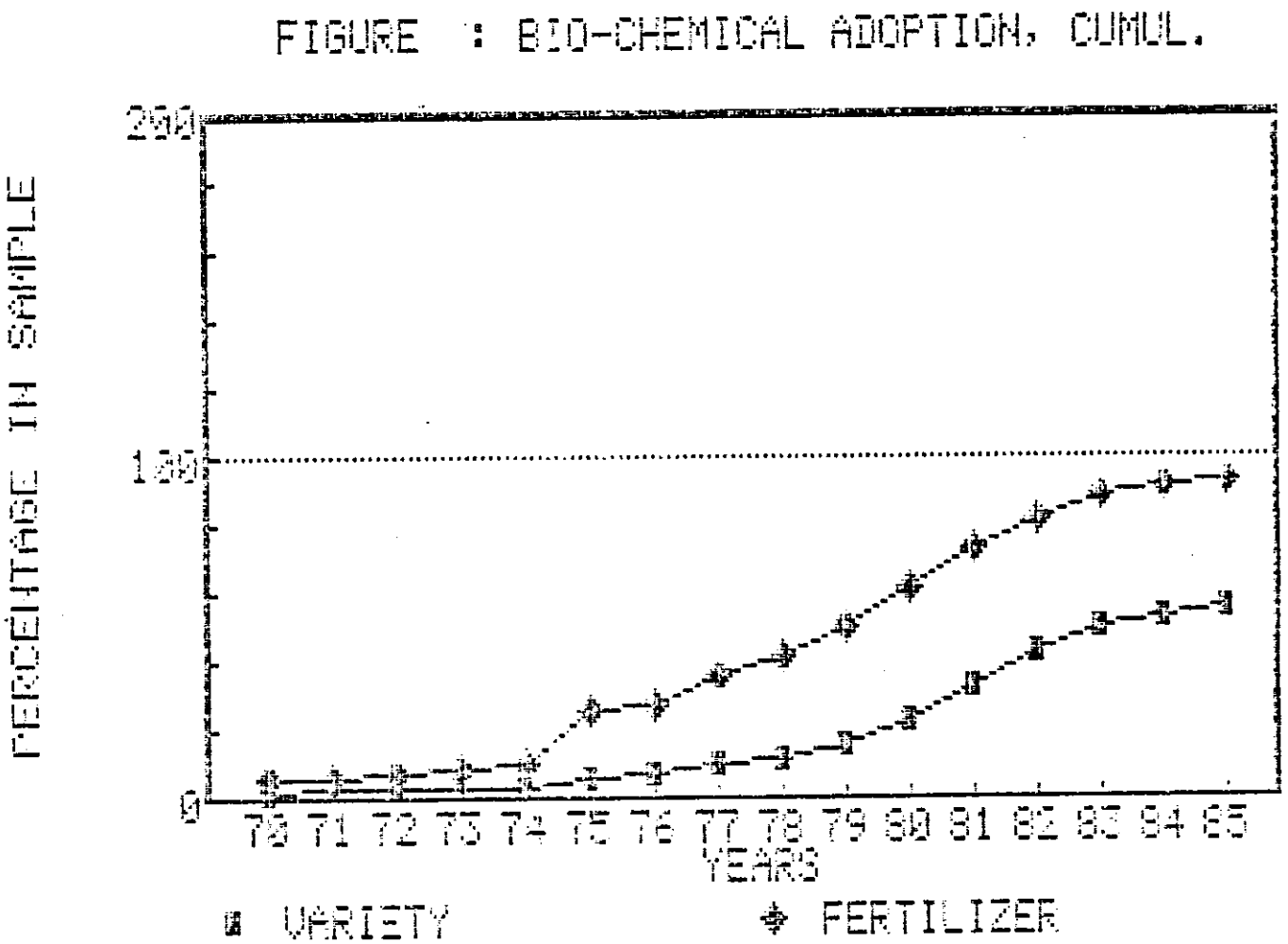


FIGURE : BIO-CHEMICAL ADOPTION, CUMUL.
PERCENTAGE IN SAMPLE
200
140
0
70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85
YEARS
VARIETY
FERTILIZER

Figure III.6

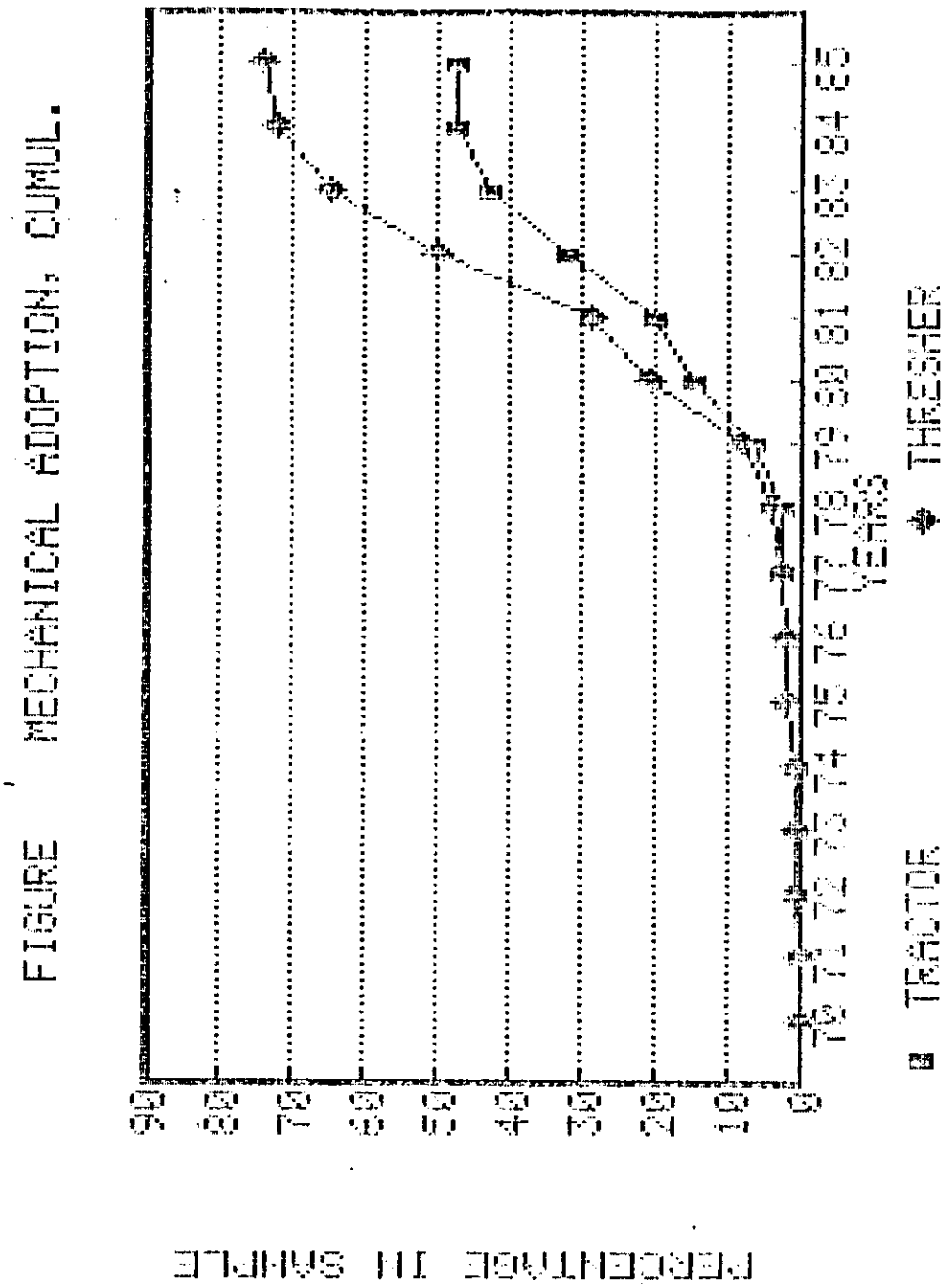


FIGURE MECHANICAL ADOPTION, CUMUL.
PERCENTAGE IN SAMPLE
YEARS
TRACTOR
THRESHER

Figure III.7

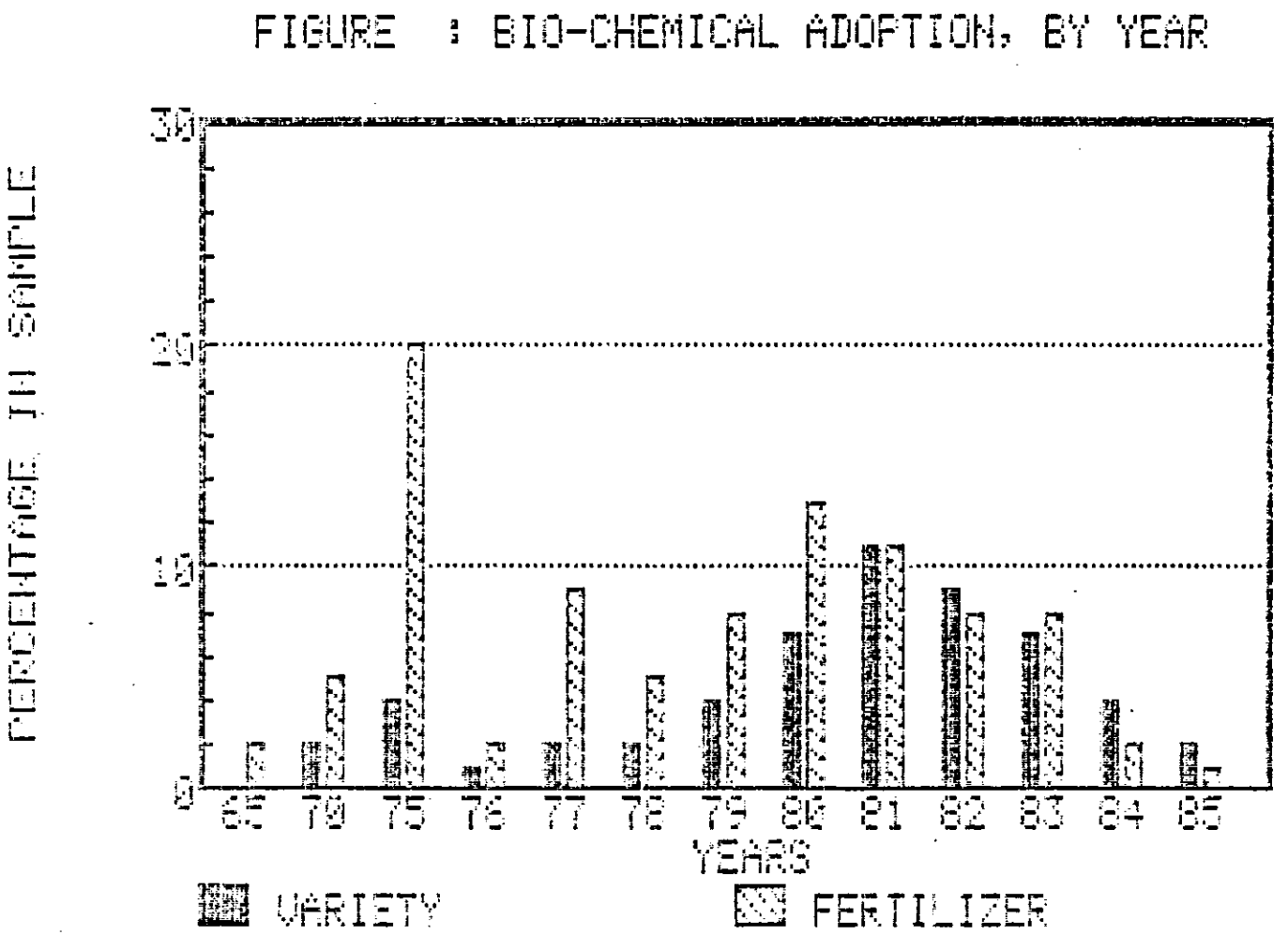


FIGURE : BIO-CHEMICAL ADOPTION, BY YEAR
PERCENTAGE IN SAMPLE
50
25
0
YEARS
VARIETY
FERTILIZER

Figure III.8

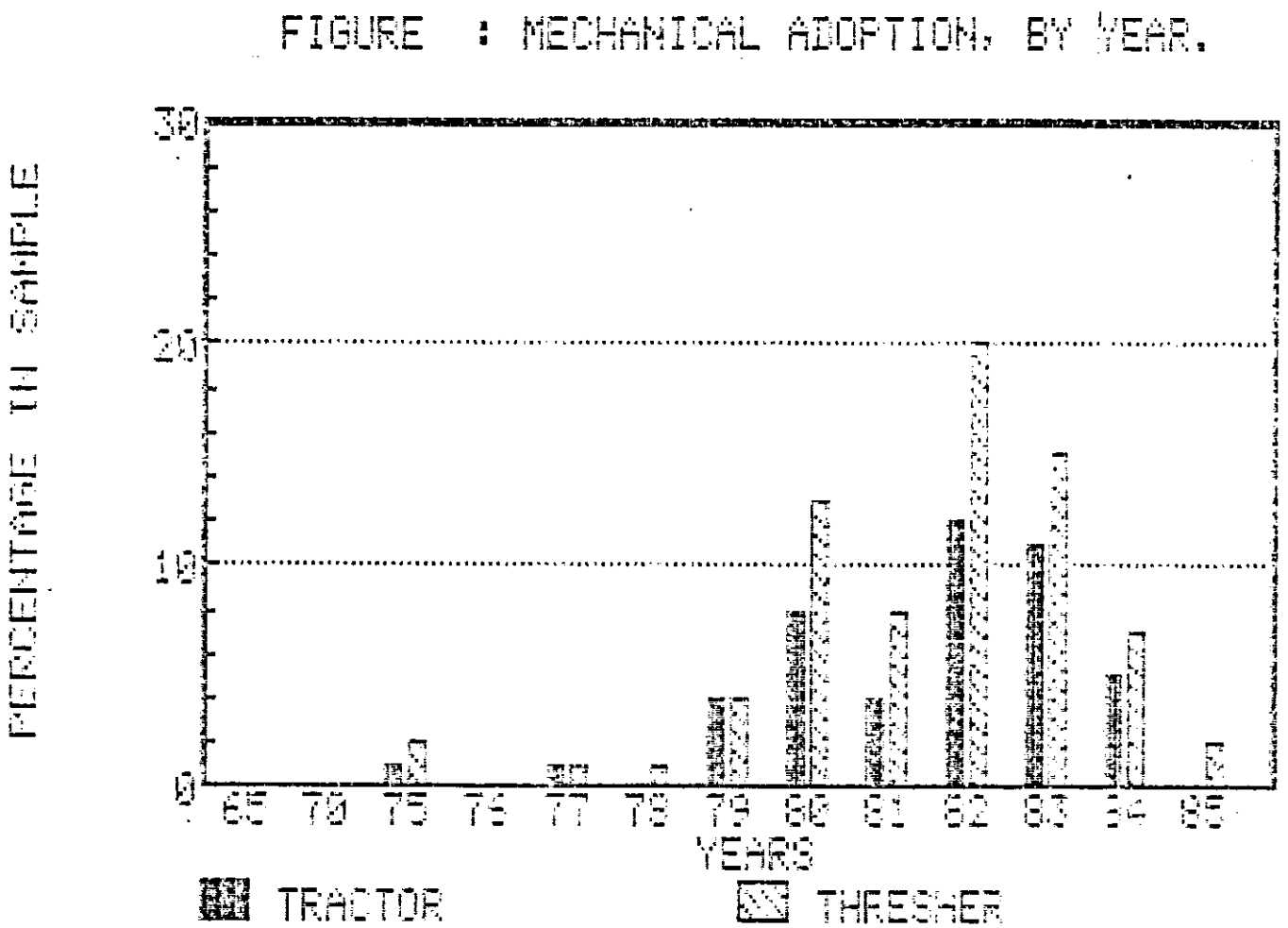


FIGURE : MECHANICAL ADOPTION, BY YEAR.
PERCENTAGE IN SAMPLE
30
20
10
0
65
70
75
76
77
78
79
80
81
82
83
84
85
YEARS
TRACTOR
THRESHER

TABLE III.4

AGRICULTURAL INNOVATIONS IN GILGIT DISTRICT
1960-1985

1960-65	1966-70	1971-75	1976-80	1981-85
Introduction of Wheat Varieties				
C-591 C-278	Penjamo	Yecora	Blue Silver	Pak 81
Dirk (Australian)	Lerma Rojo Mexi-Pak	Noori	Goldfinch	
Vulfin (Japanese)	Indus	Arz		

CHAPTER IV

1. The Risht Case Study:

(i). The Statistical Profile:

Risht lies in the centre of the Chapurson valley. The entrance to this valley lies on the Karakorum Highway and the village lies 42 kilometres off the road. There are 27 households in the village with an average landholding of 1.5 hectares per household. The curious settling pattern and the method of dividing new land has led to highly scattered individual holdings all over the valley. The village is in a single cropped region. Its main crops are wheat and barley. Among vegetables, bacla and peas are fairly popular together with an assortment of vegetables like potatoes, carrots, cabbage, etc. There are only three trees in all of Risht. As such, the village does not produce any surplus in fruits and all its crops and vegetables are for domestic consumption. The village requirements for imports like soap, matches, fuel, sugar, salt and cloth are met by men working for wage labour outside the village. A recent and major source of cash influx into the village was the compensation payments paid out by the government to households whose land was affected by the jeepable road built recently.

(ii). The AKRSP Intervention:

The project which the village selected as their first priority was a 2,300 metre long irrigation channel. This project was completed in May 1985 and will help to irrigate an additional 12.5 hectares. Each household has recieved 0.5 hectares of this land. The total cost of the channel was Rs. 100,115. From this, Rs. 78,030 was for labour and Rs.21,305 for materials. The Village Organisation had a combined equity capital of

Rs.52,600 in June 1985. The distribution of individual savings is remarkably even; 93% of the members have saved between Rs.1,461 and Rs.2,435. A preliminary analysis indicates no relationship between labour payments recieved and individual savings. The Village has recieved two fertiliser loans. The first loan taken out in 1984 paid for 50 bags of Nitrophos and the second loan paid for 60 bags for 26 members. The fertiliser supply was collectively brought to the valley and enabled the Village Organisation to save Rs.300 which they would not have been able to do had they brought the fertiliser individually. Risht has specialists in livestock and plant protection trained by AKRSP in Gilgit. The plant protection specialist has not been used very much by the villagers. The livestock trainee, on the other hand, has treated 79 cattle and 715 goats and sheep. He has recovered his remuneration and Rs.135 in vaccine costs . The Villagers have also made use of AKRSP's programme of input supplies to plant saplings in the village for the first time.

(iii). The Internal Dynamics:

The villagers are hoping to develop the additional land which the irrigation channel will help to cultivate over a five year period. The method of land development adopted by the people is an interesting variant of the collective principle being adopted by the people elsewhere in the area. In view of individual ownership of resources, the collective concept is used only where it is not likely to infringe on individual property rights and in tasks where collective effort will expedite development and reduce transaction costs. Each household takes turns in sending someone to gaurd the command area. The wall around a section of the newly irrigated land is being constructed collectively. Villagers work on it free and take turns doing so. Another aspect of collective development is the resolution of the village residents to develop an additional 35 hectares of new land

which is being irrigated by a second irrigation channel which the people constructed on their own initiative after the completion of the first AKRSP channel. The villagers did not request a loan for this channel but decided to work on it free and later divide the land equally according to the traditional custom. Admittedly, this land was easier to develop than the first but prior to AKRSP's intervention the villagers had no plans for developing it.

The village records indicate that the Village Organisation does not hold regular weekly meetings and meets only once a month. The average attendance at these meetings is 56%. Both the office bearers of the Organisation are widely respected for their honesty and dedication. The voluntary contribution of their services for the community has strong roots in the Ismailia tradition of honorary work for the "Jamat". The village is entirely Ismailia and thus the work of the Village Organisation is also seen as being sanctioned by the Imam.

2. The Chatorkhand Case Study:

(i).The Statistical Profile:

Chatorkhand is situated about 50 miles from Gilgit in the Ishkoman valley. A sporadic transport system connects the village with Gilgit. The usual journey time by jeep takes slightly over four hours. There are 170 households in the village with an average holding of about 2.5 hectares. Situated at an altitude of 7000 ft Chatorkhand is a single crop area. Its main crops are maize, wheat and barley. The village produces a surplus of fruits like mulberries and apricots. In addition, a large variety of vegetables are grown for home consumption. In terms of livestock, each family owns, on an average, about 8 ovine animals and 2 cattle. The number of animals in a village is an indication of the fodder growing and buying

capacity of the village for the winter months.

(ii). The AKRSP Intervention:

The project which the village selected as its first priority was a protective spur. However, this could not be undertaken due to technical reasons and the villagers then opted for their second choice which was an irrigation channel. Work on the 17,400 ft channel was started in February 1984 and completed by April of the same year. From among the 170 households in the village between 80 to 90 have land in the command area of the new channel. Some members had planted about 300 trees in this area. The Village Organisation is contemplating other collective land development schemes as well as a collective marketing project. The Village Organisation has submitted a loan request for the purchase of a tractor and thresher. The Organisation has made elaborate plans for the use and maintenance of these machines. The villagers are planning to plough back the profits from the operation of these machines. The equity capital thus generated will be used to repay the principal and the interest on the tractor loan. AKRSP's component of credit has enabled the Village Organisation members to increase their use of fertiliser. About 200 villagers have bought a total of 320 bags. The members have pointed out that their straw yields have appreciably

increased with fertiliser use and they do not have to buy any from outside anymore. The Livestock specialist has vaccinated 2,363 animals and treated another 55. He has earned Rs.900 for his services in addition to recovering the cost of medicines and vaccines. The plant protection expert has sprayed 250 trees and has recovered the cost of insecticides.

By July 1985 the Village Organisation had 192 members and its total equity

capital was Rs.77,500. A cursory look at their records revealed that the Village Organisation has had regular weekly meetings with an attendance of between 80 to 100 at each session. The average saving at each session is about Rs. 200. Chatorkhand also has formed a women's Organisation with 46 members.

(iii). The Internal Dynamics:

The Village is predominantly Ismaili but has a sizeable Sunni population. Sectarian identity is important in the village. AKRSP is percieved as an Ismaili institution. Initially, the Sunnis also participated in the Organisation's activities but some of them used the forum of a missionary group, the Ulama-e-Ikram, to declare the boycott of the Village Organisation. Under pressure most of the sunnis left the cooperative and now only two remain members.

A local Ismaili religious leader, the Pir of Chatorkhand, is revered in the area and wields real authority in substantive village matters. The villagers do not take any step without his approval. The Pir has done some good work for his community like setting up a grain bank. The Pir owns considerable land in many surrounding villages and is the largest landholder in the valley. Some of his land is managed for him by sharecroppers who give two parts of the threshed crop to the Pir and keep one part for themselves. The Pir is not reputed to blatantly exploit the people but he does use his religio-political influence to his economic advantage. His dominant influence also pervades the functioning of the Village Organisation.

There are about 10 to 12 landless people in Chatorkhand. They earn their livlihood by working as wage labourers. The views of these people

about the Village Organisation were not specifically elicited. Those present during informal discussions with the villagers indicated that most of these people were members of the Organisation. Their main interest was the saving aspect of the programme and participation in future projects which did not directly hinge on ownership of land.

The Village Organisation has expanded the scope of its jurisdiction beyond that connected with the AKRSP package. Its authority in adjudicating on village disputes derives from the consensus of its members. Recently, its president took matters firmly in his hands in imposing sanctions on a group of villagers who had defied an age old village custom on animal grazing. However, the Pir of Chatorkhand is still the most important activist in the village. At present, the Pir's own economic ambitions are not in conflict with those of the members of the cooperative. However, this situation may not continue for long. The Pir and a relative are the only two who own tractors in the village. In addition, the pir owns a thresher which he rents out to the villagers. This is liable to put him in a competitive position with the Organisation which has plans to purchase this equipment in the near future. Either the old authority structures will pervail or they will begin to erode in the face of these new emerging economic relationships.

3. The Gupis Case Study:

(i). The Statistical Profile:

Gupis is about 68 miles from Gilgit. It takes five hours to reach the village by the precarious jeep road. There are approximately 270 households in the village and its adjoining hamlets of Hamardas, Dadoshot and Durote. The average cultivated area is about 1.5 hectares per farm household. Situated at an altitude of about 7,500 feet it is a single crop

area when wheat is grown and double cropped with barley and maize. Its principal crops are maize, barley and wheat. The village has a surplus of fruits like mulberry, apricots and walnuts. A majority of the villagers are of the Ismaili faith and about 5% belong to the Sunni sect.

(ii). The AKRSP Intervention:

The villagers selected the completion of the Dodoshur irrigation channel which would benefit 180 households. It was estimated that the project would cost Rs. 172,000 and would help bring an additional 81 hectares under irrigation. Its annual maintenance cost was computed as Rs. 19,216. This project had been initiated under the Local Bodies and Rural development (LB & RD) department but it could not be completed because of the department's method of financial disbursements. Payments of the LB & RD were made not on the basis of project costs but were paid instead to Union Council members. This meant, in practise, that payments were piecemeal and far between. The first payment for the project had been sanctioned in 1964 and periodic disbursements were paid since then. However, before subsequent payments were recieved the work done previously would be obliterated by landslides and the rigours of the weather. AKRSP presented the first installment for the project in February 1983 and the Village Organisation started work on it in April of the same year. On their own initiative, the villagers decided to extend the length of the channel much beyond that agreed with AKRSP. It seems that the villagers did this because they felt that the grant given by AKRSP would alow them to undertake this extra work. In fact, initially there was a resolve to sacrifice on labour payments and complete the work. However, landslides repeatedly damaged sections of the channel before any water could flow through and it defeated the members resolve to work without any compensation. In the ensuing debate the villagers blamed the Village

Organisation's office bearers who, in turn, blamed the labourers for not abiding by the specifications. In July 1985 work was restarted on the channel with the expectation that it would be completed shortly.

The land in the command area has been equally divided among 180 housholds each of which will recieve an additional 0.45 hectares. This new land is unsuitable for crop production. The villagers plan to use it for the plantation of lucerne and the fast growing poplar tree. The villagers have responded to AKRSP's suggestion of collective land development with the assertion that it may not succeed due to the scattered nature of holdings.

(iii). The Internal Dynamics:

The social structure of the village can be broadly categorized into three classes: (i) the Raja's family (ii) the settled landholders and (iii) the landless pathan traders. The latter came here about fifteen or sixteen years ago and are still percieved as outsiders in the area. The Pathan traders have only marginally been successful in circumventing a village custom which prohibits landsales to outsiders. In exceptional cases, the villagers do sell but only after first offering it to a family member or a settled landholder. There are about fifteen such households in Gupis.

The reactions of each of these groups to the Village Organisation are different. The traditional ruler's family has limited influence in the village and since most of the male members of the family are engaged in employment outside the village they have distanced themselves from the day to day workings of the Organisation. The landless Pathan traders are not members of the Organisation as they percieve that most of its activities

are centered around land. Two of these traders were recently successful in purchasing land and feel more inclined to consider participation in the Organisation's activities. A majority of the villagers are settled landholders and from among these 278 are members of the Village Organisation with a combined equity capital of Rs.17,600. In December 1983 the Village Organisation split into four smaller organisations on the basis of the surrounding hamlets; Gupis centre, Dudoshote, Hamardas and Damote

A close scrutiny of the minutes register of the Organisation does not reveal any discernible pattern of attendance at village meetings. Most of the decisions which emerged from the Organisation were regarding the irrigation channel. These deliberations included discussions on the daily rate of labour payments and matters regarding the fertiliser requirements of the village. In one case, the forum of the Organisation was used to adjudicate on a matter not related to AKRSP. The village members decided to impose a fine on any one bringing wood from a certain section of the village. This decision was impressive not so much because of the wood that would be saved by it but because of the peoples changing perceptions of the Organisation's role. For the first time, the village cooperative was being used to adjudicate on a matter not related to an AKRSP scheme. When these issues were being discussed the Organisation was meeting much more frequently than stipulated by AKRSP's terms of partnership. Thereafter the Organisation went into hybernation and did not meet for almost eight months until the decision to restart the work on the channel. The experience of Gupis illustrates that the term viability may need to be recast to mean "effective when required". In this sense the Gupis Organisation has indicated that it can overcome the belligerence of its members and resurrect itself when it percieves its task as important.

The Manager of the Gupis Village Organisation has been instrumental in giving direction to it. He is a prominent shopkeeper who plays an active part in local politics and is also a member of the local Union Council. Most of the money which filters into the village for development purposes, whether sanctioned by the Government or AKRSP, is channeled through him. He has a firm control over the development of the village and could easily emerge as a local strongman. He provides the classic example of those who are likely to use the Organisation's forum to enhance their own wealth.

4. The Sherquilla Case Study:

(i). The Statistical Profile:

Sherquilla lies to the north-west of Gilgit on a highly unstable road subject to frequent landslides. The village extends over the three hamlets of Rashmal, Umphree and Sherquilla centre. There are altogether, 450 households in the village. Landholdings, in the village, range from 0.20 hectares to over 5.06 hectares. The average farmholding is about 0.60 hectares scattered in two or three plots across the village. The village has a surplus in fruits some of which it processes locally for sale in Gilgit. In recent years, this village has had greater outside exposure through the proliferation of a network of cooperative societies designed chiefly to extend credit to village entrepreneurs. The presence of a middle level girls school with teachers imported from cosmopolitan Karachi has had its impact on the village through its women.

The state of agriculture in this village is evidenced by their mercantilist conception that their redemption lies in trade. In buying goods from outside the village and selling them to the villagers. Among their chief imports is wheat, edible oils, tea sugar, kerosine, cloth and

gasoline. Just after harvest, full with a sense of their prosperity farmers start selling their crops to the shopkeepers in barter for these imports. With the onset of winter, the farmers sometimes have to buy back their crops at higher prices. The result is their perpetual indebtedness to the shopkeepers. It is not being suggested that the farmers are irrational or that they do not incorporate the learning process into their decision making but that their decisions have to be understood in terms of their value system. A very high value is placed on the consumption of these goods and the farmers may well believe that the higher imputed price they pay is justified in terms of their increased satisfaction. Moreover, there is a certain prestige associated in owning a shop and the shopkeeper may consider this satisfaction in computing benefits from being a shopkeeper.

The more interesting question is how do these people sustain this one sided trade. Part of the answer is provided by the elaborate network of cooperatives in this village. There is the Multipurpose Society, the Agricultural Development Cooperative and the Sherquilla transport society among others. Together these organisations have an equity and share capital of Rs. 598,000. In some cases, these societies have recieved loans at 9% interest and given these to villagers at 12% for development and other purposes. The repayment record of the village is unblemished. This is partly due to the fact that the villagers have devised an ingeneous system of borrowing from one society when the loan of another becomes due. Moreover, the cooperative profits are shared by the members and as such, they are careful not to default.

(ii) The AKRSP Intervention:

The project chosen by the farmers of Sherquilla was an irrigation

channel. Within three months of recieving the grant this project was completed. In November 1984, Sherquilla recieved a loan for land development. It was the first village to recieve such a loan. Each member was given Rs. 2000 for a period of five years. The repayment of the principal would begin in the third year and the loan had to be fully repaid by the fifth year.

In extending this loan AKRSP had hoped that the villagers would work collectively. In fact, collective work was an explicit condition of the AKRSP terms of partnership. The objective was to inspire collective development and responsibility while preserving individual property rights. In Sherquilla, collective work has been sporadic. Most people have done the work individually. This abondoning of the collective principal was due to the nature of the work. The villagers of Sherquilla opted to develop and improve the land they were presently inhabiting rather than the large tract of undivided land in which the people had equal shares. In practise, the collective principle was not feasible due to the scattered nature of holdings and the difference in indivdual farmer's priorities in developing land.

(iii) The Internal Dynamics:

As soon as the work on the irrigation channel was completed the Village Organisation of Sherquilla divided into three smaller organisations on the basis of the three hamlets of the village (Centre, Umphree and Rashmal). The performance of each of these is somewhat different. Leadership in these organisations has had an important bearing on their functioning. The manager of the Centre organisation is a local shopkeeper who has had more outside exposure than the average villager and he has used this experience to help in the consolidation of the

Organisation. The Umphree manager is a local contractor and is involved in an internal dispute regarding the collective purchase of some implements for land development. As such, the Village Organisation has not had a meeting for several months. The Rashmal Organisation has changed the weekly meeting schedule to once a month.

5. The Shahtote Case Study:

(i) The Statistical Profile:

Shahtote is one of the poorest villages of the Northern Areas. The village is located on the Skardu road about 30 kilometres off the Karakorum Highway. There are 19 households in the village and their average landholding is about 0.10 hectares. The area is double cropped. One field is reserved for wheat and maize while another which contains the house, has a plot for some vegetables and a few fruit trees. Annexure IV.4. gives the cropping pattern.

When the people of this village first came here about 150 years ago, rearing livestock was their main occupation. Their animals could meet most of their frugal food requirements. The animals were both friend and foe as they were competing with their owners for scarce land. In order to diffuse this competition, the animals were taken to the grazing lands on mountain tops and kept there as long as the weather permitted. Some measure of relief was provided during the construction of the road which offered an outside source of employment. Moreover, the village has been economically dependent on the nearby village of Sassi which is relatively prosperous. Sassi offers both employment possibilities as well as a market for forest wood which the Shahtote villagers collect for sale.

(ii) The AKRSP Intervention:

The Villagers of Shahtote identified the widening and extension of an irrigation channel which would help irrigate about 38 hectares of uncultivated land in the Bromdidas. The estimated cost of the project was Rs. 105,487 and its negotiated cost was Rs. 90,967. Work on the project started in December 1984 and was under progress in August 1985. Work on the channel had considerably slowed down after the payment of the third instalment. The people refuse to work free and in order to compensate them for their labour the Manager of the Organisation issues them creditor notes allowing them to buy supplies from the local shopkeepers.

A livestock specialist has been trained from the village. Every one in the village owns one or two animals and all of them were vaccinated this year. The VO has recieved Rs. 15,424 as a short-term fertiliser loan, Rs. 2000 for saplings and another Rs. 1200 for fodder seed.

(iii) The Internal Dynamics:

The Village Organisation has saved an equity capital of Rs 4991. This figure represents 9% of the grant recieved so far. (The final installment is paid only after the project is completed.) The attendance at meetings is very low as most villagers are away cutting wood in the forest or earning wage labour by working on the Dassu road. The VO has appointed a **chokidar** for gaurding the channel. As remuneration he will recieve one maund of wheat or maize annually from each household. It is his responsibility to alert the village in case of damage to the channel. Once he has done this, those who do not come to help repair the channel will be fined Rs. 30 each.

AKRSP engineers helped prepare an elaborate five year plan for Shahtote (Annexure IV.5). The plan was prepared in consultation with the VO and reads as if it was made for one large farm. The additional land made potentially cultivable by the provision of irrigation water has been divided equally among 25 households including those who did not previously own land in the village (Annexure IV.6). Thus, in practise these collective plans have been put aside and each villager is hoping to grow, in his plot, a mix of crops, fodder and trees. The villagers perception of collective is more akin to simultaneous development.

Figure IV.1

RISHT CROPPING PATTERN

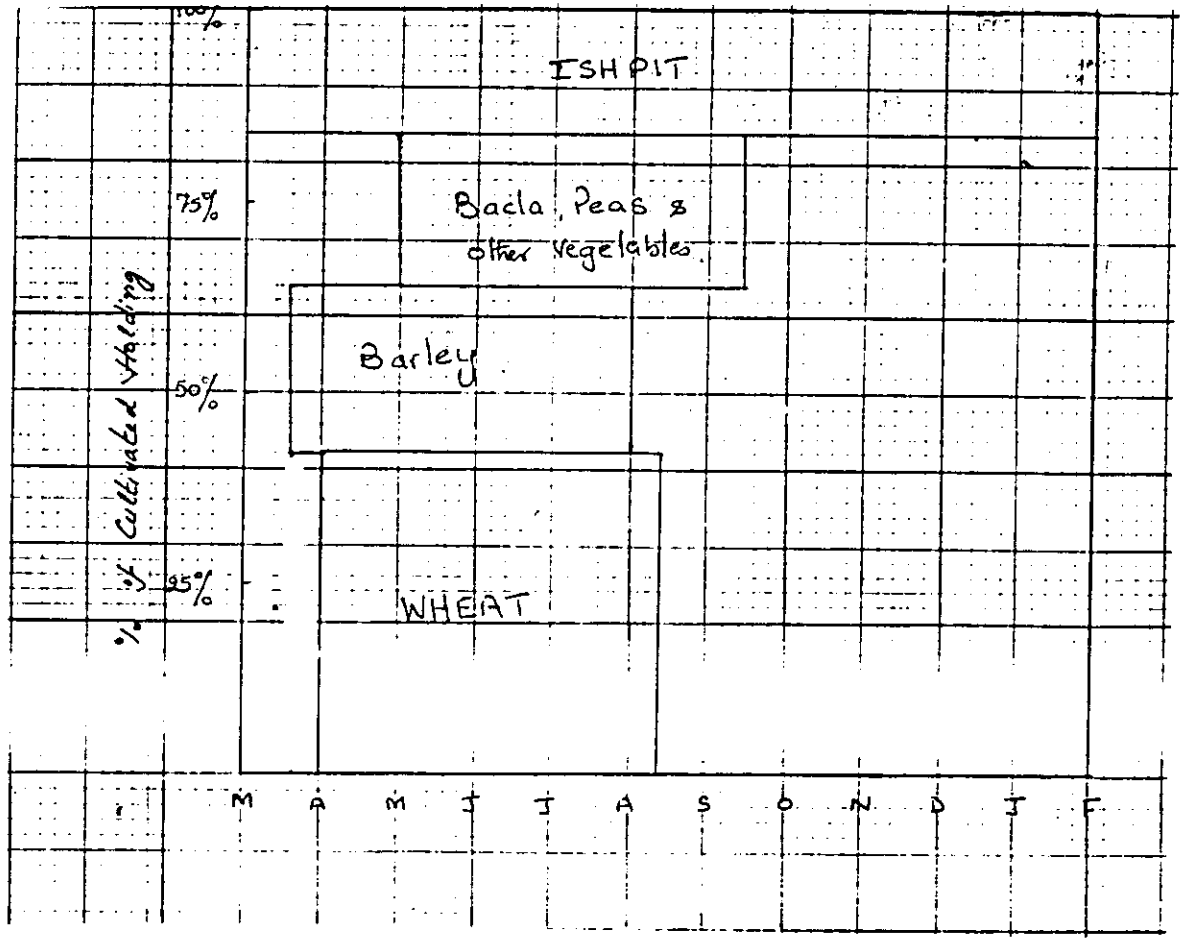


Figure IV.2

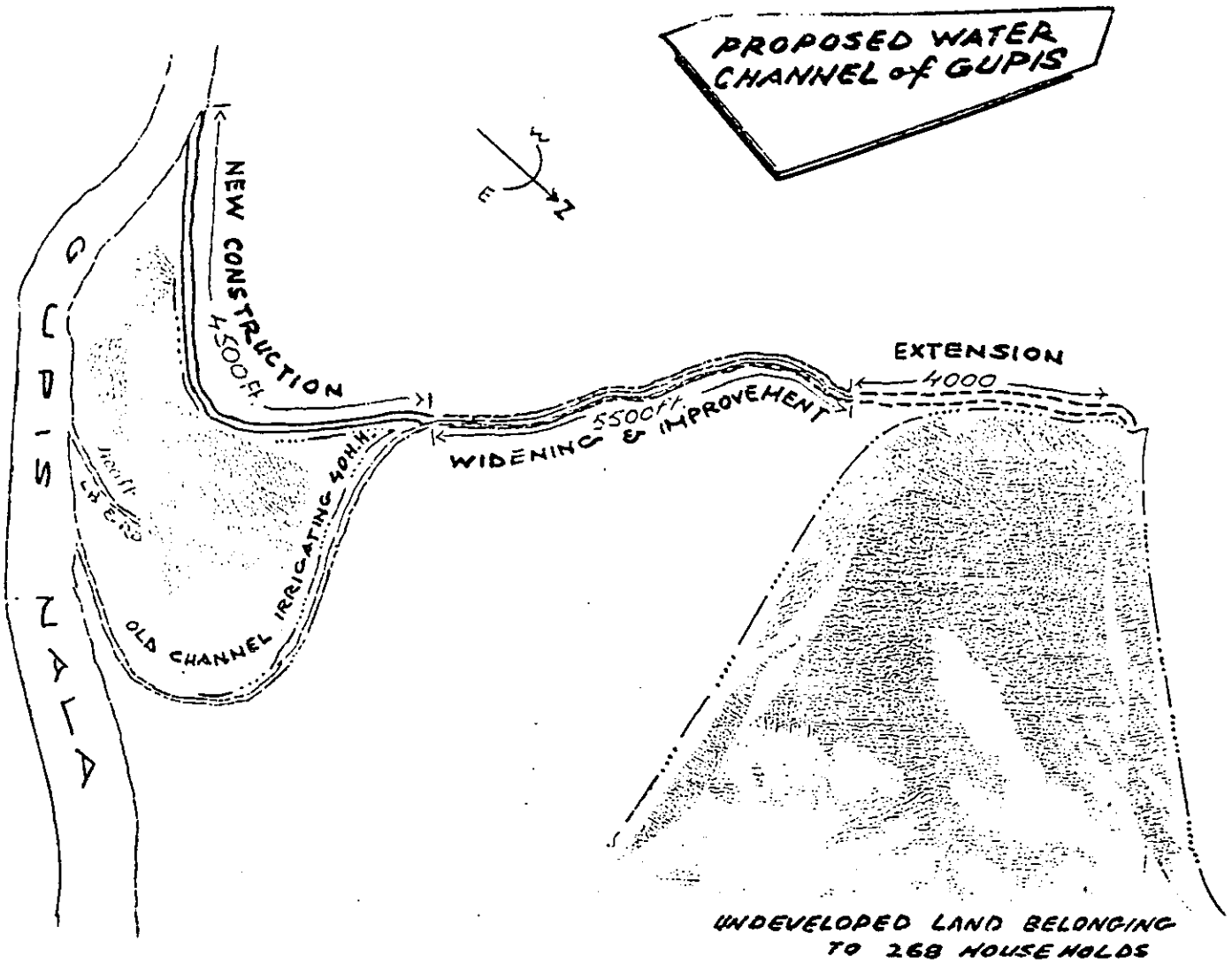

PROPOSED WATER CHANNEL of GUPIS
NEW CONSTRUCTION
4500ft.
GUPIS NALA
EXTENSION
4000
5500ft.
WIDENING & IMPROVEMENT
OLD CHANNEL IRRIGATING 40H.H.
UNDEVELOPED LAND BELONGING TO 268 HOUSEHOLDS

Figure IV.3

SHERQUILLA

CROPPING PATTERN

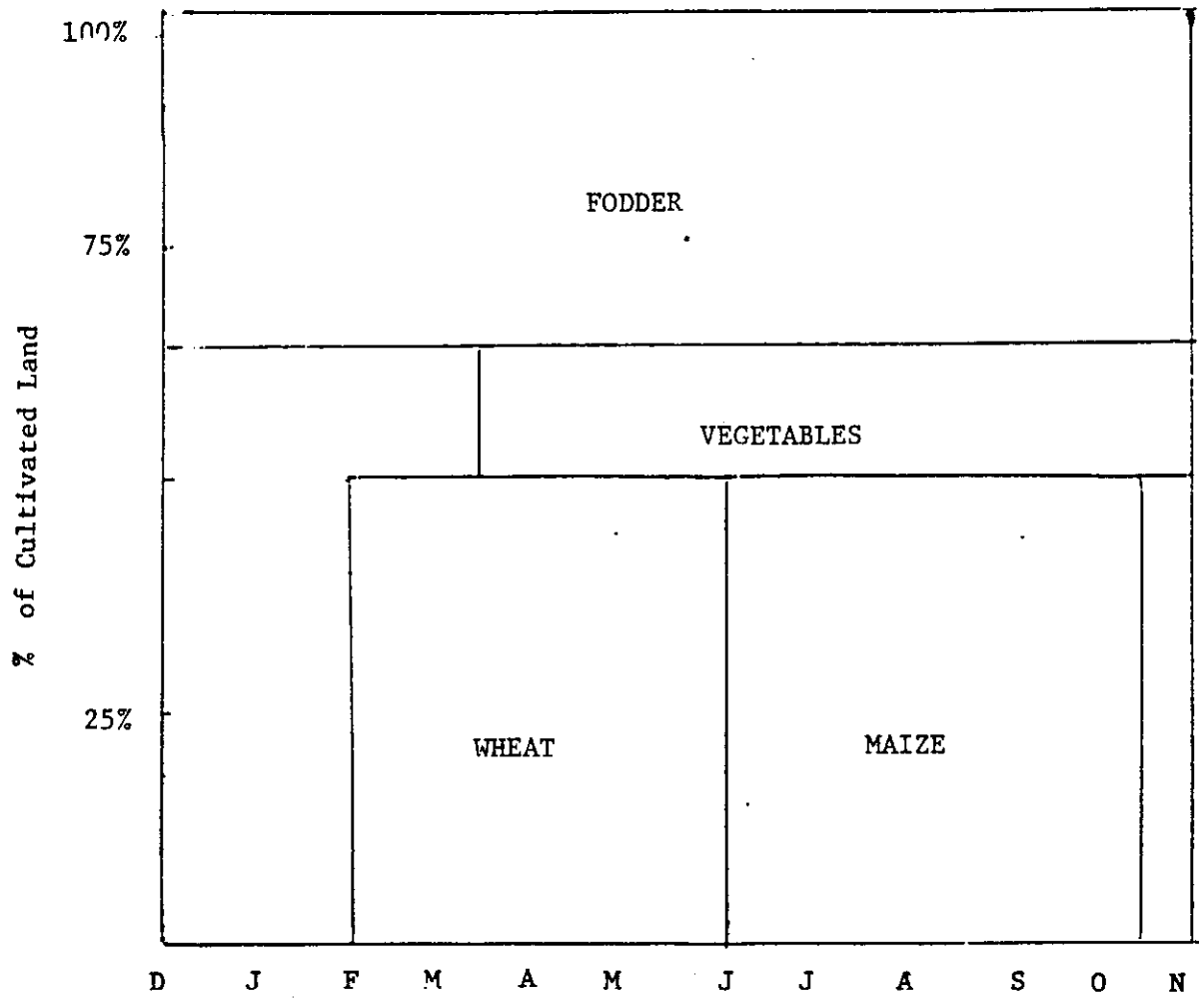


Figure IV.4

SHAHTOTE

CROPPING PATTERN

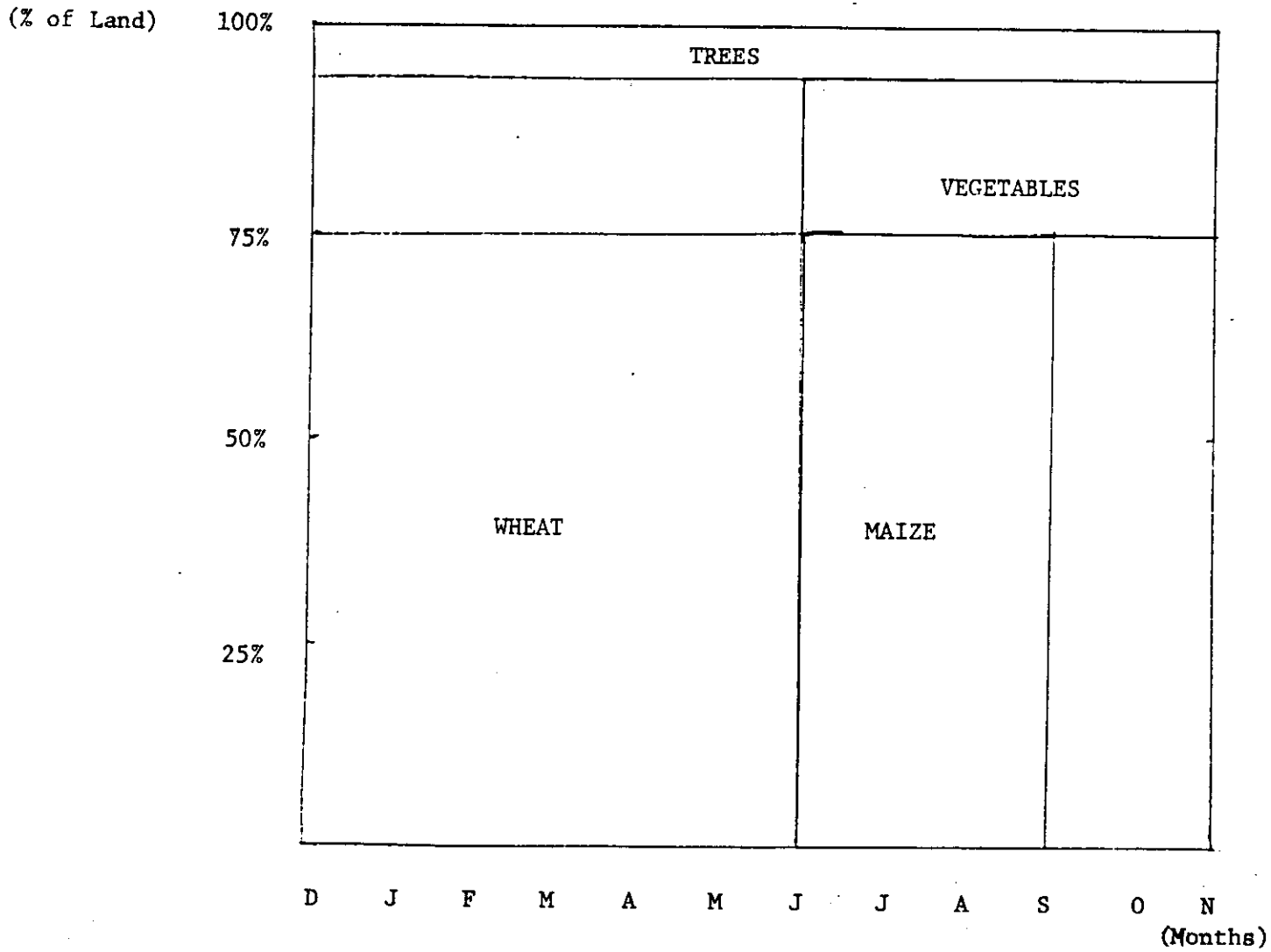
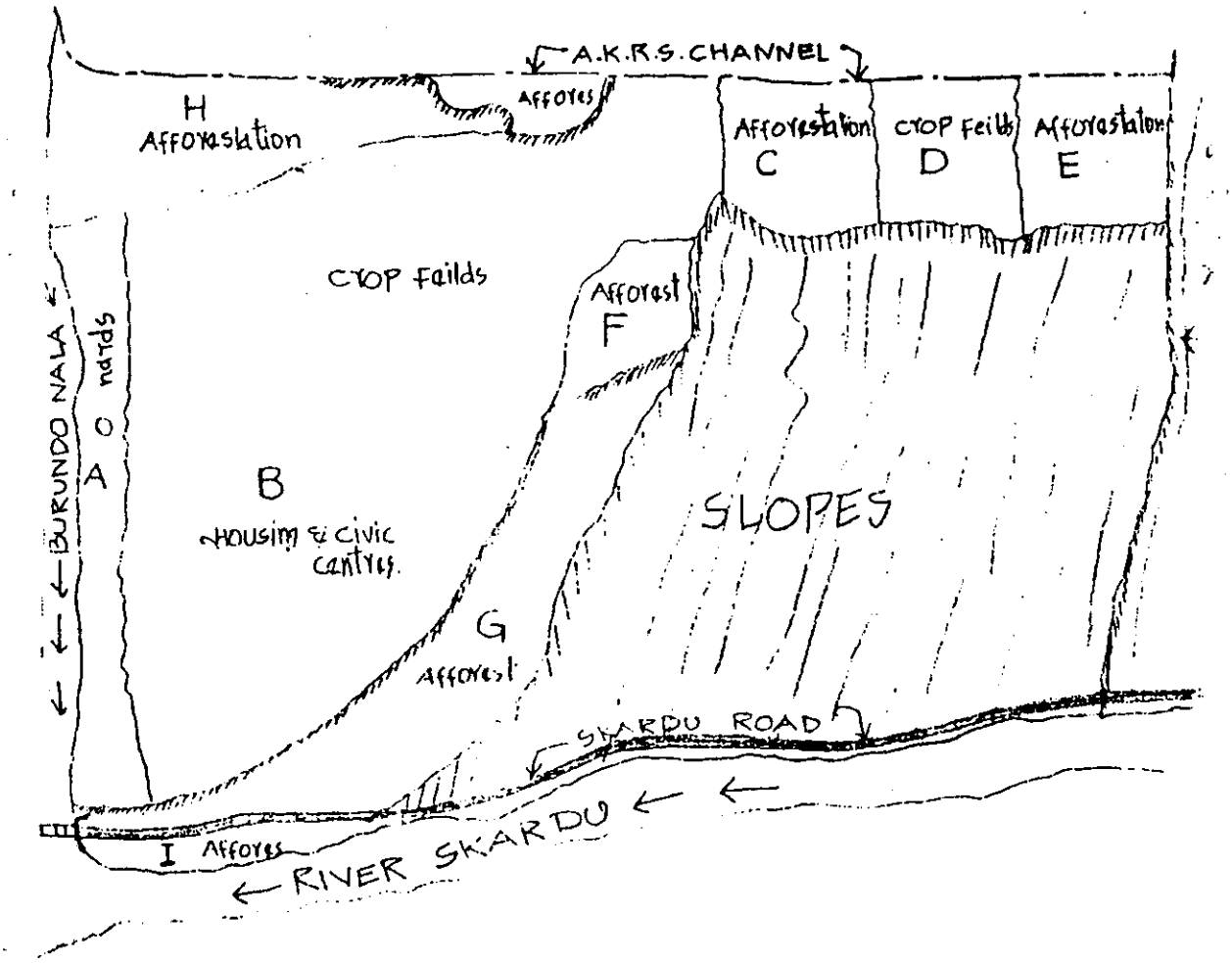


Figure IV.5

VILLAGE PLAN OF SHAHTOTE

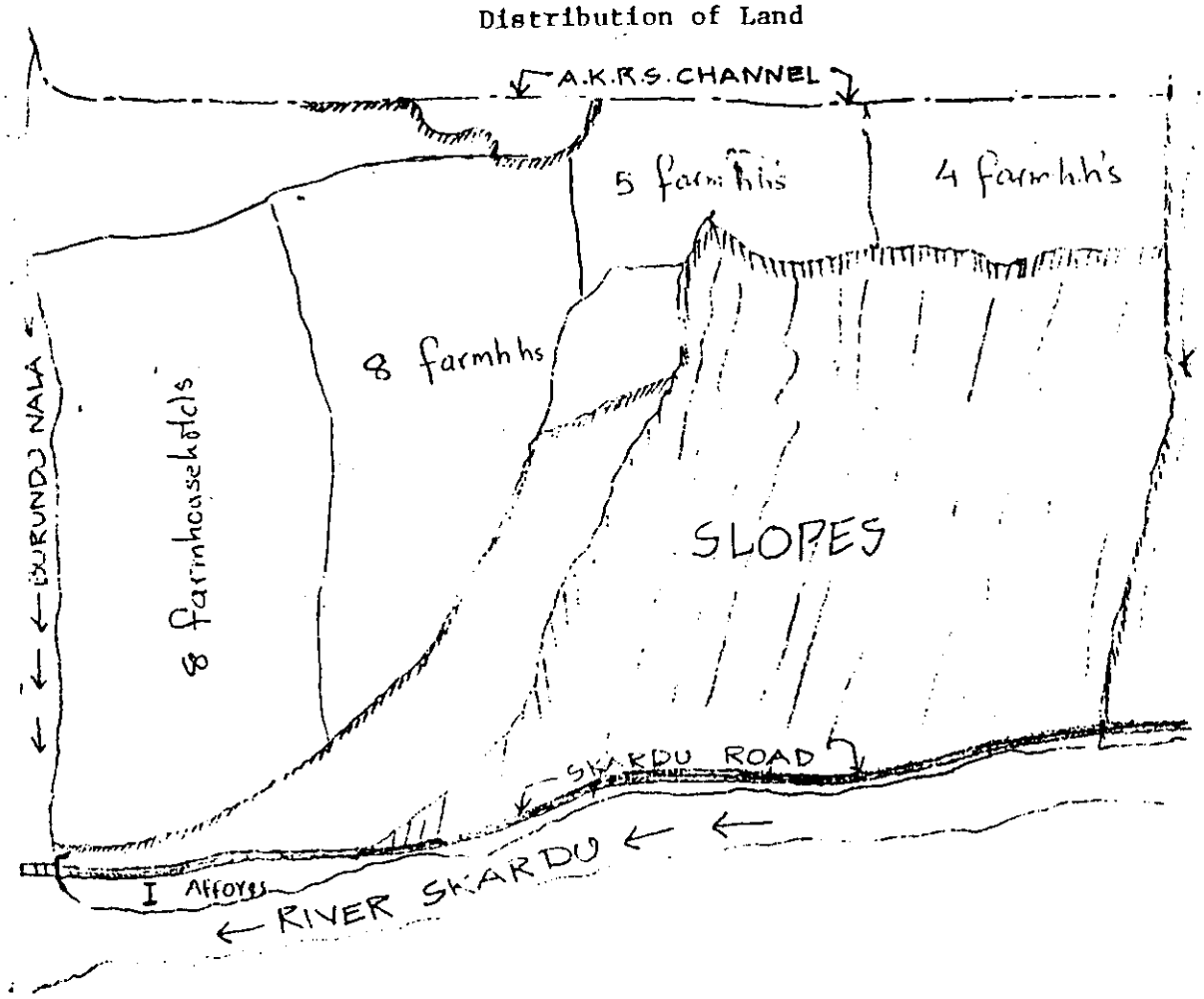


	LAND
A =	75 Kanals
B =	400 Kanals
C =	45 Kanals
D =	45 Kanals
E =	45 Kanals
F =	25 Kanals
G =	60 Kanals
H =	50 Kanals
I =	15 Kanals
TOTAL =	760 Kanals

Figure IV.6

VILLAGE PLAN OF SHAHTOTE

Distribution of Land



LAND

A	=	75 Kanals
B	=	400 Kanals
C	=	45 Kanals
D	=	45 Kanals
E	=	45 Kanals
F	=	25 Kanals
G	=	60 Kanals
H	=	50 Kanals
I	=	15 Kanals
TOTAL	=	760 Kanals

CHAPTER V

1.Productive Physical Infrastructure:

Productivity:

Among the Productive Physical Infrastructure Projects (PPI) identified in the Gilgit district by March 1985, irrigation channels were just over 50% of the total projects. A complete list of projects is given in Table V.1. In terms of benefits irrigation channels seem to be the most significant at this stage of the project. On an average, these channels have the potential for irrigating an additional 161 hectares of land in each village. This would, in most villages, double existing land holdings. Table V.4 gives land-man ratios for both developed and undeveloped land. In assessing increases in incomes the analysis would need to be disaggregated to reflect differences in cropping patterns, altitude, soil variability and ease of development. The full impact on incomes is likely to be realized only after this land is developed for cultivation. This is an expensive and labour intensive activity which is likely to be completed in the next 3 to 5 year period. However, Local varieties of fodder can often be grown on new land within the first year.

Link roads connecting villages to the major road in each valley constitute 18% of total projects identified by March 1985. Benefits of road projects are more immediate than those from irrigation channels, but even these require some complementary investments in improved transport facilities before factor and product markets emerge to take advantage of them. Flood protection works form 16% of the identified projects. Benefits from these are immediate but more concentrated among

those along the river banks. It is difficult to quantify benefits from improved flood control. Sedimentation tanks prevent soil depletion and in the long run may even improve soil fertility.

Equitability:

The available data indicates that the average developed landholding in the villages under study ranges from 0.41 hectares to 1.26 hectares. Undeveloped land holdings varied from 0.39 hectares to 1.12 hectares . New land is equally divided among all households in a village. This has been a principal way by which some of the landless have acquired land in the area. Land markets are virtually non-existent and selling land is still very uncommon. For the sample under consideration the data indicates that the distribution of land becomes somewhat less skewed when undeveloped land is included in total holdings (Table V.2). The distribution of land per capita is even less skewed and the gap narrows when per capita developed and undeveloped land is compared with total land per household (Table V.4). It seems reasonable to hypothesize that this aspect of the programme is byitself, unlikely to widen the existing difference in land holdings.

Sustainability:

There are two aspects of PPI and land development projects in which the role of the Village Organisation will be assessed. (i) The construction phase and (ii) the maintenance and use phase. In the construction phase the Village Organisation is vital. It would not be feasible for individuals to undertake the construction of these projects on thier own. Individual cost-benefit calculations are unlikely to internalize the social benefits which would be generated by their construction of these projects at the individual level. This

means that the activity will only be feasible if provided by the Government which would base its decisions on a social cost-benefit analysis or if undertaken on a collective basis by the local people. Mancur Olson argues that,"each individual in a group may place a different value upon the collective good wanted by his group. Each group wanting a collective good faces a different cost function."[1] He suggests that differential cost and benefit considerations will make agreement among group members difficult. He concludes his analysis by suggesting that, "unless the number of individuals in a group is quite small, or unless there is coercion or some other special device to make individuals act in their common interest, rational, self-interested individuals will not act to achieve their common or group interests."[2] In the case of small groups he feels that only sub-optimal levels of the good will be provided. The main factor leading Olson to this conclusion was the intractable free-rider issue. Olson does not consider the question of exclusion costs in his analysis, but makes the implicit assumption that all collective goods inherently suffer from the problem of high exclusion costs.

To begin with, The Village Organisation's are not very large. Their average membership is about 80 and the groups are small and cohesive enough to realize their mutual interdependence. In answer to some of his analysis it is suggested that (i) not all cooperative activities have the free rider problem. Excluding people from benefits does not always entail high costs. Where these costs are low, effective solutions can be devised. In the case of irrigation water, land development, and road use the problem may not even be serious. (ii) Second, where such costs exist the villagers have a well developed traditional system of sanctions for coping with them. The villagers

in the Northern Areas have for their development, relied heavily on the concept of "Common property". This led them to devise a system of effective use rights and sanctions against those who attempted to overgraze their animals at the expense of the village. The well developed mechanism for dividing new land equally among existing households can be better understood as a means of dealing with the problems of exclusion.

Some of Olson's analysis is relevant. For instance, his observation that large groups will not undertake a collective activity in the absence of additional inducements may be pertinent to the issue of labour payments paid by AKRSP for the construction of these projects. Prior to AKRSP's arrival, and in the absence of specific incentives, the villagers were not undertaking these actvities although, it was seemingly in their interest to do so. Moreover, where the Village Organisations exhaust the labour componenet of the grant before the work is completed it is difficult to induce people to work without payment. Thus, in the final stages of the project, work slows down considerably. Admittedly, this is more of a problem in large villages than it is in the smaller ones. Gupis is one case where events can be explained by Olson's analysis and where the Village Organisation eventually split into four smaller groups. If Olson is correct, one will see very few large Village Organisation's survive.

Part of the explanation might be provided by Olson, but the other part is that it was not very profitable to undertake such actvities in the absence of complementary inputs. AKRSP provided a package of incentives which made them profitable. Secondly, like Olson, most traditional self-help programs assumed that local people should provide

free labour as the activity they were undertaking was designed to benefit them. Such reasoning ignores cost considerations by assuming that the opportunity cost of rural labour is close to zero. Even where wage labour is not available on a daily basis, villagers find productive activities like wood gathering for sale, etc. AKRSP has modified its policy on labour payments by not paying the entire estimated labour cost and negotiating on this issue with the Village Organisation. In practise this would mean that those who decide to work for less than the market wage would be subsidizing others who will eventually use the project. In some cases, (Risht) the Village Organisation is aware of the implicit subsidy and they fine those villagers who do not participate in the work. This aspect of the programme policy has the potential to produce free riders, especially where the villagers are unable to devise effective solutions to cope with the problem.

The social and economic structure in the Northern Areas is in a transition from a system of traditional use rights to a system of market exchange. Institutional theory suggests that, "where bargaining power and information availability are unequal, the move from use to exchange rights often has resulted in a larger class of landless people."[3]To the extent that there is a possibility for this to happen the presence of the Village Organisation is likely to either prevent it or atleast slow down the process by distributing the costs and benefits of bargaining and information gathering more evenly among its members. Alan Schmid observes that differential response and impact to opportunities could have an impact on property ownership. He points out

that, "where traditional use rights still exist in agriculture, it is a great challenge to institutional design to create a system of rules that allows for mobility, creativity, and innovation and that draws forth extra energy without creating a very unequal income distribution[4]" This would suggest that the Village Organisation will be put under great stress as factor and product markets expand creating investment opportunities. Individual members may have an incentive to bypass the Village Organisation if their cost and benefit considerations suggest that individual action will be more profitable.

The equity issue is also important in the land development component of the program. In principal, villagers have adopted variants of the collective approach proposed by AKRSP. The Programme policy was formulated keeping in view its concerns about both equity and productivity. Thus medium and long term development loans were to be advanced to only those Village Organisations which resolved to work on the land together and develop it as a large farm. AKRSP felt that this would help farmers take advantage of scale economies in the use of inputs and achieve substantial savings in transaction costs. In practise, Village Organisations have interpreted collective development to mean different things. Some have used it to mean collective as simultaneous, others have used it selectively to apply to aspects of land development management such as seed and fertiliser supply and maintenance issues. None have used the concept as envisaged by AKRSP. Thus, the Programme had to revise its earlier definition of the concept. This has happened because existing property rights are fairly well defined and individuals would prefer to develop their land individually on the basis of their individual initiative, individual perceptions about risk and labour availability. The examples of

Shahtote, Gupis and Risht are illustrative.[5] Schmid suggests this may tend to create a relatively unequal income distribution if individuals choose not to go through the village cooperative.

2. Extension and Input supplies:

Profitability:

Specifically, the programs discussed under this head are para-veterinary training, supply of chemical fertilizer, mechanical technologies,(tractor, and thresher) insecticides and vaccines. The benefits of para-veterinary training are difficult to quantify as they are mostly in the form of prevention of losses from livestock disease. Nevertheless, these benefits are substantial as epedemics are quite frequent in Gilgit villages. Farmers have recieved Nitrophos, Calcium Nitrate and Urea. AKRSP is coordinating the timely supply of these inputs as they are not generally available. Problems in supply are likely to continue until the communication infrastructure between Gilgit and the villages is improved. The use of the tractor and thresher have become popular in the area since the 1980's. Although, the adoption of these technologies has reached a ceiling indicating that profitability in expanding their use may have declined due to imports of subsidized wheat from other parts of the country. Table V.6 gives details of fertilizer distributed during the second quarter of 1985 indicating that substantial quantities are used. Table v.7 and V.8 give details of pesticides, vaccines and medicines procured by the Village Organisation.

Equitability:

Benefits from the extension and supply component of the programme seem to be proportional to the existing ownership of resources. Table v.9

gives ownership patterns for both ovine and bovine animals. On an average each household's ownership of livestock ranges from 2.8 to 12.4. This range narrows from 0.4 to 1.4 (Table V.10) when livestock per capita is considered.

Sustainability:

The Village Organisation has played a central role in ensuring the success of various aspects of the extension and supplies component of the programme in several ways. In training a para-veterinary for the village the Village Organisation is helping in the following aspects; (i) selection of the trainee and (ii) ensuring that the trainee recieves a fee for his services. In most cases selection of a trainee from the village is difficult because it is not easy for an outsider to assess the motivations of the trainee. In the UNDP/FAO programme one principal setback to training villagers was that very few remained in the village after the training. AKRSP has tried to avoid this problem by letting the Village Organisation assess who has an aptitude for the job and who is likely to stay back. Once the trainee is well established in the village, in the sense that he is able to demonstrate his usefulness, the villagers will probably be more forthcoming in paying his fees. Once this happens, the need for the Village Organisation, for this aspect of the programme may not be that acute.

In the supply of inputs, such as fertilizer and insecticides farmers have an incentive to form cooperatives for two reasons: (i) reduction in transaction costs due to the fragmentation of factor markets and (ii) to more effectively use new input whose " characteristics are difficult to determine ex ante."[6] In applying a transaction cost approach to studying farmers incentives to take collective action via

cooperatives, John Staatz describes the latter as stemming from the farmer's desire to avoid externalities. By externalities Staatz means costs which could be imposed on the farmer by the input supplier due to poor input quality (the externality principle).

Substantial economies of scale have been realized by the collective delivery of input supplies through the Village Organisation. On the supply side, fertilizer and insecticide dealers in the central markets have agreed to supply inputs to the farflung villages of the Northern Areas only because collective orders entail substantial reductions in transactions costs. It would be prohibitively expensive to provide these inputs on a smaller scale, especially from Gilgit to the villages due to the skeletal communication facilities. The importance of timely fertilizer, insecticide and sapling delivery is likely to lead to this activity being an important part of the Village Organisation's activities. Table V.6 to V.8 give details of input distribution organized by the Village Organisation.

An increasingly important role for the Village Organisation is expected to be the purchase and management of tractors and threshers on a collective basis. Several Village Organisation have applied for loans from AKRSP to help them finance these purchases. It is difficult to predict the outcome of these ventures. In cases where the Village Organisation is able to provide the use of these machines at reduced rates there will be benefits for all. However, the maintenance and operation of these mechanical technologies is not very easy and the success of this component is likely to depend on the Village Organisation's ability to compete with existing private owners. In one case (Chatorkhand) the Village Organisation has made elaborate plans

for the use and maintenance of tractors and threshers. These still have to be tested. As long as the input markets remain fragmented there will be a strong incentive to keep this activity collective, thereby, reducing costs and sharing risk.

3.Savings and Credit:

Benefits:

The Village Organisations have taken credit both from AKRSP and commercial banks for a wide variety of activities. This includes credit for fertilizer, tractors and threshers, marketing projects and short and medium term loans for land development. Substantial economies of scale have been realized by transacting through village cooperatives on both the supply and demand side. The savings generated internally in villages have induced latent commercial bank branches to become active and extend their services to remote areas not previously served by them. Prior to the Village Organisation, opening and maintaining small individual accounts generated more work than could be handled by one man incharge of accounts in the entire valley. Moreover, the local manager was never around when the farmer needed money and this discouraged people from depositing their savings in banks. The Village Organisation has one account at the bank. This includes the savings of the entire village. The Village Organisation maintains individual accounts and issues passbooks to its members. This procedure has also enabled the Village Organisation to apply for loans from agricutural development banks. These loans were not accessible to individual farmers due to bank rules regarding a minimum amount which the farmer had to borrow to be elegible. This minimum amount was much larger than the loan requirements of individual farmers and thus hardly any one could make use of it. The Village Organisation is able to make use of

these loans and then divides them up among the members according to their needs. The scope of these activities has grown very rapidly and in the second quarter of 1985 alone, AKRSP advanced Village Organisations in the Gilgit district a loan of Rs.1,906,945 (Table V.12). Similarly loans are being given for other components of the programme package, such as land development, marketing, etc.

The savings of Village Organisations has also grown very rapidly. By the second quarter of 1985 the total equity capital of the Village Organisation's in the Gilgit district had reached Rs.8.7 million. Admitedly, a large part of this savings may have come from the influx of labour payments granted by AKRSP for PPI projects. It is a measure of the villager's confidence in the Village Organisation that their savings is deposited with it. The real test would be for the Village Organisation to devise ways to use these savings productively and to maintain the present growth rate of village savings.

Equitability:

Available data on six villages studied indicates that large farmers generally recieve a larger loan than small farmers (Table V.11). This is due to the fact that the large farmer has a greater need for purchased inputs than the smaller farmer. Thus, the benefits of this component are divided on the basis of existing ownership of resources. It is not clear, at this point, whether internal village dynamics play a role in redistributing some of these benefits among the members. However, there is no reason to believe that this is happening. Savings of each member of the Village Organisation are, in most cases, equal. This is because, in practice, most Village Organisations have adopted the rule that each member will deposit a

fixed amount at each weekly or monthly meeting. In this aspect, the AKRSP intervention is unlikely to disturb the staus-quo ownership. The loan-equity ratio is given in Table V.13.

Sustainability:

Among the central issues in assessing the sustainability of this component of the programme are the following issues; (i) repayment of loans and (ii) the concept of fungibility. In the case of fertilizer the repayment record on loans repayable by the second quarter of 1985 was 92% (Table V.12). Most of the credit for this performance must go to the Village Organisation. Although, the attitude towards debt repayment is an important factor in this performance, the Village Organisation assumes collective reponsibility for repayment of village loans. A credit programme designed with an understanding of farmer's needs and recognition of the fungibility of funds is likely to meet farmer's requirements more realistically than one which is rigid and ignores farmer's priorities. Thus in order to sustain this programme and the Village Organisation, the future policy towards the use of credit will be very important. The Village Organisation will need to be innovative in devicing ways to use its collective savings. This ability will be crucial in helping induce village savings on a continuing basis.

4.Marketing:

Benefits:

A survey of 30 villages, in the Gilgit district, was conducted to determine estimated fruit production and the quantity actually sold. This survey revealed that less than 0.02% of the apricots produced in 1985 were sold . Similarly, only 0.07% of apples, 0.06% of pears, and

17% of grapes produced in these villages were sold (Table V.14.). This gives some indication of the potential pay-off to developing marketing infrastructure in the area. AKRSP has helped provide villagers information of down country central markets, level of competition, short instructional sessons onsorting, grading, packing and picking techniques. In collaboration with the Pakistan Council for Scientific and Industrial Research (PCSIR), AKRSP has arranged demonstrations of sulphering and dehydration techniques.

Equitability:

The ownership of fruit trees is relatively egalitarian, although, those who own more land, typically, own more trees. Several Village Organisations have undertaken marketing programs in the last three years. An aspect of marketing, not generally appreciated, is that it requires specialized skills. In practise, the Village Organisations work through those members who have had some past experience in this field. AKRSP undertakes to train these "marketing specialists" further by arranging information gathering field trips and helping them acquire on the job training. Other members pool their fruits, and profits are divided on the basis of the fruit which each farmer sent to the market.

Sustainability:

There is a tendency in this system for the marketing specialist to assume the role of the "middleman" as his contacts gradually expand and markets become more integrated. There is nothing inherently wrong with this if the middleman does not take advantage of the villagers and assumes marketing risks. In fact, the emergence of a village based marketing agent may be in the long run interest of the village. The Village Organisation could still play a central role in the following

ways;(i) by coordinating the supply of the marketable surplus (ii) by using its countervailing power and (iii) taking advantage of economies of scale in processing, packaging, storing and transporting. John Staatz observes that, " One of the most common justifications for farmer cooperation is that through collective action farmers are able to counterbalance the market power of their trading partners."[7] Staatz further suggests that, "cooperative pooling and the use of contingency pricing will be more prevalent in sub-sectors like fruit and vegetables, where production and prices are more volatile, and other risk-management tools such as the futures market are unavailable, than they will be in sub-sectors like grain, where risk may not be as great and there are alternate ways of using it."[8] Staatz also notes that, "cooperatives will tend to be more prominent in declining markets than in expanding markets because in declining markets the long-term consequences to farmer's trading partners of acting opportunistically are less severe than in expanding markets."[9] This analysis would tend to imply that the Village Organisation's capacity to coordinate the marketing function effectively will be put under severe pressure with the expansion of product and factor markets in Gilgit.

TABLE V. 1

GILGIT DISTRICT

Number of PPI Projects Identified, December 1982 - March 1985

	Project	Gilgit	Hunza	Nagar	Punyal-Ishkoman	Gupis-Yasin	Total
1.	Irrigation Channel	51	48	28	30	69	226
2.	Protective Bunds	6	6	4	13	39	68
3.	Storage Reservoir	6	4	5	3	16	34
4.	Lift Irrigation	5	-	-	-	-	5
5.	Sedimentation Tank	1	1	1	1	-	4
6.	Land Development	4	1	1	2	2	10
7.	Link Road	20	25	12	6	16	79
8.	Bridge	1	3	-	-	2	6
	TOTAL	94	88	51	55	154	432

TABLE V. 2

The Ownership and Distribution of Land (Hectares)

Village	Developed Land Mean	Developed Land Coeff. of Var.	Undeveloped Land Mean	Undeveloped Land Coeff. of Var.	Combined Land* Mean	Combined Land* Coeff. of Var.
Risht						
Passu	1.21	.306	1.12	.500	1.19	.313
Rahimabad	1.04	.443	.63	.729	.95	.412
Sultanabad	.45	.634	1.03	.591	.56	.548
Mohamadabad	.41	.507	.67	.929	.46	.507
Aminabad	.63	.911	.75	1.373	.65	.991
Shahtote						
Gulapur	.75	1.023	.76	1.079	.75	1.013
Thingdas	.96	.595	.39	.842	.85	.583
Sherquilla	1.03	2.370	.68	1.225	.96	2.200
Entire Sample						

* Developed and undeveloped land aggregated by approximate value according to the formula, Combined Land = (0.8 x Developed Land) + (0.2 x Undeveloped Land).

TABLE V. 3

Household Size and Its Variation

Village	Children		Adults		Household	
	Mean	Coeff. of Var.	Mean	Coeff. of Var.	Mean	Coeff. of Var.
Rishi						
Passu	3.4	.426	5.4	.413	8.8	.266
Rahimabad	3.8	.729	6.4	.518	10.2	.537
Sultanabad	3.3	.415	4.7	.486	8.0	.371
Mohamadabad						
Aminabad	3.2	.718	4.9	.617	8.1	.600
Shahtote	3.7	.459	3.7	.486	7.4	.327
Gulapur	3.7	.508	7.4	.498	11.1	.464
Thingdas	3.7	.635	5.8	.521	9.5	.496
Sherguills	4.1	.773	7.1	.489	11.2	.596
Entire Sample						

TABLE V. 4

LAND: MAN RATIOS

Village	Develo. Land/Capita		Undv. Land/Capita		Land/Capita	
	Mean	Coeff. of Var.	Mean	Coeff. of Var.	Mean	Coeff. of Var.
Risht			Not Available			
Passu	.144	.326	.134	.463	.142	.324
Rahimabad	.129	.689	.077	.896	.118	.686
Sultanabad	.074	1.310	.145	.731	.089	1.078
Mohamadabad			Not Available			
Aminabad	.085	.658	.092	.663	.086	.628
Shahtote	.022	.864		Not Available		
Gulapur	.064	.781	.065	.969	.064	.797
Thingdas	.106	.509	.044	.727	.093	.505
Sherquilla	.107	2.551	.068	1.352	.099	2.383

TABLE V. 5

LABOR PAYMENTS FOR PPI PROJECTS (Rupees)

Village	Labor Payments					
	Large Family	Small Family	Village Mean	Coeff. of Var	Large Farmers	Small Farmers
Risht	Not Available					
Passu	3193	.638	2823	3642	3310	1500
Rahimabad	1508	.768	1688	1293	1404	2610
Sultanabad	206	1.228	131	250	251	175
Mohamadabad	227	.815	Not Available		375	208
Aminabad	1117	.634	1671	729	1776	914
Shahtote	Not Available					
Gulapur	273	.406	262	297	257	284
Thingdas	922	.672	1094	780	1015	775
Sherquilla	142	1.302	118	179	97	178

TABLE V. 6

Fertilizer Procured by Village Organizations During Second Quarter, 1985

(Percentages Given in Parentheses)

Type of Fertilizer	Quantity (kg)	Amount (Rs)
Nitrophos (NP)	172,650 (57.3)	350,455 (63.6)
Calcium Nitrate (CAN)	74,400 (24.7)	78,115 (14.2)
Urea	54,300 (18.0)	122,184 (22.2)
TOTAL	301,350 (100.0)	550,754 (100.0)

TABLE V. 7

Pesticides Procured by Village Specialists During Second Quarter, 1985[1]

Pesticide	Quantity (Kg, ltr)	Amount (Rs)	Expected Coverage: Hectares of Crops or Trees	Expected Coverage: Kg. of Seed
Dieldrine	151 ltr	15,1000	420.4	
Gusathion	36 ltr	5,544	14.4	
Nogos	22 ltr	3,080	8.8	
Folidol	22 ltr	2,640	8.8	
Dizinon	111 kg	1,110	6.8	
Disyston	4 kg	102	0.3	
Vitavax	26 kg	572		2,098
TOTAL	--	28,148	459.5	2,098

1 Excludes pesticides provided in training kits.

TABLE V.8

Vaccines and Medicines Procured by Village Specialists During Second Quarter, 1985[1]

	Quantity (ml, kg)		Amount (Rs)	Number of Vaccinations/Treatments		
				Cattle	Goat/Sheep	Poultry
Vaccine						
New Castle	25	vials	72			2,500
Oxytetracycline	20,200	ml	4,020	985	3,349	400
Enterotoxaemia	48,000	ml	2,240		16,000	
Black Quarter	28,800	ml	1,344	5,760		
Sub-Total	--		7,776	6,745	19,349	2,900
Medicine						
Neoterra-25	1	kg	124			1,600
Gamatox	13	kg	3,375	12,500	9,000	
Neguron	2	kg	525	1,500	2,100	
Dertil-O Tabs	10,900	tabs	8,175		10,900	
Dertil-B Tabs	5,600	tabs	7,952	5,600		
Sulfadiamidine	2,500	ml	325	15	30	
Sub-Total	--		20,476	19,615	22,030	1,600
TOTAL			28,152	26,360	41,379	4,500

1 Excludes vaccines and medicines provided in training kits.

TABLE V. 9

LIVESTOCK OWNERSHIP AND DISTRIBUTION

Village	Cattle		Goat & Sheep		Livestock	
	Mean	Coeff. of Var	Mean	Coeff. of Var	Mean	Coeff. of Var
Risht			26.5	.417	8.8	.364
Passu	5.7	.409	32.4	.927	12.4	.679
Rahimabad	5.7	.253	8.8	.951	6.5	.426
Sultanabad	6.0	.421	7.3	1.257	6.3	.567
Mohamadabad	2.6	.626	3.3	.770	2.8	.536
Aminabad	6.2	.362	8.3	1.179	6.7	.489
Shahtote	3.2	.805	1.9	1.438	2.8	.791
Gulapur	7.8	.862	12.2	1.800	8.9	1.030
Thingdas	6.4	.632	5.0	.893	6.1	.653
Sherquilla	8.5	.679	13.9	1.765	9.8	.994

* Cattle and smaller animals aggregated by approximate value according to the formula, Livestock = (0.75 x Cattle) + (0.25 x Goats & Sheep).

TABLE V. 10

LIVESTOCK: MAN RATIOS

Village	Cattle/Capita		Goat & Sheep/Capita		Livestock/Capita	
	Mean	Coeff. of Var	Mean	Coeff. of Var	Mean	Coeff. of Var
Risht			Not Available			
Passu	0.7	.372	3.6	.746	1.4	.540
Rahimabad	0.7	.476	0.9	.965	0.8	.520
Sultanabad	0.9	.669	1.0	1.477	0.9	.762
Mohamadabad			Not Available			
Aminabad	1.0	.557	1.3	1.088	1.0	.635
Shahtote	0.5	.839	0.3	1.424	0.4	.783
Gulapur	0.7	.656	0.9	1.148	0.7	.667
Thingdas	0.7	.739	0.5	.910	0.6	.737
Sherquilla	0.8	.710	1.2	1.962	0.9	1.000

TABLE V. 11

RELATIONSHIP OF LOANS TO FARM SIZE (Rupees)

Village	FIRST LOAN			SECOND LOAN			TOTAL LOAN		
	Village Mean	Large Farmers Mean	Small Farmers Mean	Village Mean	Large Farmers	Small Farmers	Village Mean	Large Farmers	Small Farmers
Risht	203 (.413)			233					
Passu Rahimabad	97 (.188)	96	100	1.14 (.184)	112	116	211 (.189)	211	210
Sultanabad	168 (1.319)	220	133	97 (1.546)	116	85	265 (1.230)	339	216
Mohamadabad	119 (.719)	192	110				160 (.762)	267	146
Aminabad	234 (.654)	393	185	280 (.500)	355	228	515 (.528)	823	420
Shahtote Grulapur	Not Available								
Thingdas	268 (.673)	310	202	255 (.721)	301	217	524 (.681)	621	369
Sherquilla	Not Available								

* Coeff. of variation is in parenthesis.

TABLE V. 12

FERTILIZER CREDIT PERFORMANCE OF THE QUARTER APRIL-JUNE 1985

Sub-Division	No. of Loans Issued	No. of Loanee Members	Amount Advanced During Quarter	Amount Due for Repayment This Quarter*	Amount Recovered This Quarter*	Amount Overdue at the End of Quarter	Defaults (Not Repaid) Within 12 Months	Recovery Rate of Loans Repayable This Quarter (%)*
Hunza	33	1,579	328,731	15,030	75,121	--	--	100.0%
Nagar	13	696	144,385	82,341	76,331	--	--	100.0%
Gilgit	37	1,597	452,937	203,222	124,147	25,196	22,150	87.6%
Punyal-Ishkoman	34	1,938	416,069	4,410	4,884	--	--	100.0%
Gupis-Yasin	55	2,717	564,823	8,802	18,282	--	--	100.0%
Sub-Total	172	8,527	1,906,945	317,805	298,765	25,196	22,150	92.07%

TABLE V. 13

LOAN-TO-EQUITY-RATIOS AS OF JUNE 1985

Sub-Division	Loan Amount Closing Balance (Rs)	Equity (Rs)	Loan/Equity
Hunza	385,706	1,784,027	0.22
Nagar	274,542	613,007	0.45
Gilgit	799,078	1,437,786	0.56
Punyal Ishkoman	420,807	1,158,796	0.36
Gupis Yasin	601,112	1,417,870	0.42
Sub-Total	2,481,245	6,411,486	0.39

TABLE V. 14

SAMPLE CENSUS OF 30 SELECTED VOS OF GILGIT DISTRICT, 1985

Name of Tree Variety (7 yrs. & above)	Total No. of Trees as Per Sample Census	Average Production Per Tree in Kgs.	Estimated Production in Kgs.	Actually Sold During 1984 in in Kgs.	% of Actual Production Sold
Apricot	27,030	80	2,162,400	32,800	.02
Apple	7,300	160	1,168,000	80,800	.07
Pear	1,750	140	245,000	14,000	.06
Grape	6,080	45	273,600	47,200	.17

CHAPTER VI

CONCLUSIONS, RECOMMENDATIONS AND FUTURE AREAS FOR RESEARCH.

1. Conclusions:

In this concluding chapter an attempt has been made to synthesize the experience of the Northern Areas and present a set of policy guidelines based on the theoretical precepts of the development and institutional theories considered here. The conclusions presented here take into account the peculiar conditions which exist in the Northern Areas; its rapidly changing environment and the interaction between the local environment and the institutions and their impact on development in the area.

The project area of AKRSP was, until recently, a feudal enclave, in which local Mirs and Rajas exercised the authority of the state over the economy of the region. The local rulers used a system of compulsory taxes and subsidies together with forced labour to construct new irrigation channels, develop barren lands, and build roads. Small farmers were induced or constrained into collective effort in the development of physical infrastructure. Decision making over these resources rested with the ruler and his representatives in the village. This system had low levels of productivity and built in instability due to the dual structure of society- with the feudal leader strongly entrenched in each valley exploiting the small farmers.

With the decline of feudal powers and the opening of the Karakorum Highway, the region's economy began a transition from a system of barter and use rights to market oriented exchange. A handful of well to do and influential individuals progressed rapidly, while the

mass of the small holders remained disorganized and poor. Individuals with special skills, and with access to capital and authority, started emerging as a priveleged class in each village; the government contractor, the tractor owner, the immigrant shopkeeper were all members of this privileged group. This period was characterized by relatively greater productivity but with increasing income inequality. Commenting on this period Dr. Akhter Hameed Khan noted that " a majority of the villagers were cut off and not included in the mainstream of development."[1] He surmised that it was essential for a country with a limited capacity to absorb surplus labour, in the industrial sector, to have a strong agrarian base. This could only be achieved by increasing agricultural productivity without driving out the marginal farmers.

The Induced Innovation model predicts that the development and introduction of new technology induces new institutions which are better designed to exploit the new economic opportunities created by the technical change. Part of the problem, in the Northern Areas, stemmed from the fact that the rural institutions that were emerging contributed to the increasing of income disparities in a part of the country where resources were distributed relatively equitably. The experience of Japan is illustrative in developing a model in which farmer participation is vital in creating an infrastucture of research and extension which was suited to farmer needs. This helped increase agricultural productivity and generate an agricultural surplus for the development of Japanese industry. The AKRSP strategy incorporated some of these ideas from the Japanese experience to establish village based development institutions. The Village Organisations it helped design were set up to exploit both existing opportunities as well as create

new ones which would help stengthen the VO as a vehicle of village level development. This institution is expected to increase productivity as well as maintain or improve the existing equitability.

The evidence provided in the preceding sections of this paper indicates that the programme is introducing changes that will, in the long run, help to make the villages economically and politically stable. The Environmnt-Behaviour-Performance paradigm would argue that the Village Organisation can become a viable and sustainable development institution as long as those participating in its activities recieve positive reinforcements (increased incomes, prevention of losses, savings on transaction costs, etc.) which would induce them to maintain the Organisation. Similarly, if costs exceed the benefits, individual farmers would have no economic rationale for continuing their participation in the Village Organisation. Perceptions and expectations of costs and benefits are equally important in the individual calculus.

Some conclusions derived from the analysis of the preceding chapters and those which relate to the objectives of this study are outlined below. These only pertain to village cooperatives which are similar in characteristics to those studied in the Northern Areas:

(i) The distinction between the incentives which help to organise village cooperatives and those which serve to sustain them is important. John Staatz argues that the two might be different.[2] His argument stems from the asset fixity principle. Briefly, this principle states that, " Once a cooperative firm is in business, its assets generally become fixed, in the sense that the return to them in the

cooperative exceeds the return they could earn in alternative uses..... Owners of these fixed assets therefore, attempt to maintain the organization even though the conditions that initially gave rise to it may have changed."[3]

The office holders of the village cooperatives have invested considerable time and energy into these Village Organisations. The office-bearers are able to improve their local standing and in the future they are likely to recieve a small fee for their services (particularly in the credit and marketing projects). At present, all village representatives recieve a per diem when travelling on VO business. This may suggest that the VO managers may attempt to push the VO to undertake projects for which it may not be the most appropriate institutional form. However, due to the fact that there is considerable asset fixity both in human and physical resources at the village level and that there are limited alternative uses for village resources, at this stage, the VO might be the appropriate institutional form for a large number of activities. It may well be that once the basic conditions, which argued for the suitability of the cooperative as a local development institution, no longer hold, the incentives to maintain these Organisations will become different from those which led to their creation. This makes it important for policy makers at AKRSP to periodically re-examine the viability of the Village Organistion in a changing environment.

(ii) The Village Organisation is likely to undertake those activities more successfully where collective management is stressed and the possibility of infringing on the institution of private property is minimal. In cases where the activity is likely to create free riders

the issue of exclusion costs will be a primary determinant of the outcome. In such cases, the existence of high exclusion cost could hinder the success of the cooperative endeavour. Where the Organisation is able to device an effective solution to the issue of exclusion costs it is likely to be more successful in undertaking the activity at hand.

(iii) At the present time, these institutions are sustainable at the village level. AKRSP is helping to coordinate between these Organisations and other marketing, financial and development institutions. Without AKRSP's support and assistance it would be extremely difficult for them to sustain themselves regionally, at this stage.

Recommendations:

Some specific suggestions which might aid policy formulation at AKRSP are listed below:

(i) AKRSP has introduced an element of negotiation in fixing labour payments. In deciding policy on this matter, AKRSP needs to consider two issues carefully. First, labour payments help to solve the free-rider problem. Secondly, they serve as an additional inducement in the farmers decision to supply his labour, particularly, where the opportunity cost of labour is not zero. Initially, in including a labour component in the PPI grant AKRSP recognized the importance of labour payments in mediating some of these other issues. However, since then, the policy makers may have lost sight of these earlier concerns. These need to be reemphazied due to their importance.

(ii) Small Village Organisations are likely to be more effective than large ones. There is a greater appreciation of mutual interdependence and a greater capacity to resolve internal conflicts in the smaller groups. As such, AKRSP should encourage the formation of VO's with fewer members and those in which the members form a more cohesive unit.

(iii) It is not very clear, from the factors studied in this paper, whether limiting the scope of the VO's activities would necessarily help improve its efficiency. However, there does seem to be a case for asserting that the VO would be more adept at handling activities which minimize the possibility of property conflicts between members. It is, therefore, recommended that there be greater focus on those activities which emphasize the concept of collective management and less on those which increase the possibility of infringing on established private

property rights.

Future Areas for Research:

(i) The Northern Areas are in a transition from a system of use rights to greater market-oriented exchange. This is likely to exert tremendous pressure on the Village Organisation as an institution of collective development. A useful area for research would be to examine how the process of market expansion impacts these institutions.

(ii) The principles of rural development that are being followed by AKRSP have been implemented before in rural Pakistan. They were first applied in the Commilla project in East Pakistan and subsequently in the Daudzai project in the North West Frontier Province. They are for the first time being implemented in an urban area in the outskirts of Karachi by the Orangi Pilot project. It would be interesting to contrast the application of the same principles in an urban setting against the experience in the Northern Areas.

(iii) This study has focused on a descriptive approach due to data constraints. It was primarily concerned with providing a basis for more rigorous hypothesis testing. Once more data is available on the programme area and the Village Organisation's impact on productivity and equitability, some of the hypothesis could be subjected to rigorous statistical testing.

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3. Schmid, Allan A., "Property, Power, and Public Choice," An Inquiry into Law and Economics. Praeger 1978. p. 107.

4. Ibid. p. 207.

5. See Section IV.

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3. Ibid, p. 23.

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