

**FINDING OF REVIEW STUDY ON
AGRICULTURE AND LIVESTOCK
FARMING IN ROD KOHI, D.I.KHAN**

DRAFT REPORT



SUBMITTED TO

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1 INTRODUCTION

1.1 Background to the study

Since 1997, In Pakistan Inter-Cooperation (IC) has been mandated by Swiss Development Cooperation (SDC) to implement, on its behalf, the so-called Sustainable Land Use Mandate. Preparations are on the way to the transformation from the SDC concept for Sustainable Land Use (SLU) in the mountain area of northern Pakistan (1996) to a more comprehensive 'SDC concept for the management of Renewable Natural Resources'. The geographical focus of the present SDC-SLU concept comprises whole of NWFP, Azad Jamu and Kashmir and the northern areas. The majority of the field activities, under SDC, are in progress in northern parts of the province. Presently, the SDC extended its cooperation to southern part of the NWFP.

1.2 About the target area

Dera Ismail Khan (D.I.Khan) is the southern most Division of the North West Frontier Province (NWFP) comprising of districts D.I.Khan and Tank. The District D.I.Khan spread over 9,005 square km area and has a height of 255 m from sea level. There are three tehsils in D.I.Khan, viz. D.I.Khan, Paharpur and Kulachi. Previously, Tank was a tehsil of D.I.Khan but now declared as a separate district. Major part of the district D.I.Khan is level plain, has its boundaries with Bannu on north, Punjab on east and south and tribal areas on west. River Indus is situated on the eastern side that delineates Punjab and NWFP. The area is relatively dry with limited potential for increased productivity. Inefficient and sub-optimal use of rainwater has proved to be the limiting factors for the small farmers that intercepted hill torrents during Monsoon bringing down water along with silt particles under a system called Rod-kohi. These torrents are usually uncontrolled and mostly unpredictable, causing losses to human, property, crops, and livestock.

1.3 The background study

An orientation to D.I.Khan, Tank and North Waziristan was done in June 2000. The report pointed out a number of issues related to farming system as well as soil and water management. The same was followed by a fact-finding mission in October-November 2000 with the objectives to identify and analyze problems and potentials of the farming

systems, water and soil management, as well as to develop hypothesis to be tested out through possible interventions in subsequent studies. A poverty study was conducted by SDC-IC in August-September 2001. It confirmed an extreme level of poverty attributed to natural, social and political factors.

Description and presentation of the social and relatively speaking, political dimensions were studied in previous studies conducted by the SDC-IC in 2000 and 2001. A need was felt to study technical aspects addressed rain-fed agriculture in order to provide basis for a comprehensive project proposal in future. This brought the SDC-IC to a conclusion that information needed to be collected:

- (a) through conducting review survey in region collecting base-line information from growers on the existing rain-fed agricultural practices and livestock management
- (b) through conducting experiments at farmers' field in region for knowing potentials of modern practices over tradition with improvement in crops and livestock production

1.4 Objectives and terms of reference

Keeping in view, the above mentioned background and rationale, the objectives of the study were set: to collect base-line information from growers of the region regarding practices adopting for crops and livestock production, to observe performance of the different improved lines/varieties of crops and trees for food and food supply under drought and to improve existing feed intake of the existing material. Detail terms of reference of the study are given below.

- A. To investigate the success rate of updated production practices in crop growth and livestock management for future adoption in the Rod-Kohi, D.I.Khan. This will include:

... practices in kharif crops for increasing productivity
... trials for the drought tolerant fodder species
... testing of the appropriate interventions for upgrading the feeding
... crops residues in livestock feeding

Accor... existing situation of crop production and livestock management in
of the fac... of D.I.Khan so as to identify and analyze the problems of low
... suggest solutions. This will include:

- (i) Farm size, cropping intensity and livestock herd dynamics of the regions
- (ii) Existing practices in technology in crop production and livestock management
- (iii) Estimates per unit farm out put (Crop and Livestock) and its utilization
- (iv) Estimate availability of values of by-products of local Oil extraction plants and Chishma sugar mill D.I.Khan for feeding.

C. Suggest recommendations for future intervention to enhance production of the crops and livestock in Rod-kohi area of D.I.Khan.

2 Methodology

Based on information reflected in objectives of the study, a detailed questionnaire in consultation with SDC-IC was designed. Sample of the questionnaire is appended (Annex-I). To extract the required information from farmers, three teams were designated each for upper, middle and lower streams of the sector. Each team consisted of a graduate student from Faculty of Crop Production Sciences, NWFP Agricultural University Peshawar, a female Livestock Assistant from the Department of Livestock and Dairy Development NWFP, Peshawar and a local activist from the target region.

Area map was studied and decided to sample all most all villages of the Draban Zam i.e. upper, middle and lower streams of the sector through a random sampling of 5% households per village with a maximum of 20 households per village. One-ay workshop was organized by the SDC-IC on January 08, 2002 to explain study's objectives, selection of villages and households of the area, adoption of methodology for extracting information on the pre-defined questionnaire and structuring teams' coordination for finalizing the task.

2.1 Review study

A pre test survey was organized on January 13-15, 2002, the information was discussed in a meeting on 15.01.2002 and 21.01.2002. The questionnaire was re-structured as per suggestion of groups inserting Urdu translation on questions. Time frame of the survey was scheduled in two phases i.e. first in mid February and second in early March 2002 and villagers were informed accordingly for comparison of their problems regarding crops and livestock production. The designated teams visited each individual household

in a village. The team first explained objective of the visit and thereafter asked the required information. Female team member separately interviewed the women of the selected houses. Special attention was paid to interview male and females of the same household in each village. Details regarding villages visited during the survey, number of household per village, and sampling done per village is given in Table-1. Data regarding each question of the questionnaire was entered in the computer and analyzed with a Statistical Package for Social Sciences (SPSS). Means and percentages were computed and their relationship between different parameters was studied.

Table 1. Villages, households and sampling list in the upper, middle and lower streams of Draban Zam, D.I.Khan

Village name	Stream	Households	Sampling
Kotta Alladad	Upper	025	02
Gara Mehrban	Upper	040	02
Ghandi Esab	Upper	048	02
Gara Jat	Upper	028	02
Gara Ghulam Siddique	Upper	028	02
Gara Dasti	Upper	028	03
Kot Shahnawaz	Upper	070	03
Kikri	Upper	028	03
Jalalabad	Upper	010	01
Gara Sheikh	Upper	012	01
Gara Mir Alam	Middle	215	11
Gara Isa Khan	Middle	050	02
Gara Alam Khan	Middle	040	02
Mochiwal	Middle	070	06
Gandi Umer Khan	Lower	609	25
Gara Ramzi	Lower	072	03
Jhok Abdullah	Lower	017	01
Gara Murid Shah	Lower	012	01
Charoya	Lower	010	01
Kiyara fateh Mohammad	Lower	081	04
Tilokar	Lower	012	02
Dholka	Lower	091	05
Khokar Sharqi	Lower	011	01
Zaman Tilokar	Lower	021	01
Khiyara Basharat	Lower	017	02

3 FINDINGS OF THE REVIEW STUDY

3.1 Land holding and farm size

According to this survey report, majorities of farmers were found landowners irrespective of the fact that their land is productive. Farmers in the region were categorized as those

having land less than the substance limits of 5 hectares, followed by increasing the landholding 100 times. Percent farmers with respect to their total land holding are given in Table 2.

Table 2. The landholding details of the farmers in Draban Zam, D.I.Khan

Farm size [Ha]	Percentage			
	Lower	Middle	Upper	Total
Less than 05	08.1	05.3	04.5	06.6
05 to 10	18.1	15.5	22.8	18.7
10 to 20	50.6	47.5	22.7	43.3
20 to 40	15.1	15.8	27.3	17.7
40 and above	08.1	15.9	22.7	13.7
Total	100	100	100	100

According to the data (Table 2), majority of the farmers have 10-20 hectares land in the region as well as in lower and middle streams of the area. On the basis of total land, 6.6% household (HH) have less than five hectares land, 18.7% HH have five to ten hectares, 43.3% HH have ten to twenty hectares, 17.7% HH have twenty to forty hectares and 13.7% HH have greater than forty hectares land in whole of Draban Zam, D.I.Khan.

On the basis of individual streams, it was observed that 8.1%, 5.3%, and 4.5% HH have less than five hectares land unit in lower, middle and upper streams of the area respectively, 18.1%, 15.5% and 22.8% HH have five to ten hectares land unit, 50.6%, 47.5% and 22.7% HH have ten to twenty hectares land, 15.1%, 15.8% and 27.3% HH have twenty to forty hectares and 8.1%, 15.9% and 22.7% HH have greater than forty hectares land units. The data show that about 95% HH in the region as well as in fractions of the region i.e. lower, middle and upper streams have farm size of equal or greater than the substance limits. Small landholding was observed greater in lower than middle and upper streams of the region. Likewise, the big landlords with 40 or greater than 40 hectares land were found less in the lower stream than middle and upper streams. This was due to the 1962 and 1973 land reforms wherein the big farmers lost land while the land less farmers received small pieces of the land.

Total land is cultivated land plus the fallow fraction. The uncultivated land is not of interest to this study. The total cultivated land explained in Table 2 is partly the land owned by the growers and/or tenant that has been leased from the landlords or growers on traditional terms and conditions. Details of the owned and tenant land are provided in Table 3.

