BALUCHISTAN AGRIC EXTENSION & ADAPTIVE RESEARCH PROJECT

DIAGNOSTIC STUDY OF FARMING SYSTEMS IN BALUCHISTAN: KACHHI DISTRICT

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SUMMARY

The contents of this report are split up into three sections: the first describes the farming systems in Kachhi District and is followed by suggested groupings of farmers with similar situations and needs (Recommendation Domains). The third section provides suggestions for experiments and, to a lesser extent, demonstrations and extension to meet the needs of farmers in the district.

This report is the result of a CYMMIT style diagnostic survey of farming practices carried out in Spring 1987.

1. FARMING IN KACHHI DISTRICT

1.1 INTRODUCTION

The Kachhi Plain has an unenviable reputation as one of the hottest and driest places in Pakistan. The reliability of rainfall in the district is as poor as that of Nasirabad, but the whole area is "regularly" flooded by major rivers and hill torrents which flow out of upland Baluchistan.

The contribution that rainfall makes to agriculture is normally very limited, although in some years it may allow more timely planting or make a small but significant contribution to ratoon and sailaba crops at sensitive stages. A graph of the rainfall reliabilities for the three main subdivisions is presented in Annex A1. The basis of agriculture over most of the plain has changed little in the last one hundred years. Obvious exceptions to this observation are the large perennial irrigation diversions at Nari Headworks and Bolan Weir; a portion of Jhal Magsi Tehsil also receives water from the Kirther Canal.

Temperatures reach into the 50s in summer and are accompanied by strong seasonal winds. By contrast, although mean minimum temperatures rarely descend to zero, frosts do occur infrequently in the period from the end of November through to the end of January. These cold spells usually have a serious consequence for croppers. Mean monthly temperatures and mean maxima and minima are presented in Annex A2.

The ecologies found in the plain fall into the following subgroups:

a. Perennially irrigated areas in the midplain - Dhadar, environs of Sibi, and eastern Jhal Magsi.

b. Flood irrigated (sailaba) and a few rainfed areas (kushkaba) in the midplain - Lehri, Mithri, Belpat etc.

c. The western piedmont, which was historically the main irrigated portion of Kachhi, - Sanni, Shoran, Ghandava, and Jhal Magsi. This area also has considerable sailaba and kushkaba cultivation.

Infrastructure in Kachhi is poorly developed and the majority of villages and small towns are reached by dirt roads which are rendered impassable in the flood seasons. Tribal life remains fundamental to the people, but although there are powerful sardars, land ownership is more common than in neighbouring Nasirabad. Tribal chiefs may be wealthy, but merely being a landowner does not necessarily confer any material advantage in the harsh conditions of the plain.

1.2 IRRIGATION SYSTEMS

1.2.1 General remarks

The farming systems of the district are relatively simple, and well adapted to the environment. The flood water farming practices are little changed from a century ago, although attempts have been made to harness "modern" technology to diverting spate water. Irrigated cropping has become more extensive due to construction of two weirs at Bolan and Nari, and more recently due to electrification, which allows water to be pumped from shallow surface wells and the major rivers (in winter).

Both the small area of irrigated crops and the extensive flood water spreading system are integral parts of this infrastructure.

1.2.2 Perennial irrigation

Perennial irrigation has been carried out for centuries along the western piedmont from Sanni-Shoran to Ghandava and down to Jahl Magsi. Water was pumped from shallow wells using Persian wheels, and there are still many more animal powered wells than motorised ones in use today. In Shoran there are 16 animal powered wells compared to 3 diesel powered ones. In these areas the cost and difficulty of access mean that water costs can be very high. The water table depth varies from 15 to 25m and costs of 270 Rs per hectare (110 Rs/a) are quoted per 100mm irrigation by farmers. In these cases, irrigation must inevitably be suboptimal for high as well as low value crops.

The villages of the western strip have therefore depended on a network of some 30-35 springs and diversions whose sources often lie more than 5km upslope in the mountains. There has been some confusion in describing these sources as it appears that there are only a few true karezes, the remainder being springs. The water shares were originally determined in proportion to the labour or cash given to construct the waterways; subdivision of water shares has happened since as family land holdings have fragmented. Water shares can be sold, mortgaged or traded, but the agreement of the other shareholders is often required. The water managers (Reis/Arbab) now use watches to time the distribution of water; in the past there was an amazingly accurate system of timing shares by the position of the sun (by day) and different constellations by night.