DEVELOPMENT OF AGRICULTURE IN SIND
1975-76 1984-85

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Introduction:

Agriculture is the main stay of the economy of Sind. It covers an area about 34.87 million acres of which only 13.40 million acres are cultivable. Out of this cultivable land about 12.75 million acres are commanded by the three barrage systems Guddu, Sukkur and Kotri the largest irrigation system network in the world.[1] Of the entire country, Sind accounts for about 27 percent of the cultivated area, 20 percent of the cropped area and 22.4 percent of the irrigated area.[2] Towards the total output, Sind contributes to the extent of about 18.5 percent in all major crops (wheat, rice, bajra, jowar, barley, gram, cotton, sugarcane, rape seed and mustard), 18 percent in wheat, 45 percent in rice, 34 percent in cotton and 16 percent in sugarcane.[3] This paper analyzes the production patterns of the major crops in Sind and statistical figures have been taken from the reports published by the Government of Pakistan.

1. Wheat: is the largest single crop of Sind in terms of acreage. It is a winter (rabi) crop, sown from middle of October to middle of November in southern Sind.[4] The wheat is harvested from the middle of March and the first half of April in southern Sind and a month later in the central and northern parts of Sind.

Table-I indicates that there has been rising in the production of wheat.

TABLE-I

Area, production and per hectare yield of wheat from 1975-76 to 1984-85

YEAR	CULTIVATED AREA (000) HECTARES	INDEX 1975-76	PRODUCTION OF WHEAT IN MILLION TONS	INDEX 1975-76 =100	PER HECTARE YIELD Kgs	INDEX 1975-76 = 100
1975-76	797	100	1.32	100	1568	100
1976-77	927	116	1.48	112	1595	102
1977-78	906	114	1.43	108	1575	100
1978-79	1008	126	1.63	127	1666	106
1979-80	1027	129	1.85	140	1802	115

1980-81	1030	129	1.95	148	1889	120
1981-82	1026	129	2.06	156	2009	128
1982-83	1009	126	2.07	157	2049	131
1983-84	1016	127	1.95	148	1925	123
1984-85	1030	129	2.08	158	2019	129

Source: Government of Pakistan, Agricultural Statistics of Pakistan 1985, Islamabad, 1986, P.3 and 6.

The production of wheat has been increasing since 1975-76. Table-1 reveals that the total cultivated area increased from 797 thousand hectares in 1975-76 to 1030 thousand hectares in 1984-85. Similarly the production of wheat increased from 1.32 million tons to 2.08 million tons at the growth rate of 58 percent. The yield per hectare also increased from 1568 kilograms to 2019 kilograms at growth rate of 29 percent in the same period.

2. Rice: is the most important kharif crop. It is sown with different patterns of cultivation i.e broadcasting and transplanting in different parts of Sind. Broadcasting is common in lower Sind in the area included Kotri Barrage command. It is practised side by side with the transplantation method. The pattern is that one farmer practises transplanting method, whereas the neighbour prefers broadcasting. The amount of crop yield per acre by the broadcasting method is said to be lower and the seed requirement higher (80 to 100 pounds per acre) as compared to the yield and seed 50 pound required in the transplantation method.[5] The suitable time for transplantation of rice is May-June[6]. Late sowing (July-August) reduces the yields because of unfavourable climatic and water conditions and the fact that the plant is attacked by rice stem borers during July-August.[7]

Rice is more dominant in Larkana, Sukkur, Jaccobabad, Shikarpur, Dadu and Thatta.[8] The flat relief permits subdivision of the fields by small levees, a necessity since the fields must be covered with about 6 inches of water during much of the growing period. Larkana and Dadu have the highest yields and are being called the 'rice bowl' of Sind.[9] After the construction of Sukkur Barrage in 1932, rice has been cultivated for the last 50 years,[10] with the result that the continuous seepage of water from canals is raising the ground water table and is, therefore, making it physically more suitable and more advantageous for farmers to grow rice in these areas.[11]

The high yield varieties of rice have brought better results in increasing the production as shown in table.

TABLE-II

Area, production and yield per hectare of rice from 1975-76 to 1984-85

YEAR	CULTIVATED AREA (000) HECTARES	INDEX 1974-75 =100	PRODUCTION OF RICE IN MILLION TONS	INDEX 1975-76 = 100	PER HECTARE YIELD Kgs.	INDEX 1975-76 = 100
1975-76	731	100	1.29	100	1762	100
1976-77	748	102	1.29	100	1728	098
1977-78	748	102	1.39	102	1739	100
1978-79	735	101	1.31	104	1825	104
1979-80	735	102	1.50	116	2011	114
1980-81	714	98	1.55	120	2029	115
1981-82	728	100	1.58	122	2177	124
1982-83	719	98	1.56	121	2171	123
1983-84	722	99	1.48	115	2048	116
1984-85	690	94	1.35	105	1950	111

Source: Government of Pakistan, Agricultural Statistics of Pakistan, 1985, Islamabad 1986, p. 3 & 6.

The production of rice has been increasing since 1975-76. Table-II indicates that the total cultivated area decreased from 731 thousand hectares to 690000 hectares in 1975-76 to 1984-85. The production of rice rose from 1.29 million tons to 1.35 million tons at the rate of growth of 11 percent during the same period. In the same way per hectare yield went up from 1762 kilogram to 1950 kilogram in the same period. It analyses that there has been rapid increase in the production of rice.

3. Sugarcane: is cultivated in all areas of Sind. Its planting begins in February and continues until the middle of March. The harvesting starts in November and lasts until the month of January.

Before the introduction of improved combato varieties, red and white varieties of sugarcane were cultivated in Sind.[12]

Sugarcane has substantially increased since independence. During the early years of independence, most of the increase in acreage was in central Sind, in the section watered by Sukkur Barrage.[13] The completion of Kotri and Guddu Barrages brought more area under sugarcane cultivation in north and south Sind.[14] The stimulus to sugarcane growing has been given by the growth of domestic sugar manufacturing industry. The number of sugar mills has been increasing in Sind and the demand of raw material has been rising. To meet the requirements of the domestic industry, more area has been brought under cultivation. Table 3 shows a considerable increase in acreage and sugarcane production.

TABLE-III

Area, production and per hectare yield of sugarcane from 1975-76 to 1984-85

YEAR	CULTIVATED AREA (000) HECTARES	INDEX 1975-76 = 100	PRODUCTION IN MILLION TONS	INDEX 1975-76 = 100	PER HECTARE YIELD IN TONS	INDEX 1975-76 = 100
1975-76	106	100	3.59	100	34	100
1976-77	119	112	4.04	113	34	100
1977-78	120	113	4.26	119	35	103
1978-79	121	114	4.37	122	36	106
1979-80	130	123	4.66	130	36	106
1980-81	136	128	5.01	140	37	107
1981-82	174	164	7.46	208	43	126
1982-83	181	171	7.54	210	42	124
1983-84	177	167	7.36	205	42	124
1984-85	181	171	7.43	207	41	121

Source: Government of Pakistan, Agricultural Statistics of Pakistan 1985, Islamabad, 1986, p. 19 and 20.

It is evident from table 3 that the area under sugarcane cultivation increased from 106 thousand hectares to 181 thousand hectares in 1975-76 to 1984-85. The increase rate was 71 percent. The production went up from 3.59 million tons to 7.43 million tons during the same period. It rose at the rate of 107 percent.

The per hectare yield also increased from 34 tons to 41 tons at the growth rate of 21 percent in the same period. It shows a considerable increase in sugarcane production between the year 1975-76 and 1984-85.

4.Cotton: is an important commercial crop and is being cultivated in Sind since the Indus valley civilization.[15] Different varieties of cotton are grown in the canal irrigated parts of Sind.[16]

Sind desi is a rough short staple cotton. Sind sudhar has long staple averaging of about 1-1/6 inches, is hard and resistant to red leaf pest. Egyptian and Sea Island Cotton have a staple ranging from 1-1/8 to 1 1/2 inches. American cotton is creamy white and soft, with 7/8 inches staples.[17] Of these varieties, American cotton leads all others in acreage and importance.

Cotton cultivation has been increasing with the development of perennial irrigation in Sind. It provides water and an early start for Kharif crops, which is best suited for cotton cultivation.

Table-IV shows considerable increase in cotton production.

TABLE-IV

Area, production and per hectare yield of cotton from 1975-76 to 1984-85

YEAR	CULTIVATED AREA (000) HECTARES	INDEX 1975-76 = 100	PRODUCTION IN MILLION BALES	INDEX 1975-76 = 100	YIELD PER HECT-ARE KG	INDEX 1975-76 = 100
1975-76	465	100	0.99	100	360	100
1976-77	531	114	0.93	94	296	82
1977-78	536	115	1.26	127	401	111
1978-79	501	108	0.84	85	285	79
1979-80	598	129	1.45	146	412	114
1980-81	599	129	1.40	141	400	111
1981-82	638	137	1.55	157	413	115
1982-83	647	139	1.58	160	416	116
1983-84	656	141	1.21	122	314	87
1984-85	671	144	1.48	149	374	103

Source: Government of Pakistan, Agricultural Statistics of Pakistan, 1985, Islamabad, 1986, p.19 and 20.

One Cotton bale= 177.81 Kgs

It is evident from table-IV that the cultivated area of cotton increased from 465 thousand hectares to 671 thousand hectares in 1975-76 to 1984-85, and rose at the rate of 44 percent. The production went up from 0.99 million bags to 1.44 million bags and increased at the rate of 49 percent during the same year. Similarly, per hectare yield increased from 360 kilogram to 374 kilogram. It grew at the rate of 3 percent. The rise in agricultural production and productivity in Province of Sind has been brought as a result of a number of factors which may be classified as under:

I.Seed Distribution:

Effective and adequate supply of high yielding varieties (HYV) of seeds of wheat, rice and cotton have played a vital role in the increase in area under cultivations as well as in the total output of major crops. (The tables 1 and 2) The distribution of better seed is given in table-V.

TABLE-V

Distribution of Improved Seed from 1977-78 1984-85 (000) tons

Crop	1977-78	1978-79	1979-80	1980-81	1981-82	1982-83	1983-84	1984-85
Wheat	1.75	3.60	3.49	3.60	4.23	4.40	3.44	4.20
Paddy	0.09	-	0.19	0.13	0.14	-	0.36	0.80
Cotton	3.59	2.40	2.62	4.19	4.85	0.74	3.32	4.00
Total	5.43	6.00	6.30	7.92	9.22	5.14	7.12	9.00

Source: Government of Pakistan, Agricultural Statistics of Pakistan 1985, Islamabad, 1986, p.85

It is evident from table-V that the use of improved varieties of seed (HYV) is becoming more and more popular. Its consumption has been increasing.

II. Fertilizer:

The HYV crops need a much larger quantity of chemical fertilizers than the traditional varieties. With an increase in area under cultivation of improved varieties of food crops and cash crops, there has been an enormous increase in the demand of fertilizers. Its increased demand can be visualised from the table-VI

TABLE-VI

Consumption of Fertilizer from 1975-76 1984-85

YEAR	FERTILIZER (000 M .Tons)	INDEX 1975-76 = 100
1975-76	136.3	100
1976-77	161.4	188.4
1977-78	193.8	142.1
1978-79	229.1	168.1
1979-80	255.1	187.2
1980-81	303.3	222.5
1981-82	291.1	213.5
1982-83	337.8	247.8
1983-84	332.0	243.6
1984-85	342.5	251.1

Source: Government of Pakistan, Agricultural Statistics of Pakistan 1985, Islamabad, 1986.

It is obvious from table-VI that the use of fertilizer has been increasing day by day in the agricultural sector. In the year 1975-76 the fertilizer off-take/ utilization was to the extent of about 136.3 thousand M.tons and in 1984-85 it was 342.5 thousand M. tons showing an increase of 151.1 percent.

III. Mechanisation:

The production of crops involves numerous activities including the preparation of land, sowing, weeding spraying, thinning and harvesting. To conduct these operations in time with speed and efficiency, the process of selutive machinery is being properly encouraged. Thus it covers irrigation through tubewells, land levelling through buldozers and ploughing through tractors. Both the private and public sectors are increasingly installing tubewells for extending irrigation facilities to farms. The number of tubewells rose from

8371 to 28526 during 1975-76 to 1984-85[18] and the number of tractors reached to 16,542 in the same period.[19]

IV. Agricultural Credit:

The use of expensive inputs is not possible without funds being available with the farmers. Their incomes are low, adequate credit facilities are necessary to supplement their own resources for investment in farming operations. The village money lenders have been the traditional source of credit of farmers, providing them loans at short notice but at high rate of interest. Keeping in view, the institutional credit facilities are extended to farmers in order to save them from private money lenders. The cultivators were extended interest free short term loans from kharif 1980.[20]

The various institutional credit facilities are shown in table-VII.

TABLE-VII

Supply of Agricultural Credit by Institutions in Sind from 1975-76 1984-85

YEAR	ADBP		COMMERCIAL BANKERS		TACCABI LOANS		COOPERATIVES	
	RS.IN MILLION	INDEX 1975-76 = 100	RS.IN MILLION	INDEX 1975-76 = 100	RS.IN MILLION	INDEX 1975-76 = 100	RS.IN MILLION	INDEX 1975-76 = 100
1975-76	123.30	100	-	-	6.58	100	5.15	100
1976-77	130.95	106	-	-	3.00	46	6.90	134
1977-78	73.19	56	-	-	1.07	16	176.67	3430
1978-79	87.68	71	-	-	2.70	41	120.09	2332
1979-80	137.62	112	388.87	100	2.17	33	40.51	787
1980-81	275.65	224	561.61	144	1.03	16	32.55	632
1981-82	320.30	341	701.48	180	0.44	7	89.86	1744
1982-83	602.38	489	843.85	217	0.60	9	60.00	1165
1983-84	822.20	667	1389.17	357	-	-	-	-
1984-85	1076.20	873	1552.50	399	-	-	-	-

Source: 1. Government of Pakistan, Agricultural Statistics of Pakistan, 1982, Islamabad, 1983, p.159.

2. Government of Pakistan, Agricultural Statistics of Pakistan, 1984, Islamabad, 1985, pp.184-85

3. Government of Pakistan, Agricultural Statistics of Pakistan, 1985, Islamabad, 1986, PP.119-133

It is evident from table-VII that more credit facilities have been extended by institutional agencies for the development of agriculture.

Conclusion:

The agricultural sector has made progress during the period 1975-76 to 1984-85. Various inputs were used such as better seed from 5.43 thousand tons to 9.00 thousand tons, fertilizer from 136.3 thousand tons to 342.5 thousand tons, and credit facilities by various institutional agencies to purchase modern implements which resulted in high growth rate in agricultural sector. The main crops of Sind province such as wheat output increased from 1.32 million tons to 2.08 million tons, rice rose from 1.29 million tons to 1.35 million tons, cotton increased from 0.99 million bales to 1.44 million bales and sugarcane went up from 3.59 million tons to 3.43 million tons during the period 1975-76 to 1984-85. The total output of sugarcane increased more than double because of more demand from sugar mills. This improved the socio-economic conditions of the growers.

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