

## **EXECUTIVE SUMMARY**

Mansa was declared as district on 13th April 1992 from the east while district of Bathinda. It lies between 29.58' to 36.33" in North & 75.23' to 34.87" East at the elevation of 716 Feet from sea level. Mansa is a small district both in terms of population and area. It is situated on the rail line between Bathinda- Jind- Delhi sections and also on Barnala-Sardulgarh-Sirsa Road. This district is surrounded by Bathinda district in North West, by Sangrur District in east and by Sirsa District of Harayana State in the south. Mansa district is divided into three Sub Divisions namely Mansa, Budhlada and Sardulgarh. There are five Blocks and 243 villages having 244 Gramm Panchyats. All the villages are connected with 11134 Km premix roads.

The total geographical area is 2, 16,000 ha. The total population of the district was 6,88,758 amounting to 2.9 % of Punjab state according to the census 2001. The number of woman per thousand man were 900. The rural population is about 546349 which is 85.14 % of total population. The literacy rate is 47.6 %. Regarding the literacy, the urban population was 63.52 % literate, where as literacy rate in rural area was 40.5 %. The population density was 279 per sq. As per the data collected from villages, there are 99959 house holds in this district. Out of which 31924 (31%) are Schedule Caste and 7756 (7.7%) are Backward Class. The SC literacy rate is 29 % out of which male are 32% and female are 25%.

All the families have housing facility. The housing condition varies with fertility of the soils. 31397(31%) houses have RCC roofs and 65050(65%) have roofs made of brick tiles. The source of drinking water in villages are taps & hand pumps. Every village have facility of drinking water. Regarding the latrine facilities, 29%(28893) house holds are using flush type and 58%(58082) are using bore-hole latrine within their houses. The remaining 13% (13617) House holds were using public latrines. 390 Km internal roads which are made of bricks with

uneven surface are required to be made of concrete. 1162 km approach roads are also require repairs ,in addition to this 495 km additional connecting roads are required to be made so that the farmer can approach easily. All the villages were got electrified but the supply of electricity was poor in kharif season due to higher demand for paddy .The supply remain 4 to 6 hours with a lot of tripping and under voltage. There are 321 Self Help Groups in this districts. Most of groups are non functioning .With the efforts of extension staff through ATMA scheme ,13 (5%) groups were activated with motivation .

Almost all the villages have primary /upper primary schools. Enrolment of boys (17943) is higher than girls (14313). The attendance of boys were 84.6% as compared to girls 86.6%. Approximate Total out of school boys in the age group of 6 to 14 were 372 as compared to 366 girls. Among the total out of schools boys and girls 87% & 82% were schedule castes .Regarding the teaching staff in Primary/ upper primary schools ,out of 1272 posts only 962 (76%) posts are filled .In case education up to matric,102 high schools are functioning with 1091 (73%) posts against 1499 sanctioned posts. The data shows that 42% villages have facility of high schools ,so the students of 58 % villages have to walk about 3 to 4 Km to attend the school. All the schools have facility of drinking water as well as the facility of toilets for girls.

The net sown area is 2, 02,000 ha . The no of farming families in this district are 42381. Out of which 4048 are marginals, .5548 are small.13825 are semi medium,15158 are medium and 3793 are larger. The Av. farm operational. holding is larger as.4.43 ha as compare to 4.03 in Punjab. The soils of this district are generally low to medium for N & P and sufficient in K . Regarding the Nitrogen availability ,54% soils are low and 30% soils are medium .In case of Phosphors availability ,31% soils are low and 51% soils are medium. 90% area of this district

is irrigated The major source of irrigation is canal (85%) and rest is with tube wells (15%). 30% area of this district possesses underground water which is fully fit for irrigation. Whereas the 42% water is marginal which needs some amendment like addition of Gypsum, mixing with canal water & addition of green manures. The remaining 28 % area has underground water which is not fit for irrigation.

The major area is under agriculture crops i.e. 92 % .Horticulture, fodder and forest occupy 1%, 5% and 1.5% respectively. The prominent cropping system is Cotton-Wheat followed by Paddy- Wheat. Wheat, Cotton and Rice are major crops which occupy 45%,26%and 18% area of gross cropped area. Whereas Moog, Gauara, Groundnut, Barley and Oil seeds are the minor crops which are grown under 3% area. The cropping intensity is 189 %

The block wise cropping intensity varies from 186 % to 193 %. The maximum cropping intensity was in Mansa (192%) and Bhikhi (193%),where as minimum was in Sardulgarh (186%) and Jhunir (187%) blocks.Because the soils of Mansa and Bhikhi are fertile with good quality under ground water where as in Sardulgarh and Jhunir 31 % area have the brackish under ground water which leads to decline in cropping intensity. Among the agriculture crops, during kharif cotton is the prominent crop which occupies 95000 ha area in this district which is about one sixth of the states area under cotton. The next major kharif crop is paddy with area of 66000 ha which is the 2.5 % of the area of state under paddy.The guara is a minor Kharif crop with area of 3500 ha which is the 20% area of the state under this crop. In Rabi wheat is the major crop which occupies 1.71 lac ha area which is the 4.85 % area of the state under wheat crops. Rabi oil seed with area of 2250 ha contribute 8% share of states area under oil seed. The average yield of different crops varies from block to block. The average yield of cotton varied from 685 kg to 715 kg lint per ha. The maximum yield was recorded in

Bhikhi (715kg) where as the minimum was recorded in Sardulgarh (685kg) . Similarly the maximum yield of Rice was 4395 kg/ha was in Bhikhi and the minimum in Jhunir (3995kg/ha).In case of wheat the maximum yield was observed in Bhikhi (4705kg/ha) .Regarding the minor crops ,almost all the minor crops experiences highest yield in block Bhikhi and Mansa where as minimum in Sardulgarh and Jhunir.

### **Constraints**

Soil related constraints include -Deterioration of soil health with the use of poor quality under ground water, sandy soils with uneven topography & sand dunes. Salt affected soils, emergence of deficiency of micro nutrients, formation of impermeable layer in the sub soil.

Seed related constraints—seed replacement is only 10 to 15 %, lack of seed treatment, high cost of seed particularly cotton, non availability of high yielding varieties, lack of short duration varieties.

Water related constraints- Poor quality under ground water, poor germination, shortage of canal water, highly expensive modern irrigation techniques (Sprinkler & Drip irrigation).

Nutrients management constraints—deficiency of micro nutrients, under dose of nutrients.

Pest management constraints- non adoption of IPM, lack of proper spray technology . Technology dissemination constraints—inadequate extension staff for timely dissemination of technology, lack of mobility and communication equipment with the extension staff, lack of technological dissemination centres/ laboratories, inadequate conveyance facility for the field visit for diagnostic the problems and their solutions there of. Institutional/organizational constraints—lack of initiative of cooperative/ group marketing employment of farming families.

In Rabi wheat occupy an area of 171000 ha ,out of which 41000 ha area experiences low yield as compared to the averages of the district due to constraints i.e. delay in sowing due to cotton- wheat rotation ,micronutrients deficiency, non adoption of pest/disease/weed management ,shortage of irrigation. Due to these constraints the production of

wheat exploits only 78% yield potential as compared to the potentials of the frontline demonstrations. The difference of 10.26 qtl per ha between potential and the realized yield will be removed with adoption of improved technology i.e. early sowing due to introduction of short duration variety of cotton, improvement in irrigation with laser levelling, supply of micro nutrients, adoption pest/disease/weed management etc, which will result in increase in wheat production from 7.83 lac to 9.58 lac .In this district yield potential of minor crops are very low because these crops are shifted to marginal/ rain fed due the expansion of area under major crops. Among the minor crops Oil seed occupy 2300 ha , Guara 5200 ha, Barley 1200 ha , Moong 500 ha and Gram 300 ha. The constraints for these crops are soil type, quality seeds, irrigation facilities, assured price ,non adoption of recommended practices due to poor literacy rate .With the effective implementation of proposed new techniques ie quality seeds, adoption of recommended practices , laser levelling to increase irrigation efficiency ,the yield potential of Oil seed ,Guara Barley ,Moong and Gram will be increased up to 36 %,40 %,30 % ,54 % and 60 % respectively.