

CHAPTER - IV

LANDUSE AND FOOD SUPPLY

- 4.1 General landuse
- 4.2 Irrigation facilities
- 4.3 Cropping pattern
- 4.4 Commercial crops
- 4.5 Food supply

4.1 General land use :

Land is the basic resource and it is also the basis for agriculture. Besides foodgrains and agricultural raw material, even meat, milk, fish, eggs etc. are produced directly or indirectly from land. In the final analysis, the capacity of land to feed the ever increasing population is conditioned by the fact, whether it is properly put to use.¹ One of the fundamental problems facing the world today is the rapidly increasing pressure of population on land resources. Land is the ultimate asset of a nation and the greatest need of the hour is not only to conserve and preserve this resource but also to make the maximum use of it and benefit ourselves from its multiple uses.²

Agriculture is the main occupation of the people of Western Sangli district, where nearly 70 percent of the population directly depends upon the agriculture. Approximately more than 70 percent of the total area is under cultivation. The remaining area is occupied by forest, pastures, other grazing land, culturable waste, land under misc. trees crops, area not available for cultivation and other fallows.

Table 4.1 shows the percentage of each use of land to the total area. The percentage of the various uses of land to the total area have been also shown in Map 4.1. The table shows an overall picture of landuse in the area which occupies about 346000 hectares and out of which 257900 hectares or 74.54 percent

is net sown area. About 22100 hectares or 6.38 percent of the total area is under forest. More than 7 percent of the area is occupied by fallow lands. About 25000 hectares or 7.22 percent of the total area is classified as area not available for cultivation. The land not available for cultivation comprises, the land put to non agricultural uses and barren or uncultivated land. This category includes settlements, roads, railways, cart track, area covered with water and barren land. Other unculturable land covers about 4.64 percent of the total area. This category comprises culturable waste, permanent pasture and other grazing land and land under misc. trees crops. This land is not included in fallow as well as in land not available for cultivation. Out of 16100 hectares under this group, 2300 hectares area is unculturable waste. About 11000 or 3.17 percent of the total area is under permanent pasture and other grazing land. Remaining 2800 hectares land is under misc. trees, crops.

The fallow land consists of current fallow and other fallow. The current which covers about 2.86 percent of the total area, includes the land which were left unutilized for more than two years. The other fallow land includes the land which was not under the crop at the reporting time.

About 74.54 percent of the total area is net sown area. The area sown more than once is about 13000 hectares or about 5 percent of the net sown area or 3.75 percent of the total area of the region. The total cropped area includes the net sown area and

Table 4.1 Land utilization in Western Sangli district, 1979-80,
(Total area 34,6,000 hectares).

Sr. No.	Land classes	Area in hect.	% of the total area	Total percentage of the total area
1.	Total geographical area	346000		
2.	Area under forest	22100	6.38	6.38
3.	Fallow land	25000	7.22	7.22
	a) Current fallow	9900	2.86	
	b) Other fallow	15100	4.36	
4.	Area not available for cultivation	25000	7.22	7.22
	a) Land put to non agricultural uses	7900	2.28	
	b) Barran and cultivable land	17100	4.94	
5.	Other uncultivable land excluding fallow land	16100	4.64	4.64
	a) Culturable waste	2300	0.66	
	b) Permanant pasture and other grazing land	11000	3.17	
	c) Land under misc. trees, crops etc., not included in sown area	2800	0.81	
6.	Net area sown	257900	74.54	74.54
7.	Area sown more than once	13000		
8.	Total cropped area	270900		
				100.00

Source : Socio-economic review & district statistical abstract of Sangli district, 1980-81.
CIVIL UNIVERSITY, SOLAPUR

the area sown more than once. It is about 78.29 percent of the total area of the region.

The current fallow land is considered as good as cultivated land. The current fallows have, therefore, been included in cultivated land. The total cultivated area constitutes about 81.16 percent of the total area.

Table 4.2 indicates the tahsilwise percentage of each use of land to the total area. The area under forest is highest in Shirala tahsil. Shirala tahsil is situated on the foothill of Sahyadri, which receives highest amount of rainfall. At the same time it is the hilly region. Hence forest cover is more in Shirala tahsil. About 13100 or 20.63 percent of the total area of Shirala tahsil is under forest. Tasgaon tahsil had 4.50 percent and Walwa tahsil had 3.81 percent of the total area under forest. Miraj tahsil has recorded lowest area under forest, eastern part of Miraj tahsil has included in drought prone area of district where annual rainfall is very low. So forest cover is also negligible.

The fallow land proportion is highest in Walwa and Miraj tahsil. About 7600 hectares or 9.66 percent of the total area of Walwa tahsil is fallow land, out of which 4200 hectares of land is, current fallow and 3400 hectares is other fallow. About 8500 hectares or 9.17 percent of the total area of Miraj tahsil is fallow land; out of it only 1100 hectares of land is current fallow and other 7500 hectares of land is other fallow. Tasgaon

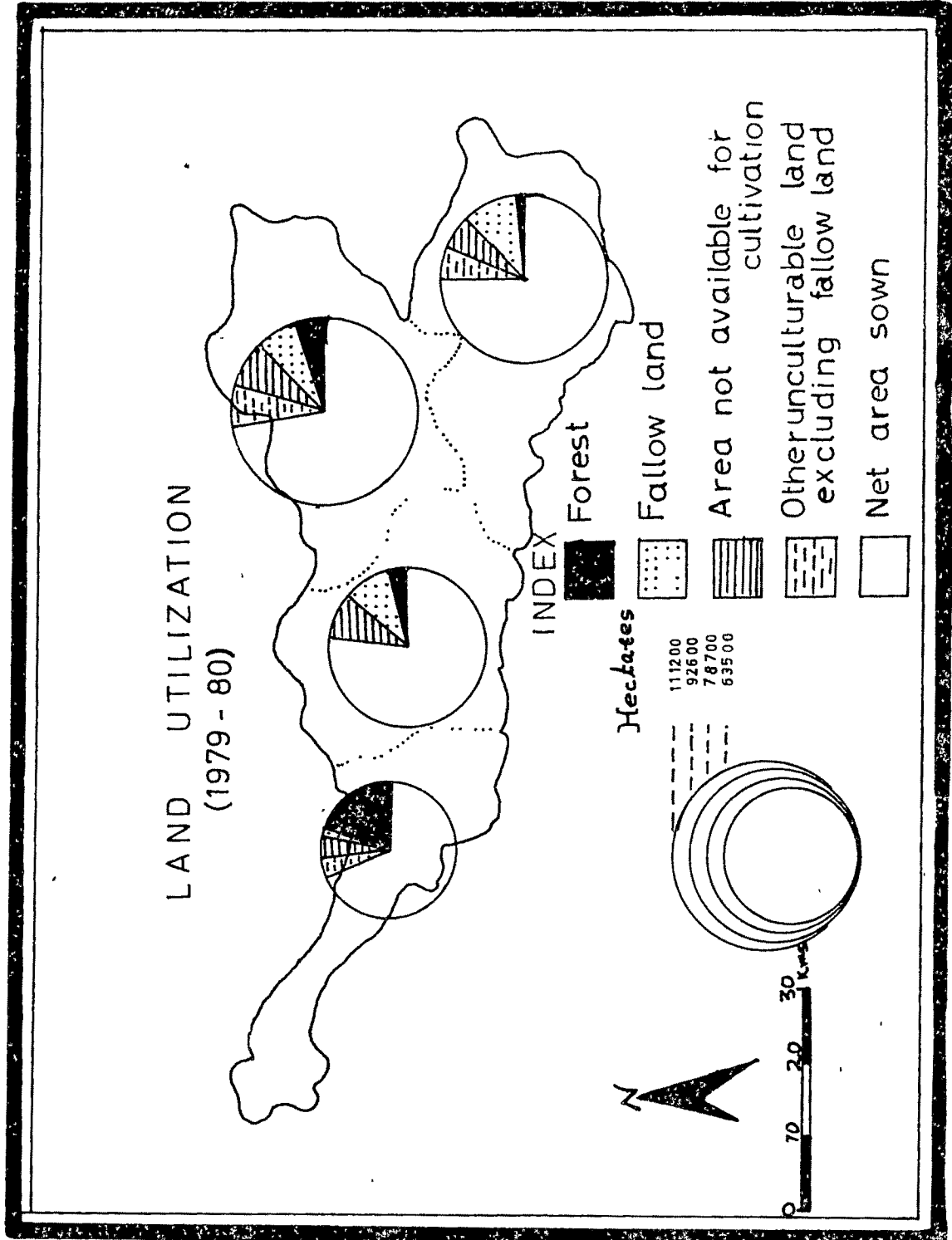
angli district, 1979-80.

Sr. No.	Land	Shirala Tahsil		
		Area in hectare	% of total area	Total % of total area
1.	Total area	63500		
2.	Area under	13100	20.63	20.63
3.	Fallow	800	1.26	1.26
	a) Current	200	0.31	
	b) Other	600	0.95	
4.	Area not for cult	3000	4.72	4.72
	a) Land under agric	-	-	
	b) Barren uncult	3000	4.72	
5.	Other land ex fallow	2500	3.94	3.94
	a) Cultu	-	-	
	b) Permai and o land	1300	2.05	
	c) Land trees, not in area s	1200	1.89	
6.	Net area	44100	69.45	69.45
7.	Area set once	2100		
8.	Total	46200		
			100.00	100.00

Source



MAP NO 4.1



tahsil has 8100 hectares or 7.29 percent of total area is fallow land is other fallow. Shirala tahsil recorded only 800 hectares or only 1.26 percent of the total area is fallow land. Out of it only 200 hectares is current fallow. The region enjoys maximum amount of rainfall in south-west monsoon season and paddy cultivation is dominant.

Walwa, Tasgaon and Miraj tahsil records highest area that is not available for cultivation. About 7100 hectares or 9.02 percent of the total area is not available for cultivation, out of it 2100 hectares of land is put to non agricultural uses and 5000 hectares of land is barren and unculturable. Nearly 9000 hectares or 8.09 percent of the total area of Tasgaon tahsil is not available for cultivation, out of it 2200 hectares of land is put to non-agricultural uses and 6800 hectares of land is barren and unculturable. About 5900 hectares or 6.37 percent of the total area of Miraj tahsil is not available for cultivation. Miraj tahsil recorded highest (3600 hectares) area put to non agricultural uses. This due to urban development and transport development under which most of the area included and remaining 2300 hectares of land is barren and unculturable. Shirala tahsil has recorded 3000 hectares or 4.72 percent of total area not available for cultivation and most of this land is barren and unculturable.

Tasgaon tahsil has 8000 or 7.19 percent of the total area under unculturable land excluding fallow land. Out of it 6800

About 81100 hectares or 72.93 percent of the total area Tasgaon tahsil is net sown area. Area sown more than once is 4500 hectares or 5.55 percent of the net sown area or 4.05 percent of total area. The total cropped area is 85600 hectares or 76.98 percent of the total area. The total cultivated area is 80.94 percent of the total area of Tasgaon tahsil.

As compared to these three tahsil Shirala tahsil has lowest net sown area, which is 44100 hectares or 69.45 percent of the total area. Area sown more than once is 2100 hectares or 4.76 percent of the net sown area or 3.30 percent of the total area. The total cropped area is 46200 hectares or 72.75 percent of the total area. The total cultivated area is 73.06 percent of the total area.

When we conclude about the land utilization in Western Sangli district, one thing is very clear that, area sown more than once is very less in all the tahsils. It ranges from 6.26 percent of the net sown area in Walwa tahsil, 5.55 percent in Tasgaon tahsil, 3.61 percent in Miraj tahsil and 4.76 percent of the net sown area of Shirala tahsil. Poorly developed irrigation facilities are responsible for this situation. Irrigation facilities are not well developed in this region. So dry farming is most dominant. Table 4.3 shows tahsilwise percentage of net irrigated area to net sown area.

4.2 Irrigation facilities :Table 4.3 Percentage of net irrigated area to net sown area.

Sr. No.	District/Tahsil	1960-61	1970-71	1974-75	1978-79
1.	Western Sangli district	6.94	11.38	11.78	18.94
2.	Miraj	6.98	14.19	14.63	23.56
3.	Tasgaon	6.91	13.43	13.27	20.27
4.	Walwa	9.46	13.43	14.28	26.20
5.	Shirala	4.40	4.48	4.76	5.72

The table above indicates that there is an increase in net irrigated area to net sown area. More than 20 percent of net sown area of Walwa, Tasgaon, Miraj tahsil is irrigated. Irrigation facilities are very poor in Shirala tahsil. Though this percentage of irrigated area is some what higher, as compared to the area sown more than once, most of the area enjoys irrigation facilities in Kharif season. Rabi season is not benefited by the similar irrigation facilities. There is a great shortage of water in Rabi season. Starvation of crops from water is the most common phenomenon in Rabi season. So there is not wide spread sown area in Rabi season as compared to Kharif. So area sown more than once is small in all tahsil.

4.3 Cropping pattern :

There are two main agricultural seasons in a year i.e. the Kharif season or the crops of summer seasons and Rabi season or the crops of winter season. The sowing of Kharif season begins with the advent of south-west monsoon, generally from the first week of June. If rainfall of wet monsoon months is well distributed and timely, all the Kharif crops flourish well, since all the Kharif crops with the exception of sugarcane are grown without irrigation. The principle Kharif crops are rice, jowar kharif, bajara, maize, ragi, red gram, moth beans and groundnut.

The Rabi season starts from October. The crops are sown in the month of October and harvested in the month of March and April. Due to the shortage of water Rabi season is shorter than Kharif season. The major crops of the season are wheat, rabi jowar, bengal gram.

Table 4.4 reveals most important features regarding the use of agricultural land. The crop landuse is shown in Map 4.2. About 140054 hectares or 51.70 percent of the total gross cropped area is devoted to cereal crops such as rice, wheat, jowar, bajara, maize. Jowar is most important crop in the region, which occupies 35.05 percent of the gross cropped area. Jowar is sown in Kharif season as well as Rabi season; but Kharif jowar is important in all region; while rabi jowar is important in Miraj and Shirala tahsil. Rice is also important staple crop. About

Table 4.4 Percentage of area occupied by major crops Western Sangli, 1979-80.

Sr. No.	Crops	Area in hect.	Percentage of G.C.A.	Total percentage of total foodgrains
1.	Total cereals	140054	51.70	51.70
2.	Rice	18675	6.89	
3.	Wheat	7134	2.64	
4.	Jowar	97659	36.05	
5.	Bajara	10728	3.96	
6.	Maize	1038	1.49	
7.	Other cereals	1782	0.67	
8.	Total pulses	27691	10.22	10.22
9.	Bengal gram	7003	2.56	
10.	Red gram	8274	3.07	
11.	Moth beans	4300	1.59	
12.	Other pulses	8124	3.00	
13.	Total foodgrains	167745	61.92	61.92
14.	Sugarcane	25836	9.54	9.54
15.	Groundnut	36370	13.42	13.42
16.	Total oilseeds	37511	13.84	

Source : Socio-economic review and district statistical abstract of Sangli district, 1980-81.

18675 hectares or 6.89 percent of the total gross cropped area is under rice. Shirala tahsil is important in rice cultivation, followed by Walwa, Miraj and Tasgaon tahsil. Bajara is important crop in Miraj and Tasgaon tahsil. While maize is important in Shirala and Miraj tahsil. Wheat is cultivated in all tahsil. The important tahsils are Tasgaon, Walwa and Miraj. In other cereals, ragi is most important in Shirala tahsil.

About 27691 hectares or 10.22 percent of the total net sown area is under pulses. Red gram (Tur), bengal gram, moth beans are the important pulses. Other pulses include black gram, hourse gram, green gram and peas. About 167745 hectares or 61.92 percent of the total gross cropped area is devoted to total foodgrains. Tasgaon tahsil records highest (71.89 percent) area under foodgrains. Followed by Miraj and Walwa tahsils. Shirala tahsil records lowest (39.74 percent) area under foodgrains. This is due to undulating topography of the region.

Nearly 13.84 percent of the total gross cropped area is under oilseeds. Groundnut is the most important oilseed in the region. More than 13 percent of the total gross cropped area is under groundnut. The other oilseeds include safflower, linseed, gigelly, sunflower etc.

Sugarcane is the most important commercial crop of the region. Nearly 9.54 percent of the total cropped area is under sugarcane. Walwa, Miraj and Tasgaon tahsil are important in sugarcane cultivation. Other commercial crops included cotton,



tobacco, turmeric, chilli. Now adays Tasgaon tahsil is famous for grape cultivation.

Table 4.5 shows percentage of area occupied by major crops in Miraj, Tasgaon, Walwa and Shirala tahsils. It would be worthwhile to give a brief account of each Kharif and Rabi crops and its relation with existing climatic and soil conditions of the area.

Jowar is the most important cereal crop of the area. There are two types of jowar (i) the Kharif jowar, (ii) Rabi jowar, Kharif jowar is important in Tasgaon, Walwa and Miraj tahsil, while Rabi jowar is important in Miraj and Shirala tahsil. There is a rapid expansion in the introduction of high yielding varieties of jowar seeds which give higher yield and mature earlier than the jowar which was generally grown. Tasgaon tahsil recorded highest, 49.17 percent of the total cropped area under jowar. Walwa tahsil is the second important jowar producing tahsil, nearly 38.76 percent of the total cropped area is under jowar. Miraj tahsil having 35.17 percent of the total cropped area under jowar. Shirala tahsil recorded only 9.34 percent of the total cultivated area under jowar. Due to heavy rainfall in Kharif season, which is not suitable for jowar, hence jowar is not important crop in Shirala tahsil.

Bajara is also important Kharif crop. It is most dominant in Miraj tahsil. About 10.32 percent of the total cropped area of Miraj tahsil is under bajara. Tasgaon tahsil has 3.33 percent

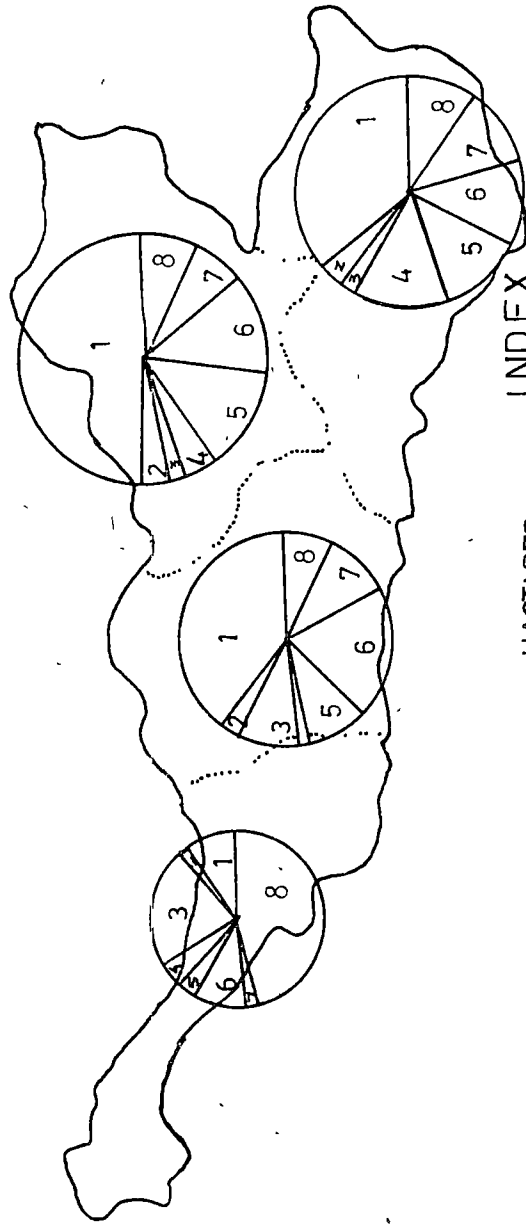
Shirala tahsil in 1979-80.

Sr. No.	Crops	Shirala tahsil			
		Total percentage of total grains	Area in hectare	% of G.C.A. Total percentage of total foodgrains	
1.	Total	36.90	16741	36.27	36.27
2.	Rice		9932	21.52	
3.	Wheat		413	0.89	
4.	Jowar		4312	9.34	
5.	Bajara		9	0.02	
6.	Maize		1009	2.19	
7.	Other		1068	2.31	
8.	Total	3.14	1600	3.47	3.47
9.	Bengal		540	1.17	
10.	Red gr		248	0.54	
11.	Moth b		504	1.09	
12.	Other		308	0.67	
13.	Total Foodgr	39.04	18341	39.74	39.74
14.	Sugarc		971	2.10	
15.	Ground		4490	9.73	
16.	Total		4510	9.77	

Source

MAP NO 4.2

CROP LANDUSE (1979-80)

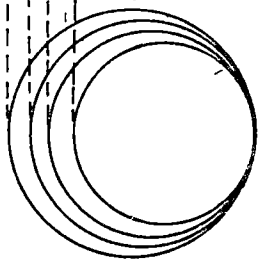


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HACTARES

- 85600
- 74600
- 64500
- 46200



of the total cropped area under bajara. The eastern portion of Miraj and Tasgaon tahsil where amount of rainfall is low, bajara is important in Kharif season. Walwa and Shirala tahsils enjoy high rainfall amount which is not suitable for bajara. Hence, Walwa and Shirala tahsil recorded negligible area under bajara.

Rice is the third important cereal crop which is generally sown in Kharif season. Rice is grown extensively and covers largest cultivated area of Shirala tahsil. Due to the heavy rainfall in Shirala tahsil area under rice is greater. Nearly 21.52 percent of the total cropped area is under rice. Walwa is second important rice producer tahsil. About 9.39 percent of the total cropped area is under rice. This rice is mainly concentrated in the low lands of Krishna, Warna valley bottoms and in limited extent in the irrigated tract of the region. Miraj and Tasgaon tahsil, particularly eastern part of the tahsil having very less rainfall, hence area under rice is less than 2 percent of the gross cropped area. Rice is sown after the first shower of the monsoon and harvested in October and November.

Wheat occupies significant position in Rabi season. It occupies similar position to rice among the cereals. Sowing of wheat start in the month of October and harvested in February March. About 2772 hectares or 3.25 percent of the total cropped area of Tasgaon tahsil is under wheat. Miraj is next important tahsil which is having 2.73 percent of the total gross cropped

area is under wheat. Walwa covers 1909 hectares of area that form 2.96 percent of gross cropped area. The soil where wheat is grown are mostly the deep and moisture retentive. The low hectarage under wheat indicates the poorly developed irrigation facilities of the region. As it is grown in the dry months of winter, needs artificial irrigation. Shirala tahsil having only less than one percent of the total gross cropped area under wheat.

Wheat forms the good quality of nutritious diet. In recent years high yielding varieties of wheat seeds have been largely introduced in the area. These high yielding varieties require more fertilizers and more irrigation facilities, but irrigation facilities are not satisfactory in the region. So there is limitation on these high yielding varieties.

Maize is a minor staple food of the people of the region. Sometimes the villagers pick up the green cobs to be roasted for food. The maize is sown in Kharif season, interculture with jowar and in Rabi season interculture with, wheat. Sometimes it is taken as a monocrop. It is generally grown in good quality lands. Water logging is harmful to crop, hence it is never sown in low lying fields. Well drained and generally light soils are best suited for maize. Miraj and Shirala tahsil is important in maize production. About 3.02 percent of the total gross cropped area of Miraj tahsil is under maize and 2.19 percent of the total gross cropped area of Shirala tahsil is under maize. Tasgaon and Walwa tahsil is having less than one percent of the total gross cropped area under maize.

Among other cereals ragi and barley are important. There is a wide spread cultivation of ragi in Shirala tahsil. Owing to the favourable geographical conditions in Shirala tahsil, ragi occupies fourth largest area after rice, jowar and maize in Kharif season.

In general more than 50 percent of the total gross cropped area of Tasgaon, Miraj and Walwa tahsil is devoted to cereal crops. About 50292 hectares or 58.71 percent of the total gross cropped area of Tasgaon tahsil is under cereal crops. Miraj has 53 percent and Walwa is having 51.90 percent of the total gross cropped to cereal crops. Shirala is having 36.27 percent of its gross cropped area to cereal crops. When we consider the food habit of the people cereal crops play an important role in the diet of people. Most of the energy is derieved from the cereal crops. So it is the major diet of the people.

Pulses are significant throughout the region. They have heavy concentration in Tasgaon and Miraj tahsil. The pulses are very effectively used in interculture with jowar, and bajara. Pulses are also taken as a mono crop in some parts of the region. Major pulses of the region are bengal gram, redgram (Tur), moth beans (Mataki), black gram, hourse gram, green gram and peas. Generally all these pulses are grown mixed with other Kharif and Rabi crops on relatively poor or less productive land. Tasgaon tahsil has highest hectarage of land under pulses. About 11287 hectares or 13.18 percent of the total cropped area is

devoted to pulses. The major pulses are red gram, bengal gram and moth beans which occupy about 4.37 percent, 2.90 percent and 2.38 percent of the total gross cropped area respectively. About 11.93 percent of the total cropped area of Miraj tahsil is under pulses. Out of it bengal gram, red gram, moth beans occupied 2.35 percent, 3.75 percent and 2.05 percent of the gross cultivated area respectively. Nearly 9.14 percent of gross cropped area of Walwa tahsil is devoted to pulses. Important pulses are bengal gram, and red gram which occupy about 3.45 percent and 2.30 percent of total gross cropped area respectively, Shirala tahsil has very limited area under pulses. Only 3.47 percent of the total gross cropped area is devoted to pulses.

Pulses play a very significant role in the diet of people. Most of the proteins are obtained from the pulses. Pulses are the cheapest source of protein. Due to the poverty among the people, animal proteins are not easily available in the diet. So most of the proteins are obtained from the pulses.

When we consider the total area under foodgrains, Tasgaon tahsil ranks first. About 71.89 percent of the total gross cropped area is under foodgrains. Miraj, Walwa and Shirala occupies about 64.93 percent, 61.04 percent and 39.74 percent of the total gross cropped area respectively.

This cropping pattern reflects the food habit of the people. Nearly $\frac{3}{4}$ of the energy is obtained from cereals and pulses.

Oilseeds- The major oilseeds are groundnut, safflower, sunflower, linseed, nigarseed. Groundnut is the most important oilseed, which is largely produced in the region. It constitutes the prime source of oil and fats, largely it is grown in Kharif season. Other oilseeds are grown mixed with Kharif and Rabi crops. Walwa tahsil has highest hectarage of land under oilseeds. About 20.37 percent of the total gross cropped area is under oilseeds, out of it 20.14 percent of the total G.C.A. devoted to groundnut. Tasgaon and Miraj tahsil have more than 12 percent of the total gross cropped area to oilseed. Of it 11.26 percent and 12.24 percent of the total G.C.A. of the Miraj and Tasgaon is under groundnut respectively. Shirala tahsil having only 9.77 percent of the total G.C.A. to oilseed, out of it 9.73 percent of G.C.A. to groundnut.

4.4 Commercial crops :

In the commercial crops sugarcane, cotton, tobacco, turmeric and chilli are important. Sugarcane is the most important commercial crop of the region. It occupies the good quality of land and it requires best care during the cultivation. It is highly concentrated in Krishna, Warna and Yerela basins. Alluviul soils of these river basins and good water supply provide favourable conditions for the sugarcane cultivation. Walwa tahsil is leading in sugarcane cultivation. About 8407 hectares or 13.04 percent of total gross cropped area is devoted to sugarcane. Miraj tahsil ranks second after Walwa. About 11.21

percent of the total gross cropped area is under sugarcane. Tasgaon has 9.44 percent of the total G.C.A. to sugarcane. The area under sugarcane is very less, only about 2.10 percent of the total G.C.A. of Shirala tahsil is devoted to sugarcane.

In other commercial crops cotton is cultivated in Miraj and Tasgaon tahsil. Tobacco is important in Miraj, Tasgaon and Walwa tahsil. A very small hectarage is devoted to turmeric in all tahsils. Chilli is also important in all tahsil.

Grape farming is famous in Tasgaon tahsil. But due to the shortage of water a very small portion of land; where permanant irrigation facilities are available, is devoted to grape cultivation. Rose gardening is second important agricultural innovation in Tasgaon tahsil.

Table 4.6 indicates that cropping has undergone various changes between 1965-66 and 1979-80. Due to the commercilization of agriculture area under sugarcane has increased day by day, whereas area under foodgrains are constant or slightly increases. The area under cereals in Western Sangli district was 132562 hectares, 128698 and 140054 hectares in 1965-66, 1975-76 and 1979-80 respectively. During the span of these 15 years period, the area under cereals increased by 7492 hectares or 5.6 percent. The area under pulses was 26251 hectares, 29694 and 28591 hectares in 1965-66, 1975-76 and 1979-80 respectively. During this 15 years period area under pulses increased by 2340 hectares or 8.9 percent.

		Commercial crops				
Dis	Sugarcane		Cotton, Tobacco, Turmeric			
	1975-76	1979-80	1965-66	1975-76	1979-80	
Wes	21009	25836	6352	5061	4962	
	6060	8369	3713	2960	3444	
	7137	8089	1392	1025	975	
	6710	8407	1191	1052	503	
	1102	971	56	24	40	

Sugarcane	
1979-80	Growth %
25836	+ 131.7
8369	+ 209.5
8089	+ 229.6
8407	90.7
971	- 38.9

But the area under sugarcane increased very fast. The area under sugarcane was 11151 hectares, 21009 hectares and 25836 hectares in 1965-66, 1975-76 and 1979-80 respectively. During this 15 years period, area under sugarcane increased by 14685 hectares or 131.7 percent. If we consider area under foodgrains together it was 158813 hectares in 1965-66 which increased by 168645 hectares in 1979-80; which increased by 6.2 percent. Whereas area under sugarcane for the same year increased by 131.7 percent. That means area under sugarcane increased 21 times more than foodgrains. This indicates the impact of commercialization in agriculture. Regional differences are also marked. Areas under foodgrains in Miraj tahsil increased by 1.4 percent since 1965-66 to 1979-80, whereas area under sugarcane increased by 209.5 percent. In Tasgaon, area under foodgrains increased by 5.7 percent, while area under sugarcane increased by 229.6 percent. Figures for Walwa tahsil are 12 percent for foodgrains and 90.7 percent in sugarcane. The Shirala tahsil marked negative result in sugarcane cultivation.

It is clear that the area under foodgrains are nearly constant or have slightly increased. But the area under sugarcane increased very rapidly. Sugarcane is a such crop which requires great amount of water throughout the year. Seasonal shortage of water is the common phenomenon of this study region. The water which is available is supplied to sugarcane. Hence area sown more than once is very small. If the same water is given to the

other food crops especially to Rabi crops like wheat, bengal gram etc. The area under food crops will increase. So it helps to increase the foodgrain production. So the per capita food availability will be more.

4.5 Food supply :

One of the major concern of the world today is to increase the food production particularly in the developing world, where three fourth of the world population lives with low nutritional level. The problem may be further aggravated by the turn of the century when the world population is likely to get doubled itself for over 1985 figure. Thus there is a great urgency to consider the entire food system in the developing and developed world from initial production stage to the final utilization stage.³ Population and food supply disparity is a general problem of 20th century. It is more acute in the regions of low potential land resources. However, the intensity of the increasing food deficiency is experienced everywhere. Population growth and rate of the growth of agricultural production are not at all matching. With continuously increasing population the need for increasing the food resources of the world has become more pressing now than ever before. The gravity of food problem and the danger of food scarcity are making a serious shape.⁴

While discussing the man-land relationship Stamp has stated that, "In recent years no problem has forced itself more insistently on world attention than the rapidly increasing of

population on material resources. The days of larg scale exploration in the old sence are over. The area of the land surface available for occupation and use by man can be measured with an accurancy that becomes greater year to year".⁵

Proper land utilization is the need of time. The area available for cultivation must be used properly. Foodgrain production must be increased. As compared to the growth of population, the agricultural production is not keeping pace with population growth. So it is not possible to feed all the population properly. According to a FAO Survey, India is one of the poorestly fed countries in the world. Four out of ten human beings in the world are hungry; and one out of four is an Indian. The FAO Production Year Book, 1971 has given the details of food supply in 133 countries. In terms of per caput supply of calories, India is some where near to the bottom; 121st to be exact. In terms of the consumption of meat, eggs, and fish India occupy the bottom most position. There are 54 countries in the world, each with a population exceeding ten million. In terms of the total quantity of food consumed Indian's consumption is the lowest among these 54. In terms of the per caput consumption of calories, India's position is the last but three. If we take into account the per caput consumption of protective foods such as, milk, fruits and vegetable, India's position is the last but six. If we take into account the per caput consumption of meat, eggs and fish India's position is the last.⁶

Table 4.7 shows that the production of foodgrains in Western Sangli district was 60104 tonnes in 1971 and which increased to 111383 tonnes in 1981. The net increase of production in this decade is about 51275 tonnes. The population in 1971 was about 1019989 which increased to 1238868 persons in 1981. The decadal growth of population is 218879. This production constitute cereals and pulses. Among cereals jowar forms the largest production and this followed by rice, wheat, bajara and maize. Among the pulses bengal gram and red gram forms major part of the total production.

For a population to be adequately fed, the agricultural production should keep pace with the needs of growing population. During this decade there has been considerable increase in food production, the annual increase being of order of 8.5 percent. Though the production improves but the problem to feed the increasing population continues. Before the Green Revolution in India agriculture was so primitive, irrigation, power and other facilities and supplies were very meagre. But after the Green Revolution this picture has changed. The improving irrigation facilities and power supply, spreading the latest know-how in agriculture, promotion of research, the evolution adoption, production and distribution of improved high yielding seed varieties, improvements in inputs etc. As a result, agricultural yields have increased and more areas have been brought under the plough. It is true that our yields are still low compared with those in developed countries.

ion.

Sr. No.	District	8 1	
		Foodgrains per capita per year in Kg.	Foodgrains per capita per day in gm.
1.	Western District	90	246
2.	Miraj	63	174
3.	Tasgaon	135	371
4.	Walwa	87	239
5.	Shirala	96	262
Sources		1980-81.	

Indeed during the period 1971-81 the foodgrains production had gone up by about 85.3 percent, against a population increase of about 21.4 percent. These figures clearly indicate that the rate of growth of agricultural productivity is greater than the population growth. But the problem should still be there in spite of this stupendous success. The per caput daily consumption of foodgrains is very low. The availabilities of foodgrains per capita per day was only 161 grams in 1971, which increased to 246 grams in 1981.

Table 4.8 Average daily per capita availability of foodgrains (1981).

Sr. No.	District/ Tahsil	Cereals		Pulses	
		Per head consumption		Per head consumption	
		Kg. per year	gm. per day	Kg. per year	gm. per day
1.	W. Sangli district	79.0	216	11.0	30
2.	Miraj	54.6	150	8.5	24
3.	Tasgaon	116.9	320	18.1	51
4.	Walwa	77.6	213	9.4	26
5.	Shirala	89.5	245	6.5	17

The regional differences are most striking. The per capita availabilities of foodgrains in Tasgaon tahsil is better as

as compared to other tahsil. The per head per day consumption of foodgrains in Tasgaon tahsil was about 234 grams in 1971, which increased to 371 grams in 1981. The figures for Walwa tahsil was 148 grams in 1971 and 239 grams in 1981. The per capita per day consumption of foodgrains for Shirala tahsil was only 168 grams in 1971, which increased to 262 grams in 1981. The per capita availabilities of foodgrains for Miraj tahsil is very low. It was 124 grams in 1971 and 174 grams in 1981.

Although there has been an appreciable increase in total production of foodgrains in Western Sangli district, per head per day consumption of foodgrains is very low. Table 4.8 shows the average daily per capita availabilities of foodgrains in 1981. The average daily per capita availability of foodgrains of Western Sangli district is 216 grams cereals and 30 grams pulses. The Nutrition Expert Group of the Indian Council of Medical Research has recommended the average quantity of food-stuffs per person per day. The recommended allowances for cereals is 370 grams and pulses in 70 grams per person per day.⁷ That means 440 grams ($370+70=440$) foodgrains per person per day are recommended by I.C.M.R. The average daily per capita per day availabilities of foodgrains of Western Sangli district is about 216 grams and 30 grams cereals and pulses respectively. That means deficiency of 154 gram of cereals and 40 grams of pulses to the standard requirement occurs. Regional differences are also most striking. The average per capita per day availabilities of

foodgrains in Tasgaon tahsil is 320 grams of cereals and 51 grams pulses; the deficiency is about 50 grams of cereals and 19 grams of pulses to the standard requirement. In Walwa tahsil per day per capita availabilities of foodgrains are 213 grams of cereals and 26 grams of pulses, the deficiency is 157 grams of cereals and 34 grams of pulses to the standard requirement. For Miraj tahsil per capita per day availabilities of foodgrains are 150 grams of cereals and 24 grams of pulses, the deficiency is 220 grams of cereals and 36 grams of pulses to the standard requirement. In the total foodgrain production Miraj tahsil stands second after Tasgaon tahsil. But Miraj tahsil having greatest urban population, which is not concerned with the agricultural production. So per head per day availability of foodgrains are low in Miraj tahsil. In Shirala tahsil per capita per day availabilities of foodgrains are 245 grams of cereals and 17 grams of pulses; the deficiency is 125 grams of cereals and 53 grams of pulses to the standard requirement.

Rural population is the active force in agricultural production. Urban population is engaged in other than the agricultural activities. Nearly 3/4th of the urban population is engaged in other than the agricultural (secondary & tertiary activities) activities. So urban population is not directly concerned with the agriculture, but rural population is directly concerned to agriculture. Most of the rural population constitutes cultivators and agricultural labourers which directly depend

upon the agriculture. So agricultural production is directly linked to rural population. Though urban population also depends upon the agricultural production but not directly concern to agriculture. So the Table 4.9 shows average daily per capita availabilities of foodgrains in rural areas of Western Sangli district.

Table 4.9 Average daily per capita availability of foodgrains in rural areas of Western Sangli district in 1981.

Sr. No.	District/ Tahsil	Cereals		Pulses	
		Per head consumption		per head consumption	
		kg. per year	gm. per day	kg. per year	gm. per day
1.	W.Sangli District	112.6	308	15.5	42
2.	Miraj	116.5	319	18.3	50
3.	Tasgaon	138.4	379	18.3	50
4.	Walwa	94.7	260	11.6	32
5.	Shirala	89.5	245	6.5	17

In general average daily per capita availability of foodgrains of rural population of Western Sangli district is 308 grams of cereals and 42 grams of pulses; the deficiency is about 62 grams of cereals and 28 grams pulses to the standard

requirement. The rural population of Tasgaon tahsil has sufficient quantities of cereals. The figures for Tasgaon tahsil are 379 grams of cereals and 59 grams of pulses. The pulses deficiency is about 11 gram to the standard requirement. In Miraj tahsil per capita per day availabilities of foodgrains are 319 grams of cereals and 50 grams of pulses; the deficiency is 51 grams of cereals and 20 grams of pulses to the standard requirement. The figures for Walwa tahsil are 260 grams of cereals and 32 grams of pulses, the deficiency is 110 gram cereals and 38 grams pulses. The figures of Shirala tahsil are same, because there is not a single urban centre in Shirala tahsil. All population is the rural population.

It is found that the per head per day availabilities of foodgrains are below the standard requirement. Increase in the production of foodgrains is of great importance to reach the required standard. This can be achieved in a number of ways increase in the area under cultivation. But there is little scope to increase the area under cultivation in the study region. So per hectare productivity must be increase with the help of new agricultural techniques mentioned in the foregoing discussion. It is also necessary to increase the intensity of cropping. At the same time it is necessary to explore the possibilities of changes in the present cropping pattern to have more calories. This will enable the agricultural scientists to develop new varieties or new crops which will yield a better nutritional return. Bajra, ragi, pea, greengram, blackgram are some of the

crop varieties which will be climatically suited to this region. Though these are the age old crop varieties, but the area under these crops is decreasing day by day. Ragi is rich in calcium and iron, bajra in protein, calcium, phosphorus, iron, carotene and greengram, blackgram, pea are rich in calcium and iron. The climatic condition of Shirala tahsil are most suitable for ragi and for bajra, Miraj and Tasgaon. Pea, blackgram, greengram can be cultivated in the part of Sangli district. Lastly all types of irrigation facilities must be developed, as they will help to increase the foodgrain production, which will in turn provide the people with the minimum required standard of caloric intake.



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