RESEARCH REVIEW JOURNALS
Volume-05
Issue-08
August-2020

ISSN: 2455-3085 (Online)
RESEARCH REVIEW International Journal of Multidisciplinary
www.rrjournals.com[Peer Reviewed Journal]
DOI: https://doi.org/10.31305/rrijm.2020.v05.i08.038

Availability of Food: An Issue of Food Security Among Tribal Population In Satpuda Mountain Region of Jalgoan District (M.S.)

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ARTICLE DETAILS

Article History
Published Online: 17 August 2020

Keywords
food, availability, tribal, recommendation, pulses, cereals.

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ABSTRACT

Availability of food, as per the need and choice of an individual, is the first and very pertinent dimension of the food and nutrition security. Food security is India's one of most persistent problem, and outcomes are worse for tribal communities. Most studies have found that food intake of both tribal children and adults falls much below the recommended dietary allowances. This paper examines the levels of food availability at the micro level as against to the macro level in the tribal dominated Satpuda Mountainous area of Jalgaon district. To find the availability of food mainly cereals and pulses last five years data have been considered and the results have been correlated with the daily recommendation made by ICMR. During the study period per capita availability of cereals and pulses has been declined significantly.

1. Introduction

Availability of Food is a necessary condition for food security. Attainment of self sufficiency in food grains at the national level is one of the country's major achievements in the post-independence period. Despite such a positive development in food grain production, the incidence of poverty and child under-nutrition remains relatively high in tribal dominated areas across States. In India ensuring food security is an issue of great importance, because it is estimated that one third population of the country is very poor and facing insecurity of food.

On the whole, the development process in the tribal areas seems to have suffered due to the over-emphasis on projects of national interest, encroachment of tribal areas by non-tribal communities and the Naxalite uprising. Together these factors led to a higher incidence of poverty and child malnutrition in the tribal dominated areas. The situation in the tribal region of Jalgaon district is not different from the status as mentioned above. In view of above an attempt has been made to analyze the food availability status in the tribal dominated Satpuda mountain area of Jalgaon district.

2. Study Area

The tribal area of Jalgaon district is a peculiar region with distinct physical setting and socio-economic conditions. It is a region flanked by Narmada valley to the north and Tapi valley to the south. Satpuda hills are rise abruptly above the plain from 200 to 700mts. The entire study region is therefore, mountainous one. The study region lies along the northern boundary of Maharashtra State. The study region occupied major parts of Chopda, Yawal and Raver tehsil of Jalgaon district (Map 1). There are about 35 tribal villages or *padas* (micro settlement) are spread in the study region. This region is mainly inhabited by '*Bhil-pawra'* tribal community. The study region lies between 20^0 50' North and 21^0 North latitudes and 75^0 15' East and 76^0 15' East longitudes.

3. Objectives

There are some important objectives of the present study...

1. To assess the availability of food from various food crops in the study region.
2. Compare the availability of food to the standard requirement.
3. To study the distributional pattern of food availability in the study region.

4. Methodology

Present study is based on primary and secondary source of data. Taking Satpuda mountain region of Jalgaon district as a unit of study and villages located in the region has been selected as spatial unit of analysis. Data regarding area under different food crops for the last five years from 2015 to 2019 has been collected from the TF 20 records of respective tehsil and agricultural offices. Per hector production of these food crops have been collected from the Jalgaon district Statistical Abstract.

The availability of food production has been calculated for major cereal crops i.e. jowar, bajra & maize and pulses. Besides this the distribution of subsidized food through government agencies has also been considered to analyze the availability of food.

The net availability of food grains is estimated to be Gross Production is calculated as 87.5 percent of gross production. The rest of amount is considered for amount of food required for seeds, farm animal feed and waste are deducted for gross production (Dev and Sharma 2011). On this basis estimated food production and distributed by PDS has been consolidated and divided by the total number of population of each village. The net availability of food grains divided by the population estimates for a particular year indicate per capita availability of food grains in terms of kg/year. Net availability thus worked out is further divided by the number of days in a year i.e. 365 days which is taken as net availability of food grains in terms of grams/day.

Year wise population (2015-2019) has been estimated using following formula

$$Pn = Po\ x\ \left(\frac{2100 + ng}{2100 - ng}\right)$$

Where, Pn = Projected population, Po = Existing population, n = No. of years, g = decennial rate of growth

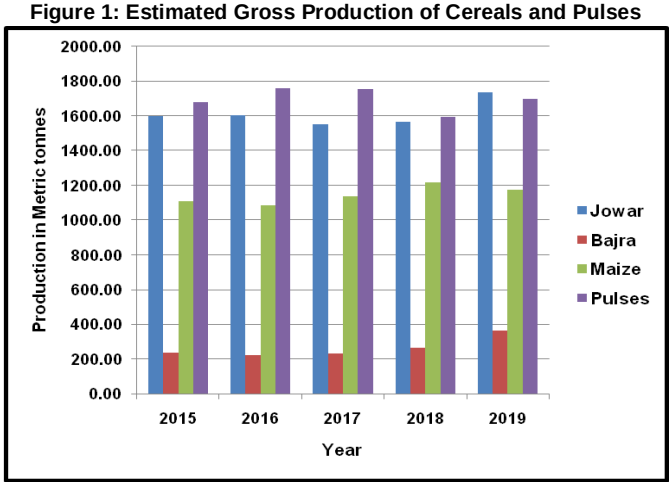
5. Discussion

The important element of food security, availability of food is a conventional measure that indicates physical access to food. The availability of food is mainly determined by agricultural production and Public Distribution System (PDS). The performance of agriculture is important for availability of food as more than 55 percent people in the country are dependent on this sector.

In the study region the land is not suitable for agriculture or non availability of agricultural land in many parts. The region under study is totally mountainous and hilly in nature. As, the region under study is inhabited by tribal people, who are economically backward. They survive with limited resources available locally. Agricultural land is limited as forested area is classified as Reserved Forests by the government. Clearing forest land for the purpose of making farmlands is a practice in the study region. Group of tribal people living in a village come together and clear a patch of forest (one or two acre) completely within a night, and surprisingly the forest patch is transformed in agricultural patch over night. This agricultural practice locally known as 'Navad'.

5.1 Crop Production: Food production provides the base for food security as it is a key determinant of food availability. In the present study the production of cereals and pulses have been considered to measure the availability of food. The cereals includes jowar, bajra and maize are the main food crops grown in the study region. Pulses are also grown in many parts of the region.

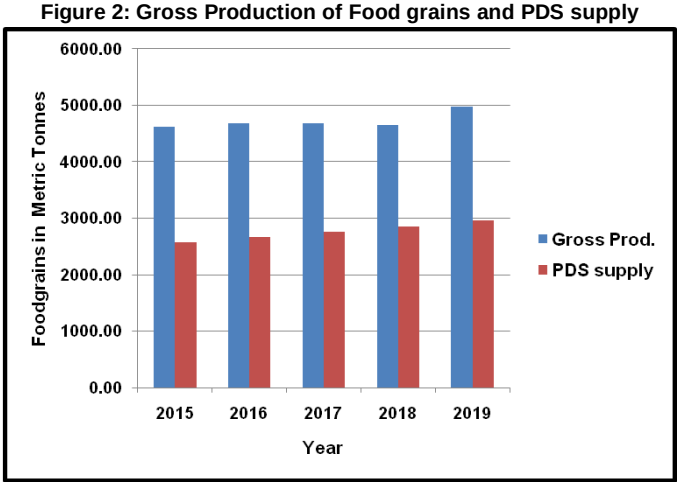
Figure 1: Estimated Gross Production of Cereals and Pulses



Source: Computed by author

Estimated production during the years 2015 to 2019 is shown in figure 1. It is observed that production of all crops jowar, bajra, maize and pulses, is more or less remain constant. Jowar and pulses are the main crops in the region. It is seen that except the year 2018 overall production of total food grains has remained constant and slightly increased in the year 2019. Bajra and jowar has increased in recent years while production of maize declined slightly. The production has not increased marginally during the study period. It may be due to drought years during this period and the agricultural practice in this region is primitive and only subsistence agriculture is practiced in the region.

Figure 2: Gross Production of Food grains and PDS supply



Source: Computed by author

The Indian National Food Security Act, 2013 ensures the food security to the population. Under the provisions of the bill, beneficiaries are to be able to purchase subsidized food grains, 5 kilograms per eligible person per month. Through Public distribution system (PDS) these food grains made available to the population every month. As the supply of food grains increased every year due to the increasing population. Figure 2 shows the supply of food grain through fair price shops in the study area.

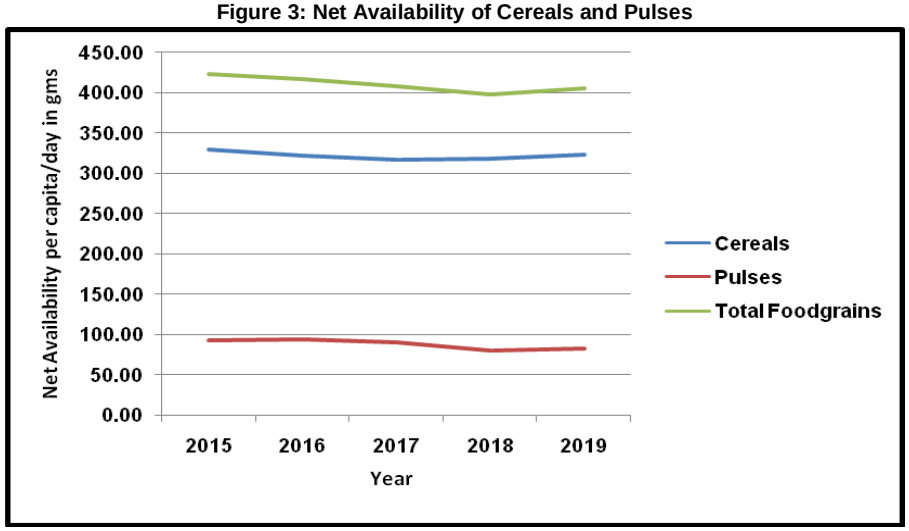
5.2 Food Availability: Availability of food refers to the physical availability of food stocks in desired quantities. Because of agricultural developments, production of various food items has increased in India. Therefore, per capita availability of food-grains has also constantly increased in the county. Ministry of Agriculture and Farmers Welfare, GoI, has estimated the per capita net availability of total food grains 484 gm/day in the year 2018. As per guidelines of National Institute of Nutrition, Hyderabad Recommended Dietary Allowances or RDA is 400 gm/capita/day.

Table 1: Per Capita Net Availability of Cereals and Pulses

Year	Cereals	Pulses	Total Food Grains
2015	329.33	93.94	423.27
2016	322.11	95.15	417.26
2017	317.13	91.56	408.69
2018	318.19	80.41	398.59
2019	323.76	82.67	406.42

Source: Computed by author

Figure 3: Net Availability of Cereals and Pulses



Source: Computed by author

As shown in the table 1 average availability of cereals during the study period is ranging between 329.33 gm to 317.13 gm per capita. Average availability of cereals in the study region is lower than the Recommended Dietary Allowances (RDA). During the reference period 2015 to 2019 per capita availability of cereals and pulses has declined significantly. Despite record production of these crops in the country at national level, the declining trend of net availability of cereals is a matter of concern at the local level.

It the study period the trend of availability of pulses has declining. In the year 2015 it was available 93.14 gms per capita per day and it is recorded as low as 80.41 gms per capita per day during the year 2018. It has slightly increased in the year 2019. As the yearly population increased the availability does not increased. The availability of pulses is more than the RDA. As per Nutrition Monitoring Bureau 35 gms of pulses are required daily. The availability of pulses in the study region is more than the RDA. However there are villages namely Kundyapnai (Chopda tehsil), Langda Amba, Ambapni, Ruikhede (Yawal tehsil) has no production of pulses therefore non availability of pulses in these villages (Table 2). In these villages land for agricultural practices is not available. People in these villages are mainly depends on the food grains supplied through fair price shops through PDS. The availability of pulses are low in some villages than the RDA.

Food availability has been calculated at village level for all the villages in the study region for the period 2015 to 2019 (Table 2). It is observed that food insecurity is more at village level. In many villages of the study area there is acute shortage of food grains to meet the demand of food security of population. Because of negative growth rate has been estimated for village Ichkheda located in Yawal tehsil have been recorded maximum availability of cereals and pulses during 2015 to 2019.

6. Conclusion

It is concluded that the region is not able to produce as much as food require meeting the demand of population of the

region. On the whole, food availability in the study region has been declining. The lower food availability in the satpuda region can be attributed to the lower proportion of land under cultivation and the increasing population. The large fluctuations in the availability of food grains from year to year due to frequent occurrences of droughts and varying rainfall across regions are a major challenge to food security.

Land, water and forest are the main source of food for the tribal population. In the mountainous region there is lack of agricultural land. The patch of agricultural land if any must be protected by the government for tribal people. Only primary occupations are practiced in this region. For the food security of tribal, the government must secure their agricultural land. The land is the basic needs for the food security of poor tribal. Government should not be displaced them otherwise it will reverse their economic life. If need to displace, they must be provided with same quality of land as well as houses. The Public Distribution System (PDS) alone cannot supply all sorts of nutrition as well as sufficient food. Hence, the government should provide all facilities in its true spirit to grow foods locally without spending on transportation.

Acknowledgement:

The author acknowledges with thanks to the ICSSR and MHRD, New Delhi for the financial support for research project under IMPRESS scheme.

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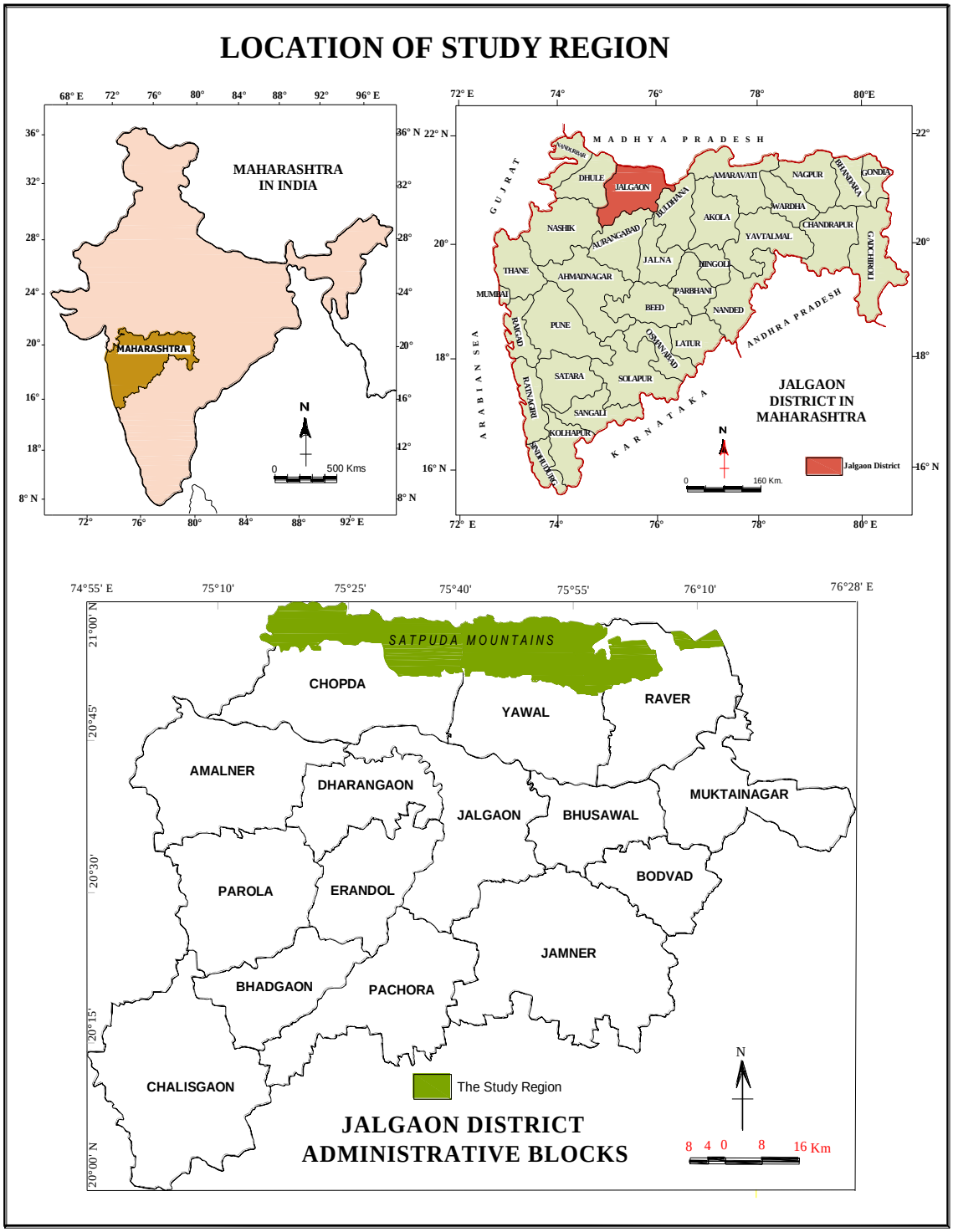
Table 2: Village wise per capita per day availability of Cereals and Pulses in grams

Sr. No.	Tehsil	Sample Villages	2015		2016		2017		2018		2019	
			Cereals	Pulses	Cereals	Pulses	Cereals	Pulses	Cereals	Pulses	Cereals	Pulses
1	Chopda	Morchida	328.37	68.37	314.14	84.32	310.58	86.12	331.57	87.47	366.13	116.03
2		Umarti	237.81	27.21	225.57	35.87	229.19	34.68	227.41	31.28	245.80	34.55
3		Kundyapani	164.38	0.00	164.38	0.00	164.38	0.00	164.38	0.00	164.38	0.00
4		Karjane	416.73	250.52	439.73	282.44	445.51	261.21	429.50	223.33	454.48	254.21
5		Kharya Padawa	419.01	139.94	436.65	163.46	413.04	154.96	394.08	141.68	408.90	133.83
6		Mulyautar	287.02	147.13	279.82	176.60	274.80	161.45	283.60	167.94	347.24	163.76
7		Vaijapur	247.31	127.53	254.05	130.37	257.40	133.06	263.05	100.44	257.88	103.49
8		Vaijapur (Shenpani)	291.31	128.39	305.59	124.79	323.79	114.55	322.47	91.69	375.79	108.20
9		Karjane	251.35	136.53	245.03	130.66	257.17	124.85	256.57	113.91	258.10	123.69
10		Melane	290.99	45.28	277.67	38.99	266.58	35.42	274.36	36.60	346.51	35.45
11		Devhari	375.72	291.38	396.44	300.68	387.88	323.65	410.98	276.58	418.93	135.90
12		Deozari	310.55	129.28	296.56	115.06	291.24	108.49	294.35	109.00	250.91	119.34
13		Bormali	229.36	31.39	225.52	26.18	219.38	27.62	215.53	31.63	206.33	29.61
14		Bor Ajanti	393.68	103.32	373.98	98.80	367.03	96.82	375.43	85.77	349.91	88.42
15		Malapur	296.86	58.50	301.16	55.27	299.76	58.68	313.66	66.64	288.49	71.03
16	Yawal	Langda Amba	324.24	0.00	259.53	0.00	266.02	0.00	266.92	0.00	266.56	0.00
17		Usmali	410.19	117.65	292.41	111.74	383.88	99.01	404.92	60.41	384.23	57.30
18		Gadrya	387.32	99.60	390.82	85.43	377.78	78.78	369.52	63.05	370.24	66.59
19		Jamnya	241.11	18.85	231.45	18.00	226.84	22.91	219.25	16.40	208.06	26.07
20		Vaghazira	336.29	38.35	351.17	39.96	309.92	37.37	308.54	28.69	296.12	32.36
21		Manapur	904.18	238.49	847.85	226.86	888.63	197.76	879.55	170.90	887.82	259.81
22		Khalkot	518.54	205.07	480.03	185.58	449.34	152.31	430.71	123.37	412.00	122.90
23		Ichkheda	2434.34	2055.99	2567.06	2208.80	2792.85	2256.37	2945.94	2109.40	2813.80	1791.53
24		Haripura	343.72	252.19	345.76	266.77	337.34	260.86	335.31	238.65	330.80	235.68
25		Ambapani	164.38	0.00	164.38	0.00	164.38	0.00	164.38	0.00	164.38	0.00
26		Ruikhede	164.38	0.00	164.38	0.00	164.38	0.00	164.38	0.00	164.38	0.00
27	Raver	Morwhal	397.33	34.62	403.00	42.32	397.92	40.83	405.49	32.82	421.97	39.40
28		sahastraling	530.82	266.04	495.06	284.08	493.24	290.78	484.65	265.37	523.40	292.95
29		Garkheda	386.30	83.63	399.38	89.19	364.42	90.14	345.64	79.05	346.92	76.24
30		Nimdya	352.73	74.93	354.69	72.75	347.84	65.93	342.37	59.43	355.79	75.44
31		Andharmali	230.86	68.80	226.64	78.86	213.45	76.58	225.24	55.31	233.83	65.08
32		Garbardi	534.65	236.43	530.88	242.46	520.66	222.24	509.80	182.29	507.70	144.57
33		Mohmodali New	311.20	41.13	338.28	39.82	325.70	42.40	356.22	26.11	409.94	43.32
34		Tidya	410.70	69.54	364.56	67.94	349.04	75.85	345.11	64.84	378.43	72.39
35		Mohmodali Old	411.63	97.23	382.21	146.66	380.08	158.88	389.25	95.33	435.61	192.30
Average			**329.33**	**93.94**	**322.11**	**95.15**	**317.13**	**91.56**	**318.19**	**80.41**	**311.34**	**69.43**

Source: Computed by author


LOCATION OF STUDY REGION
MAHARASHTRA IN INDIA
MAHARASHTRA
500 Kms
MADHYA PRADESH
GUJRAT
ANDHRA PRADESH
KARNATAKA
ARABIAN SEA
MUMBAI
THANE
NASHIK
DHULE
JALGAON
BULDHANA
AURANGABAD
JALNA
AHMADNAGAR
BEED
PUNE
AKOLA
AMARAVATI
WARDHA
NAGPUR
BHANDARA
GONDIA
CHANDRAPUR
YAVTALMAL
HINGOLI
PARBHANI
NANDED
LATUR
OSMANABAD
SATARA
SOLAPUR
SANGLI
KOLHAPUR
RATNAGIRI
SINDHUDURG
JALGAON DISTRICT IN MAHARASHTRA
Jalgaon District
160 Km.
SATPUDA MOUNTAINS
CHOPDA
YAWAL
RAVER
AMALNER
DHARANGAON
JALGAON
BHUSAWAL
MUKTAINAGAR
PAROLA
ERANDOL
BODVAD
JAMNER
BHADGAON
PACHORA
CHALISGAON
The Study Region
JALGAON DISTRICT
ADMINISTRATIVE BLOCKS
16 Km

Map-1