

**A MINOR RESEARCH PROJECT SUBMITTED TO
UGC**

Sanctioned and Approved by UGC Western Region, Ganesh Khind,
Pune

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Title of Project

**“Utilization of Water Resources for Improve Crop
Productivity & Foodstuff Values in Saoner Tahsil”**

Investigator

MR. YOGESH KRISHNARAO PATIL

Assistant Professor in Geography

Mahila Mahavidhyalya, Revenue Colony,

Gadchiroli

2015

DECLARATION

I, hereby declare that this Minor Research Project
**“UTILIZATION OF WATER RESOURCES FOR IMPROVE
CROP PRODUCTIVITY & FOODSTUFF VALUES IN SAONER
TAHSIL”** is the result of my own work.

I have not submitted this project to any other University or
Institution for award of any academic purpose.

(Investigator)

Mr. Yogesh Krishnarao Patil
*Assistant Professor in Geography
Mahila Mahavidyalaya Gadchiroli
Distt. Gadchiroli 442 605*

CERTIFICATE OF HEAD OF THE INSTITUTION

This is to certify that Mahila Mahavidhyalya, Revenue Colony, Gadchiroli is permanent affiliated college under section 2(f) and 12 (b) of UGC, Mr. Yogesh Krishnarao Patil (Investigator) is the regular and permanent faculty member of our college. His minor research project **“UTILIZATION OF WATER RESOURCES FOR IMPROVE CROP PRODUCTIVITY & FOODSTUFF VALUES IN SAONER TAHSIL”** is the result of her own work. he prepared this minor research project after the approval of UGC.

I also certify that he has not submitted this project to any other University or Institution for the award of any academic purpose.

Principal
Dr. H.S. Tomar
Mahila Mahavidyalaya
Gadchiroli

Acknowledgement

I am preparing this page at last, numerous rushes through my mind which are full of gratitude to those who encouraged and helped me at various stages of this academic endeavor. It is my pleasure to record these feelings to thankful appreciation for favors'.

First of all, I must express my deep sense of gratitude about Dr. H.S. Tomar, Principal Mahila Mahavidyalaya Gadchiroli, for his valuable guidance, affection and encouragement for the preparation of this Project. It is simply because of his constant support and help, during the course of my research, I came to this stage. Without his able guidance, I shall not able to complete this task. I am very much grateful to him for rendering the timely guidance to me in the completion of this work.

I would be failing in my duties, if I do mention the co-operation extended to me by various Govt. Offices, such as District Statistical Officers of various districts in Vidarbha and their staff,

I have a deep obligation for my mother, father and all family members who act a constant source of inspiration during the course of this research work.

Mr. Yogesh Krishnarao Patil
Assistant Professor in Geography
Mahila Mahavidyalaya Gadchiroli
Distt. Gadchiroli 442 605

“Utilization of Water Resources for Improve Crop Productivity & Foodstuff Values in Saoner Tahsil”

Introduction:-

‘Agricultural’ in agricultural geography implies the subject matter and geography gives the way of viewing or investigating the subject matter, Agricultural geography thus means the geography of agricultural. Etymologically the expression agricultural geography has Greek & Latin roots. The word agriculture comes from a latin term ‘Agercultura’ which has its origin in the words ‘ager’ meaning a field and ‘cultura’ meaning to culture or cultivate, Watson longman modern dictionary (1976) defines the word ‘agriculture as the science or the art or the practice of large-scale soil cultivation’ in order to produce crop.

As an agriculture geographer we are trying to study all the things the present themes of the project focus on how to improve the crop productivity and foodstuff value by utilization of water resources.

India is the agricultural country, mainly the people of the Maharashtra are belongs to agriculture. The Saoner Tahsil of Nagpur District has good geographical background suitable for agriculture. The region has good regur soil but unable for fulfill the foodstuff values, which required for social well being and also for human health. So there has been need to study the Agriculture Pattern, Productivity and foodstuff values of the region.

What is Crop Productivity ?

Crop productivity is measured as the ratio of agricultural outputs to agricultural inputs. While individual products are usually measured by weight, their varying densities make measuring overall agricultural outputs different, therefore outputs is usually measured as the market values to final output, which excludes intermediate products, this output values may be compared to many different types of inputs.

The measurement of crop productivity the method of mapping of Spatio-Temporal characteristics of the level of agricultural productivity, several techniques

adopted of crop productivity per unit area of time or per unit of farm work force etc details are given below

1. Assessing the value of agricultural production per unit area.
2. Measuring production per unit of farm labour.
3. Determining output in relation to input or relation to input or output ratio and productivity of farming measured in terms of the return for the sum total of human efforts or paid out cost in relation to the output (Khusro 1964)¹.
4. Considering output per unit area or yield per hectare after grading than in ranking order, thereby deriving the ranking co-efficient (Kendall 1939)².
5. Using the carrying capacity of land in terms of population (Stamps 1958, 1967).
6. Expressing production of agriculture in terms of grain equivalent per head of population. (Buck 1967)³.
7. Computing the crop yield and concentration indices ranking coefficient. (Jasbir Sing 1976)⁴.

Of these, the first technique seem to require such statistics as are not even easily accessible in most of the under developed and developing countries of the world.

The farmers in this region are mainly depending upon traditional cropping pattern. The region has good regur soil but unable for fulfill the foodstuff values which required for social well being and also for human health. So there has been needed to study the agricultural pattern, productivity and foodstuff values of the region. As an agricultural geographer we are trying to study all things. The present themes of the project focus on how to improve the crop productivity and foodstuff values by utilization of water resources like well, tube well, canals and Major/Minor irrigation projects.

Objectives:-

For the present research following objectives are selected,

- 1 To study physical, socio-economical factors affecting crop productivity
- 2 To assess the production and productivity is able to fulfill the nutritional/foodstuff values or not.
- 3 To study the spatial variation of crop in the study region.

- 4 To know the uses, various products and marketing of crop in the region.
- 5 To suggest means and methods to improve crop production, Productivity and nutritional/foodstuff values of the region.

Data Source :-

Present study is mainly depending upon primary and secondary data. The statistical information is collected from socio-economic review, district statistical handbook of Nagpur district and office record of regional agricultural development officer of Saoner Tahsil, National B. of Soil Survey and Land use planning Nagpur and information published by agriculture and health ministry Govt. of India and irrigation department of Saoner Tahsil. The frequent visits are also given to the region for primary observations.

Methodology :-

The crop productivity is calculated by Jasbir Sings crop yield, crop concentration and ranking coefficient method. Researcher is finding out the nutritional/foodstuff status of the study region for study the nutritional/foodstuff value. Finally the tabulated data is shown by maps and model.

Study region (Location & Extent) :-

There are fourteen tahsils in Nagpur District, in choose one of them is Saoner Tahsil. Three main circles in Saoner Tahsil respectively Saoner, Kelod and Khapa.

the Saoner Tahsil is Located Between $21^{\circ} 07'$ to $21^{\circ} 33'$ North latitude and $78^{\circ} 35'$ to $79^{\circ} 05'$ East longitude. The region has 2, 23,938 of population covers 60,678 sq. hector of total geographical area that is 6.19% of Nagpur district.

Total villages in Study region is 136, total geographical area of Saoner circle, Kelod circle & Khapa Circle is respectively 20,259 sq. hector, 21,493 sq hector and 18923 sq. hector among of them more area covered by Kelod circle & less area covered by Khapa circle.

Conclusion/Finding:-

- A major part of the region is occupied by plateau and alluvial plains while most of the area rest is mostly occupied by piedmonts and structural hills, the general elevation of the region is from 330 to 500 meter above from mean sea level.
- Climate is suitable for cultivation of all crops, agriculture of study region mainly depends on monsoonal rainfall. 10 to 125 cm quantity of rainfall found in the study region, monsoonal rainfall suitable for the crop of wheat, Soyabean, Jawar, Mung, Udid and Groundnut for cultivation in the region.
- Drainage system in the study region can be grouped under two river system first in Kanhan River and Second is kolar River.
- Depth of the study region found in 25 to 100 cm, exceptional Kelod circle is more than 100 cm.
- The soil pH of the region is 8.0 which cause to decreases fertility rate of region
- The pH increases mainly due to non-rotation cropping pattern, over irrigation and excess use of chemical fertilizers.
- Net irrigated area is decreased in the recent years but crop productivity is greater than last five years.
- The Khapa circle has high productivity followed by Saoner, while Kelod has low productivity due to inadequate irrigational facilities.
- In the year of 2006 the groundnut has higher productivity followed by Gram, Tur, Mung, Sugarcane and Wheat.
- In the year of 2011 the crop Tur ranked first by Groundnut, Gram, Sugarcane, Cotton and Wheat.
- In Saoner Tahsil only Cereals are able to provide demand of nutrition as per standard nutrition/foodstuff level, while pulses and oilseeds are unable to provide demanded of as per nutrition level.

Recommendation:-

- There has been need to give more attention to crop rotation system as well as use of chemical fertilizers as per requirements of soil by considering cropping pattern and use of irrigation as per requirements of crops according to season.
- Irrigation area should be increased by providing ponds and by Co-operative irrigation system.
- The fallow land should be taken for agricultural activity by improving soil status.
- Nutritional/Foodstuff values should be increased by increasing irrigational facilities and also by using green manuring.