



RELEVANCE OF GANDHIAN PRINCIPLES IN AGRICULTURAL GEOGRAPHY-A PROSPECT OF REGIONALISATION

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Abstract

Agricultural regionalization has attracted the attention of many scholars in the field of agricultural geography. Geographers have been interested in the overall agricultural region, although they by no means completely agree on its definition or the importance of its study in agricultural geography. Agricultural geographers have commonly used the physical and cultural attributes to define agricultural region.

Mahatma Gandhi believed that the land should not belong to an individual or the national owned. A farmer should have an amount of land with which he could subsist his daily earnings honestly and live a life of dignity.

Approach and methods of agricultural regionalization enables one to choose the most appropriate method crop associations with respect to the available agriculture data for study area. The data available are collected for three different levels of administrative units viz., village, tahsil and district. Data regarding the areal strength of crops for a village have to be collected from different tahsil headquarters. An ideal plan for agriculture regionalization should cover the entire agricultural activity in the study area, but the agriculture region has been reduced here to the level of crop association region. Therefore an attempt is made to delimit the crop association regions.

Keywords: Regionalisation, subsists, crop association, areal strength, delimit.

INTRODUCTION:

In the last four decades, Indian geographers have been applying quantitative techniques to study the crop association regions. Indian geographers have delimited agricultural regions based upon techniques like crop-association, cropping pattern, crop concentration, crop diversification and agricultural efficiency.

Region is one of the basic concepts of geography. It has been defined differently by different geographers. A widely accepted definition of region is "an area that is differentiated from other areas according to the specific criteria." It has also been defined as "a differentiated segment of the earth surface" (Whittlesey, 1929).



Agricultural region is an uninterrupted area having some kind of homogeneity with specifically defined outer limit. Agriculture region is a device for selecting and investigating regional groupings of the complex agricultural phenomena found on the earth surface. In other words, any segment or portion of the earth surface possessing a distinctive form of agriculture is an agriculture region. Thus, an agricultural region is a dynamic concept which changes in space and time.

The data available are collected for three different levels of administrative units viz., village, tahsil and district. Data regarding the areal strength of crops for a village have to be collected from different tahsil headquarters. An ideal plan for agriculture regionalization should cover the entire agricultural activity in the study area, but the agriculture region has been reduced here to the level of crop association region. Therefore an attempt is made to delimit the crop association regions in the study area in four stages as follows:

- i) To present areal strength of the crops grown in the region by ranking and interpret the factors responsible for this rank distribution.
- ii) Identification of crop combination regions applying Doi's method.
- iii) To delineate the patterns of crops combination of the Thane District by applying Doi's method and plot it in a regions of crop combination.
- iv) To identify the crop diversification patterns of the study region by applying Bhatia's method of crops diversification and find out the variables responsible for such patterns in the area under study.

The purpose of the study is to evaluate the influence of certain physical environmental and cultural factors on the spatial variation in agricultural landuse.

THE MAIN CHARACTERISTICS OF AGRICULTURAL REGIONS ARE:

- i) They have location
- ii) They have transitional boundaries
- iii) They may be either formal or functional
- iv) They may be hierarchically arranged

DELIMITATION OF AGRICULTURAL REGIONS:

The main techniques used by geographers for the delimitation of agricultural regions are:

- i) Empirical Technique- is largely based on the experience of the farmers and observed facts. Baker was the first geographer who adopted the empirical technique and demarcated the agricultural belts of the USA.
- ii) Single Element Technique – This is an arbitrary technique in which the single element of agricultural landscape is taken into consideration. In this technique the relative position of different agricultural enterprises is taken in to consideration. The demarcation of rice, grass, pulses and fruits and vegetables of Thane district on the basis of first ranking crops is an illustration of this technique.
- iii) Multi-Element or Statistical Technique – The multi-element technique is an improvement over the empirical and single element techniques of agricultural regionalization. In the statistical



technique combination of the closely associated features are taken into consideration. The crop combination and livestock regions as demarcated by Weaver, Doi and Coppock are the examples of this technique.

- iv) Quantitative – cum - Qualitative Technique - For the demarcation of agricultural regions, when the physical, social and economic factors are taken in to consideration, such as technique is known as a quantitative-cum-qualitative technique of agricultural regionalization.
- v) Normative Technique - For the analytical and mathematical approach to the description of an economy, which a description of relationship and linkages between the output and various inputs.

METHODOLOGY FOR AGRICULTURAL REGIONALISATION:

The agricultural regionalization may be done with the help of following methods:

Cropping Pattern – means the proportion of area under various crops at a point of time.

Crop combination, concentration and diversification - crop concentration means the variation in the density of any crop in an area at a given point of time. The concentration of a crop in an area largely depends on its terrain, temperature, moisture and pedological condition.

Location Quotient Method for crop concentration – may be expressed as - Index for the determination of crop concentration =

$$\frac{\text{Area under 'X' crop in the component areal area}}{\text{Area of all crops in the component area unit}} \div \frac{\text{Area under 'X' crop in the entire region or country}}{\text{Area of all crops in the entire region or country}}$$

CROP COMBINATION REGION:

Agricultural practices and typology are best represented by crops in any region. The principal crops tend to concentrate according to their requirement of physical environment. A single crop like rice can dominate a region and also occurs as a monoculture in three villages. Cropping pattern or crop combinations become essential. Crops combination can be identified by taking recourse to ranking. Ranking leads to determine few dominant crops, but at the same time ignoring others in any given region. These crops which have low ranks. Though there are various methods to determine cropping patterns, in the present study K.DoI's method has been used.

The method is a derivative of Weavers method of crop combination region. By taking recourse to all table which gives critical values for different combinations, it is possible to identify crop combinations percentage of different crops to net sown area are calculated and the combinations decided as per the table after due correction. The results according to Doi's method are more realistic is in comparison to other methods. They are equally suitable in regions of high specialization, as well as in the region of no marked variations. In the present study Doi's method is applied to villages which constitute the study region.



CROP DIVERSIFICATION TECHNIQUE:

In order to identify spatial pattern of crop diversification in present study. Bhatias method has been adopted in modified form. The crop having five or less than five percentage have been excluded from computation. This modification formula expresses as.

$$\text{Index of Crop Diversification} = \frac{\text{Percent of Net Sown Area}}{\text{Number of 'n' Crops}}$$

Where 'n' crops are those which individually occupy five or more than five percent of crop to net sown area in the village.

Regional Patterns of Agricultural Productivity - The measurement of production and inputs required for the production of that output is known as agricultural productivity in other words, it is an input-output ratio. In the recent decades geographers and economist have developed sophisticated tools and techniques to determine the agricultural productivity. Some of the well-known techniques developed and used for the measurement of agricultural productivity and agricultural efficiency.

DEGREE OF COMMERCIALIZATION:

Agricultural commercialization as "the proportion of agricultural production that is marketed" (1999:5). According to these researchers, agricultural commercialization aims to bring about a shift from production for solely domestic consumption to production dominantly market-oriented. Sokoni (2007:3) defined commercialization of smallholder production as "a process involving the transformation from production for household subsistence to production for the market."

Hazell et al. (2007:4) found out that most definitions refer to agricultural commercialization as "the degree of participation in the output markets with the focus very much on cash incomes."

BASIC CONCEPTS AND MEASURES OF AGRICULTURAL COMMERCIALIZATION:

Modes of Agricultural Production

1. Small-scale farmers: these are further classified into two groups:

Small-scale "non-commercial farmers" (Type A) - these farmers are subsistence oriented but may also sell some of their production in the output market; but they cannot wholly dependent on agriculture for living.

Small-scale commercial farmers (Type B) – these are better integrated with the market than the first group. In fact, they produce crops both for own consumption as well as for the market. They even exert effort to specialize on high value cash crops.

2. Small-investor farmers- these are exclusively engaged in market-oriented agriculture even though their size dictates their modest scale production. Samuel and Sharp (2007:59) refer to this people as being often educated and urban-based. They are known also as "emerging commercial farmers" (Samuel and Sharp, 2007).



3. Large-scale business farming- these refer to the capital intensive enterprises that are either private or state-owned (Samuel and Sharp, 2007). These three categories indicate the different policy scenarios the government can possible adhere to in the course of assisting smallholder farmers to increase their income and mainly to come out of poverty.

Pattern of Crop Rotation: Crop rotation is the practice of growing a series of different types of crops in the same area in sequential seasons. Crop rotation gives various benefits to the soil. A traditional element of crop rotation is the replenishment of nitrogen through the use of green manure in sequence with cereals and other crops. Crop rotation also mitigates the build-up of pathogens and pests that often occurs when one species is continuously cropped, and can also improve soil structure and fertility by alternating deep-rooted and shallow-rooted plants. Crop rotation is one component of polyculture.

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