Methodology for Ranking of Districts on Rural Backwardness and Fishery Development Potential

Introduction

The Government of India launched 'Blue Revolution' Mission with a central outlay of Rs. 3000 crore for five years. The Scheme aims at a focused and integrated approach for development and management of fisheries covering both the marine and inland sectors to ensure a sustained annual growth rate of 6%-8% in fish production. The scheme has an important goal of increasing farmers' income so it will be doubled by 2022. In order to achieve this goal, there is a need for identifying agriculturally backward districts which have potential for development of fishery sector. After identification of these districts, district plans have to be prepared for Fishery sector so that development will take place in the proper direction. An attempt is made here to identify the backward but potential districts in each state. Methodology for identification of backward districts and potential for development of fishery sector is explained below. The selection of the districts has to be done by the State on the basis of their knowledge of the backwardness as well as potential and also taking local conditions into account.

Methodology

The exercise has two steps – identification of backward districts and identification of potential for fishery development in these districts. First, dimensions of development are selected are identified and indicators are selected to represent these dimensions. The selection of indicators is constrained by the availability of data at the district level. These indicators are then converted into indices.

Step I: Identification of Backward Districts

Identification of backward districts is based on three dimensions – agricultural development, dairy development and fishery development. For agricultural development, two indicators viz., availability of cultivated land and irrigation development, are considered. For dairy development, milk production (milch animal stock) is considered. For fishery development, fish production is considered.

Based on these dimensions, dimension indicators are developed. For agricultural development, gross cropped area per rural person and percentage of irrigated area are

the indicators. For dairy development and fishery development, per capita availability of milk (milch animals per rural person) and fish production per rural person are considered.

Table 1: Dimensions and indicators of development

Dimension	Indicators	Indices
Agriculture	1. Gross cropped area 2. Irrigated area	1. Gross cropped area per rural person 2. Percentage of irrigated area in net sown area
Dairy	1. Milch animals (Standardized number)	1. Milch animals per rural person
Fishery	1. Fish production	1. Fish production per rural person

The indices are normalised in such a manner that the maximum value will be unity and the minimum value will be zero. For this, we fixed the goal posts for each of these variables and used the formula similar to the one used by United Nation Development Programme (UNDP) and their Human Development Reports (HDR). These goal posts are maximum and minimum values for each variable. However, some of the extreme values in a few districts are capped at a lower level.

Index Value = $\frac{Actual\ Value - Minimum\ Value}{Maximum\ Value - Minimum\ Value}$

The two indices of agriculture development are combined by weighted average with weights 0.6 for irrigation and 0.4 for land availability to arrive at the index of agricultural development. The three indices of agriculture, dairy and fishery sectors are combined by taking the geometric average to get the overall development index. However, it is also calculated as a weighted average of the three dimension indices with weights 0.5, 0.3 and 0.2 for agriculture, dairy and fishery sectors respectively. It is found that both the methods of aggregation gave the same ranking of the districts.

Index of backwardness is calculated as 1- index of development and districts are ranked on the basis of backwardness. In other words, the most backward district is given rank one. Ranking is done at state level as well as All India level.

The analysis is restricted to districts as they existed as per the 2011 Population Census

and 609 districts are considered for the analysis.

Step II: (A) Potential for inland fishery development

Identification of potential districts for fishery development is based on water availability. The indicator is the ratio of total water spread area under all sources per one thousand metric tonnes of inland fish production. However, in the case of reservoirs, only one per cent of the water spread area is considered as the potential. The indicator which is defined as water spread area per 1000 MT of fish production is normalised using the formula given above.

(B) Potential for marine fishery development

Marine resources are available in nine states and sixty districts. Potential for development of marine sector is calculated for these districts using two dimensions of development—availability of water resources and availability of manpower. Index for availability of water resources is calculated as length of coastline per metric tonne of fish caught. Index for availability of manpower is calculated as the length of coastline per thousand fishermen. These two indicators are normalised and then aggregated as the geometric average to arrive at the overall index of marine development potential.

All the marine districts are ranked both on inland fishery development potential and marine fishery development potential.

Purpose of Ranking

It is felt that fishery sector has to be developed on priority basis in some districts which are backward in agriculture and allied sectors and also have resource potential for fishery sector development. Keeping this in view, we have classified the districts on the basis of agricultural backwardness and availability of water resource adjusting for present level of fish production. Two types of ranks are given, one at the state level and the other at India level.

States are suggested to examine the results and express their views based on ground level realities. If the ranking is satisfactory, states can select priority districts and prepare micro-level plans for fisheries development.

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Appendix: Sources of Data

1. Rural Population is taken from Census 2011 and it is projected for 2014 using the decennial growth. Suitable adjustments are made for newly created districts.

2. Gross cropped area and irrigated area are taken from Land Use Statistics of Directorate of Economics and Statistics, New Delhi.

3. No of milch animals is taken from 19th livestock census.

4. Fish production and water resources data is obtained from State Fisheries Departments.

5. Marine census data is taken from Marine Census: 2010, CMFRI