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RESEARCH ARTICLE

Rationality doctrine behind selecting 'One-District-One-Product' in India: holistic approaches

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Abstract

The "One District One Product" (ODOP) program seeks to foster economic growth through promoting regional specialization and raising awareness of local goods. Rooted in historical trade practices and inspired by Japan's OVOP (One Village One Product) model, ODOP seeks to boost local economies while preserving cultural heritage. This paper explores the evolution and implementation of ODOP across India, examining its alignment with sustainable development goals. It identifies that the ODOP framework projects the best product of a district but holistically it suffers from isolated approach, particularly in terms of the entirety of the national perspective such as optimizing economy of scope and scale, decreasing import dependency etc. The study introduces a 3D Matrix framework to optimize product selection based on resources, marketability, and skill availability. Recommendations include adopting a dynamic ODNP (One District Nth Product) approach to align district-level strategies with national economic priorities. In order to support a strong and sustainable agro-based economy, the research emphasizes the significance of reorganizing ODOP to meet domestic consumption demands, lessen reliance on imports, and increase export potential. This would foster the aspiration of food security and the superior economic value-creation essentially from the primary sectors of Indian economy.

Keywords: ODOP; Economy of Scope and Scale; ODNP; Food Security; Superior Economic Value-Creation; India

1. Introduction

1.1 Philosophy behind the basic construct of ODOP and its existence in ages

The philosophy behind the basic construct of "One District One Product" (ODOP) is rooted in regional specialization. Every region or community essentially has its inherent core competency either in terms of developing a product, crop indigenous practices, value proposition, culture and traditions. The mythological tale of Lord Krishna projected a village (Gokul) that had been producing milk and butter. If we look back far into the past during the eras of the oldest civilization, be it the Indus Valley Civilization, Chinese Civilization, Egyptian civilization, or the Mesopotamian civilization it can be observed that over a period of time most societies developed specialization in manufacturing a product, producing a crop or providing a service. There are various factors that can contribute in the attainment of these skills. One of the primary factors is the cultural and traditional practices that particular communities follow can be a reason for the acquaintance of a skill. The other major reason can be availability and abundance of the raw materials and resources in a particular region leading to the growth of a specific crop, industry or service. The origin of wine and wine industry backs to approximately 7000 years. True sparkling wine—a wine free of hazy impurities—was created in the French area of Champagne in the seventeenth century (Cartwright, 2021). The sparkling wine champagne derives its name from the region that it originated. It was a long road to perfecting and creating the Champagne since it was introduced by the Romans in the 1 century AD (The Champagne, n.d.). Today, champagne is often associated as a symbol of luxury. Pruning, crafting, fermentation, clarification, bottling are some of the basic skills necessary for champagne production. The idea behind quoting these examples from different eras of history here is to reinforce the idea that certain regions develop expertise and specialization over time. When certain products coming from a region grows wide in popularity the identity of a region is intertwined with this speciality product. Throughout history, trade routes often connected regions with distinct products. These routes facilitated the exchange of goods and knowledge, leading to the development of specialized products in different areas. ODOP, in a way, revives this concept by promoting regional specialization. The ancient trade route known as the Silk Road linked Europe and the Middle East with China and the Far East. The Silk Road was used for trade of goods that were highly valued in the West. The silk road was established during the rule of Han dynasty in China in the 130 B.C (History, 2017). Some of the valuable Chinese goods that had a demand in Europe included Chinese silk, porcelain, woollen products, and tea. Horses were imported by China in exchange for Chinese silk from central Asia, spices and perfumes from the middle east, and glassware and exotic foods from the west (Quan, 2023) .This ancient trade route that connected Europe, Middle East and China was operational until A.D. 1453. The silk road was a significant trade route and it promoted the artwork, craftsmanship of local artisans as well as the speciality products of the participants involved in the trade (Zhaowen, n.d.). Many regions have products that are closely tied to their cultural heritage and identity. Promoting these products can help preserve cultural diversity and heritage. ODOP encourages the preservation of indigenous knowledge related to traditional products and processes. This supports the transmission of knowledge across generations.

1.2. ODOP initiatives adapted by various countries

The ODOP model has its origin from the concept of One Village One Product (OVOP). The basic principles of OVOP have been depicted in Fig 1. This was a practice which originated in the 1980s in Oita, Japan (Tripathi and Agrawal, 2021) . The OVOP model was introduced in 1979 by Morihiko Hiramatsu, who was the governor of Oita Prefecture in Japan at the time. In order to boost sales and raise the local population's standard of living, a competitive and

staple product from a particular area was promoted as "One Village One Product (OVOP)". It is significant to note that OVOP in Japan did not get any financial support from the government because it was primarily a social movement founded on the ideas of independence and innovation. The ODOP model aligns with the principles of sustainable development. By encouraging the production of locally relevant products, it can reduce the need for long-distance transportation, lower the carbon footprint, and support environmentally friendly practices.

Many developing Asian and Central Asian nations have expressed interest in the OVOP project. The countries which have taken inspiration from the OVOP Model and implemented similar schemes in their countries include Thailand, Taiwan, Kyrgyz Republic, Cambodia, India, Indonesia, Laos, Malaysia, Myanmar, and Mongolia. Think locally, act globally, be independent, and be creative by developing human resources were the guiding principles of OVOP. With varying degrees of success, a few other nations later adopted this model under different names, such as Vietnam's One Commune One Product, Thailand's One Tambon One Product, the Philippines' One Town One Product, Uzbekistan's One Mahalla One Product, Oceania's One Island One Product, and Afghanistan's Our Village Our Pride (Mishra, 2022).

1.3. ODOP adapted by India and its states

The philosophy behind ODOP promotes inclusive growth in which marginalized communities and individuals are able to participate in economic activity. This is often seen as a way to reduce economic disparities. ODOP reflects the importance of localism and regional identity. It acknowledges the unique cultural, historical, and geographical characteristics of different districts or regions and seeks to leverage these qualities for economic development. This philosophy emphasizes the preservation and promotion of local traditions and products. It is observed that every state has its inherent super speciality in certain product or services and eventually that makes the district or the region that makes the brand image of the district or the region nationally or internationally. The indicative product and the name of the states are mentioned in Table 1.

The ODOP model has been widely adopted and implemented by various states in India as a strategy for promoting economic development, regional specialization, and the growth of indigenous products. Different states have customized the ODOP model to suit their specific needs and resources. The Uttar Pradesh government first introduced the One District One Product model in January 2018, and as a result of its success, the Central government adopted it in 2020. (Tripathi and Agrawal, 2021). The idea behind implementing ODOP is to promote district-specific indigenous and prominent product of the district. Many regions of India have long-standing traditions of craftsmanship and artisan skills. Indian villages have historically viewed traditional skills to be those of the carpenter, barber, dhobi (washer man), kumbhkar (makers of earthen pots), and lohar (blacksmith), whose abilities are reflected in cultural history and societal activity (Mishra, 2022). The ODOP model recognizes and seeks to harness these skills to create high-quality products with a cultural and historical significance.

India has a very diverse and rich cultural heritage and there are variety of unique artworks which are crafted by certain communities since generations. While there are a number of unique products which India has to offer there are some products which have grown highly popular and has a demand in domestic as well as International Markets. To name a few well-known products that come from different states of India are pashmina shawls from Jammu and Kashmir, Banarasi sari from Varanasi, Uttar Pradesh, Bhagalpuri silk from Bihar, Muga silk from Assam, Kanchipuram silk sari from Tamil Nadu, Handicrafts and cane products from north eastern India, Bandhini dress material work from Gujarat (Kaur, 2023). The ODOP model encourages such niche products and the community involved in the production of these goods. ODOP promotes the empowerment of local communities and small-scale enterprises. This philosophy aligns with the idea of decentralization and local self-governance, allowing communities to take ownership of their economic development.

The Department for Promotion of Industry and Internal Trade is a key player in the operational merger of the ODOP effort with the "Districts as Export Hub (DEH)" initiative of the DGFT, Department of Commerce (PIB, 2022). Through the provision of shared facilities, incubation centers, training, research and development (RandD), branding, and marketing, this fusion of the two models seeks to improve both forward and backward interactions. According to a report by the standing committee on commerce the DEH and ODOP initiatives aims to strive and to integrate the products of the districts into the global supply chains and connect the products and services of every district of India into the economic mainstream. Some of the observations and recommendations of the committee include that each district should work on preparing and implementing a district export action plan. Also, the committee noted the importance of improving the financial literacy of farmers and manufacturers. The Committee also observed that tier-II and tier-III manufacturers will be able to increase their visibility and reach to new markets if they are on boarded on popular e-commerce platforms (PRS, 2022) .

Taking inspirations from the ODOP scheme the Ministry of Indian Railways has launched the 'One Station One Product Scheme' (OSOP) with the objective to promote 'Vocal for Local' vision of the Government of India (PIB, 2023). The initiative has been launched to increase the market share of locally produced goods in the market and to promote indigenous and local products (Mondal, 2023). Across 21 States and 3 Union Territories, 728 stations are covered by 785 OSOP outlets which will showcase indigenous products giving them higher visibility at stalls designed through National Design Institute for uniformity.

1.4. Basic description and incompatibility of ODOP disclosures

In Japan and elsewhere, OVOP initiatives have not always been carried out one after the other. In essence, these initiatives rely on the production and marketing of regional goods and/or services. For these products to succeed, their level of financial sustainability is essential. (Mukai and Fujikura, 2015).

The Systems theory which provides a strong emphasis on the formation of collective strategies that optimize the network (Bertalanffy, 1972). The foundation of systems theory was developed to provide for a comprehensive approach to the study of occurrences across interdisciplinary fields (Teece, 2018). The major drawback of the ODOP model is that it has an isolated approach towards the production and promotion of an agricultural crop or product which is indigenous, popular or special to the region. The ODOP Model lacks this holistic approach when it comes to production and promotion of the selected product of the district. This major flaw of an isolated approach in the model leads to inefficiency in delivery and output. Also, this approach is a hindrance in achieving economies of scale which is a very important factor if a country aims to achieve comparative advantage in the export of any product. The creation of group strategies that maximize the network is emphasized by systems theory. This kind of technique does not analyze individual optimization strategies. Individual tactics would only provide less-than-ideal network solutions (Mele et al., 2010).

Table 1. Few special/unique products of select states/districts

State/District	Product	Citation
Varanasi	Banarasee Saree	(Bajpai, and Pandya, 2013)
Madhya Pradesh	Chanderi Silk	(Mohanty, 2022).
Bihar	Madhubani Paintings	(Bhattacharya and Das, 2021)
Kashmir	Pashmina Shawl	(Dollfus, 2011).
West Bengal	Bengal fhulia tant, Teracota, Baluchari saree	(Chaudhuri and Bhattacharyya, 2022)

Since, the ODOP model does not consider multiple important factors of production while selecting a product, it results in selection of a product which may not be competitive in the global market. Since, each district and its products are placed in isolation, the five major factors of production called the 5 M's, i.e., man, machine, money, material, and methods are scattered in the ODOP model. They lack coordination in allocation of raw material and other vital resources necessary for achieving economies of scale. Further, the ODOP model does not address the challenge of import dependency. The discrete approach of the ODOP model is also incapable of achieving domestic demand as it has not considered the domestic demands as a criterion during the development of the model and allocation of the products to the districts.

2. Literature review

The idea of specializing in a particular product or industry is deeply rooted in classical economics. A famous book by Adam Smith, *'The Wealth of the Nations'*, from 1776 discusses the concept of comparative advantage between nations. It's based on the concept of comparative advantage, where regions or individuals specialize in what they can produce most efficiently. This specialization is believed to lead to increased productivity and overall economic growth. However, specialization alone is not the only dynamics for producing and positioning a product in the market place as there are several other factors involved that contribute to making the product as an attractive option among its competitors. According to some research and findings from the European Union, there is no sure-fire way to guarantee economic growth through either economic specialization or economic diversification (Dzemydaitė, 2021). Through the implementation of the One District One Product initiative, a thorough plan for district development is developed. Research in the Mukomuko Region of Bengkulu Province, Indonesia, evaluates techniques for developing districts as the center of economic growth. The study's theoretical implications looked at the local identification approach as the first step in identifying a suitable product for the district. In particular, by emphasising community empowerment, involvement, and assistance in this respect as the fundamental building blocks for understanding sub-district local economic productivity (Fadly et al., 2018). A study conducted on the entrepreneurs who have taken up entrepreneurship based on the One Tambon One Produvt (OTOP) model discusses the importance of developing competency and sustainability. One of the major observations of this study is that the entrepreneurs and businesses should work on achieving maximum core competency if the product of a region has to thrive in the domestic markets (Grodgangunt et al., 2022). The OVOP strategy has been promoted in more than 30 countries, with overseas propagation beginning in China in 1983 (Mukai and Fujikura, 2015). Assuming that a single product would address every village's financial issues or that the strategy had been successful in every community, including those in Japan and other nations, would be naïve (Schumann, 2016).

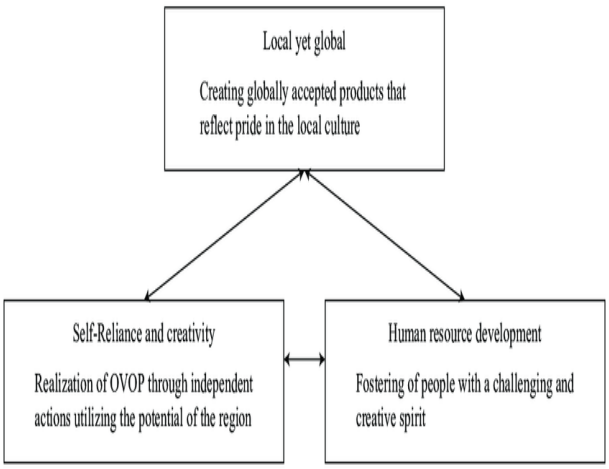

Figure 1. Basic principles of one village one product (OVOP). Source: International OVOP Exchange Committee Office

Productivity is the sole significant measure of national competitiveness. A country's main objective is to provide a high and increasing standard of living for its people. A nation's ability to do so is based on how well it uses its labour force and capital (Porter, 1990). According to the idea of comparative advantage, which was initially put forth by Ricardo in 1847, international trade results from disparities in comparative advantage between countries. As a result of Ricardo's concept of comparative advantage in an open economy, one can explain the efficiency of resource allocation across a variety of countries or regions based on the relative advantages (Falciola et al., 2020). When a country is able to produce more goods and services at a lower cost than its competitors, it will be able to establish a comparative advantage (Costinot and Donaldson, 2012). Ricardo noted that comparative costs of production, not absolute costs, were what drove commerce. (Rahman, 2023). Comparative advantage is often regarded as a significant analytical advancement over absolute advantage theory. (Machado and Trigg, 2021). The real insight of Ricardo's argument is his realisation that, contrary to the "fallacy of absolute advantage," a nation can have an edge over other nations in terms of its relative costs of production. Therefore, absolute advantage is seen by the majority of economists as merely a stepping stone to trade theory (Ruffin, 2002).

3. Objective of the study

i. To study the present ODOP model adopted by the government and further to understand any extent of adequacy for universalizing the concept in meaningful implementation across Indian states.

ii. To broaden the scope of ODOP construct for optimizing the essence of sustainable economic development across the country.

iii. To explore emerging challenges and impediments for achieving meaningful implementation of ODOP to achieve balanced growth across Indian States.

4. Research methodology

The Paper has been developed using credible secondary information from reports, research papers and reliable web sources.

5. Discussion

The ODOP frame work has been conceived to identify and promote the best product from each district of India thus the policy suggests to invest and pay more attention to the best product of the district. In other way, the district would be better known by the product itself. It would be helpful to enforce respective GI tag that would help the local players to operate in the regional and national market with certain competitive edge. When we talk about the entirety of a nation on a holistic platform, the decision criteria for selecting best product from a district needs to be broad based and multifaceted in such a manner that it would address the local aspiration in consonance with national collective interest. Figure 2, attempts to showcase a three-dimensional vector on which the selection of ODOP should essentially be manifested.

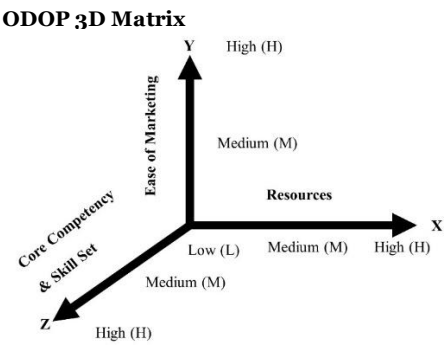

Figure 2. ODOP 3 D Matrix. The selection of the crop of a district is based on 3D matrix which is presented in Table 2. The crop will be weighed against 3 important factors, i.e; Resources, Ease of Marketing and Core Competency and Skill Set. The resources and core competency play a crucial role in the production of a crop whereas ease of marketing plays an important role in the supply

chain of the crop in order to have widespread accessibility to the market

Table 2. Selection Model of Crop based on 3 D Matrix.

Agricultural Crops	Resource {Climatic conditions rainfall, temperature, soil fertility,}	Ease of Marketing	Core Competency & Skill Set	Remarks
Crop	H	H	H	Ideal Case
Crop	H	H	M	High Priority crop
Crop	H	M	M	Moderate Priority crop
Crop	M	H	H	Lower Priority crop

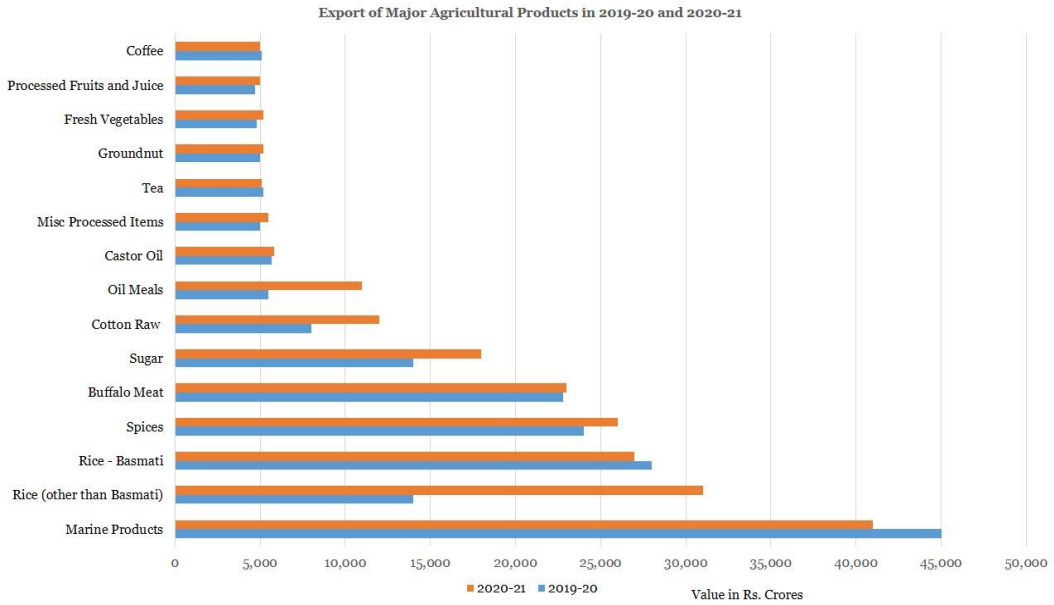

Figure 3. Major Agricultural Products exported from India. Source: Dept. of Commerce, Govt. of India. (https://www.commerce.gov.in/about-us/divisions/export-products-division/export-products-agriculture/).

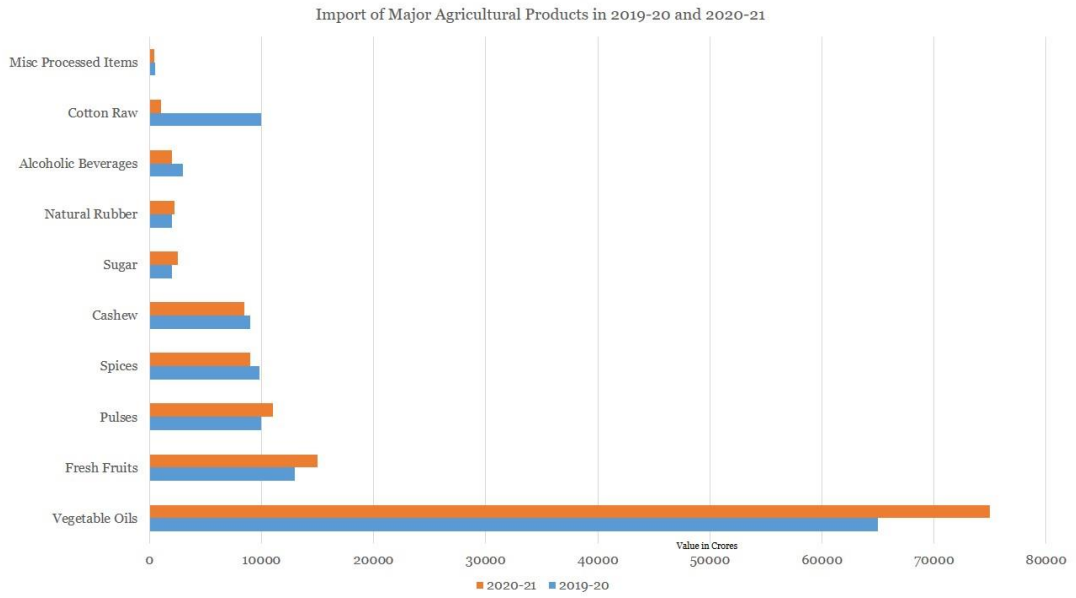

Figure 4. Major Agricultural Products imported in India
Source: Dept. of Commerce, Govt. of India. (https://www.commerce.gov.in/trade-statistics/)

Table 3. Highest exported, imported and consumed crops of India

Most Exportable Agri produces / crop in India (Source: Dept. of Commerce)	**Most Imported Agri produces / crop in India** (Source: Dept. of Commerce)	**Most consumed Agri produces / crop in India** (Source: Wikipedia)
Rice	Vegetable Oils	Rice
Spices	Fruits	Milk
Sugar	Pulses	Wheat
Cotton	Spices	Mangoes, Guavas, Bananas
Oil Meals	Cashew	Potatoes

Table 4. Tracing selects crops from highest exported, imported and consumed crops in India. (Source: www. statistica. com) Data for FY 2021-2022

Crops	**Production (+ve)** (million metric tons)	**Consumption (-ve)** (million metric tons)	**Export (-ve) (million metric tons)**	**Import (+ve) (million metric tons)**
Rice	120	108.5	11.79	NA
Wheat	112.18	104	7.85	NA
Spices	10.87	4.6	1.53	0.26
Cotton	6.16	5.54	0.73	0.02
Edible Oils	7.31	22.7	NA	13.35

Table 3 identifies highest exported, imported and consumed crops of India. The identified agricultural products which are produced in large quantities in India are domestically consumed as well as exported. The agricultural products which are produced in the country but are unable to meet the domestic demands needs to be imported in the country. In this research paper, we propose a framework that can facilitate the selection of a crop that is suitable for a district based on a national perspective rather than a regional approach.

5.1. The approach and Framework towards selection of a Crop for a District

The core idea for the construct of the framework lies on three principles. The most important principle being that the resources of a country should be put to the best use and optimally utilized in order to achieve self-sufficiency as well as economic benefits. The second significant factor being the supply chain elements that aid in the production as well as in the distribution of the crop to the marketplace. The third element of the pillar for the framework is the core competency and skill set required for the production of the agricultural crop.

To provide a clear understanding of the framework the cow belt region of India and some other states which contribute significantly to the agriculture production of the country have been selected. Weightage to each state is assigned under the three heads mentioned above after considering various metrics that contribute to the high yield of a crop. Some of the factor that contribute to the high yield of a crop are: Climatic conditions, rainfall, temperature, soil conditions, fertility of the soil. Labour, wages per day in the region, supply chain network, skill set of crop production.

Applying these parameters aka filters can further aid in the selection of a crop that is suitable both from the regional perspective as well as the national perspective. This framework will maintain the Balance of Trade of the country. The difference between a nation's import and export values during a specific time period is known as the balance of trade (BOT). This approach helps in identifying some of the highest imported crops and then trying to develop ways through which the production of that crop can be increased in order to reduce the import dependency. Some of the highest consumed crops and the quantity in which they are consumed need to be identified in order to meet the domestic requirements of the country. The highest exported crops are generally those crops which are produced in abundance and can be exported to other countries as there is surplus production of those crops.

From the dataset it is clearly depicted that the state should completely focus on edible oil as the priority for each district wherever (3D matrix) holds good i.e., in feasibility, viability and competency.

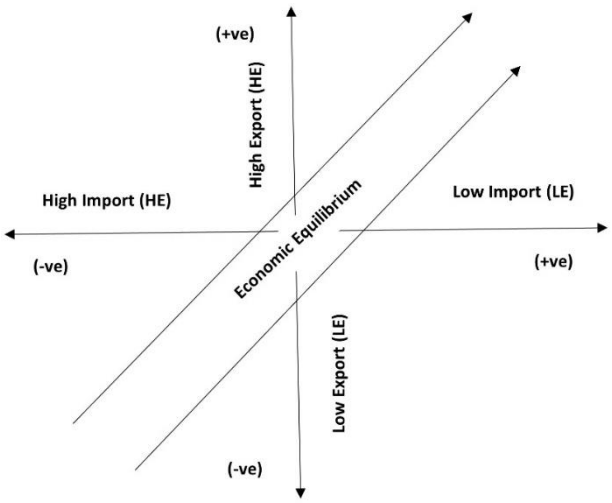

Figure 5. Dynamic District Subsistence Plan

Core competency of a district for a product / Service delivery must be prioritized with the extent of exportability or import dependency substitution along with a subsistence land or area may be protected or utilized for production of local livelihood goods for catering local demands. The Gandhian economic model of subsistence also suggests that an area of land should be provided to meet the local demand. Figure 5 depicts the dynamic district subsistence plan.

Example: Table 6 presents an approach for allocating land area(s) / district(s) allocation as per demand and feasibility. Since India is highly dependent on other countries for Edible Oil and has low Oil

Palm Production. Districts of Andhra Pradesh such as East Godavari, Krishna, Nellore, Srikakulam, Vishakhapatnam, Vizianagaram, and West Godavari are being supported for Oil Palm production.

Earmarking of residual land has been done on 3 D Matrix for exportable crop irrespective of district or state boundary and devoid of confining to best or highest productive crop characteristics. Fig 6 illustrates residual agricultural land mapped using colour coding. A specific land might be identified to produce 2nd, 3rd.....nth product in consonance with the land mapping best

Table 5. ODNP decision matrix

ODNP Decision	ODOP 3D Matrix	Export Potential	Import Dependency
Ideal	Optimal product selection for export	High	Low
High Potential	Focus on import substitution / reduction	Low	High
Local	Subsistence Land for fulfilling local demand	Low	Low

Table 6. Corresponding best crop producing land area(s) / district(s) allocation as per demand and feasibility.

Crop	Total Domestic Crop Demand (D_{Cn})	Area Mapping [Land area(s) / district(s)] (L_{dcn})	Residual Land (RL)	Crop Export Potentials (Cep_n)
C_1	D_{C1}	L_{dc1}	Total Agricultural Land - $\sum L_{dc1}, L_{dc2}, L_{dc3}\ldots\ldots, ..L_{dcn}$	Cep_1
C_2	D_{C2}	L_{dc2}		Cep_2
C_3	D_{C3}	L_{dc3}		Cep_3
C_4	D_{C4}	L_{dc4}		Cep_4
.	.	.		.
.	.	.	.	.
C_n	D_{Cn}	L_{dcn}	.	Cep_n
		$\sum L_{dc1}, L_{dc2}, L_{dc3}\ldots\ldots, ..L_{dcn}$		

Table 7. Area identification for production of crops that are highly import dependent.

ODNP (One District N Products)	Crop 1	Crop 2	Crop 3
East Godavari	Oil Palm	Mustard Oil	Rice Bran Oil
Krishna	Oil Palm	Mustard Oil	Rice Bran Oil
Nellore	Oil Palm	Mustard Oil	Rice Bran Oil

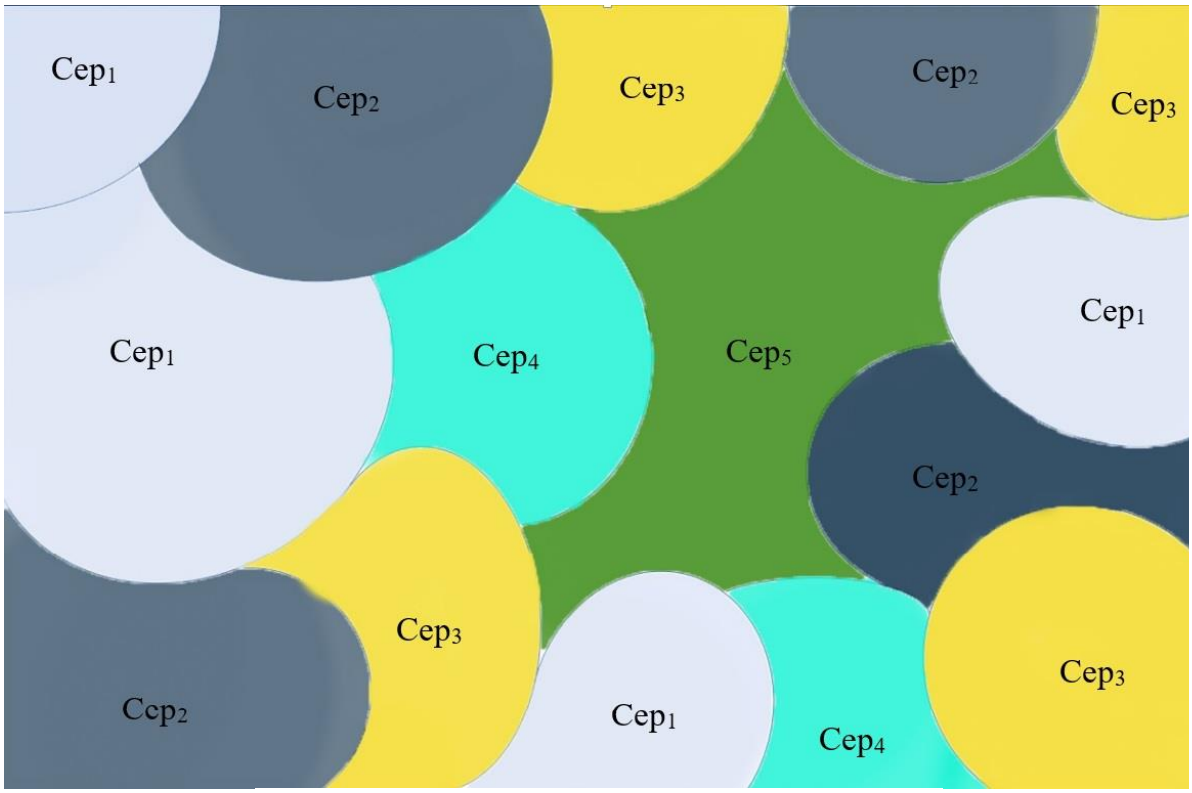

Figure 6. Residual Agricultural Land Mapped with Export Potential

Table 8. Residual agricultural land identification and colour coding

Cep1	**Dcep1**	
Cep2	Dcep2	
Cep3	Dcep3	
Cep4	Dcep4	
Cep5	Dcep5	
Cepn	Dcepn	

possible crop decision based on land mapping and crop priority for achieving optimum food security, least possible import dependency and optimization of export economy from priority sector.

As there are presently 806 districts in India. Agricultural land area of each district has to be identified and crop allocation has to be done based on the parameters and framework provided above.

6. Findings and suggestions

One district one product model pioneered by the state essentially focuses on the idea of branding the best product from each district of the country. It is imperative to understand that the branding of the district is essential by showcasing the district's best item but when we talk about the country in totality of a country or nation. Summation of the best product of each district may not fulfil the basic demands of the people of the country as a whole or focus on the best products would not magically reduce the import dependency or it would hardly fulfil the extent of potential export gain by any means. So, the crux of the discussion is ODOP should not be selected from only the district perspective rather it should be based on widespread nations' interest. It is quite possible that the promoting third, fourth or nth best product of a district may contribute to the country in a bigger way either by fulfilling the domestic demand or import dependency or improvising the export

Table 9. Mapping of identified crops with districts as per ODNP parameters [**Z value: 1-n]**

Districts	1st Priority Crop	2nd Priority Crop	3rd Priority Crop	.....	Selection of Nth Priority Crop based on national/regional demand
D_1	X1	X2	X3		Xz
D_2	Y1	Y2	Y3		Yz
D_3	Z1	Z2	Z3		Zz
.					
D_{806}	A1	A2	A3		Az

Table 10. Crop export potential mapped with agricultural land area of each district.

	L/1st P	L/2nd P	L/3rd P	...	....	L/Nth P
C_{ep1}	List of Potential Districts/Regions [LoPDR]	LoPDR	LoPDR	LoPDR	LoPDR	LoPDR
C_{ep2}	LoPDR	LoPDR	LoPDR	LoPDR	LoPDR	LoPDR
C_{ep3}	LoPDR	LoPDR	LoPDR	LoPDR	LoPDR	LoPDR
C_{ep4}	LoPDR	LoPDR	LoPDR	LoPDR	LoPDR	LoPDR
C_{ep5}	LoPDR	LoPDR	LoPDR	LoPDR	LoPDR	LoPDR
C_{ep6}	LoPDR	LoPDR	LoPDR	LoPDR	LoPDR	LoPDR

Table 11. Mapping crops with international demand and export potential.

Crops	**Demand**	**Export Potential**
C_1	DC_1	EC_1
C_2	DC_2	EC_2
...	...	...
Cn	DC_n	EC_n

Table 12. One District One Crop (ODOC) fixed approach vs dynamic approach

Fixed Approach	**Dynamic Approach**				
Years	Year 1	Year 2	Year 3	Year 4	Year 5
ODOC	$ODOC_1$	$ODOC_2$	$ODOC_3$	$ODOC_4$	$ODOC_5$

Table 13. Crop profiling for a particular year for all the Districts of India

D_1	D_2	D_3	D_4	D_5	D_6	D_7	D_8	D_9	D_{10}
D_{11}	D_{12}	D_{13}	D_{14}	D_{15}	D_{16}	D_{17}	D_{18}	D_{19}	D_{20}
..	..	..	..	..	..	..	..	..	..
..	..	..	..	..	..	..	..	D_{805}	D_{806}

orientations or export potentials so the ODOP model may be moderated by ODNth P where N represents the 1/2/3...nth best product of the district depending upon the dynamics of domestic and global market time to time. For Instance, India has to import large quantities of onions throughout the year even though onions are produced by a few sates of India. Considering The increase in domestic demand followed by the growing import dependency of onion, it is important to promote onion production wherever it is feasible in Indian or Indian districts irrespective of whether it is the best or second best or nth best of the district.

i. Through intergovernmental consultative dialogue, ODOP Model needs to be finalized for each sector of the economy. So, there would be three products per district while one product should be from any of the sectors of the economy.

ii. Three products would be selected per district. The products would be categorized into three categories i.e; primary, secondary and tertiary sector.

iii. Each product that is selected for a particular district falls into one of the three industries mentioned a) Agriculture and its allied sectors, b) Manufacturing industry, c) Service industry.

iv. India's population increased from 450.55 million to 1.43 billion between 1960 and 2023. Over the past 63 years, this is an increase of 216.5 percent. To ensure food security for the large Indian population and also keep food inflation under control we need to make necessary alterations in the existing ODOP Model so that our consumption requirements are fulfilled.

v. Also, efforts must be made in order to increase the production of those crops which India imports in large quantities and thus reduce its import dependency especially for essential commodities.

vi. Priority needs to be given to be those crops which is in high demand in other countries and India has ample number of resources and competitive advantage to further boost its production.

vii. Development of the ODOP Model following the 3 D Matrix crop selection model would play a pivotal role in substantially contributing to the GDP of India through the Agricultural sector. In addition, this would contribute to our goal of achieving a vibrant and sustainable agro based economy.

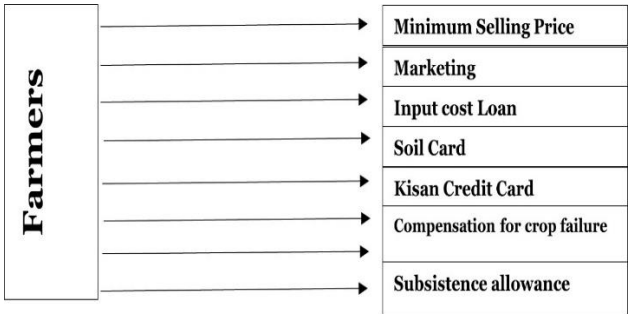

Figure 7. Farmers' improvisation value creation.

The ODOP policy primarily is developed on the principle of the best product of a district. Be earmarked and that should be the first priority. This principle holds good for the district. In the large country like India, we need to devise wide spectrum of preferential bundle of products transferring to ODNP, which means One District n - Number of Products.

Based on the dynamic profiling of import dependence and export potential of goods. The district level product priority may be decided that may not be always the best product as per the district but in order to offset the import burden of the country as well as to explore superior foreign revenue generation in foreign currency. So, the mapping of products for each district profiling should be broadly based and can't be freeze only on the best or highest producing product or agricultural produce.

ODOP ⟶ ODNP

The model given below provides a comprehensive and integrated approach of the crops mapped with the districts considering both the domestic demand and export demand.

Total Production = $\sum_1^n EC + \sum_1^n DC$
Total Production = $\sum [EC_1 + EC_2 + EC_3 + \ldots\ldots EC_n] + [DC_1 + DC_2 + DC_3 + \ldots\ldots DC_n]$

The One District One Crop (ODOC) is a dynamic concept and it encourages the practice of crop rotation as fixing a particular crop for a very long period of time results into poor fertility of the soil and deficiency in certain nutrients in the soil.

Table 12 exhibits the dynamic approach towards selection of a crop. The crop profiling would bring multiple benefits to the farmers along with fulfilling domestic demand and reducing import dependency. The monitoring and evaluation of the crops can include the stake holders of the agricultural ecosystem like Agriculture extension officers, Krishi Vigyan Kendra's (KVK's) of the state and centre, NGO's, Farmer producer organizations (FPO's), Nearby University and Colleges. Some of the technology that can be used to monitor and evaluate that the farmers are sowing the crops according to the crop profiling are satellite imaging, drone technology and Internet of Things (IoT). IoT devices can help farms maximise output and cut expenses by real time monitoring of crops, livestock, soil, weather, and insect infestations. To encourage the farmers to follow the crop profiling and district crop mapping it is essential to provide certain benefits to the farmers. Some of the benefits that can be provided are depicted in Figure 7.

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Author's contribution

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Declaration of conflict of interest

Authors have no conflict of interest.

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