

Leveraging government policies and schemes for promoting mushroom entrepreneurship in India

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ABSTRACT

In recent times, there is increased emphasis on the nutritional security across globe including India. Mushroom as a nutritional food has a major role to play to complement the national efforts to address the hunger and malnourishment. Mushroom entrepreneurship to grow in the country, there is a need for an enabling environment and policy backing to incentivize private individuals to take up the mushroom entrepreneurship. There are several policies and schemes by the federal and provincial Governments in India that help to attract the entrepreneurs to invest in mushroom farming. There is a need for consistent popularization of these policies and schemes among the entrepreneurs so that they make full use of the opportunity of these initiatives by the Government to venture into mushroom enterprises. This article makes an effort to comprehensively discuss the Government policies and schemes to sensitize the entrepreneurs about the schemes and ways to apply them in the mushroom entrepreneurship.

Keywords: Mushroom, Policy, Entrepreneurship, Agricultural marketing, FPOs

Till recently, mushroom was not considered as regular food of the bourgeois. In ancient times, mushrooms were collected from forests and eaten by the people dwelling in the forests. When the domestication of mushroom began, it was mostly consumed by elite class as the majority of middle class could not afford to pay for the 'costly' vegetable (Shirur *et al.*, 2014). But with diversification of mushroom varieties and reduction in cost of mushroom production due to improvement in cultivation technology, the mushroom production and consumption is increasing in geometric progression across the globe (Royse *et al.*, 2017). At present about 43 million tonnes of mushroom are produced in the world that implies that about 6 kg mushroom is consumed per

year per person. In India the consumption is about 0.15 kg only (Singh *et al.*, 2017). Still there is a large gap between the potential and the existing level of mushroom production and consumption in several countries of the world including India.

In India, the mushroom growers are involved in this avocation in different scale and model of mushroom farming. Indian mushroom industry is predominantly dominated by white button mushroom (*Agaricus bisporus*) with about 30% contribution from other varieties *viz.*, oyster mushroom (*Pleurotus* spp), milky mushroom (*Calocybe indica*), paddy straw mushroom (*Volvariella volvacea*), shiitake mushroom (*Lentinula edodes*) and others (Sharma

et al., 2017). Even the farmers and entrepreneurs growing all these type of mushrooms cultivate them in different scale and techniques as mostly they make their own innovations in designing of the cropping sheds, composting facility, tools and machinery required for farming, etc (Shirur *et al.*, 2021). The decisions of the majority of the mushroom growers are driven by their lack of financial resources for setting up of commercial models of mushroom growing infrastructure. The state of the art facility to take up mushroom cultivation as an industry demands huge financial resources.

For several years, there was impetus from the Government to promote the mushroom production in the country through schemes on subsidy targeting mostly the individual mushroom growers (Raman *et al.*, 2018). However, the benefit of such schemes were taken by very few farmers as it involves too much paper work and farmers find it too complicated to follow the procedures laid in guidelines to avail such benefits. There are other extreme cases, where some farmers/ entrepreneurs chase these Government aid and grants seeing it only as an avenue to extract the benefit from the largesse of the State without really working on the techno-economic and ecological feasibility of the project. But, several of such cases as per our observation end up either as a failed mushroom unit or a mediocre mushroom unit struggling to sustain due to lack of financial viability and profitability. There are many policies and schemes of the Government which are potentially very helpful to mushroom entrepreneurship in India. However, in the light of changing market dynamics and globalisation, these policies and schemes must be explored and pursued intelligently by the individual entrepreneurs and group of farmers to venture into mushroom farming. This article aims to highlight few initiatives of the Government which can be leveraged to succeed in mushroom entrepreneurship. However, it should be noted that, these policies and schemes are not meant exclusively for mushroom entrepreneurship but the article tries to present the scope to use the

same for augmenting mushroom production and their supply chain in India.

Reforms and policies by the Government of India to strengthen agricultural marketing in India

The recent policies and decisions of the Government reiterate with certain modifications the establishment of agricultural markets in private and co-operative sector, promotion of direct marketing and contract farming, establishing effective linkages between farm production and retail chains (boosting private sector investment in agricultural marketing infrastructure, creation and strengthening of online trading portal, i.e E-National Agriculture Market (E-NAM), etc). The introduction of reform linked scheme for development of agricultural marketing infrastructure and enactment of Warehousing Development and Regulation Act, 2007 and Introduction of Negotiable Warehousing Receipt System for storage of agricultural produce are also seen as important facilitating roles played by the State. These policies may not be intended primarily for mushroom growers. But, the mushroom growers can draw the benefit based on the type of activity and processes.

The Government of India has recently amended three farm Acts viz, Farmers' Produce Trade and Commerce (Promotion and Facilitation) Act, 2020, Farmers (Empowerment and Protection) Agreement on Price Assurance and Farm Services Act, 2020, Essential Commodities (Amendment) Act, 2020

The amended contract farming Act 2020 in India claims to usher in the investment from private sector to develop infrastructure like cold storages and modernising food supply chain. Since mushroom production and its supply chain demand such infrastructure development and if private sector or the public-private partnership ventures creates such enabling factors, it may motivate many farmers to venture into mushroom farming who are hither to vary

because of heavy investment. The contract farming Act is also expected to help in reduction of post-harvest losses of mushrooms and promote agro-industry through supply of raw materials required for them. At present there are many apprehensions among farmers and hence the recently amended acts may need fine tuning and restructuring to avoid possible exploitation of farmers.

The Farmers (Empowerment and Protection) Agreement on Price Assurance and Farm Services Act 2020 may also have added thrust in motivating small mushroom growers through aggregation to enter into contact with agri-business firms to supply critical inputs such as spawn and machinery on custom hiring basis. The details on the Farmer Producer Organisations (FPOs) are discussed in detail later in this article as they are so relevant for mushroom farmers. This Act also provides an opening of opportunity to engage in direct marketing by eliminating intermediaries for full price realisation. In mushroom industry its relevance is limited for the time being as most of the growers directly sell their produce in the market.

In another farm Act, the Farmers' Produce Trade and Commerce (Promotion and Facilitation) Act, 2020 one of the idea is to provide facilitative framework for electronic trading which can be used to boost the confidence of mushroom growers as it can help them to assess the real time price and demand in various terminal markets across the country. This can empower farmers for effective decision making in synchronising their production and planning staggered harvesting to avoid costs and to sell the produce gainfully by sale during peak demands such as weekends, market days, weather, etc. There can be difference of opinion on universal application of these amended laws in agriculture, but in specific cases like mushroom, there is potential to use this with appropriate modifications and specific guidelines. But in mushroom industry it may take some more time to realise its full potential. Hence, commodity specific modifications based on interactions and inputs from

specific interest groups are the need of the hour and can have wider acceptability.

Schemes of the Government of India that can be leveraged for mushroom production

There are several recent initiatives by the Government of India which are helpful for mushroom growers. These schemes are offered by the Ministry of Agriculture and Farmers' Welfare (MoA & FW), Ministry of Food Processing Industries (MFPI), Ministry of Commerce and Industries- Agricultural and Processed Food Products Export Development Authority (APEDA), etc. The major schemes from the Ministry of Agriculture and Farmers Welfare are the Formation and Promotion of 10,000 Farmer Producer Organizations (FPOs), schemes under Mission on Integrated Development of Horticulture (MIDH), Agri Infrastructure Fund (AIF) under Integrated Scheme for Agriculture Marketing (ISAM), Promotion of National Agriculture Market (NAM) through Agri-Tech Infrastructure Fund (ATIF) etc.

Integrated Scheme for Agricultural Marketing (ISAM)

Primarily ISAM is aimed at developing marketing infrastructure to incentivise marketable surplus, encourage private and cooperative sector, promote direct marketing to protect the interest of the farmers from intermediaries and promote creating scientific storage, grading and infrastructure facility. But the main component under this scheme that is of significant assistance to mushroom growers is the promotion to integrated value chain (confined to primary processing) to provide vertical integration of farmers with processors. Mushroom being a perishable vegetable, it has high scope for processing to develop various nutraceutical processed products.

Under this scheme, the mushroom growers can especially target to integrate their activities under storage Infrastructure, functional Infrastructure for assembling drying, cleaning, grading & standardization, SPS measures, quality certification, packaging, value-

addition facilities, infrastructure creation for direct marketing, Infrastructure for e-trading and integrated value chain projects. Since the mushroom industry is heavily dependent on all such activities, the mushroom growing entrepreneurs must start making use of such incentive by the Government. This is especially attractive as it is a subsidy scheme.

The subsidy under this scheme can be availed by Individuals, Group of farmers/growers/Registered Farmer Producer Organizations(FPOs), Partnership/ Proprietary firms, Companies, Corporations, Non-Government Organizations(NGOs), Self Help Groups (SHGs), Cooperatives/ Cooperative Marketing Federations, Autonomous Bodies of the Government, Local Bodies (excluding Municipal Corporations for Storage Infrastructure projects), Panchayats and State agencies including State Govt. Departments. In this scheme the Minimum promoter’s contribution shall be 20% of the project cost and minimum term loan (including subsidy) should be 50% of the project cost. If the States want to support the mushroom growers under this scheme, the National Bank for Agriculture and Rural Development (NABARD) may be approached to relax the norms as per their respective fund guidelines. Promoters’ contribution in case of own funded State Agency projects should be 75%/ 66.67% of the project cost.

The subsidy will be released- through NABARD for the projects financed by Commercial, Cooperative Banks, Regional Rural Banks, and State Cooperative Banks etc., through National Cooperative Development Corporation (NCDC) for projects financed by NCDC or by Cooperative Banks, or through Department of Agriculture and Cooperation in case of State Agency Projects. The details of rate of subsidy and ceiling of subsidy for storage projects and other projects category are given in table 1 and 2 respectively.

Mission on Integrated Development of Horticulture (MIDH)

MIDH is a Centrally Sponsored Scheme for the holistic growth of the horticulture sector covering fruits, vegetables, root & tuber crops, mushrooms, spices, flowers, aromatic plants, coconut, cashew, cocoa and bamboo. Under MIDH, Government of India (GOI) contributes 60%, of total outlay for developmental programmes in all the states except states in North East and Himalayas, 40% share is contributed by State Governments. In the case of North Eastern States and Himalayan States, GOI contributes 90%. This scheme is primarily helpful for i) Creation of Integrated Post-Harvest Infrastructure ii) Creation of Cold Chain Infrastructure both of which are very essential for the mushroom enterprises. The

Table 1. Subsidy pattern for storage infrastructure projects

Category	Rate of Subsidy	Subsidy ceiling		
		Upto 1000 MT in Rs/MT	More than 1000 MT and upto 30,000 MT in Rs/MT	Maximum ceiling (Rs/Lakhs)
A) North Eastern States, Sikkim, UTs. of Andaman& Nicobar and Lakshadweep Islands, hilly areas	33.33%	1333.20	1333.20	400.00
B) In other Areas				
For Registered FPOs, Panchayats, Women, SC/ST entrepreneurs or their cooperatives /SHGs	33.33%	1166.55	1000.00	300.00
For all other categories of beneficiaries	25%	875.00	750.00	225.00

Table 2. Subsidy pattern for other infrastructure projects

Category	Rate of subsidy	Max Subsidy Ceiling (Rs Lakhs)
A) North Eastern States, Sikkim, States of Uttarakhand, Himachal Pradesh, Jammu & Kashmir, UTs. of Andaman& Nicobar and Lakshadweep Islands, hilly areas and tribal areas	33.33%	500.00
B) In other Areas		
For Registered FPOs, Panchayats, Women SC/ST entrepreneurs or their cooperatives	33.33%	500.00
For all other categories of beneficiaries	25%	400.00

benefit of this scheme can be availed for development of marketing infrastructure for mushrooms and grading, standardization and quality certification of mushroom and mushroom products.

The assistance under the scheme can be availed by mushroom growers as credit linked back ended subsidy for purchasing static / mobile vending cart / platform with cool chamber and for setting up of functional infrastructure for assembling drying, cleaning, grading & standardization, SPS measures, quality certification, packaging, value-addition facilities, etc. Even the establishment of terminal and retail market for the sale of mushroom can be proposed looking at the prospect of rising demand for mushroom and mushroom like commodities. The cost norms and pattern of assistance by the MIDH are given in table 3 and 4.

Besides the above, MIDH schemes can be utilised for strengthening marketing infrastructure in general. Since the marketing infrastructure and cold supply chains are essential for the long shelf-life life of mushrooms, these benefits must be availed by group of mushroom growers to their advantage. Brief summary of such schemes are given in Table 5.

Schemes of the Ministry of Food Processing and Industries

Though some of the schemes appear duplicate to the schemes of MoAFW to focus on the cold chain, processing and quality assessment labs, the mega food park scheme is an integrated scheme to develop several related operations for production to processing and marketing. Aims at establishment of strong food processing industries backed by an efficient supply chain, which include Collection Centre, Primary Processing Centres, Central Processing Centre and Cold Chain Infrastructure. Each Mega Food Park will have around 30-35 food processing units with an investment of Rs. 250 cr. Mushrooms have hardly found place in several such food parks. The mega food parks are given the financial assistance of one time capital grant of 50% - 75% of project cost subject to a maximum ceiling of Rs. 50 cr. The important schemes of the MFPI are given in table 6 along with their scope and pattern of assistance to each.

Schemes of the APEDA

In its quest to grow sustainably, India is focusing on the policy of 'trade abundantly'. Mushroom is

Table 3. Cost norms and pattern of assistance for different facilities by MIDH which are of help to mushroom entrepreneurs.

Item	Cost Norm	Pattern of Assistance
i) Production unit	20 lakh /unit	100% of the cost to public sector and 40% of cost for private sector, for meeting the expenditure on infrastructure, as credit linked back ended subsidy.
ii) Spawn making unit	Rs. 15 lakh/unit	100% of the cost to public sector and 40% of cost for private sector, for meeting the expenditure on infrastructure, as credit linked back ended subsidy.
iii) Compost making unit	20 lakh /unit	100% of the cost to public sector and 40% of cost for private sector, for meeting the expenditure on infrastructure, as credit linked back ended subsidy.

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Table 4. Cost norms and pattern of assistance for different facilities which complement mushroom industry.

Item	Cost norm	Pattern of assistance
Functional Infrastructure	Rs. 150.00 cr / project	25% to 40% (limited to Rs. 50.00 cr as PPP mode)
i). Collection, sorting / grading, packing units etc.,	Rs. 15.00 lakh	Subsidy @ 40% - 55% of the cost of project
ii). Quality control / analysis lab	Rs. 200 lakh	Subsidy @ 100 % of the total cost to public sector, and 50% of the cost to provide sector
Pack house	Rs. 4.00 lakh / unit with size of 9M x 6M	50% of the capital cost
Integrated pack house	Rs. 50.00 lakh / unit with size of 9M x 18M	Subsidy @ 35% - 50% of the cost of project
Pre-cooling unit	Rs. 25.00 lakh / unit with capacity of 6MT	Subsidy @ 35% - 50% of the cost of project
Cold room (Staging)	Rs. 15.00 lakh / unit of 30 MT capacity	Subsidy @ 35% - 50% of the cost of project
Mobile Pre-cooling unit	Rs. 25.00 lakh	Subsidy @ 35% - 50% of the cost of project
Cold storage units type – 1 - basic mezzanine structure with large chamber	Rs. 8000/- per MT (Max. 5000 MT)	Subsidy @ 35% - 50% of the cost of project
Cold storage units type – 2 - PEB structure for multiple temperature and product use, more than 6 chambers	Rs. 10000/- per MT (Max. 5000 MT)	Subsidy @ 35% - 50% of the cost of project
Cold storage units type – 2 with add on technology with Controlled Atmosphere	Addl. Rs. 10000/- per MT for add on components of CA Technology	Subsidy @ 35% - 50% of the cost of project
Refrigerated transport vehicles	Rs. 26.00 lakh for 9 MT	Subsidy @ 35% - 50% of the cost of project
Primary / Mobile / Minimal Processing Unit	Rs. 25.00 lakh / unit	Subsidy @ 40% - 55% of the cost of project
Ripening Chamber	Rs. 1.00 lakh / unit	Subsidy @ 35% - 50% of the cost of project for max. of 300 MT

Table 5. Schemes of MIDH to strengthen market infrastructure to support mushroom enterprises

Item	Cost norm	Pattern of assistance
Terminal Markets	Rs. 150.00 cr / project	25% to 40% (limited to Rs. 50.00 cr as PPP mode)
Wholesale Markets	Rs. 100.00 cr / project	Subsidy @ 25% - 33.33% of the cost of project
Rural Markets / ApniMandies / Direct Markets	Rs. 25.00 Lakh	Subsidy @ 40% - 55% of the cost of project
Retain Markets / outlets	Rs. 15.00 Lakh / Unit	Subsidy @ 35% - 50% of the cost of project
Mobile vending cart / Plat form with cool chamber	Rs. 3000 Lakh / Unit	Subsidy @ 50% of the total cost

demand globally by US, Europe and West Asia. Therefore, the Schemes of APEDA will help mushroom growers to explore the opportunities for

export of mushrooms to meet the demand of the global population. The schemes of APEDA which can help mushroom industry are given in table 7.

Table 6. Schemes of MFPI which can promote mushroom industry in India.

Components	Major Focus
Mega Food Park	Developing supply chain infrastructure covering collection centres, primary processing centres, central processing units and cold chain. Capital grant of 50-75% of project cost.
Cold Chain	Provide integrated cold chain and preservation infrastructure facilities, without any break, from the farm gate to the consumer. The objective of the scheme of cold chain, value addition and preservation infrastructure is to provide integrated cold chain and preservation infrastructure. It covers pre-cooling facilities, reefer vans, mobile cooling units as well as value addition centres etc.50% - 75% of the total cost of plant & machinery in subject to maximum of Rs. 10 cr.
Food Processing/ Preservation Capacity	Modernisation/ expansion of existing food processing units
Agro-Processing Cluster	Encourage group of entrepreneurs to set up food processing units based on cluster approach by linking groups of producers/ farmers to the processors and markets
Creation of Backward and Forward Linkages	Plugging the gaps in supply chain in terms of availability of raw material and linkages with the market
Food Safety & Quality Assurance Infrastructure	Setting up/ upgradation of quality control/ food testing laboratories

Table 7. Schemes of APEDA for the growth of APEDA

Sub Component	Pattern of assistance
Setting up of sheds for intermediate storage and grading / cleaning operations	40% of the cost of equipment subject to ceiling of Rs. 10.00 lakh
Setting up of mechanized handling facilities for sorting, grading, washing, waxing, ripening and packaging	40% of the cost of equipment subject to ceiling of Rs. 25.00 lakh
Setting up of integrated post-harvest handling system (pack house)	40% of the cost of equipment subject to ceiling of Rs. 75.00 lakh

Initiation of Mushroom Growing Farmer Producer Companies (FPCs)

Aggregation of mushroom growers with a small scale for attaining the economies of scale is need of the hour. Aggregation will reduce transaction cost and due to scale, mushroom growers can participate in better price discovery mechanism. There are several tools of aggregation available with crop production, livestock and sericulture. However, there is conspicuous absence of this tool among mushroom growers. The new generation tool of aggregation is promoting farmers into FPOs to be registered under Companies Act or Cooperative societies Act are gaining attention of policy makers.

Farmers Organizations are groups of producers coming together based on the principle of membership, to pursue specific common interests of their members and developing technical and economic activities that benefit their members and maintaining relations with partners operating in their economic and institutional environment. These organisations can provide timely and cost effective financial, technical, marketing and educational services to member farmers. Since many of the schemes discussed above may look too grand for an individual mushroom grower, collective strength of FPOs of mushroom growers can help to take advantage of them. A producer company is a corporate body registered as Producer Company under Companies Act, 1956 and shall carry on or

relate to production, harvesting, processing, procurement, grading, handling, marketing, selling, and export of primary produce of the Members or import of goods or services for their benefit. Among several other benefits, they also render technical services, consultancy services, training, education, research and development and all other activities for the promotion of the interests of its Members. A person engaged in production of primary produce can become member of FPC. For incorporating a Producer Company, minimum 5 Directors and 10 members are required. The minimum paid up capital of the company should be rupees 10,000/-. The registered office address has to be situated in India.

The Ministry of Agriculture and Farmers' Welfare has placed special thrust on Farmer Producer Companies / Organisations (FPCs/FPOs) to address the problems of farmers through the scheme of promoting 10,000 FPCs in India. Though this scheme is being used by more than 8000 crop/ commodity growing associations in different parts of the country, the zeal by mushroom growers to start FPCs is still not very encouraging. Group of mushroom growers can approach any of the agencies promoting FPOs in India. These agencies are Small Farmers Agri-Business Consortium (SFAC), NABARD, Line departments of State Government and even the NGOs and private players. The small mushroom growers must aggregate to form mushroom FPOs to realise the benefit as they greatly reduce the input cost, transaction cost, machinery cost by collective use, group consultancy services, etc.

The other important Government schemes which are of help for startups is provided under Rashtriya Krishi Vikas Yojana- Remunerative Approaches for Agriculture and Allied Sectors Rejuvenation (RKVY-RAFTAAR) scheme. This scheme is aimed at strengthening infrastructure in Agriculture and Allied sectors to promote Agripreneurship and Agribusiness by facilitating financial aid and nurturing a system of business incubation. Startups with innovative solutions for the burning problems through mushroom

production, processing, value addition can be submitted for incubation and for grant for commercialization of the ideas. Those who want to start mushroom enterprises as beginners in small scale can get trained under the Skill Training for Rural Youth (STRY), Agri-Clinics and Agribusiness Centres (AC&ABC) offered by National Institute of Agricultural Extension Management (MANAGE), Hyderabad and through programs offered by the ICAR-Directorate of mushroom Research, Solan and by the Ministry of micro, small and medium enterprises.

Important Website links for more information

<https://midh.gov.in/>

<https://www.scribd.com/document/416263862/mushroom-farming-aspects>

https://agricoop.nic.in/sites/default/files/English%20FPO%20Scheme%20Guidelines%20FINAL_0.pdf

<https://www.nabard.org/>

<https://mofpi.nic.in/>

<https://apeda.gov.in/apedawebsite/index.html>

<https://dmi.gov.in/>

http://nhb.gov.in/online_application_nhb_scheme_2020_21.aspx?enc=3ZO8K5CzcdC/ Yq6HcdIxJw3jOsnY1 HI9ingCqrki32KY34Y0GhGQwY4XXZj4ffu#

CONCLUSION

The mushroom entrepreneurship must flourish in India. It has several implications on food and nutritional security, employment generation, utilizing the agriculture residues to reduce climate change impact and export revenue, etc. Mushroom an an agribusiness activity must be promoted through research and infrastructure support in India. The Government schemes and policies which are for the agriculture and horticulture sector must be effectively

utilized for the promotion of mushroom industry in India. The diversity and broad natured projection of the schemes might fail to suggest directly as how they can be leveraged for mushroom industry. The industrious and foresighted mushroom experts, researchers and consultants must explore and advocate the mushroom growers to make best use of the Government support in the form of schemes by several ministries.

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