

Spawning a new economy: Mushrooming of Mushrooms

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China produces 75% of global mushrooms. Indian annual production of five lakh Metric Tonnes (MT) is just 2% of the world's production (estimated to touch 2.1 crore MT by 2026). Uttar Pradesh, Tripura, and Kerala are the top three Mushroom producing states in our country. India's Mushroom production enlarged by 29 times in four years preceding 2018. Meghalaya's mushroom production shot up more than ten times in two and a half years, from 27 MT in 2018 to 287 MT in 2021. Conceded, as a state, we don't count for much as of now, but we shall be – in just a few years. Mark my words!

Mushrooms are edible fungi. Well, not all of them – but gone are the days of foraging mushrooms in the wild; we have begun cultivating them now. The demand for cultivated Mushrooms is rising in the state because they are low in fat and cholesterol while being very rich in Selenium, Potassium, micronutrients, and vitamins. Moreover, mushrooms are a sought-after food the world over for immunity and to minimize the risk of prostate and breast cancers, albeit the tag of their being an elitist food item persists.

The most widely cultivated mushrooms in the world are (1) Oyster, (2) Button, and (3) Shiitake. The Button mushroom is the most preferred type of Mushroom, and 73% of India's mushroom production is of this type. Meghalaya farmers cultivate both Oyster and Button, and since 2019 we have collaborated with a Japanese Company to introduce Shiitake Mushrooms in the state. Mushrooms are sold as fresh, frozen, canned, and dried and powdered forms. The opportunity for Mushroom cultivation in our state is enormous given the insatiable local demand, export potential, scope for value addition and favourable climatic conditions. Against this backdrop, the state government decided to launch an exclusive Mission called the Meghalaya Mushroom Mission (MMM). The Mission was launched on 30th May 2019.

I am a strong advocate of the Mission mode approach because: (1) Missions have more precise targets and are specific in terms of the outputs (2) The Project Officers are clear about their roles and accountability (3) Missions are flexible. Therefore, mid-course corrections are possible and (4) all the Missions we launched in the state are oriented to generate livelihoods and markets. In contrast, schemes are inflexible, formulated at times with limited contextual

understanding, and usually marked by indifferent official accountability. In the absence of measurable metrics, it is tough to evaluate if a particular scheme has been successful or not. That in part explains how the MMM has made significant progress despite the several Covid induced lockdowns over the last two and a half years. The purpose behind this article is to update the citizens about the Mission, its components, achievements, and the benefits accrued to farmers over the last two and a half years.

First, the numbers. When we launched the MMM, the production of Mushrooms in our state was just 27 MT. The target under the Mission was to produce at least 5000 MT by the end of the five-year Mission period, i.e., 31.3.2024 with a total financial projection of Rs. 62.37 crore. The components of the outlay included the civil works, the expansion of the Mushroom Development Centre (MDC), Upper Shillong, a Spawn Production Lab at Jowai, the introduction of the Shiitake mushroom, capacity building of the farmers, etc. In the first two years of the Mission period, the Mushroom production in the state went up to 287.43 MT, which is a ten-fold increase, and 432 new farmers (against a target of 1000 farmers) had been trained and drawn into the Mission.

The farmers earned an additional amount of Rs. 11.56 crores (at an average price of about Rs.300/- kg. of Mushrooms) through the Mission, which, to my mind, is a significant additional income to the farming community. The MDC supplied both the Compost and the spawn to the farmers. Spawn availability and its quality are critical to Mushroom production anywhere globally, more so in our state.

A significant challenge we face in the state is the shortage of uncontaminated and high-quality spawn. This constraint is sought to be addressed by constructing a new lab at the MDC to expand the capacity of spawn production. The Government of India sanctioned an amount of Rs. 1.51 crore for this purpose and the new lab will be ready for commissioning by the end of January 2022, after which the spawn production capacity will go up from the present 12 M.T/year to nearly 100 M.T/year and more farmers can be provided with high-quality mushroom spawn. In final production terms, it should add 2300 M.T./year of Mushrooms to the current production, which will be achieved by the end of the third year of the Mission. Production will begin at Jowai next year once the Spawn Development Laboratory is complete – work for which has already commenced. Thirty clusters of villages, with about 100 farmers each, have been formed (twenty for Oyster and ten for Button Mushroom), so cluster level infrastructure development can be attempted in due course of time. When erected in each cluster, common infrastructure will help the farmers cut down on the logistics costs. Being a tropical mushroom, the Oyster is coming up well in the Garo Hills districts and Ri Bhoi, while

Button is doing well in the Khasi & Jaintia Hills districts, being a temperate Mushroom. The state government alone will not be able to meet the demand for spawn in future. So, youth entrepreneurship will have to be promoted in the spawn production, so the Directorate of Horticulture floated an expression of interest. We were pleasantly surprised to note that 39 potential entrepreneurs responded, and the screening process is currently on. I hope that we will have a reasonably good number of private players producing the mushroom spawn in the state by the end of next year. All these steps will lead to the next big leap in our state's spawn production capacity. The farmer readiness is heart-warming because they see a good market in it, and their keenness to participate in any event or meeting that we organize is exceptionally upbeat. Already ten exclusive Mushroom cooperative societies have been registered in the state. In all this, I will need to mention the dedicated work being done by the team of officers and staff at MDC, Upper Shillong, under the superb leadership of Shri Sumarlang Kharlukhi, Assistant Director. I would be failing in my duty if I did not mention his name at this juncture.

Then, something more exciting is also happening – the state is firmly moving toward Shiitake Mushroom (In Japanese, 'Shii means 'from a hardwood tree', and 'take' means "mushroom"). A rare and highly-priced mushroom is Shiitake – but difficult to cultivate because of the unique medium it demands, in the form of sawdust chips or blocks of particular kinds of trees. The global shiitake mushroom market is currently valued at 2.6 lakh crore and is expected to grow at 15.31% by 2023. Apart from the exotic cuisine that Shiitake mushrooms are generally used for, they also are used extensively in the pharmaceutical and personal care industries. In this context, we contacted Japan's YATS corporation, the second-largest producer of Shiitake in Japan and a global exporter. The Corporation was scouting for partnership with our country, and after a few initial parleys with states like Tamil Nadu and Himachal Pradesh, they zeroed in on Meghalaya, signed a tripartite MoU with us for technology transfer, capacity building of our officers and assured buy-back. In addition, the Hill Farmers Union (HFU) was roped in as one of the parties to the MoU to enlist the farmers to grow the feedstock tree – the Chestnut (locally known as Dieng Soh-ot, extensively found in the East and West Khasi Hills and South-West Khasi Hills districts) and the HFU planted 5000 saplings last July. So, we have some distance to cover concerning Shiitake, and I estimate that it will be a year before we may connect all the dots in the production process of Shiitake. I will now close with a few thoughts: (1) There is massive scope for Mushroom production in the state. The entrepreneurs can consider establishing Mushroom Spawn Centres to supply within our state as also to cater to the whole north-eastern region. (2) There is scope for Mushroom specific composting, which is a stand-alone entrepreneurial activity (3) The ground straw (of wheat and rice) facilitates a higher growth rate and yield than the chopped

straw. As of now, farmers do not have any supply of the ground straw which aspect can be undertaken, and (4) Mushrooms are highly amenable for food processing and value addition through canned products, dried products and powdered products. Now that the production is going up in the state, it may well be the time for the entrepreneurs to start thinking in this direction. And who is ready?