

Impact of Mushroom Production as a Livelihood Practice on the Rural Women of Chandrapur Block: A study in Kamrup (Metro) district of Assam

Saranga Sekhar Dutta

PhD Scholar, Social Work Department
Assam University, Silchar

Dr. Mrityunjay Kr. Singh

Assistant Professor, Social Work Department
Assam University, Silchar

ABSTRACT

Diversification of livelihoods is very important to reduce vulnerability. Mushroom production has been playing a vital role in the process of diversification of livelihoods as it has given an additional income source for the vulnerable rural population for an enhanced livelihood outcome. It is highly suitable for the womenfolk and therefore the rural women have used this activity and changed their livelihood patterns resulting in an increase in their asset creation.

Available literatures make it clear that mushroom production is an upcoming livelihood activity which possess a lot of potential to be highly demanding and sustainable source of livelihood for vulnerable rural people. There are also studies done on women mushroom cultivators which shows how their engagement with collectives like SHGs have helped in their capacity building process to adopt such entrepreneurial activities. But what it lacks is a more detailed account of the experiences of these women cultivators and how do they distinguish this activity from the other sources of livelihood which they have been commonly practicing.

This paper therefore aims to understand the impact of mushroom production on the socio-economic conditions of the women farmers and also their interpretation regarding this impact. The paper discusses the experiences of these women based on their mobility and networking for finding a suitable market to sell their product. It also tries to understand how they have developed their entrepreneurial and management skills through this livelihood and what role does the government and non-government institutions play in developing these skills. A detailed study regarding the sustainability and security of this livelihood is very important and therefore this paper also tries to interpret the vision of these women regarding the future of this livelihood practice.

Keywords: Sustainable Livelihoods, Mushroom Production, capacity building, entrepreneurial activities, skill development, women farmers, etc.

I. Introduction:

The definition of livelihood has been interpreted in various manner by different authors but the most common and also the working definition for this paper is the one provided by Conway and Chambers. According to them, livelihoods is a means of gaining a living which comprises of capabilities, assets and activities (Chambers & Conway, 1992). This definition was a modification of a concept of sustainable livelihood security suggested by the WCED's Advisory panel.

The panel defined the concept livelihood as adequate stocks and flows of foods and cash to meet basic needs (WCED, 1987). Chambers and Conway define sustainable livelihoods as the ability to cope and recover from stress and shocks, maintain and enhance the capabilities and assets and also provide ample opportunities for the next generation (Chambers & Conway, 1992). This definition of sustainable livelihood was also adopted in the DFID's Sustainable livelihood framework.

This framework is used as a tool to improve our understanding of livelihoods, particularly the livelihoods of the poor. The framework mainly talks about how assets for livelihoods are influenced by various context, transforming structures and processes the transforming structures and processes reinforce the positive aspect and mitigate the negative ones (DFID, 1999). The framework also talks about livelihood strategies and their vice-versa relationship with assets. With the positive choices of livelihood strategies an enhanced livelihood outcome is achieved.

The greater the diversity of livelihood strategies, the higher the household's resilience to the shocks, trends, and seasonality conditions within the vulnerability context. Therefore, diversification of livelihood is very important to maintain sustainability. It is well to recognise that the benefits of diversity are context specific like high seasonality, high risk, absent markets, poor infrastructure, declining farm size, and similar adverse factors (Ellis, 1999). Livelihood diversification is a continuous adaptive cycle in which household's add new practices, maintain existing once or drop other one, thus retaining diverse and evolving livelihood portfolios (Admiral, 2012).

In developing nations like India, it is evident in rural places where although the agrarian economy plays pivotal role in rural livelihoods, people also engage themselves in various other income generating activities like livestock rearing, handicraft and other non-farm activities. Government institutions, NGOs, civil societies and other social institutions plays the role of transforming structures whereas policies like NRLM, GKY, MGNREGA can be identified as the transforming processes which help the poor in building their capacity through skill development training, market linkages, financial inclusion, etc.

Although the poor in general have limited access to assets and resources, the women have comparatively lesser control over resources they possess. Women are thus even more marginalised, by virtue of being women (Padmaja & Reddy, 2014). Therefore, we could see that women have been and important beneficiaries of these policies and schemes, especially in the case of DAY-NRLM. With the help of the existing SHGs and newly formed ones under NRLM rural women are able to empower themselves economically, politically and socially which help improve their livelihoods (Rathinam & Akudugu, 2014). Amarjeet Sinha, the secretary of rural development department said in an interview the diversification of livelihoods through the women's self-help groups (SHGs), have contributed to decline in poverty in many states especially the southern ones. (Sinha, 2018)

Sustainable livelihood promotion being the most important objective of this programme, skill development and market knowledge along with financial assistance is provided to these SHG women for practicing various activities. Amongst these activities some are the ones they are practicing traditionally whereas some are acquired through training programmes like soap making candle making and some farming activities especially which are new and have promising future in the market. This paper mentions one such activity which has propagated by ASRLMS, the nodal agency of NRLM in Assam, i.e. Mushroom production or cultivation.

Mushroom production is an indoor activity and high profit venture which provides ample opportunities for gainful employment for small farmers, landless labourers, women and unemployed youth (Das, 2014). It offers a low start-up cost with short term returns on investment (Vaidya, 2001).

The venture, being indoor is quite suitable to womenfolk, especially the rural ones (Das, 2014). Therefore, it is seen that mushroom production have become a very significant venture for rural women especially for the ones engaged with SHGs. There are also studies done on women mushroom cultivators which shows how their engagement with collectives like SHGs have helped in their capacity building to adopt such entrepreneurial activities. But what it lacks is a more detailed account of the experiences of these women cultivators and how do they distinguish this activity from the other sources of livelihood which they have been commonly practicing.

II. Research problem:

The problems related to livelihoods are more prevalent in the lesser paid livelihood opportunities as they face the issue of sustainability and the people engaged with such livelihoods are deemed to be vulnerable in crisis situation. Due to the uncertain conditions looming around agrarian livelihoods the rural population faces severe livelihood vulnerability. To cope with vulnerabilities the solution is building formidable resilience in the form of livelihood diversification. Mushroom production is one of those diverse livelihood activities practiced by small farmers, especially the rural women of developing economies. This research tries to explore the scopes and the challenges of mushroom production through the experiences of the women farmers.

III. Aim of the paper:

This paper aims to understand the impact this activity has made on the socio-economic conditions of the women farmers based on their experiences. Their effectiveness in mobilising themselves and creating networks for market opportunities have been studied. There are many constraints faced by these women practicing this upcoming livelihood activity which are discussed elaborately. Although these constraints have been discussed by other studies also, this paper focuses on how the women farmers deal with these constraints by enhancing their capacity building process with the help government and non-government institutions. This paper also tries to explore the vision of these women regarding the sustainability of the activity.

IV. Review of Literature:

In the last 4 to 5 decades the world mushroom production has increased about ten times from which the most notable ones came about in China, the US, the Netherlands, India and Vietnam. The rapid growth and market expansion of the mushroom industry in China is a great example of rural development which is driven by bio-

innovation and spread of technology (Zhang, Geng, Shen, Wang, & Dai, 2014). Although Asian countries are the leading producer of different varieties of mushroom, the U.S and European countries like the Netherlands and Poland are also among the leading mushroom producers in the world. Some 260 U.S. growers produced more than 844 million pounds of mushrooms in 2002-03, with a farm gate value of \$889 million (Beetz & Kustudia, 2004). In the U.S. most of the large and well-established mushroom producing companies are located in Pennsylvania and California.

The scope of mushroom production as a livelihood activity is high in the developing countries like India. From various literatures it could be understood that this particular activity has made inroads in other South-Asian countries like Pakistan and Bangladesh. Due to the suitable climate of certain areas of Pakistan especially the cooler summer of the Swat valley and favourable ecological conditions of the Peshawar both the growth and yield of oyster mushroom, have taken a boost. It is the similar type of mushroom also cultivated in the north eastern region of India. The Swat region have proven to be more favourable than Peshawar due to its higher altitude and comparatively cooler climate (Hassan, Al-Yemeni, & Khan, 2011). During the hot summers of Peshawar mushroom production takes a hit arising a similar situation like in Assam making the livelihood activity a seasonal one.

Similarly in Bangladesh as the soil and climatic conditions are very suitable for mushroom cultivation, there is huge prospect for its industrial production. This will also lead the way in creating employment opportunities for landless beggar, both educated and uneducated youth, most importantly the vulnerable ones like person with disabilities and women respectively (Shakil, Tasnia, Munim, & Mehedi, 2014).

Based on the existing literatures on mushroom cultivation it could be understood that this sector has a major contribution in the agricultural sectors of the large economies for many decades. But in the recent years we could observe mushroom production being a key factor for rural development in the third world countries. The awareness regarding cultivation of mushrooms is gradually emerging amongst rural population of the third world nations as they have only known about wild mushrooms available in the forest areas nearby. In the Kabale district of Uganda, wild mushrooms are collected by women and children and so they are more well-informed about them. Due to the upper hand in the knowledge the women were quick to adopt the mushroom growing technology (Obaa & Nshemereirwe, 2004).

It was found that women engagement for this activity is most pre dominant in the developing nations, especially the South East Asia and Africa. The decision making and ownership over income is seen to be developed amongst women as they are starting to make decisions on land use for the activity and control the income generated from it. Some other studies have suggested that women can be organised into certain co-operatives or self-help groups where they can increase their bargaining power, get better markets and access other services easily among others (Mayanja & Tipi, 2017).

Women SHG members have started engaging themselves with various livelihood activities, mushroom production is standing out amongst others. This enhanced their socio-economic conditions to a great extent with an increase in their asset creation. A study done in Virudhunagar district of Tamil Nadu found that mushroom production can be successfully promoted in rural areas for creating self-employment among rural women (Muthuramu, Paulpandi, Sakthivel, Ramakrishnan, & Karthik, 2015). Changes could be observed in attitude towards self-employment, self-confidence, innovativeness and enhanced group performances as a part of this livelihood activity. Due to the exposure given by this activity, women have now started taking social responsibilities and leadership roles (Sumira, 2018).

Although the literature talks about the impact on the economic conditions of the farmers, not much details are given regarding their strategies and network to create a market. More studies need to be done to understand not only the production process of mushrooms but also the strategies adopted by the farmers to sell it in an appropriate market.

To understand the mechanism of market of a product, the consumption pattern is also needed to be taken into account along with its production process. For example, a study was conducted by the US department of Agriculture regarding the consumption pattern of mushroom in US. According to a study the consumption of mushroom has been on a rise in US. The study looked into the various dimensions of the consumer's demand and its influencing factors like the change in income, family size, changing demographics due to immigration of more Asian and Hispanic Whites and most importantly the changing of taste and preferences culture (Lucier, Allshouse, & Lin, 2003).

The training programmes provided by different institutions helps in the capacity building process of these women to adopt such livelihood strategies which are scientific and technical in nature (Upamanya & Sarma, 2020). The importance of training of mushroom production was shown in a study done in Barpeta district where the knowledge regarding the mushroom production have been tested. In most of the aspects the pre training knowledge was not much satisfactory whereas the knowledge score after training was found satisfactory in most of the aspects (Upamanya & Sarma, 2020).

In a similar study, an evaluation of knowledge gained from the training programmes was done where in the pre training period due to the lack of market channels the oyster was mostly produced for self-consumption.

But post training more knowledge gain was observed in button mushroom than oyster as it was more popular in the northern region with high demand in the market (Tanwar, Singh, Matharu, & Sohi, 2020).

Another study was done in Punjab Agricultural University in Ludhiana where trainees' suggestions were asked to improve the quality of vocational training of mushroom production. The results showed that more importance to practical classes, supply of printed materials and wide publicity on mushrooms were the main suggestions to include in the trainings (Kaur, 2016).

The value addition skills are also very important as it enhances the income farther by providing additional value to the product. Technologies for production of some other products like mushroom-based biscuits, nuggets, preserves, noodles, papad, candies and readymade mushroom curry in retort pouches have been developed but are yet to be popularized. Attractive packaging of the value-added products is yet another area, which may be called the secondary value-addition (Wakchaure, 2011).

In countries like U.S along with exports of agricultural commodities, there is much faster growth in the trade of value-added products. With the increase in demand for the consumption of value-added products a considerable growth is observed in the market for value added agricultural products (Krause, Wilson, & Dooley, 1994). The processed mushroom is one such example which have a higher demand specially in the urban areas. In the U.S it was found that the demand for fresh mushroom is edging over the processed ones in the recent decades but still its consumption is yet not waning (Lucier, Allshouse, & Lin, 2003).

In most of the local market of mushrooms we could find deficiency of standard packaging & measurement. Therefore, it leads to selling of mushrooms with unspecified quantities, qualities and the price variation. Hence there is a need to improve the value chain system and increase value addition. Awareness regarding the usage of the value-added products need to be given for increasing the production and consumption of mushrooms which enhances its nutritional and medicinal value. Therefore, the local producers and mushroom farmers along with learning its production process is also developing value addition skills. Training programmes of food processing is quite helpful to add value to mushroom products (Jahan & Singh, 2019).

The capacity building doesn't only happen through training programmes but also during the process of the production. While building capacities of these women they had to go through many challenges. These constraints which question the sustainability of this particular livelihood activity. Some of the most common constraints discussed by the literature is that of the marketing channels, production issues and lack of technical knowledge (Barmon, Sharmin, Abbasi, & Mamun, 2012). To mitigate these problems the role of the government schemes, the NGOs and MFIs are very important. The funds provided by various schemes like NRLM and the training programmes by the NGOs have been helpful to an extent to the SHG members engaged with this activity.

A livelihood becomes sustainable only when it can cope with and recover from stresses and shocks and maintain or enhance its capabilities, assets, and activities both now and in the future, while not undermining the natural resource base (Serrat, 2017). Different studies have made suggestions to ensure the sustainability of the livelihood activity. As there is no regulation for checking the quality of spawns, the farmers face production problems like low productivity as inferior spawns lose their efficiency to produce mushrooms. Therefore, government intervention is required to set up regulatory boards like the Seed Act so that the farmers get a redressal system and operating procedure and purity are produced (Singh, 2020).

V. Study Methodology:

The study follows a descriptive research design where it mainly focuses on discussing the process and impact of mushroom production as a novel form of livelihood and narrate the experiences of the women SHG members who are engaged with this activity. For conducting the study, the methodology is based on qualitative approach. The study mainly tries to collect the experiences of the women SHG members who have been engaged with this activity of mushroom production for some time. The data was collected with the help of in-depth interview of 10 SHG members of Chandrapur block from the Kamrup (metro) district of Assam, who are practicing this livelihood. 6 of them were established mushroom cultivator with an experience of more than 1 year. The other 4 were beginners with less than 1 year experience. The respondents for the study were selected with the help of snowball sampling method. As the nature of the respondent was already pre decided, this method of sampling made the process smoother and faster.

VI. Findings and analysis:

Mushroom production is found to be a common practice in Chandrapur block of Kamrup metro district. Although mushroom farmers were in various localities, the study was limited to 2 villages where mushroom farmers were concentrated, i.e. Hajonbari and Thakurgusi. Many of the mushroom farmers were new to this livelihood practice under a new government scheme Shama Prashad Mukherjee RURBAN project.

This project attracted many women to start this livelihood, but mushroom production was not new to this block. Back in 2018, a project was carried out by the joint effort of NRLM and MDF in the blocks of Chandrapur and Dimoria (both in Kamrup (M) district). Under this project they tried to promote self-employment amongst the

women by introducing mushroom production as a source of livelihood. A total of 200 women from both the blocks were selected and a collective was formed which was given the name “DIMCHA”. In each block there were 5 cluster with 25 mushroom farmers in it. Both the chairman of this society, Tulika Swargiwary and vice-chairman, Dipjyoti Dutta are from the Chandrapur block. They have been a very valuable source of information during the research. Due to their leadership positions they were the go-to persons for the farmers.

Almost all the farmers were from either the RURBAN project or the one from 2018 MDF project. But there were also few who used practice this livelihood long back when SIRD introduced it in 2000. Either some of them have left the practice or has again resumed it under these projects. In this study, amongst the 10 respondents 5 of them were old mushroom farmers, 2 of them continues whereas 3 had just resumed under the new RURBAN project. 7 were from the MDF project whereas the other 3 were new farmers joined under the RURBAN project.

6.1 Mushroom farming: an additional income source

Mushroom production as a livelihood practice acts as an additional source of income for almost all the women farmers interviewed in the study. It could be observed that this activity was a part of the diversified livelihoods that they practice like poultry, piggery, orchid and some also had jobs outside home. For none of these respondents, mushroom production was the only source of income as it is nowhere near sufficient to run a household, but it gives a fair push by enhancing the limited income which they enjoyed previously.

They sell the fresh mushroom at the rate of ₹ 250 per kg. This is a fixed price to which all the DIMCHA members abide by. But it was found during the interviews that some of them sometimes vary the price according to situation. As they produce around 200-300 bags (varies based on the experiences of the farmers) which yields around 600-1000 kg (around 3 kg per bag) and gives them earnings of 30000 to 50000. This was quite low compared to the income generated from the activity in other places, like in Virudhunagar, a mushroom farmer earns around ₹ 90000 per season (Muthuramu, Paulpandi, Sakthivel, Ramakrishnan, & Karthik, 2015). But it must be noted that the said study was conducted with successful and experienced mushroom farmers as their respondents which is not the case in this particular study.

Income range (last year)	No. of farmers
Less than ₹10000	2
₹10000-20000	3
₹20000-30000	2
₹30000-40000	1
₹40000-50000	0
More than ₹50000	2

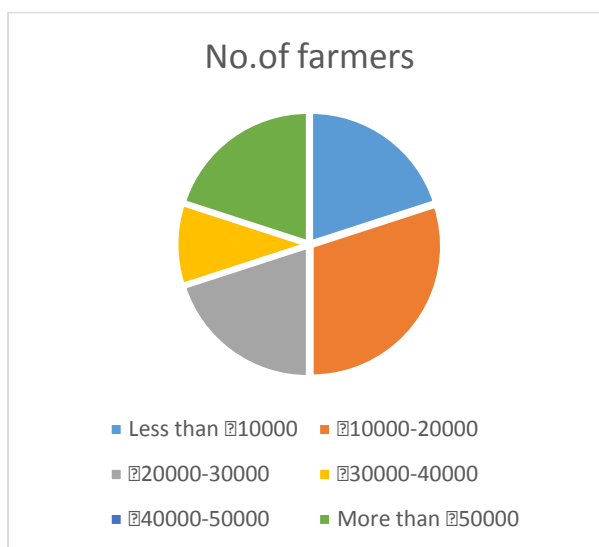


Table 1.1

Based on the table 1.1 we can understand that the income level varies for different farmers. The farmers earning less than ₹20000 are the ones who have started the activity for the first and therefore have the least experience.

As not all mushrooms get sold by every farmer, the income varies a lot between them. The ones with better network earn more than ₹50000 and up to ₹1 lakh in a year. This is mainly in the case of the leaders, Dipjyoti and Tulika. As they are engaged with the activity for around 4 years, they have good experience and are earning more. But the other's income range within ₹10000 to 40000.

This activity has enhanced their purchasing power up to an extent as it was seen that they have used this increased income in various small needs of the household including expenditure of their children's education, small health issues, buying of important gadgets. Although many of them feels self-dependent with this enhanced purchasing power, the road is still too long for it as they have to depend highly on their male counterpart.

Although there are various uses to this additional income, it was reported that most of it was repeatedly used as working capital for the activity. It could be observed that the repaying of loans through this income were from

families with lower household income. Moreover, due to the seasonality of the production, the output keeps on varying which freckles the certainty of the income.

As most of the farmers were continuing this activity for last 3 years, they might not have significant change in the income but were able to develop their social capital up to an extent due to the exposure provided by various schemes. This networking and mobility have also motivated the new farmers to continue with this activity for a better future ahead.

6.2 Enhanced mobility and networking:

Enhanced mobility and networking help in building social capital which leads to social empowerment. Social capital refers trusts, norms, values and network that connects individuals (Putnam, 1993).

Unlike the production process, the market won't come to home for these farmers. Although MDF was taking responsibility of the market when the project was running, but as soon as it got over, the burden of market fell on the shoulders themselves. The leaders became the bridge between the organisations and the community. They mostly participate in the SARAS mela organised by NRLM both within and outside of the state where they put up stalls in the food court. There they were able to make connections with organisation like Kudambashree, a NRO which works with NRLM to provide support in eradicating poverty.

Dipjyoti Dutta, the vice-chairman of DIMCHA have shared her experience of their visit to Delhi for the first time.

It was a first time for both me and Tulika to travel outside Assam without any other companies with us. Two women alone surviving in the national capital seemed a little terrifying at the beginning. But both of us took it as a challenge and overcame all the problems faced in the process. The people from Kudumbashree were very helpful and guided us in every step.

By not limiting themselves to one place, they are now able to gain more knowledge and ideas from all across the country. Both of them have also set a good example for the other farmers who are reluctant in mobilising themselves. With inspiration and guidance from their leaders they know that to access the market the others also must move outside of their homes (comfort zones) and make network.

Unlike the newer ones, the old farmer who are practicing this activity for more than 10 years have more enthusiasm to mobilise themselves. Sagarika Daimari from Hajongbari village have been practicing the activity for more than 10 years since SIRD provided them training back in 2000. Due to her prior experiences, she is quite confident in traveling to places which are nearby. The only reason she cites for not travelling to far places is lack of time as she also works as an ASHA worker.

In this process, these women are able to gain social capital which is as important as any other physical capital. Even the ones who are still reluctant to mobilise are understanding its importance and now have the will to change their mind-set. Government and NGOs like MDF should have played a better role in inculcating the importance of mobilisation and networking amongst the women during the tenure of the project.

6.3 Capacity Building of the women:

Mushroom production as an activity has been introduced as capacity building programme for these women so that they can enhance their income by adding another activity to their livelihood basket. They were given trainings by resource persons from the government and NGO to acquire skills and knowledge of mushroom production. The women who started the activity during the project of MDF and NRLM, the trainings were provided by MDF. The new farmers who joined under the RURBAN project were given training by resource persons from agricultural department.

Although the formal training happened for only 2 days, most of them learnt better from the old farmers with their experiences. Jayanti Boro a new farmer started the activity in February 2022 shared her experiences regarding the formal trainings. She believes that it is only by learning from your mistakes and challenges, they could gain the expertise in this field. The training programmes given by these institutions were only helpful in making them know about the skills but learning these skills took place only through experience.

In the process of learning the producing and marketing skills they also developed certain other skills like managerial skills, organising skills, etc. Acquiring of these skills have enabled them to access various exposure which has enhanced their overall capacity. They are now quite efficient in time management as they have to multi task to practice their diverse livelihoods. The family member of a respondent expressed that they were very proud of their daughter in law as she keeps herself busy and earns something to help in running the household. The encouragement and motivation from the family is always helpful in enhancing the capacity building process of these women. Tulika Swargiary, the chairman of the DIMCHA co-operative society shares her experience regarding self-identification acquired by this activity.

Before I was identified as someone's wife or someone's daughter-in-law but now since being engaged with this activity as a Chairman of DIMCHA I have got my own identification as a rural woman entrepreneur. Due to the leadership position my verbal and communication skills have also developed which gives me more confidence while speaking in public platforms.

The livelihood activity of mushroom production has not only added to their source of income but also have influenced their personalities to an extent. With the necessary guidance and inspiration, the new ones will also get the motivation to develop their personalities. They look up to their leaders and are motivated to follow their footsteps. For example, with inspiration from Tulika many farmers are now willing to get trainings to learn these value addition skills so that they can enhance their income. Learning value addition techniques is very important as they further build one's capacity and also the value of the product increases in the market.

6.4 Value addition to mushroom production:

According to Tulika due to lack of value addition knowledge and skills, the mushroom farmers are still lagging behind. As it could be seen that the demand for fresh mushroom is not overwhelming nor is the demand for dried mushroom, the farmers must rely on various value addition techniques to ensure sustainability of the livelihood. The chairman herself uses skills from PMFME trainings to add value to various food products including mushroom to make products like mushroom cake, mushroom biscuit and also chocolates.

It was observed that although all women understand the importance of value addition, many of them are reluctant in practicing it because of lack of time. According to them one of the primary reasons of adopting the practice of mushroom production is its time effectiveness. For adding value, they will also have to add time and effort in the production process which would be challenging for them as their multi-tasking load will increase.

Rupali Boro who is also an Anganwadi worker have been practicing this activity since 2018 under MDF project. She shares talks about the burden of heavy work load who is it affecting her daily life.

I am a daughter-in-law of a joint family and have many responsibilities at my home. Moreover, I am also working as Anganwadi worker since 2010. I am also rearing pigs and poultry, which I have bought with loan money from my SHG. At a time when there are so many tasks at my hand, an added activity could disturb my schedule. But if time permits, I would be eager to avail the opportunity of value addition training.

From the conversation with these women, it could be figured that although they were not earning much from mushroom production their overall income was satisfactory as they were engaged with other jobs. Therefore, they were not too ambitious about enhancing the income from mushroom production, hence giving less priority to value addition.

Value addition is believed to be one of the solutions to problems of lack of demand in the market. These women farmers have discussed various problems and changes that they face in the process and have also provided suggestions as fit to them.

6.5 Problems faced during the practice:

The problems are mainly due to the various vulnerabilities which are in the form of shocks, trends and seasonality (DFID, 1999). The main challenge mushroom production face is in the form of trends and seasonality. Trend have been a vulnerability of this activity because of the dearth in the accessibility and availability of the market. Even though the women have tried to mobilise themselves and make networks and connections, they are still deprived of getting the suitable market.

Lack of awareness regarding the usefulness of mushroom consumption among masses creates problems for the venture to bloom. The reports of deaths by consumption of wild mushroom causes hysteria among many which have bad impact on the market to a great extent. The vice chairman, Dipjyoti also had to face challenges due to this lack of awareness.

Once I was held responsible for the deaths caused by consumption of wild mushroom as I was selling them. Even after explaining them the difference between wild and harvested mushroom, the customers remained sceptical and not satisfied with my arguments.

Although the lack of demand in the market is a challenge, they are not worried about wastage of their products being unsold. The unsold mushrooms are later dried and kept to sell it in a higher price (₹900/100 per kg). But drying of mushroom itself possess its own challenges due to lack of machinery and rainy weather. Some also use the remaining mushrooms for their own consumption or sell it in their neighbourhood at a lower price.

According to the respondents it is the low production quality which leads to wastage of mushrooms. There were many complaints given by farmers regarding the quality of spawns and straws provided by the government. Therefore, as suggested by the article of Wire, it is important to form a regulatory body by the government to check the quality of spawns.

Another major challenge mushroom production face is the problem of seasonality. Mushroom production, especially the oyster mainly takes its peak in the colder seasons. During the summer there are more chances of crop failure due to pest attacks. Moreover, as reported by the chairman, at DIMCHA only organic farming is practiced and therefore the yield might be low but the quality is always superior. The organic products always find it difficult to find a market where the inorganic sells their product at a very low price.

By looking at all these problems, one would definitely question the sustainability of the activity. But the farmers are quite optimistic in spite of all the challenges they are facing in the production process. Therefore, they

have also discussed about the vision they have regarding the future of this activity and how they could solve these problems to make this livelihood activity a sustainable one.

6.6 Sustainability of the livelihood practice:

In spite of all these challenges of production and marketing, the mushroom farmers have a positive attitude regarding the sustainability of the activity. The leaders have stated they believe the MDF project to be a successful one because unlike other projects, here no women left even after the project's tenure was over. This was a good sign for the cooperative society of DIMCHA as it strengthened their demography which could attract more investment from the government making mushroom production a promising and sustainable livelihood practice for these women.

Amongst the new farmers, from their narrations it could be understood that they have a sense of belief towards this new form of livelihood practice. They were keen on continuing this livelihood for long term. The cluster leaders also believes that if the production runs all around the year, the chances of sustainability increases. Therefore, they encourage the other farmers to put effort even in the summer season to continue with the production although it is not the suitable season to produce mushrooms.

Moreover, these farmers believe that their product will be sustainable in the long run as they follow a complete organic method of production. Although the organic product face challenges in finding a market, but it sustains in the longer run due to its eco-friendly and healthier characteristics.

As this livelihood has given them a new identity as mushroom farmers and women entrepreneurs, they are willing to fight to overcome every challenge and continue the activity as long as possible. Moreover, being SHG members and part of a co-operative society strengthens their bargaining power and could get them access to better markets and other services easily (Mayanja & Tipi, 2017). Therefore, both the chairman and vice chairman have a vision regarding this livelihood practice that it could be major industry if it gets its proper market to sell their product.

VII. Conclusion:

The study tries give us an idea about the impact of mushroom production on the rural women practicing it. Based on the study we could understand that the livelihood activity of mushroom production is mainly adopted as an additional source of income to their overall livelihood basket. The income generated form the activity keeps on varying every year based on the production and demand in the market. Although significant change in the overall income is not evident, but changes could be observed in the purchasing power of the women. Their attitude towards mobilising themselves and creating networks to find suitable buyers of their product. But with inspiration from their leaders, they are also motivated to move outside of their comfort zones and travel different places to meet people and create their own networks.

Through training programmes, they have not only enhanced their capability with knowledge and skills of mushroom production but also gained important market perceptions. But due to lack of practicality they are learning the market dimensions only through experiences. The activity has enhanced their confidence level, leadership qualities, and entrepreneurial skills along with production and market knowledge. They have also understood the importance of value addition and are therefore keen on learning various techniques to enhance their income farther. The farmers therefore seek training from the government institutions and NGOs to acquire skills and techniques for value addition.

The study also discusses the challenges faced by these farmers, one being the market and other the production quality. After MDF left the responsibility of the market, the burden of selling their products was on themselves. They still rely on their leader to find networks and connections to sell their product. it was expected by the farmers that government and the institutions like MDF would provide them good market opportunities and connect them with large and regular customers. Moreover, as the mushroom production is best only in cold weather, it faces the problem of seasonality. During the summer season the crop gets damaged. The other reasons cited by the respondents for crop damage are poor quality of spawn, straws and houses provided by the government. A cold storage facility and food processing unit is a constant demand of these farmers.

In spite of the constraints faced by the women farmers, they still have positive vision regarding the sustainability of the livelihood practice. The leaders also believed that if awareness about effectiveness of mushrooms is created and proper government interventions are taken to find a better market, sustainability can be ensured for this livelihood.

VIII. Suggestions:

- Interventions of government, NGO and other civil society organisation are required to spread awareness regarding the benefits of nutrition from mushroom consumption and the hysteria regarding poisonous mushroom consumption.

- A regulatory body is required to be formed by the state to check spawn quality and supply of other raw materials (Sinha, 2018).
- As mention by Dinesh Das in his article, a minimum support price is also needed to be fix by the state so that the farmers don't suffer any losses (Das, 2014).
- Tulika, the chairman during her interview have suggested that there have to be at least one market which needs to be regulated completely by the government where only local and organic products could be bought and sold.
- Packaging and storage are also important aspects to be looked upon by the government and other institutions. The farmers seek to learn better techniques of packaging which have longer durability and attractive designing. Better storage facilities needs to be there so that the products remain undamaged for longer duration.

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