

**Scope of Work for F2F COVID-19 Period Support
Mushroom Spawn (Button and Oyster) Laboratory Development
25th September 2020**

Country: Malawi

Country Project: Horticulture

Assignment title: ML-CV13, Mushroom Spawn Laboratory Development (how to set up a mushroom spawn lab)

Date of Submission: 25 September 2020

Scope Developed By: Mwayi Sinda

Proposed start date: October 2020

Host Organization: Jat Investments

Partner Organization: None

Host Location: Lilongwe

PERSUAP level: 3

Support to be given through: Zoom/Skype

Proposed time of the day for the support: 2:00 pm - 5:00 pm (CAT).

Translation needed: No

I. Desired Qualifications of Volunteer:

- a. Must be citizen or permanent resident of the U.S;
- b. Prior experience in spawn production in a small scale laboratory;
- c. Experience in technology and management of a spawn laboratory;
- d. Experience in training staff in practical aspects of spawn laboratory operations and management;
- e. Has creativity and ability to improvise where necessary and feasible.
- f. Willing and able to conduct training through Skype, Zoom etc.

II. Assignment Classification:

- a. Increase agricultural sector productivity and profitability.

III. Objectives:

- Set up mushroom spawn laboratory.
- Set up standard operating procedures for the spawn lab.
- Develop protocols for various operations.
- Identify bio-safety hazards and set up risk mitigation measures.

IV. Background

Jat Investments is a family-owned business in the outskirts of Lilongwe, the capital city of Malawi, whose core business is mushroom farming. The business started in 2012 as a vegetable/tomato farm and later diversified into other, non-farm businesses, i.e., transportation and construction materials. The owners, Andrews and Temwani Gunda (husband and wife), were not impressed with the returns from these businesses and sought to do something more lucrative. In 2016, they invested into mushroom farming after their research indicated much better business potential in this venture. By early 2017, Jat

was able to produce both oyster and button mushrooms but chose itself to focus on the production of button mushrooms, which are more lucrative but also harder to produce. For oyster mushroom production, Jat partnered with farmers in the neighboring villages in an outgrower scheme, training them in production of these mushrooms which they will then sell back to Jat. Currently, Jat is training 25 farmers (10 men and 15 women) with the expectation that they will go on to train 8 other farmers each. This will bring the total number of outgrower farmers to the set target of 200.

At Jat's own farm, there currently is one mushroom house with four growing rooms for a total area of 153 m². At full capacity, each room produces up to 300 kilograms of mushrooms per growing cycle. On average, Jat produces 2,500 kilograms of mushrooms per year which it sells hotel restaurants, such as Walmont Hotel (Umodzi Park), Sunbird Hotels and Ufulu Garden Hotel, as well as some households,.

Currently, the farm is in the process of building another bigger mushroom house (307 m²) in order to increase production. Jat has also acquired a compost making machine from India to improve the quality and speed of making compost which is a crucial factor in button mushroom production. As production increases, the medium to long-term plan for the farm is to start processing and value addition to make mushroom powder and dried mushrooms, among others. Jat is also looking to become a commercial button and oyster mushroom spawn producer.

Previously, Jat Investment has hosted a F2F volunteer consultant who helped the company redesign the financial management system to allow better and more informed decision making. The training took place in December 2019. Some of the recommendations made include; to eliminate two minor businesses if profitable mushroom production grows, develop financial management system with records to show transactions using double entry system and to control assets and liabilities, prepare periodic financial statements from new records particularly an income statement (preferably on a quarterly basis), prepare written cost-benefit analysis before implementing any significant change in business and prepare written annual plan/ budget for each coming year.

V. The Host:

Jat Investments (Address)

Mr. Andrews Gunda, andysgunda78@gmail.com +265 888 242 894

Mrs. Temwani Gunda, temwani2004@yahoo.com +265 999 005 357

VI. Activities Envisioned:

The volunteer will work with the technical team consisting of three people (two women), i.e., Mr. Andrews Gunda (Chief Executive Officer), his wife Temwani Gunda (Director of Operations) and Rose Kumwenda (Technical Advisor). The volunteer will focus on guiding this team in the setting up of a spawn laboratory. The host has reserved about \$25,000 for the spawn laboratory project, for construction of a new building, equipment and supplies. The volunteer will assess the 5 m by 2.5 m structure that has just been constructed to house the laboratory and advise any changes. Currently no equipment has been purchased and the volunteer will advise on the required equipment and their layout for efficient production of oyster and button mushroom spawn. Guidance will also be provided about where the equipment can be sourced at a reasonable cost. Where the standard equipment cannot be accessed, volunteer will have to provide guidance on other innovative and resourceful ideas of making the laboratory functional. To the extent possible, the volunteer will also help Jat in setting up standard operating procedures and protocols for all the key lab operations. On top of that, the volunteer will also share some lessons on the actual process of spawn development. The anticipated number of hours of

assignment activity per training session is 3 hours, two or three days a week. All trainees can speak, read and understand English and are computer literate.

VII. Cross-cutting Issues:

Jat Investment is an innovative medium-scale business that is taking an inclusive approach to business growth by engaging smallholder farmers in the surrounding community as outgrowers. Currently, Jat is training 25 farmers (10 men and 15 women) in oyster mushroom production with the expectation that they will train 8 other farmers each. Seventy percent of these farmers are youths. Jat will provide them with spawn and later buy their produce. Ultimately, Jat would like to have 80 such farmers integrated in its production and market chain.

This is potentially a good opportunity for poverty reduction, nutrition improvement and gender empowerment for the individual farmer households as well as their communities. Unlike the traditional field crop cultivation, mushroom farming brings income all year round, while also being a source of good nutrition. Mushroom production requires minimal amounts of water, hence it is adapted to increasingly drier climate as a result of climate change in Malawi. Furthermore, mushroom cultivation is a suitable enterprise for women because it can be practiced around the homestead.

VIII. Covid-19 Mitigation

All trainees are members of the same family and the training will take place at their home. If the training will require that the trainees should go out and meet other people, all precautionary measures will be followed. CNFA will provide the necessary details for online connections to make sure that the trainings run smoothly.

IX. Preparation required

CNFA-F2F assignments require some pre-assignment preparation by the volunteer, since the time with the host is limited. This assignment requires the following preparation:

- a. Review of the environmental brochure: Yes
- b. Compile possible training materials for the host: Yes
- c. Compile materials for a Powerpoint to be used for a lecture: Yes
- d. Discuss with the previous volunteer: Yes

X. Deliverables

Deliverable	Specific instructions
<i>Trip report</i>	Please complete no later than a week after assignment and preferably before the last day on assignment.
<i>Training beneficiary record</i>	Please complete no later than a week after assignment and preferably before the last day on assignment.
<i>Training manuals</i>	Notes/manuals or and such reference materials that may be suitable

Any other document submitted to the host

This must be submitted together with the trip report and training beneficiary record







