

Sheltered workshop - growing mushroom for PWDs in Phong My commune, Phong Dien District

Project proposal developed in terms of main project “Social
Inclusion of Vulnerable Groups of Inhabitants of Thua Thien
Hue Province in Vietnam in the years 2006-2009”

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commune Phong My

Method: Combined poly-professional research examination



Support for Development of Social Capacities
of Inhabitants of the Thua Thien - Hue



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1 Preface

Following text is the explanation on why project has decided to build the mushroom production workshop in territory of commune Phong My as one of main project targets. From the beginning it was very clear, that the economic and social situations of inhabitants should be improved, but with the recommendation of producing special tools for PWDs. Several field examinations, feasibility analysis, SWOT analysis were made for a number of suggested solutions. As well as the feasibility analysis of possibility of the production workshop and project documentation were provided and translated into Vietnamese and at this time the workshop is approved by authority of district Phong Dien, who has assigned a spot of land in territory of commune, where the workshop will be built.

This text will not be published for public, but only for Ministry of Social Affairs of Czech republic, as the institution who initiated the project, and in Vietnamese for organizations of state affair of district of Phong Dien and commune of Phong My. Other subjects have approach to it only on internet or on request.

2 Feasibility study – selection from several models

Author of the study: Jan Černík, M.A

Phong My municipality is a vast hilly region with 11 villages, inhabited by the native peoples of these regions (mostly nations Pa Hy ana Van Kieu, but also majority nation Viet). Largest migration waves arrived after the war with the USA – new settlers, colonists, who were able to get land here, otherwise so hard to get. Out of about 5200 inhabitants of the municipality, around 250 are disabled. The definitive list is currently being up-dated, due to the initiative of this project. The region is rather vast and its administrative centre is identical with its geographical centre, but still far from any village centres. The distance between the main road Hanoi – Ho-Chi-Minh City and the municipality is 25 km. The municipality stretches through the sub-tropical rain-forest and mountain region. For the project, it was vital to find a viable solution to fulfill general as well as specific objectives. The solutions could be chosen base upon expert assessment of the project team management or by another method. We have decided to chose an applied research and a combined multi-level analysis. The feasibility study has been carried out under the methodological guidance of the project leader Jiří Kocourek, BA and by the members of the project leaders Eng. Nguyen Viet Cuong, Bc. Nguyen Thi Lan Anh and the author of solution is Jan Černík, BA. The results and conclusions of his work are included in this material.

The purpose of the feasibility study is to offer the submitter the analytical outputs for decision-taking in connection with the way of performing of certaing activities of the project „Social inclusion of endangered groups of citizens – province Thua Thien Hue in Vietnam in years 2006 - 2009“

Primary scope of the feasibility study (hereinafter „Study“) is an objective assessment of alternative models for the purposes of chosing the proper form as well as content of the the project target „Sheltered Workshop“ (hereinafter „Workshop“). The Study also comprises compilation evaluation of the human resources management of the Project, recommendations and a draft model of establishing the Workshop. The analysis of feasibilty looked at several alternatives of production portpolio for this Workshop, which the implementor of the Project considered as feasible. These alternative models are outputs of new knowledge and experience gained from the stay of the realisation team of the Project directly in the involved district.

Submitter (Performer of the Project): Jiří Kocourek, M.A, Applied Sociology

Implementor (Feasibility Study): Jan Černík, M.A, Research and Development in the area of Humanities.

2.1 Study initial thesis

The starting point of the Feasibility Study is to find the point of intersection between the two lines of thinking about the development cooperation.

The first one, let us call it a conservative approach, is based on assumption of successful acceptance of cooperation by the target group in their experiential, technological and organisational framework. The result would be support of the already existing and functioning models. A positive factor of the conservative approach is an easy implementation, certainty of acceptance by the target group, e.g. assured efficiency and sustainability. The criticism of this approach is based on the low development potential, absence of innovation and lack of visibility of such conceived projects. Conservative approach is typical for work in rural, traditional environment.

The second line of thinking about the development assistance is characterised by an innovative approach, based on the assumption of building new or transforming existing institutions. Among the positive factors of this approach, we can find the development potential, high level of visibility and efficiency of such conceived projects. The aim is a positive social change. The criticism of this approach is focused on low sustainability, questionable acceptance of the assistance and non-colonial background. Innovative approach is typical for projects of so-called technical assistance.

Below mentioned models of project outputs „Workshop“ can be ordered on a fictive scale between conservative and innovative approach. One of the fictive end is the traditional way of livelihood in Vietnam and the other is the modern mode of production and organisation of work, similar to that in the Czech Republic. The aim of this Study is to find an optimal variant of the mentioned output according to the project intention.

2.2 Workshop – alternative models

Suggested alternative models are results of considerations and thinking of the whole implementation team. Apart from the below listed models, also other solutions have been considered: production and processing of energy raw materials (cassava, buffalo excrements) – this model failed due to environmental sensitivity (necessary adhesive); number of end-users (no more than 2 persons are needed for the production machine); technological exigence of operation (in Vietnam this appliance is not available). The implementation team also discussed possibilities of introduction of completely new craft production but failed to identify a specific production portfolio. Besides growing orchids as mentioned below, the team also considered growing bonsais and succulents; these are however traditionally grown in Vietnam as either rather volumous plants, or as parts of stone decorations depicting or immitating a rocky landscape. Such production also involves a rather considerable physical labour and is thus not feasible for disabled persons.

2.2.1 Growing of decorative plants

Decorative plants are an unseparable part of the Vietnamese housing culture. That is why cultivation of orchids, succulents and bonsais is a common moon-lighting activity in rural areas of Vietnam. For example in Phong My municipality, the seedlings of orchids are retrieved from forest. The production is then purchased by tradesmen who own a regular stone shop, or by street vendors. Those farmers who grow orchids, succulents and other decorative plants as their main or important source of income, own special growing establishments and at the same time carry out the trade (sale) by themselves.

The municipality is not ideal for growing orchids from climatic reasons, the seedlings are imported from other provinces of Vietnam.

2.2.2 Enhanced traditional craft production

Home hand-made craft production is using local, accessible raw materials and sufficient labour force. Products from wicker and other natural materials can be found in the markets and in households. Phong My municipality's traditional craft production is a common way of additional subsistence activity. The market place in Hue one can buy brooms, baskets, mats, rattan furniture, hats, pumpkins and embroidery. Some hand-made products from reed and bamboo are also among the souvenirs bought by tourists and offered in shops in downtown Hue.

2.2.3 New agricultural production

Existing agricultural commodities of Phong My municipality a typical for the respective province: rice, cassava (manioc), rubber tree and vegetables. All these are commodities which require physical fitness. Therefore we need to direct our thoughts toward such agricultural production which could be arranged by handicapped people. Growing of mushrooms is thus a logical consequence of this thinking as the cultivation does not require considerable physical effort, nor long-distance travelling. Production is concentrated on the growing establishment within the municipality. Mushrooms are a vital part of Vietnamese cuisine, especially during the fasting days.

2.2.4 Production of medical and protetic aids

Satisfying the demand within this specific economic nice presents by itself a significant potential of grow. Most of disabled in Vietnam cannot afford a daily use of special aid tools; it is already a positive situation to have the basic medital aids at one's disposal. The demand would be constant due to the high occurence of disabled in Vietnam – provided the purchasing power of the disabled and their families is granted¹

2.3 Research

The Study is based on the research carried out in two research phases in Thua Thien – Hue province; several interviews were made in Hanoi and Danang. In Phong My municipality, the survey could not be carried out in the planned scope and schedule due to administrative obstructions. This significant impairment of survey was reflected in adjustments of the survey against the original intent.²

- **I phase – feasibility survey:** The first stage of the research should find out whether and how the suggested models of Workshop would be feasible in the whole context of the province and municipality. The feasibility was judged with the help of respondents out of the municipality. The first phase

¹ Economic situation in this respect is to a large extent given by the presence of foreign organisations and their aid programs for disabled.

² The economic audit was not realized. When realizator provided field research, the project was not approved.

included the collection of data supporting the fundamental or key factors of feasibility of the suggested alternatives of the Workshop.

- **II phase – participative estimation of necessity:** in the second phase, the survey of priorities of the target group and the acceptance of the project outcome for the elite of the Phong My municipality.

2.4 Feasibility survey

The collection of data was carried out in form of semi-structured interviews. Apart from discussions with the implementers of the project, the assistance of interpreter was necessary. There was taken a total of 17 interviews (including both of the implementation team members). Follow-up survey of this inseparable part of this feasibility survey was carried out by the trained collaborators during the months of July and August. The data were supplemented by an involved monitoring of the functioning of relevant workshops or production establishments throughout the whole territory of the Vietnamese Socialist Republic, where the interviews were taken.

Most of the interviews are recorded, relevant information was entered into Excel tables. The individual items from the table represent at the same time the (semi)structure of the interview, and correspond to the below listed categories and comparative criteria. During the interviews, both the surveyor and the interpreters tried to unify the quality of the information so that the retrieved values could be compared.³

3 Draft project "Sheltered workshop" - growing mushrooms

Author of the text: Nguyen Viet Cuong, Eng.

Co-author: Jiří Kocourek, MS

Establishment and operation of a sheltered workshop is one of main objectives of the project "Social inclusion of endangered communities - Province Thua Thien Hue", carried out between November 2006 till November 2009 in Vietnam. This project is a reaction to international documents on development cooperation, current political objectives and real need of Vietnam and Phong My municipality in the area of social and health care and is in harmony with the long-term development priorities of the government of Vietnam.

This draft model of a sheltered workshop is based on:

- Field research carried out in Phong My municipality,
- Performing the feasibility study of the project "sheltered workshop",

³ Unified duality of data is ideal in these similar researches. In our case we, for example, realized interviews with marketers in province markets, chairman of US organization or with chairman of institute for applied biotechnologies. The final data are comparable through variability of target group.

- The knowledge and experience of the team members, acquired during the visits and interviews at the Institute for bio-technologies at the University of Vietnam in Hanoi
- Interviews at the Institute of plant bio-technology,
- Interviews at the centres growing mushrooms in Hung Yen, Phu Luong,
- The bibliography listed at the end of the project proposal,
- The knowledge acquired during the field work, visiting the Alliance of farming co-operatives in Hue,
- Visits to several mushroom growing facilities in Hue,
- Visits of the farming co-operative in the municipality,
- Last but not least, on the knowledge of the economic situation in the municipality - see Chapter II.

Brief description of the target situation of the sheltered workshop

The workshop is conceived as:

- The project centre (office, reception, educational and training premises)
- The centre for support of local home production in the municipality, arranging the sale for the families which already produce something
- The sheltered workshop for mushroom growing - centralised
- The sheltered workshop for mushroom growing - de-centralised into individual households
- The sheltered workshop for mushroom growing with and associated production of interrelated products
- Eventually the centre for sale support of the grown mushrooms and other interrelated products
- Probably also the centre for providing certain social services to poor households and to the disabled

Until the ultimate installment of the workshop into operation, the workshop will be supervised by the project management together with one appointed social worker. Later on, it will gradually be handed over to another operational management or a legal entity and to the disabled themselves. From the very beginning, it will be managed also by a representative of another party, so that the transition of the workshop on to another legal entity will be smooth and problem-less.

One of the very important issues of the establishment of the workshop is the provision of engineering network, suitable climate and hygiene in the workshop, protection of mushrooms from mould fungus etc.

Another vital issue is the proper selection of the disabled for separate working positions.

The workshop should smoothly and unforcedly continue the local traditions, local environment and landscape, the architecture should not disturb the country round about the municipality. It should provide sufficient income so that its employees can earn their living independently, without the further help from the project. In the first phase, it should employ at least 10 disabled and two intact employees. It should develop further on in such a way that the main focus is not laid on achieving the highest possible profits but on investing the profits back into creating new working positions and possibly connecting the workshop with the activities of other target households in the municipality.

A key issue is also an effective education and training of the workshop employees and their healthcare.

The project on establishing the workshop is conceived as a long-term process. Firstly, the phase of establishment (first two years) + future prospects are described. At the end of the following text, there is a preliminary discussion on the form of the established workshop in the future together with suggestions for further development in the whole economic system of the municipality.

The workshop connects to the following priorities of the project:

- Improving the economic situation of the target groups of the project:

The workshop will provide the whole-year work for at least 12 people from the municipality with the possibility of widening the production into families - cf Chapter VII. According to the budget of the project, each employee has a secured income of approx. 500 thousand dong a month (officially, the poverty line in rural upland regions is a monthly income per person lower than 200.000 VND). That is, the total minimum net revenue needed for the wages of the employees is 6.500.000 VND a month or more - as it is necessary to count with some bonuses for the executive management of the workshop. Any further revenue will either be invested into further enhancement of production, or into hiring new employees. The decision making in relation of usage of the revenue will until the end of project be under the competence of the project management. Upon transfer of the workshop into the hand of the new management, this new management has to sign a contract binding it to keep certain economic rules, taking regards to the interests of the integration of the disabled in the municipality.

According to information coming from research and interviews, the average share on the production revenue per employee of such a model of workshop is around 300 - 500 th. VND a month⁴, even after handing the workshop into the hands of beneficiary persons. This amount fluctuates according to the quality of the season and efficiency of individual activities (for example, winter time is more convenient for growing champignon mushrooms when these can achieve

⁴ Interview with Mr. Phuc, the president of the Association of war veterans, the founder of the workshop for production of mushrooms in Hung Yenu, taken on 6.4.2007; Interview with Mr. Thu, the president of the farmers' cooperative in Phu Luong, Hue, taken on 27.09.2007. According to internet newsletters *Vietnam Post*, *vnexpress* etc. the results of farmers growing mushrooms are very favourable. People in some areas even leave out certain traditional plants such as peanuts just to devote themselves to the cultivation of mushrooms.

higher price. In summer time, the hot temperatures prevent these mushrooms from growing. In the area of the proposed workshop, the climate is rather favourable. Thanks to the higher altitude, the temperatures are lower in comparison with surrounding areas.

-The workshop **creates new jobs:**

The situation on the job market in the municipality will improve. In this area, the rice is harvested twice a year (Jan. - April and August - Oct.). In the period between the two harvests, most of the people have no job - that is around 6 months, unless some of them have some other activities, such as trade, growing vegetables or cassava. Only those who are involved in trade, have enough work all year round. There have been several attempts in the municipality to re-vive the traditional crafts. People were sent to participate in hand-craft courses for weaving traditional products such as baskets, plates, vases and boxes from bamboo and ratan. Unfortunately, these attempts failed, one of the reason was insufficient raw materials in close vicinity of the municipality, and the purchase price of the material coming from outside the municipality was too high. The production costs exceeded the sale price. The sale was inted for export only, and thus the workshop was dependent on the orders from the exporter⁵.

-The workshop will contribute to **decreasing the poverty of the inhabitants:**

From the short-term point of view, the workshop will provide financial support of mostly the target groups from the village from the project funds and from the long-term point of view, it will create a steady sustainable structure of permanent jobs for selected groups of individuals.

- With the construction of its premises, the workshop will indirectly influence the **rural development** sector:

One of the objectives of the vietnamese authorities (in this case the district), is to build and improve the local infrastructure. That is why the chairman of the district authority has included this objective among the projects' objectives - to build the workshop itself as well as educational office which will become a new economic, social and educational premise in the municipality. The workshop whall be build environmentally-friendly - not just from the technological point of view, but also from the esthetical point of view. Beside interconnecting many households, the workshop will develop new activities. It will become a centre where the people interested can meet and share their experience with others.

-Contribute to the **solution of main social difficulties** of the community in Phong My:

The workshop will try to become not just an economic centre but also an educational centre of the area, where target groups from other areas could come to share their experience. The workshop is based on the quality survey of the relatively new social traditions of the region and its needs, it backs the natural development of the locality and its healthy, active evolution, it introduces the

⁵ Interview with the head of the farmers' cooperative, Mr. Vinh and with others, taken on 16.4.2007.

region with the cultivation of new crop and the new way of ecological farming. The disabled will not just be able to find a job and increase thus the social status of themselves and whole their family; they will also increase their status in the eyes of the rest of the inhabitants and authorities of the municipality.

- Include the target region into the **process of global development**:

The workshop serves as a pilot project, which can later be joined by other entities, such as pharmaceutical or processing companies. The project is also a pilot of social projects for the areas affected by the dioxides.

- The workshop will at the same time increase the **awareness** of the competent authorities about the **situation of the inhabitants** of the municipality:

Selected prospectives from the area and relevant institutions will be able to receive training as a preparation for employment. The establishment of workshop will provoke the interested parties to actively participate. Also entrepreneurs and other prestigious organisations from the province will get interested and involved, and thus the message about the workshop will be disseminated throughout the whole province.

- **Endorsement of equal opportunities for men and women and improving the status of ethnical minorities**: this criterion will be applied when selecting employees for the workshop - cf. Chapter V.

Main risks

Experience gained by the team members during their first and second stay in Vietnam show certain risks which may lead to a failure of the whole project of sheltered workshop:

- The most serious issue is still the approval of the whole project. Until the end of August 2007, the project was still not registered by the governmental office due to obstructions caused by the People's Council of the Phong Dien district. At present, we are awaiting the project's approval by the People's Council of the province and the set-up of the steering committee of the project. The preparatory work for the project have been re-allowed and renewed.

- The climatic and geographical conditions of the municipality indicate that there are insufficient water supplies in the closest vicinity; the region is every year hit by more or less regular storms which lead to high level and rapid waters and floods.

- Political barriers and inexperienced partners caused to a large extend the delay of the project's approval. This causes a lack of time and threatens the completion of the project and its long-term sustainability. In the region, there is also a very low potential of human resources with sufficient education.

3.1 Objectives and outputs

Objective 1

Build a sheltered workshop.



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Output 1.1

Carry out research in the area of local material and human potential. E.g. search for the best possible solution (model) for the target group.

Output 1.2

Gradually establish a sustainable community of the disabled, selection and training of first employees, continuous further training of employees and interested households. Training of management in cooperation with the Finnish project.

Output 1.3

Sheltered workshop – establishment

Find and secure a suitable location, equipment, material, specimen and types of products, staffing (in first phase minimum of 10 persons (10+2)) and their training, legal institutionalisation, supplies and sales, organisation of work of the sheltered workshop. Products of the sheltered workshop will also be used in the pharmaceutical industry.

Output 1.4

Sheltered workshop – operation

Secure the operation of the sheltered workshop, production and sale of products of the sheltered workshop run and managed by the employees trained within this project.

Output 1.5

Sheltered workshop – operation – networking

Integrate a sustainable group, other households etc.

Output 1.6

Secure new legal personality for the workshop and its long-term sustainability, secure compliance with the principles of development within the framework of the workshop operation after the termination of the bilateral Czech development project.

Objective 2

Public education office as a part of the workshop: fostering community cooperation. E.g. inclusion of other families. Eventually, contracting a social worker(s). Probably one room will be built for the purpose of educational activities.

Output 1.2

Build a public education office as a part of the workshop where people can meet and share their experience not just from work but from their personal lives as well.

Output 2.2

Prepare and provide a training for selected persons. Pass over knowledge and growing techniques to be utilised by the selected persons at home.

Output 2.3

Increase community awareness

Prepare and distribute educational and information materials which will inform in a suitable way the community citizens about the possibilities offered by the workshop.

Objective 3

Establishing the system of other products

Output 3.1

Carry out analysis with the aim of finding out the possibilities for widening the scope of production

Output 3.2

Search for and find sponsors for the creation and construction of distribution networks

Output 3.3

Training employees as for lines of production different from the original one

Output 3.4

Promotion: stickers, labels, promotion postcards about the disabled (for sale)

3.2 Activities – brief description

- **Research**

The research served and will serve for finding necessary information, its effective application within the project, for creation of presentations about the project, for writing the final case study and for further presentation and publishing, for improving the awareness of the community on the relevant topic.

First preparation of the research was largely carried out during the second stay of the project team in Vietnam in 2007. Research regarding the workshop were also been carried out in March – May 2007. Most of the interviews took place in provincial centre Hue, some in Hanoi, Danang and in the Czech Republic. In Phong My municipality, the administrative obstructions prevented the survey to be completed, and this led to a fundamental amendments and changes of the course of study.

Dividing the survey into two phases: The first phase of research aimed at finding out whether and how the suggested models of Workshop would correspond to the economic environment of the province. The second phase aimed at research into priorities of the target group and acceptability by the elite of Phong My.

- **Collection of data**

The data were collected with a help of semi-structured interviews. In total, 142 + 17 + 8 + 14 interviews were taken (with target groups, authorities, workshop authorities, individuals interested in membership of the self-supporting group). In our case, for example, we made interviews with various market-sellers in the provincial market, with the manager of a US organisation or with the director of the Institute for Applied

Biotechnologies. Despite the variability of the target group, the output data are used for comparison of various models and variants as they are comparable⁶.

- **Establishing the sheltered workshop**

Since the very beginning of the project, it is vital to search for a suitable locality and form of the workshop, as well as a suitable construction company or group who could build the workshop. The project of the workshop plan is created on the proposals submitted by the team, after consultations with the local health-care workers, expert consultants from the area of medicine and social work in Vietnam – see Chapter V.

After choosing the company (subcontractor), it will be necessary to arrange an eventual construction supervision which can be carried out for example by the whole working group that will be meeting continually during the whole project. Other tasks and communication will be provided by the Vietnamese coordinator or one trained social worker together with one representative of a self-supporting group (target group).

Considering the fact that the workshop will be first of its kind in the area, we will prefer to employ persons with different PWDs which shall have an educational, didactical and promotional effect. The workshop can serve as a model or example for a wide range of other sheltered workshops, established in localities hit by dioxins. The work activities suggested by the submitted model are not demanding and so most of the disabled could manage them.

- **Selection of employees**

The selection of suitable employees for the work in the workshop must take place alongside establishing and building the workshop. Considering the fact that it is going to be a sheltered workshop, the employees will be chosen from among the disabled. There are 280 such persons in the municipality and most of them are children with mental, growth, physical or combined distortions and adults with missing limbs. The most seriously disabled, with diagnoses described immediately after the exposition to dioxins have been so far detected only in a minority of cases in this municipality. The disabled are not concentrated in one locality within the whole municipality. For the work in the workshop, following categories apply:

- Disabled persons, if possible from the self-supporting group as long as such group can be set up before the establishment of the workshop,
- Persons who can at least take care of themselves (e.g. are not immovable and do not have attacks or seizures). This criterion is set because those disabled people who can work but do suffer from seizures, e.g. need to work under supervision, must work under a special regime. Toto kritérium je stanovené proto, že lidé, kteří mohou pracovat ale musí být pořád pod dohledem, např. ti, kteří mívají záchvaty, musí pracovat v jiném režimu. Perhaps they could work together with somebody who can assist them in case of seizure and manage the whole situation. We will try to include also those with stronger functional disabilities.

⁶ Jan Černík, Vietnam Study, 2007

- Persons with no allergy to humidity (molds...). No research so far shows that mushrooms which will be grown are allergenic. On the contrary, the extract from button mushrooms can act as anti-allergic⁷,
- A member of family whose income is below the subsistence level, in other words, this family counts as a poor family,
- Minority natives, at least one third of the total number, as long as the mutual communication can be assured (e.g. they must understand Vietnamese),
- Women shall build one half or close of the total number,
- Persons who have no allergy to a certain (chemical) fertilizers, lime or other used substance,
- Other necessary health criteria will be set after the assistance of a medical doctor (project partner). The medical doctor shall cooperate on the creation of job descriptions and safety rules for the operation of the workshop, code of conduct etc.

- **Training**

Before the selected employees could joint the production process and operation of the workshop, they will be trained. At the beginning of the operation of the workshop, the trainer will also serve as a supervisor of the workshop. The training program according to the proposal of the Institute for Plant Biotechnologies will be two-week long. This Institute deals with the development and cultivation of mushrooms. It employs experts who are pioneers in the area of growing mushrooms in Vietnam. Directly on the premises of the Institute, there are growing plots and according to the director of the Institute, there have already been organised many successful training courses. The training course shall thus last for two weeks. During the training, the employees (applicants) shall attend both theory and practical classes in which they can directly take part in the process of mushroom cultivation. They shall have opportunity to visit several successful growing plots and gain experiences there. After the training, the trained employees shall immediately join the production process in the workshop under the supervision of one expert hired for the project specifically for supervision at least for the period of the first production cycle (in our case approx. 3 month cycle of the cultivation till the harvest of the mushrooms), in the supposed period of the fourth quarter of 2008. This training shall provide to all participant the main techniques of preparation and cultivation of mushrooms, inclusive their harvest and processing.

In addition, some other agencies will also conduct similar training courses such as agricultural cooperative alliances under the cooperation framework with the project. The detail cooperation terms will be further discussed. Phu Luong agricultural cooperative alliance also provides such training services. They are the most experienced in straw mushroom and Ganoderma Lucidum mushroom natural (Reishi or Lingzhi mushroom) in the locality.

- **Operation of the production workshop**

⁷ Roku 1944 publikoval fr. lékař Paul Daguin, že sušená droga z žampionů má léčebný účinek na některé alergické choroby, zejména kožní: http://www.darius.cz/archeus/B_H_zampion.html

Apart from production, the production workshop also serve other purposes such as being the head quarter for the Viet Nam project coordinator; product exhibition; venue for meetings and seminars organized. Also, a centre for social work in the locality may be formed here. Of course, equipments and facilities such as computers, motorbikes ... will be provided at the production workshop.

- **Final activities (property hand over, expanded activity scope etc)**

There will be some negotiation meetings conducted in between the project property hand over to remark the completion of the project. The institutionalization of the production workshop will complete. All of the project's properties as well as the training materials and results of the survey research will be handed over for the Vietnam side- the project beneficiaries or the project partners. To take full advantage of using the production workshop in the future, this issue will also be discussed in next steps. Contracts on using the results of the project in period of 5 years will also be signed..

The production workshop, one of the major goal of the project will be a pilot project in the locality. This means there is possibility of expanding the production model of the workshop. For instance, the preparation of overall mushroom breeding so that the production workshop are able to provide mushroom breeding planted in the baskets for the participating households. In addition, the production workshop will collect the mushroom products made by these households. Hence, the idea of building a centre for processing and exporting farm products here is absolutely possible.

3.3 Mushroom plantation

Mushroom is a rich nutritious foodstuff. Protein in mushroom's is lower than in meat and fish. Mushroom contain various minerals and vitamins such as A, B, C, D, E etc and is not toxic. Mushroom is seen as "clean meat" or "organic vegetable". In addition, mushroom contains substances which can cure the diseases or increase resistance for the body such as high blood pressure, fat, Intestine. Additionally, it can purify the blood. Mushroom can be consumed in fresh, dry or salt forms (canned mushroom).

In recent years in Vietnam the growth and consumption of mushrooms are increasing thanks to their positiveness in terms of rich nutrition and economic efficiency. According to survey, Vietnam has suitable natural, and socio-economic conditions for growing mushrooms all year round. According to reference materials, it is easy to earn a living through growing mushrooms, cheap price and easy to grow, available human resources. In ten years back the production workshopation is paid attention and considered a new agricultural sector. However, it is in small and scattered, unconsolidated. Moreover, the mushroom has been mostly consumed in local market. This does not meet the production workshopation capacity.

In Viet Nam, the major types of production workshoped are mussel mushroom, fat mushroom, straw mushroom, cat's ear mushroom, thin top mushroom, and Ganoderma Lucidum mushroom natural. Ganoderma Lucidum mushroom natural alone has good capacity of disease treatment– considerably improve the body resistance , adjusting the blood pressure and the fat volume in the blood; asthma, headache and insomnia relief. In

addition, it contains substances for cancer treatment. There are some other types of mushrooms planted in Viet Nam such as Japan lycoperdon , chicken mushroom...which provide very high economic efficiency.



Shii-také

Thin top mushroom has special taste and smell and is very good for health. Specialized materials often recommend that eating thin top mushroom frequently reduces the fat volume in blood, increasing the body resistance capacity and acting against the emergence of cancer cells. We can cook thin top mushroom in a normal way. Thanks to its good smell it is used as the additional spice for different kinds of food. It also can be used to make soup with

different types of meat

The disease treatment usage of thin top mushroom:

- Increasing the body resistance capacity
- Acting against the emergence of cancer cells
- Acting against strange and harmful bacteria in the body
- Acting against Cardiac disease
- Being the source of B12 và D2⁸



Lesklokorka lesklá

Ganoderma Lucidum mushroom natural include various substances which can purify the blood. It is poor in protein and fat but rich in mineral and vitamins such as calcium, manganese, iron and copper... it also contains multi-sugar substance which can act against the excrescence and increase the body resistance capacity. Ganoderma Lucidum mushroom natural has been known in China for thousands of years and is

considered a kind of mushroom contributing to longevity like the perception of the Japanese on straw mushroom. In chinese it is called "Ling Zhi" or "Ling Chih", meaning immortal or „marvelous flower“. . By late 1980s public scientific research proved the capacity of adjustment of sugar and fat in the blood and blood pressure. In Viet Nam it is grown with the purpose of disease treatment. Vietnamese dry and use it like other types of tea, soak it into wine or use it as one of valuable medicines. In some countries in the world people grind it; or make it into capsule; syrup... In China, the patients are advised to take the exstract of this mushroom in the form of syrup as one of the steps for disease treatment for:

- Increasing the immunization
- Asthma
- Cardiac disease
- Hepatitis
- Insomnia
- Headache
- Arthalgia...

⁸ <http://www.volny.cz/myceliumwolf/siitake.htm>

Linh Chi was used for Russian astronaut with the purpose of increasing their capacity and recuperation.



Mussel (Oyster) mushroom was popular during the late of 20th century. Beside fat mushroom, we can see this type of mushroom sold more and more in the markets. Mussel mushroom does not have the advantages of disease relief but it has status in the foodstuff. Especially, it can be grown on the straw, sawdust or rotten wood... Mussel mushroom could be used to make soup or canned in vinegar (the best is vinegar made from grape). Scientists proved the Glucan substance help decreasing fat in the blood, blood pressure (Cardiac disease), improving the sugar in blood and acting against allergen³.



Abalone mushroom (or it is called in other names-peacock tail mushroom, white mussel mushroom). It has the same taste and similar usage of disease relief. The only difference between the mussel mushroom and abalone mushroom is the latter is smaller and the upper layer of the surface is flat; white color or whiten yellow color and becoming little yellow and light dark when it grows old, dry and having very soft white hair at the bottom.



Jew's ear mushroom (*Auricularia Auricula-Judae*) has been known in Asia for 1500 years. Nowadays, it has a sit in Chinese and Vietnamese dishes. We can dry it and after soaking it into water, it recovers almost the similar shape like in fresh form.



In Europe, Champignon mushroom (*Agaricus bisporus*) has been known for nearly 400 years. Although this kind of mushroom requires for a good environment to grow- well preparation of mushroom breeding plantation and nurturing materials. The advantage of this kind of mushroom is it does not require for a big volume of light to grow. However, it easily gets the diseases compared with other types of mushrooms. For example, it may be ruin because of waste released by a fly landing on the mushroom hat. It is among the best favored mushroom in terms of taste. People cook it with fish, meats...

In addition, it can be canned by many ways, especially the young mushroom.

Medical properties: Against with allergen bacteria

The disease treatment capacity of champignon mushroom: allergy and bacteria resistance



There is another type of mushroom which is still unpopular in the world. However, it is planted and sold a lot in Viet

Nam. It is planted in straws, called straw mushroom. At the moment, it is the answer for job shortage problems and life improvement in rural areas, especially where growing paddy rice is the only way to earn a living. The advantage of the plantation of this mushroom is growers can take advantage of the spare straws available after harvest. And, it is easy to grow this type of mushroom. People can grow it either indoor or outdoor. Moreover, the timing period from plantation to harvest is short (about 21 days). Beside fat mushroom and thin top mushroom, straw mushroom rank the third in terms of best selling in the world.

3.4 Realization conditions

3.4.1 Conditions provided by the Project

The total budget of the project for building, equipping for and conducting training for the production workshop in a period of 3 years is 1 348 953 CZK equally 12% of the total project budget.

This budget will be spent constantly on training (training schedule in details will be made), building the production workshop, put it into operation...vv. until the completion of the project. All income generated from the sale of the made products will be used for re-investment⁹.

Beside the above mentioned budget, the project staff have sought in advance other possible financial sources for the building of the production workshop. Discussions with potential donors have been made such as: Finland project on agriculture development. This project aims to form self-reliant group, rebuilding traditional handicraft and professions as well as investing in agricultural development in poor regions of the Thu Thien Hue province. Furthermore, the project staff had talks with the “East meets West” organization in Da Nang; agriculture co-operative alliance in Hue. This alliance commits to provide some services such as vocational training, buying products or the production workshop operation expanding.

Finland project are able to support the project on forming self-reliant group, providing consultation on agriculture; contributing to the construction of the project production workshop. The “East meet West” organization can support the project in providing specialized tools; contributing to the construction of the project production workshop or organizing specialized training courses for handicapped children under the framework of the project.

- **Management board of the production workshop**

Right from the beginning the project staff shall take part in the construction and management of the production workshop. The operation of the production workshops will be completely under the control of management broad until the workshop is handed over to the beneficiaries of the project (self-reliant group or association for the handicapped people in the commune). The aim of this issue is to ensure the consolidated and systematic management of the production workshop as well as to ensure the goal of forming production workshop.

⁹ Budget for activities attached in the following sections.

At the workshop, there will be participation of the managers; social workers and other officers who are responsible for caring for the handicapped workers; and possible involvement of the accountants or the project and production workshop; other colleagues and volunteers; participating households.

3.4.2 Condition at the commune

- **Climate condition**

The commune locates in the tropical and monsoon region: hot, wet and rainy climate. There are two distinct seasons- rainy season from October to the end of January of the following year and hot season from February to September.

Temperature: The average temperature is 24,2oC

High temperature months: June and July, average temperature from 36 to 41 o C

Low temperature months: December and January, average temperature: 12-17oC

Amplitude Day: 7,1oC, the highest amplitude Day is July (9,1oC)

b. Wind: there are some main wind flows as follows:

- Northern east monsoon: blow under Northern east – Southern west direction, bringing along with cold air and rain, from October to February of the next year;

- Southern west monsoon (phon wind): blowing from the Southern west direction. The wind volume and hot and dry characteristic of it is lower than in Quang Tri region but it is still very strict, from May to July annually.

In addition, Eastern South monsoon, blowing from the sea bring along with cool air.

c. Storm and flood: the frequent volume of storm is 0,7-1,2 storm/year. Flood does not bring much affection.

d. Rain: The average rain volume is 2400mm/year.

The rainy season starts from October to the end of January of the following year, accounting for 78% of the rain volume annually. October and November are the two months having largest volume of rain with average rain volume of 600-800mm/month.

The dry season cover the remaining months, accounting for 22% of the rain volume in the whole year. Months having little rain are July and August with average rain volume of 50-60mm/month.

e. Sun: The average sun hour is 1900 hour/year. April to September are among months having large volume of sun.

f. Humidity: The absolute humidity annually is 27.1mb; the relative humidity is 85%/year.

Hydrographical characteristic

Fresh water is plentiful, including water from O Lau river and streams in the regions. Water from Quao irrigation is the water supply for agricultural production and local living.

Land

The local land is formed and developed on the basis of mother stones- schist and limestone with the nutrial composition of soil is at medium level but there is alluvial soil from rivers, streams together with the few quantity of ancent alluvial soil consolidated each year.

- **Economic conditions.**

Up to now, there has been no project for handicapped people in the commune, where includes 950 households with the total population of 5133 people- 250 of them are handicapped people. According to the district report, around 40 handicapped people have labor capacity. However, there has been no information of on recognition methodology applied to justify such capacity. Major income of the local people here generated from agriculture production (paddy rice and peanut platation), forest plantation, animal husbandry, rubber tree plantation... Income of the local people generally is very low. In households having handicapped children thing is worse. Moreover, since a mother/father has to take care of his/her handicapped child the remaining spouse is the only bread winner for the whole family. Through conversation with the local people it is revealed that beside pady rice plantation-twice a year the local people are almost unemployed, except for people involving in small trading. Since the local people are familiar with agricultural production together with limited education, the project has to create jobs suitable with their capacities under the financial capacity of the project. Such possibility will unable to change completly their characteristic of work such as sending them to training courses on machine generation or investing in a industrial manufacturing unit.

Though being mountainous commune paid attention by the State and other agencies, infrastructure for production and living standard are being improved.

Electricity system: electricity cover 100% hamlets in the commune, 92% of the peopulation use electricity for production and living. Northern O Lau residence planning region alone is being invested to become concentrated residence area for the re-settlement people.

This capacity can not replace their work capacity (for ex; training them using machines, investment on industrial manufacturing stations).

Transportation system: there is a provincial road No 11B, 17 and 9 from the district centre to the commune centre. Transportation roads of joint hamlets, joint communes mostly are dirt road, trail, a part of them are being concreted

Schools: Primary school and secondary school are available in the commune. They are repaired and upgraded annually, however due to the long year of existence, they are downgraded. There has been no training institution for the handicapped people

Local medical system: In the commune centre a medical clinic is built spaciouly with the qualified medical staff under the current medical regulations. However medical facilities do not meet the requirements of first aid and emergency aid before sending the patients to hospitals at upper level; though medical staff of hamlets and moutainous hamlets are frequently trained for their professional knowledge improvement, it remains limited.

Water supply system for living: The ratio of household using hygienic running water is 53,2%. The source of water is running water, well-water, water from river and stream. There exists the running water system supply in the region but it is downgrade.

There are various markets selling agriculture products around the commune. All Big and small agent can go to far away localities to buy local products and resell them at the markets. The local people said they are willing to involve in the product sale process like the wholesale agents.

- **Transportations**

The commune is over 40km from Hue city. Road from the commune to District and linking to national road is good. In Phong Dien District, there is a railway station which is 12 km from the commune. It is one of other stations in North – South railway. These give advantages for transportation.

Crops are regular, the transport is diversified, goods are provided to local market so that there is no need to use a large lorry, and moreover, businessmen will go to the markets directly to buy goods.

3.5 Construction

3.5.1 Technical requirement

The workshop is one of the major target of the project implementation activities. The construction proposal should be made under some criteria. The following parts are detail technical requirements that the workshop shall have to follow:

- The plane square under the proposal is 2000m²;
- Since the target groups of the workshops mostly are handicapped people so the workshop should be built in ways so that these handicapped people are able to go back and forth and work easily; office and other rooms need to be builed in the ways that these should not be obstacles for them;
- If possible, the plane square should be arranged close to the traffic roads so that the handicapped workers can easily go back and forth. In addition, the plane square need to close to the infrastructure, water drainage, wastes... The road to the site should have the wide at least of 3.5m and the height of 4.1m to enable the transportation for vchicles;
- Due to the production characteristic of the workshop the plane square need to be close to be water source.
- The workshop built taken into consideration the prevention and protection against flood, storm and other natural disaster
- The workshop shall have following rooms:

- Office: the office is used not for production purpose but also be the meeting and training room for the local people. This office will also be the place for exhibition of products made from the workshop. The square of the office is around 50m²;



Room for planting mushroom in the basket

- Vocational training room (30m²)
- Small training room for handicapped children (around 25m²)
- Frozen room (around 5x10m) will be the place for plantation of mushroom requiring for low air condition;
- Material warehouse: (100m²); Another warehouse for storing products (60m²);
- Room for warming the products- 50m² , including the pipe of hot air supply;
- Room for planting mushroom into the basket- 20m² . It can be designed right in the room for planting the mushroom seed- 300m²
- Place for preparing materials-100m²;
- Yard for drying materials (hay, cotton, humus) (300m²);
- Area of production workshopation: around 900m²;



Ceiling must be capable of high weight pressure

- Other infrastructure such as waste contained tank after planting mushroom for producing fertifier (in case of expanding the scope of performance of the workshop);

Total of these related requirements are specified in present Codes and Regulations of Viet Nam, for instance Construction Code No 16/2003/QH11, dated 26 .11.2003.

3.5.2 Financial requirement

Total budget of the project for the forming of the workshop and estimated equipment is 3 150 500 000 VND.

Table 1: Preliminary budget for building workshop

No	Content	Timing for implementation	Square (m2)	Total budget (VND)
1	Office		50	250 000 000
2	Frozen room		50	150 000 000
3	Warehouse		60	800 00 000
4	Material warehouse		100	100 000 000
5	Steaming stove		30	40 000 000
6	Dry stove		50	40 000 000
7	Strain steaming room		50	120 000 000
8	Room for steaming and drying stove		50	140 000 000
9	Mushroom plantation room		20	50 000 000
10	Room for planting mushroom strain		300	35 000 000
11	Plantation		800	800 000 000
12	Room for preparing mushroom basket		100	30 000 000
13	Yard for drying and processing tank		300	50 000 000
	Supporting infrastructures and facilities (entrance road, water supply pipe, water tank)			50 000 000
14				
	Measures for preventing flood and storm (building dike, high foundation)		2000	200 000 000
15				



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	16	Waste processing (wc, water waste, unused products...)			30 000 000
	17	Tank	50		20 000 000
		Subtotal			2 335 000 000
Programme: final building stagee		Equipment purchase	Quantity	Price	Total cost
		Coal Stove	2	80 000 000	160 000 000
		Refrigerator	1	100 000 000	100 000 000
		Water pump	3	4 000 000	12 000 000
		Irrigation and dew injection system	1	20 000 000	20 000 000
		Subtotal			292 000 000
Programme: post- building stagee		Material Purchase	Quantity (kg)	Price	Total cost
		Straw	50 000	500	250 00 000
		Sawdust	10 000	800	8 000 000
		Cotton scrap	2 000	2 500	5 000 000
		Variety	1 700	15 000	25 500 000
		Other materials (lime, fertilizer...)	1	10 000 000	10 000 000
		Devices	1	10 000 000	10 000 000
		Subtotal			83 500 000
		Preparation	Schedule		Total
			At the latest		
		Training	15.12.2008	10	100 000 000
		Training right at workshop	1.1.2009	3 months	40 000 000
		Subtotal			140 000 000
		Reserve fund			300 000 000
		TOTAL			3 150 500 000 VND

3.5.3 Environment

The production workshop has direct impacts on the commune environment in terms of the view of landscape but in terms of technical aspects such as wasters, noise, dust, and smell from the production workshop it remains at low level.

The production characteristic of the workshop relatively match with the local environment at the moment, hence, it hardly produce wastes, There hardly existence of machines in the workshop, hence there will be no noise which may disturb the surrounding people.

Both fresh and dired straws and mushrooms are not smelly but vice versa they have good smell.

In terms of landscape view the project shall requires architectures to draft different designs so that the workshop match with the surrounding environment. It means the production workshop building must have some typical features of Vietnamese countryside.

In addition to economic, technical requirements the production, workshop must meet the environment requirements despite litte wastes produced. Waste related processing system will be formed under the current requirements.

4 Marketing

4.1 SWOT analysis

- S-Strength:
 - Initial budget funded by the project for the construction of the production workshop, training of employees, purchasing equipments and facilities, materials...
 - A part from the construction expenses, it requires for small budget – accounting for around 6,5% of the total budget for the production workshop for every 6 months or production.
 - Avaliable input materials– straw with large quantity, twice per year. It is easy to find other materials with reasonable price.
 - Production activities do not require for a lot of labor effort and skills spent – the total production workshopation is a daily farm work, occured inside the workshop, not in the fields.
 - The characteristic of work close to the local people – similar to the farmwork, in which the caring is the only difference. Of course, all employees will be trained from the budget funded by the project.
 - Big market – the population in the province is 1 138 000 residents (2006). The province includes 9 districts. Meanwhile Phu Luong is the only commune having production workshopation units with house hold scale. In some other localities there are few small mushroom growers. Da Nang locates in the southern part of the province, the biggest potential market in the central region of Viet Nam. In addition to the local market, there is a possibility of exporting the products to other countries in the world.
 - Mushroom price is stable – according to a survey conducted by the project team (M.A J. Černík, and M.A Nguyen Viet Cuong) in the biggest markets in the province mushroom price sedomly have significant change. Moreover, it tend to increase.
 - Easy transportation – Transportation from the commune to the National road No 1 A is very convenient and easy. From March to May, 2007 the road from commune to the district was upgrade.

- Being able to take advantage of natural materials to decrease the input price of the products, hence more budget is available for production operation.
- Weakness:
 - The handicapped workers limitation is moving – they can not perform some certain work.
 - Since this is a pilot programme there is shortage of practical experiences on production workshopation. However, it is applicable knowledge tested in other regions with similar climate conditions.
 - Phong My is a mountainous commune, hence the transportation for the handicapped people is relatively difficult.
- Opportunities:
 - Expanding the production– other households can participate
 - Expanding the products made– in addition to production workshopation the production workshop can proceed other products such as drying; salting the products, or producing fertilizer...
 - Re-investment possibility from the profit generated– since the project shall directly pay wages for employees until the project is handed over all profit generated from the production will be re-invested in production, material purchasing, operation expanding...
 - Being pilot project in the district in which other donors may involve in
 - Possibility of consuming the overall products– the Bioengineering Institute as well as the mushroom centre in Phu Luong commune commit to purchase the whole products (if any).
 - Initial investment budget coming from the project is a very big advantage for the workshop. Loan credit for the local people, especially the handicapped people is unpredictable in terms of economic efficiency calculation. On the other hand, the project directly pay for employees' wages until it is handed over. Hence, income of the employees at the production workshop is ensure until the workshop earn profits to cover these expenses. After that, there is no further need of big investment in the workshop. Another advantage in the commune is inputs are available from the material sources to the human resource. Market is relatively big and potential. Different types of agents which can reach the spot to collect products are available. The characteristics of work in the production workshop is close to the local people. It is possible to expand the productions as well as scope of operation.
- Threat:
 - Inadequate water supply resource
 - Flood and storm disaster – the commune locates in a region frequently affected by the natural disaster.

- Limited direct supervision – the project staff are unable to present constantly in the construction, production and consumption processes.

Initial investment for the budget project is a huge advantage. It is the local people's credit – especially handicapped. In the other hands this project will pay for labor until it is returned. So that the labors in workshop are assured of income until it can be... independently. One of the best advantages are community has enough input including materials and labors, market is rather wide, where large and small shops can go there to buy goods, the price is stable, the work is rather familiar to people, capacity of widening product as well as kinds of goods is high.

Besides, there are some disadvantages, like the labor resources are handicapped; planting mushroom is a new job in commune...

4.2 Other products:

In addition to production workshopation the production workshop will test the expanding of operation possibility such as salting, drying mushroom or involving in other production such as tea producing from the types of mushrooms with usage of disease relief. In addition, the project shall call for further investment in production and processing mushrooms with usage of disease relief to provide for other sectors such as the medicine industry.

Organic vegetable is a „hot“ product at the moment and the mushroom waste is very suitable with the plantation of this type of vegetable. According to Prof. Kiet in Biotech Institute, Ha Noi National University the mushroom waste is very suitable with vegetable plantation of different crop, which is always in shortage. The waste of vegetable plantation can be produced into fertilizer, which is also in shortage in the market.

4.3 Transportation

The commune locates over 40km from Hue city. There is a good road of transportation from the commune centre to the district connecting to the National road No 1A. In Phong Dien district, 12 km from the commune, a railway station is available. This is among the stations of North-South railway routine. All these good conditions promise easy product transportation.

Product harvest is constant together with busy transportation; products are provided in local markets. Therefore, there is no need of big truck. Moreover, the wholesale traders will reach to the spot to collect the products.

5 Recommendation of expanding the model

Production workshop on production workshopation will be the first model in the province. During the survey, the project team has paid attention to other types of possible production such as planting orchid. Due to the low economic efficiency and the seasonal feature of plantation it is recommended by the project team that orchid plantation will be considered as an additional product. This type of plantation is relevant to the farm work, closing to the local people. And, it does not require a lot in terms of effort and labor spent on.

Mushroom plantation relates to sanitation matter. Waste from mushroom basket after harvest can be re-used or to grow seasonal vegetable. Food stuff sanitation is a hot issue in Viet Nam. The possibility of expanding operation of the workshop is very practical. Moreover, waste of vegetable planation can be produced into fertilizer. Such close model of production proposed is initiated from the interview with Prof. Kiet in Biotech Institute, Ha Noi National University.

As mentioned before, mushrooms can both serve as good food and medicines to cure some diseases. Usage of some types of mushroom to cure diseases is known in the Eastern culture. Even in some remaining ancient documents of Middle ages reported that the ancient people used some types of mushroom to cure disease. At the moment, the Japanese still call thin top mushroom is a “longevity mushroom” or “magic medicine”. At the moment some well known scientetic institutes are studying the mushroom usage to cure diseases¹⁰. Communication on the production workshop is a practical idea to attract the attention of the medicine investors.

The self reliant group of the handicapped people will take part in the production workshop in terms of product consumption and workshop management. There is vocational training room in the workshop. Rice straw broom is among mentioned products in the survey coducted by the project team on the local people and communal officials (heads of hamlets, heads of cooperative alliances). Producing rice straw broom at small scale is possibly consumed in the provincial market.

¹⁰ http://www.volny.cz/myceliumwolf/recepty.htm#lecive_ucinky

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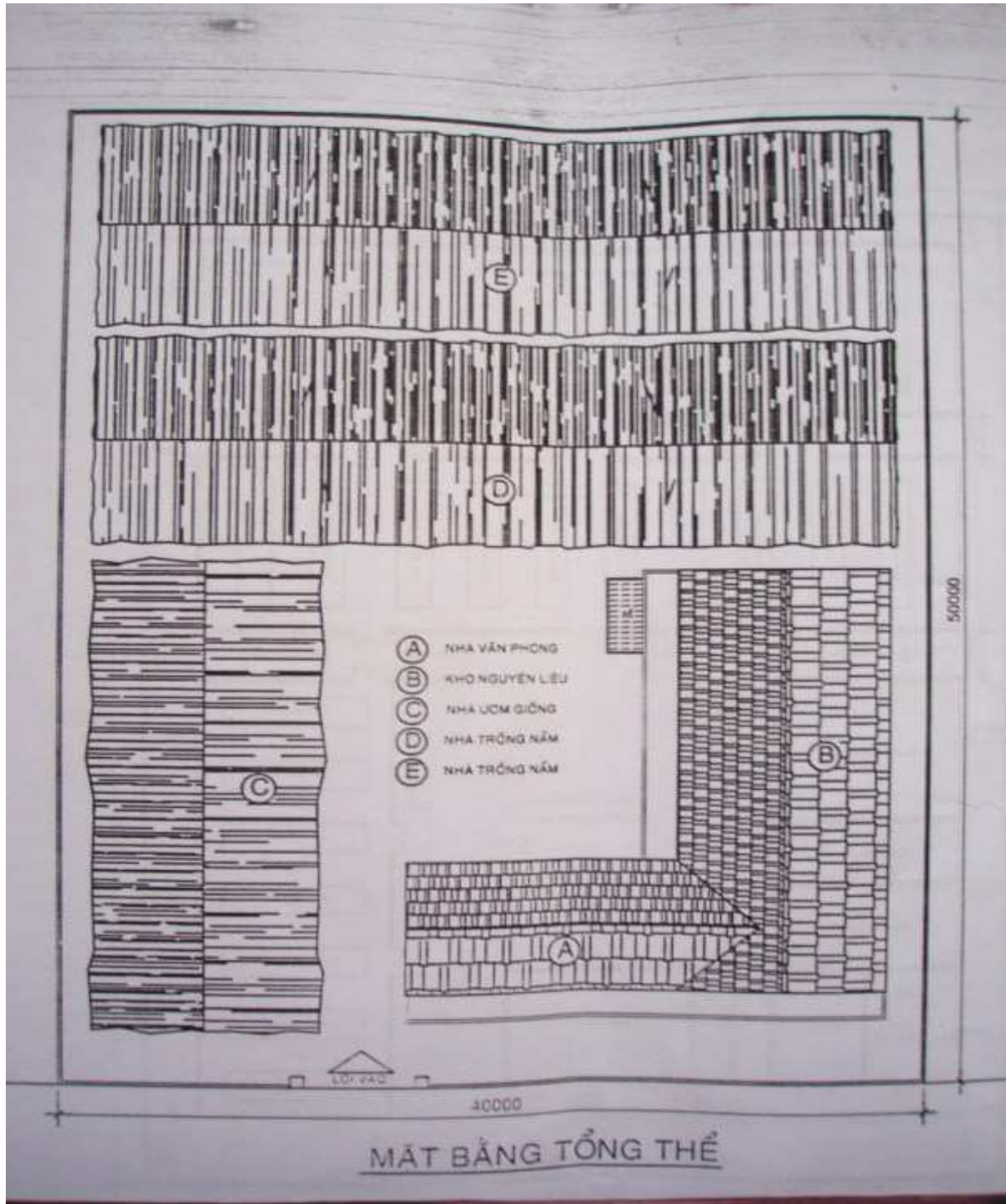
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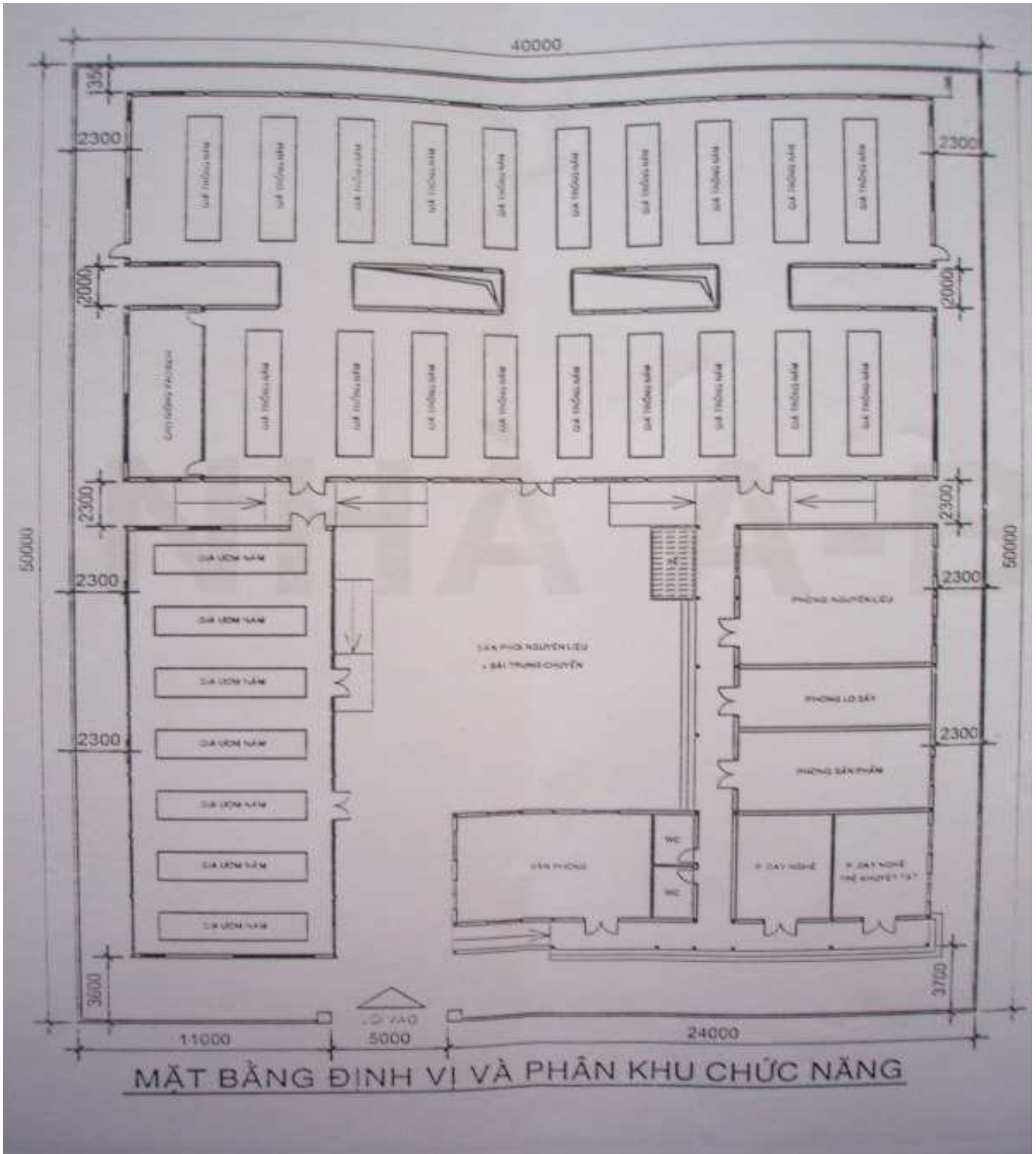
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- Market analysis
- Commune potential analysis
- brainstorming
- traditional agricultural analysis
- social and economic analysis in commune.

ANNEX

Workshop design – overall plane



Workshop design – overall plane (functional classification)





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Workshop design in 3D:



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