OCCASION

This publication has been made available to the public on the occasion of the 50th anniversary of the United Nations Industrial Development Organisation.

DISCLAIMER

This document has been produced without formal United Nations editing. The designations employed and the presentation of the material in this document do not imply the expression of any opinion whatsoever on the part of the Secretariat of the United Nations Industrial Development Organization (UNIDO) concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries, or its economic system or degree of development. Designations such as “developed”, “industrialized” and “developing” are intended for statistical convenience and do not necessarily express a judgment about the stage reached by a particular country or area in the development process. Mention of firm names or commercial products does not constitute an endorsement by UNIDO.

FAIR USE POLICY

Any part of this publication may be quoted and referenced for educational and research purposes without additional permission from UNIDO. However, those who make use of quoting and referencing this publication are requested to follow the Fair Use Policy of giving due credit to UNIDO.

CONTACT

Please contact publications@unido.org for further information concerning UNIDO publications.

For more information about UNIDO, please visit us at www.unido.org

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
Vienna International Centre, P.O. Box 300, 1400 Vienna, Austria
Tel: (+43-1) 26026-0 • www.unido.org • unido@unido.org
Report on:
Project XP/RAS/94/135 - Application of Mushroom Biotechnology and Bioconversion for Sustainable Small Industries Development in Developing Countries - UNIDO Contract No. 95/032
"Training of Selected Resource Center Managers in Asia and Asian LDC’s in Commercial Industrial Mushroom Production and Business Management"

1. **Title:** Training of Selected Resource Center Managers in Asia and Asian LDC’s in Commercial Industrial Mushroom Production and Business Management

2. **Date:** 20 - 30 October 1995

3. **Venues:**
   - **Technical Training:**
     National Institutes of Biotechnology, U.P. at Los Baños
     Los Baños, Laguna, Philippines
   - **Entrepreneurship Training:**
     Sea and Sky Hotel, San Fernando
     La Union, Philippines

4. **Objectives:**
   - To train selected potential resource center managers from Asian developing countries on improved mushroom technology and management on an industrial scale.
   - To train selected potential resource center managers from Asian developing countries on mushroom entrepreneurship development and on setting-up a mushroom business.
   - To promote relevant exchange of experiences and information and South-South cooperation among participants.

5. **Target Participants:**
   - Selected potential Resource Center Managers coming from Asian developing countries.
   - Representative local mushroom growers and entrepreneurs, who are beneficiaries of the CDG-SEAPO Biotech Project.

6. **Brief Description of Program:**

The Training Program consisted of two main parts: the first part is the technical training on mushroom production technology while the second part is the entrepreneurship and mushroom business development training. Details of the program is contained in Annex 1.
The technical training on mushroom production technology included: (1) country reports by each participant on the state of mushroom production and production technology in their country, (2) technical lectures and discussions on common technical problems facing the representative countries, and (3) study tour of selected mushroom farms.

The entrepreneurship and mushroom business development training followed CDG-SEAPO’s Project Casework (PCW) training approach as implemented in the Biotech Project. The course consisted of Package I: Analyzing the Situation and Identifying Opportunities for Mushroom Business and Package II: Setting-up the Mushroom Business, and in between a special study tour of representative mushroom enterprises was conducted.

In Package I, the participants were expected to come up with a project proposal on the selected kind of mushroom business after analyzing the situation and market opportunities in the PCW case scenario, defining business objectives, generating options on the kinds of mushroom-based business, and selecting the most suitable business option based on appropriate quantitative and qualitative criteria. Package II, on the other hand, required the participants to refine the proposed project by including the type of business to be set up, the location of the business, how to get the required capital, and an implementation plan for setting up the business. As in Package I, several options were considered and evaluated before selecting the most suitable one.

7. Participation:

The participants included 10 selected resource center managers who were sponsored through the UNIDO contract plus 14 local participants: consisting of 6 mushroom growers, 3 mushroom technicians and 5 prospective mushroom entrepreneurs who participated in the entrepreneurship phase of the training only. The following 10 selected potential resource center managers were highly qualified and directly involved either on mushroom R&D or commercial production:

1. KUSWANTO, Kapti Rahayu
   Gadjah Mada University
   Faculty of Agricultural Technology
   Bulaksumur, Yogyakarta 55281
   Indonesia

2. PHAN, Huy Due
   University of Hanoi - Vietnam
   Faculty of Biology
   90 Nguyen Trai St., Hanoi
   Vietnam

3. RAHMAN, Habibhur
   Technomushroom Farm, D.M.C.
   725 North Karful, Dhaka 1206
   Bangladesh
4. **DONGOL, Rama Hari**
   Plant Pathology Division
   Nepal Agricultural Research Council
   Kumaltar, Lalitpur, Nepal

5. **NGUYEN, Hong Ha**
   Institute of Biotechnology
   National Center for Natural Science and Technology, Hanoi
   Vietnam

6. **SHRESTHA, Gyan**
   Green Energy - Nepal
   Ghatte Kulo, Anaam Nagar
   Kathmandu
   P.O. Box 10647
   Nepal

7. **DIVINA, Cynthia**
   Mushroom Technology Laboratory
   Department of Biology
   College of Arts and Sciences
   Central Luzon State University
   Muñoz, Nueva Ecija
   Philippines

8. **ABELLA, Evaristo**
   Mushroom Technology Laboratory
   Department of Biology
   College of Arts and Sciences
   Central Luzon State University
   Muñoz, Nueva Ecija
   Philippines

9. **LAPITAN, Lina**
   Bureau of Plant Industry
   Roxas Blvd., Manila
   Philippines

10. **JACABAN, Patricio**
    Jacaban Mushroom Farm
    Agoo, La Union
    Philippines

The participants' profile (including the additional local participants) are shown in Annex 2.

8. **Actual Costs Incurred:**

   - Total Budget: $25,000.00
   - Actual expenses Incurred: $25,046.22
   - Advance Received from UNIDO: $20,000.00
   - Outstanding Balance: $5,046.22

   Details of expenses are given in Annex 3.
9. Assessment of:

**Degree of Reaching the Target Group.** The target group was or, the whole largely covered with 10 selected potential resource center managers coming from Bangladesh, Nepal, Vietnam, Indonesia and Philippines, who participated in the whole training course. Moreover, an additional 14 local participants consisting of 6 mushroom entrepreneurs, 5 potential mushroom entrepreneurs, and 3 mushroom technicians joined the entrepreneurship training part of the program thereby enriching and enhancing the exchange of information and experiences among participants.

**Degree of Meeting Objectives.** The main objectives of the training program were generally well met, as mushroom production technology as well as mushroom production management problems and issues were covered in the training program. In this regard, a list of important technical problems tackled during the training and the corresponding suggested solutions is presented in *Annex 4*. The training program, more importantly, encouraged a very fertile exchange of experiences and information among participants particularly during the PCW entrepreneurship training part of the program. The small group discussions, moreover, generated some ideas for encouraging development, cooperation and facilitating mushroom technology transfer and commercialization. For the UNIDO-sponsored participants, in particular, the training has provided them an excellent chance for networking with colleagues from other developing countries and more importantly, getting new ideas on simple mushroom production technology from the local mushroom growers which can be applied in their own countries.

10. **Assessment by Participants:**

On the whole the Symposium was well appreciated by the participants, as most of them indicated that their knowledge has been enriched and that their expectations were met. Furthermore, majority of them (through a roundtable evaluation) judged that the training objectives were realized and felt that the training was well organized and implemented.

11. **Conclusions:**

The UNIDO Contract 95/032 has been satisfactorily fulfilled as the selection and participation of 10 potential resource center managers from the Asian developing countries of Bangladesh, Indonesia, Nepal, Philippines and Vietnam to the “Training of Selected Resource Center Managers in Asia and Asian LDC’s in Commercial Industrial Mushroom Production and Business Management” held in Los Baños and La Union, Philippines were successfully facilitated. Participants were satisfied with the outcome of the Symposium and indicated that objectives have been met and that on the whole, the activity had been well organized. Moreover, the participants proposed the following points for future cooperation and collaboration with possible assistance from UNIDO:
a. Networking among selected Asian developing countries regarding problems in mushroom production and other forms of technical cooperation;

b. Mushroom entrepreneur/technician/scientist exchange between Asian developing countries;

c. Germplasm exchange, evaluation and improvement;

d. Mushroom training design and implementation; and

e. Development of a 'sustainable' village-level mushroom growing industry.

The organizers will come up with a proposal integrating the above points for consideration by UNIDO.
"Training of Selected Resource Center Managers in Asia and Asian Developing Countries on: Industrial Mushroom Production and Mushroom Business Development and Management"

Phase I: Technical Training on Industrial Mushroom Production

20-23 October 1995
BIOTECH U.P. at Los Baños, Los Baños, Laguna, Philippines

PROGRAM SCHEDULE

18-19 October 1995 (Wednesday-Thursday)

Arrival of foreign participants

20 October 1995 (Friday)

09:00-09:30 Registration of Participants
09:30-10:30 Opening Ceremony

- National Anthem
- Opening Prayer
- Welcome Address

Dr. Reynaldo dela Cruz
Director
BIOTECH
U.P. at Los Baños

- Opening Remarks

Dr. Emerlito Borromeo
Project Manager
QCTC. BIOTECH

11:00-12:00 Tour of BIOTECH and QCTC Faculties
12:00-01:00 Lunch Break
01:00-03:30 Country Reports on Status of Mushroom Industry by Individual Participants
03:30-04:00 Coffee Break
04:00-05:00 Country Reports: Continuation...

21 October 1995 (Saturday)

Morning Sessions: Panel Discussion on: Results of the Country Reports and Participants Questionnaire
12:00-1:00  Lunch Break

Afternoon Session:  Continuation of Panel Discussion

22 October 1995 (Sunday)

Whole day Study Tour of Industrial-Scale Mushroom Farms around Metro-Manila

23 October 1995 (Monday)

Morning Session:  Panel Discussion on: Results of Study Tour and Recommendations on the Common Problems faced by Mushroom Growers and Researchers in the represented Developing Countries.

12:00-01:00  Lunch Break

Afternoon Session:  Continuation of Panel Discussion

Field Trip to the International Research Institute and U.P. at Los Baños research facilities.

24 October 1995 (Tuesday)

Whole day Travel to San Fernando, La Union to the site of the PCW Entrepreneurship Training on the Development of a Mushroom Business
"PCW Entrepreneurship Training Course on: Development of a Mushroom Business"

25-30 October 1995
Sea and Sky Resort, San Fernando, La Union, Philippines

PROGRAM SCHEDULE

25 October 1995 (Wednesday)

08:00-08:45 Registration
  - National Anthem
  - Opening Prayer
  - Welcome Address Dr. Saturnino Ocampo, Jr.
    Director
    Dept. of Agriculture
    Region I

  - Opening Remarks Dr. Emerlito Borromeo
    Project Manager
    QCTC, BIOTECH

09:45-10:00 Coffee Break

10:00-11:00 Presentation on: "Entrepreneurship Training through Project Casework Approach" Dr. Edwin J. Caliung

11:00-12:00 Plenary (1) Panel Discussion: "Experiences in Setting-up a Mushroom Business" Invited Entrepreneurs

12:00-01:00 Lunch Break

01:00-02:00 Orientation to Package I: "Analysis of the Situation and Opportunities for a Mushroom Business"

02:00-03:30 Group Work (1): Analysis of the Situation, Development of Business Objectives and Alternative Options on Type of Mushroom Business

03:30-04:00 Coffee Break

04:00-05:30 Group Work (1): Continuation...

05:30-7:30 Break and Dinner

07:30-09:00 Group Work (1): Continuation...
26 October 1995 (Thursday)

08:00-09:30  Plenary (2): Group Reports on Analysis of the Situation, Development of Business Objectives and Alternative Options on the Type of Mushroom Business

09:30-10:00  Coffee Break

10:00-11:00  Presentation on: "Methods for Comparing and Evaluating Alternative Business Options"

11:00-12:30  Group Work (2): Costing/Comparison of Alternative Mushroom Business Options and Selection/Justification of the Most Suitable Option

12:30-01:30  Lunch Break

01:30-03:30  Group Work (2): Continuation...

03:30-04:00  Coffee Break

04:00-05:30  Group Work (2): Continuation...

05:30-07:00  Break and Dinner

07:00-09:00  Group Work (2): Continuation...

27 October 1995 (Friday)

08:00-10:00  Plenary (3) Group Reports on: Costing/Comparison of Alternative Mushroom Business Options and Selection/Justification of the Most Suitable Option

10:00-10:30  Coffee Break

10:30-11:00  Presentation on: Writing a Project Proposal

11:00-12:30  Group Work (3): Development of the Project Proposal on the Most Suitable Mushroom Business Option

12:30-01:30  Lunch Break

01:30-03:30  Group Work (3): Continuation...

03:30-04:00  Coffee Break

04:00-05:30  Group Work (3): Continuation...

05:30-07:00  Break and Dinner
07:00-09:00  Plenary (4) Group Reports on: Project Proposal on the Most Suitable Mushroom Business

28 October 1995 (Saturday)

08:00-05:30  Field trip: Tour of Local Mushroom Growers in La Union (Volvariella mushroom farms) and Trinidad Valley (Agaricus mushroom farms)
05:30-07:00  Break and Dinner
07:00-09:00  Discussions on the Results of the Field trip

29 October 1995 (Sunday)

08:00-09:30  Plenary (5) Panel Discussion on: Sources of Capital for Starting a Business and Requirements by: Invited Bank Representatives
09:30-10:00  Orientation to Package II: Setting-up the Mushroom Business
10:00-10:30  Coffee Break
10:30-12:30  Group Work (4): Development of Alternative Options on Form of Business, Source of Capital, Business Location, Evaluation/Comparison of Alternative Options and Selection/Justification of the Most Suitable Option
12:30-01:30  Lunch Break
01:30-03:30  Group Work (4) Continuation...
03:30-04:00  Coffee Break
04:00-05:30  Plenary (6) Group Reports on: Development of Alternative Options on Form of Business, Source of Capital, Business Location, Evaluation/Comparison of Alternative Options and Selection/Justification of the Most Suitable Option
05:30-07:00  Break
07:00-09:00  Farewell Dinner and Socials

30 October 1995 (Monday)

08:00-10:00  Group Work (5): Development of the Implementation Plan on Setting-up the Mushroom Business
10:00-10:30  Coffee Break
10:30-12:00  Group Work (5): Continuation...
12:00-01:00  Lunch Break
11:00-02:30  Plenary (7) Group Reports on: Development of the Implementation Plan on Setting-up the Mushroom Business
02:30-03:00  Coffee Break
03:00-04:00  Plenary (8): Training Conclusions and Evaluation
04:00-05:00  Closing Program and Awarding of Certificates
Annex 2

TRAINING OF RESOURCE CENTER MANAGERS IN ASIA AND ASIAN LDC’s IN COMMERCIAL MUSHROOM PRODUCTION AND BUSINESS MANAGEMENT

PARTICIPANTS’ PROFILE

Phase 1. Technical Training (October 20-23, 1995)

1. Name: ABELLA, EVARISTO Age: 31 Sex: Male
   Nationality: Filipino
   Education: B.S. in Botany
   Current Job/Affiliation: University Instructor, Department of Biological Sciences, Central Luzon State University (Government, Academe)

2. Name: DIVINA, CYNTHIA Age: 38 Sex: Female
   Nationality: Filipino
   Education: M.S. in Biology
   Current Job/Affiliation: Assistant Professor, Department of Biological Sciences, Mushroom Technology Lab., Central Luzon State University (Government, Academe)

3. Name: DONGOL, RAMA HARI Age: 49 Sex: Male
   Nationality: Nepali
   Education: Ph.D. in Botany and Zoology
   Current Job/Affiliation: Mushroom Technologist, Nepal Agricultural Research Council (NARC), Plant Pathology Division, Mushroom Research Unit (Academe)

4. Name: DUC, PHAN HUY Age: 53 Sex: Male
   Nationality: Vietnamese
   Education: Ph.D. in Mushroom Cultivation
   Current Job/Affiliation: Professor, Department of Mycology, University of Hanoi (Government)

5. Name: KUSWANTO, KAPTI RAHAYU Age: 51 Sex: Female
   Nationality: Indonesian
   Education: Ph.D.
   Current Job/Affiliation: Professor, Faculty of Agricultural Technology, Gadjah Mada University (Government)

6. Name: NGUYEN, HONG HA Age: 43 Sex: Female
   Nationality: Vietnamese
   Education: Ph.D. in Biology
   Current Job/Affiliation: Researcher, Institute of Biotechnology, National Center for Natural Science and Technology of Vietnam (Government)
7. Name: RAHMAN, HABIBUR Age: 28 Sex: Male  
Nationality: Bangladesh  
Education: B.S. in Agriculture  
Current Job/Affiliation: Manager, Techno Mushroom Farm (Private)

8. Name: SHRESTHA, GYAN Age: 58 Sex: Male  
Nationality: Nepali  
Education: Ph.D.  
Current Job/Affiliation: Executive Director, Green Energy Mission/Nepal (Non-Government Organization)

9. Name: JACABAN, PATRICIO Age: 55 Sex: Male  
Nationality: Filipino  
Education: College level  
Current Job/Affiliation: Owner/Manager, Jacaban Mushroom Farm (Private)

10. Name: LAPITAN, LINA Age: 45 Sex: Female  
Nationality: Filipino  
Education: M.S.  
Current Job/Affiliation: Researcher, Bureau of Plant Industry (Government)

PHASE II. Entrepreneurial Training (October 25-30, 1995)

1. Name: CARANAY, LAYDA Age: 22 Sex: Female  
Nationality: Filipino  
Education: B.S. in Entomology  
Current Job/Affiliation: Mushroom Technician, One-Stop-Mushroom Shop San Andres, Manila (Private)

2. Name: DONGOL, RAMA HARI Age: 49 Sex: Male  
Nationality: Nepali  
Education: Ph.D. in Botany and Zoology  
Current Job/Affiliation: Mushroom Technologist, Nepal Agricultural Research Council (NARC), Plant Pathology Division, Mushroom Research Unit (Academic)

3. Name: DUC, PHAN HUY Age: 53 Sex: Male  
Nationality: Vietnamese  
Education: Ph.D. in Mushroom Cultivation  
Current Job/Affiliation: Professor, Department of Mycology, University of Hanoi (Government)

4. Name: GONGON, ZITA Age: 60 Sex: Female  
Nationality: Filipino  
Education: B.S. in SW  
Current Job/Affiliation: Businesswoman, Baguio City Market (Private)
5. Name: GUINTO, RUBEN  
   Age: 45  
   Sex: Male  
   Nationality: Filipino  
   Education: B.S. in Commerce  
   Current Job/Affiliation: Plant Manager, Mycophil Mushroom Project (Private)

6. Name: JACABAN, PATRICIO  
   Age: 55  
   Sex: Male  
   Nationality: Filipino  
   Education: College level  
   Current Job/Affiliation: Owner/Manager, Jacaban Mushroom Farm (Private)

7. Name: KUSWANTO, KAPTI RAHAYU  
   Age: 51  
   Sex: Female  
   Nationality: Indonesian  
   Education: Ph.D.  
   Current Job/Affiliation: Professor, Faculty of Agricultural Technology, Gadjah Mada University (Government)

8. Name: LANTZAR, JOCELYN  
   Age: 36  
   Sex: Female  
   Nationality: Filipino  
   Education: B.S.  
   Current Job/Affiliation: Analyst, United Sugarcane Planters of Davao Multi-purpose Cooperative (Private)

9. Name: LAPITAN, LINA  
   Age: 45  
   Sex: Female  
   Nationality: Filipino  
   Education: M.S.  
   Current Job/Affiliation: Researcher, Bureau of Plant Industry (Government)

10. Name: NGUYEN, HONG HA  
    Age: 43  
    Sex: Female  
    Nationality: Vietnamese  
    Education: Ph.D. in Biology  
    Current Job/Affiliation: Researcher, Institute of Biotechnology, National Center for Natural Science and Technology of Vietnam (Government)

11. Name: PUMARES, GIOVANNI  
     Age: 36  
     Sex: Male  
     Nationality: Filipino  
     Education: B.S. in Agriculture  
     Current Job/Affiliation: Agriculturist, Sta. Rita East Consumers Coop., Inc. Mushroom Production Center (Non-Government Organization)

12. Name: RAHMAN, HABIBUR  
     Age: 28  
     Sex: Male  
     Nationality: Bangladeshi  
     Education: B.S. in Agriculture  
     Current Job/Affiliation: Manager, Techno-Mushroom Farm (Private)

13. Name: RAMOS, ARMANDO  
     Age: 24  
     Sex: Male  
     Nationality: Filipino  
     Education: B.S. in Electronics and Communications Engineering  
     Current Job/Affiliation: Entrepreneur (Private)
14. Name: RAMOS, JOY  
   Age: 25  
   Sex: Female  
   Nationality: Filipino  
   Education: B.S. in Computer Science  
   Current Job/Affiliation: Businesswoman. Baguio City (Private)

15. Name: SABABAN, JOSE  
   Age: 27  
   Sex: Male  
   Nationality: Filipino  
   Education: B.S. in Commerce major in Accounting  
   Current Job/Affiliation: Technician. Mushroom Foundation, Inc. (Private)

16. Name: SARMIENTO, LITO  
   Age: 30  
   Sex: Male  
   Nationality: Filipino  
   Education: College level  
   Current Job/Affiliation: Mushroom Grower. La Union (Private)

17. Name: SARMIENTO, ROWENA  
   Age: 32  
   Sex: Female  
   Nationality: Filipino  
   Education: College level  
   Current Job/Affiliation: Mushroom Grower. La Union (Private)

18. Name: SORIANO, GENOVEVA  
   Age: 31  
   Sex: Female  
   Nationality: Filipino  
   Education: B.S. in Banking and Finance  
   Current Job/Affiliation: Technician. ORT Mushroom Farm (NGO)

19. Name: SHRESTHA, GYAN  
   Age: 58  
   Sex: Male  
   Nationality: Nepali  
   Education: Ph.D.  
   Current Job/Affiliation: Executive Director. Green Energy Mission/Nepal (NGO)

20. Name: TUAZON, BEN  
   Age: 40  
   Sex: Male  
   Nationality: Filipino  
   Education: College undergraduate  
   Current Job/Affiliation: Manager/Operator. Mycofields Mushroom Farm (Private)

21. Name: TUMBAGA, LUZviminda  
   Age: 56  
   Sex: Female  
   Nationality: Filipino  
   Education: Third year BSA (Gen. Agriculture)  
   Current Job/Affiliation: Project Coordinator/Technician, PHILEX-Poro Installation (Private)

22. Name: YUDELMO, HERMINIA  
   Age: 49  
   Sex: Female  
   Nationality: Filipino  
   Education: Vocational  
   Current Job/Affiliation: President. Bacaca Farmers (Private)
**Training of Resource Center Managers in Asia and Asian LDCs for Commercial Mushroom Production and Business Management**

*October 20-30, 1995*

*BIOTECH, UPLB and San Fernando, La Union*

**LIQUIDATION OF EXPENSES**

<table>
<thead>
<tr>
<th>Date</th>
<th>Particulars</th>
<th>O.R. No.</th>
<th>In Pesos</th>
<th>In Dollar</th>
</tr>
</thead>
<tbody>
<tr>
<td>9/26/95</td>
<td>Airfreight</td>
<td>9036139</td>
<td>35.00</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Airfreight</td>
<td>9036138</td>
<td>35.00</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Airfreight</td>
<td>9036137</td>
<td>35.00</td>
<td></td>
</tr>
<tr>
<td>10/10/95</td>
<td>Photocopying</td>
<td>38569</td>
<td>7.50</td>
<td></td>
</tr>
<tr>
<td>10/5/95</td>
<td>Training supplies</td>
<td>395687</td>
<td>2,286.00</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Training supplies</td>
<td>395914</td>
<td>216.75</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Film</td>
<td>97193</td>
<td>178.00</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Battery</td>
<td>253643</td>
<td>184.50</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Slide Film</td>
<td>253642</td>
<td>365.00</td>
<td></td>
</tr>
<tr>
<td>10/6/95</td>
<td>Training supplies</td>
<td>125148</td>
<td>862.00</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mailing</td>
<td></td>
<td>14.00</td>
<td></td>
</tr>
<tr>
<td>10/12/95</td>
<td>Binding (Training Manual)</td>
<td>0066</td>
<td>300.00</td>
<td></td>
</tr>
<tr>
<td>10/13/95</td>
<td>Photocopying</td>
<td>5692</td>
<td>234.50</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mailing</td>
<td></td>
<td>6.00</td>
<td></td>
</tr>
<tr>
<td>10/10/95</td>
<td>Morocco paper</td>
<td>125304</td>
<td>150.00</td>
<td></td>
</tr>
<tr>
<td>10/17/95</td>
<td>Training supplies</td>
<td>125551</td>
<td>188.25</td>
<td></td>
</tr>
<tr>
<td>10/18/95</td>
<td>Photocopying</td>
<td>25700</td>
<td>5.40</td>
<td></td>
</tr>
<tr>
<td>10/20/95</td>
<td>Expanding Envelope</td>
<td>1140</td>
<td>500.00</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Airfreight</td>
<td>9341434</td>
<td>35.00</td>
<td></td>
</tr>
<tr>
<td>10/22/95</td>
<td>Photocopying</td>
<td>111128</td>
<td>110.00</td>
<td></td>
</tr>
<tr>
<td>10/22/95</td>
<td>Envelope</td>
<td>1147</td>
<td>47.80</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Vehicle rental</td>
<td>0001</td>
<td>1,500.00</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Training bags</td>
<td></td>
<td>2,500.00</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pp bags</td>
<td>26306</td>
<td>391.50</td>
<td></td>
</tr>
<tr>
<td></td>
<td>G.L.Wire</td>
<td>58654</td>
<td>15.00</td>
<td></td>
</tr>
<tr>
<td>10/19/95</td>
<td>Streamer</td>
<td>2093</td>
<td>520.00</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Photocopying</td>
<td></td>
<td>56.25</td>
<td></td>
</tr>
<tr>
<td>10/26/95</td>
<td>Fax charge</td>
<td>7864</td>
<td>15.00</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fax charge</td>
<td>7866</td>
<td>240.00</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Supplies</td>
<td>131861</td>
<td>104.50</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Catering (socials)</td>
<td></td>
<td>3,000.00</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Honorarium</td>
<td></td>
<td>500.00</td>
<td></td>
</tr>
<tr>
<td>10/25/95</td>
<td>Fax charge</td>
<td></td>
<td>30.00</td>
<td></td>
</tr>
<tr>
<td>Date</td>
<td>Description</td>
<td>Amount</td>
<td></td>
<td></td>
</tr>
<tr>
<td>--------</td>
<td>--------------------------------------------------</td>
<td>--------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10/30/95</td>
<td>Telephone bill</td>
<td>4.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Printing &amp; developing</td>
<td>147.30</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Professional fee</td>
<td>91,500.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Vehicle rental</td>
<td>5,000.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Vehicle rental</td>
<td>18,000.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Professional Fees/Honorarium</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>for 2 Resource Persons</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(7 man-days each @ $200/day)</td>
<td>$ 2,800.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Registration Fees</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>US$ 500.- x 10 participants</td>
<td>$ 5,000.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Return Tickets</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10/17/95</td>
<td>Air tickets</td>
<td>132,455.41</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Reimbursement (Kuswanto)</td>
<td>2,832.90</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Airport tax</td>
<td>3,000.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10/30/95</td>
<td>Taxi fare</td>
<td>400.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11/2/95</td>
<td>Airticket &amp; visa fees</td>
<td>10,008.25</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Reimbursement (Duc)</td>
<td>$ 80.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Reimbursement (Shrestha)</td>
<td>128.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Reimbursement (Dongol)</td>
<td>153.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Reimbursement (Hong Ha)</td>
<td>80.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Reimbursement (Rahman)</td>
<td>134.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Reimbursement (Calilung)</td>
<td>2,120.00</td>
<td>$ 296.00</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>$ 406,451.11</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Daily Subsistence Allowance</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10/23/95</td>
<td>Accommodation</td>
<td>17,869.80</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Catering Services</td>
<td>5,925.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10/25/95</td>
<td>Board and Lodging</td>
<td>67,500.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10/30/95</td>
<td>Hotel Accommodation</td>
<td>600.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Hotel Accommodation</td>
<td>600.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Hotel Accommodation</td>
<td>900.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Dr. Calilung</td>
<td>$ 560.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10/20/95</td>
<td>Per diem</td>
<td>2,000.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Per diem</td>
<td>7,250.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Per diem</td>
<td>450.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Per diem</td>
<td>6,000.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10/25/95</td>
<td>Per diem</td>
<td>9,420.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>$ 9,231.00</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### SUMMARY

**Training Program Preparation**

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>$8,000.00</td>
<td></td>
</tr>
<tr>
<td>Less expenses (in pesos)</td>
<td>137,119.75</td>
</tr>
<tr>
<td>Less expenses (in dollars)</td>
<td>2,800.00</td>
</tr>
<tr>
<td>Sub-total</td>
<td>$5,335.40</td>
</tr>
</tbody>
</table>

**Registration Fees**

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>$5,000.00</td>
<td></td>
</tr>
</tbody>
</table>

**Return Tickets**

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>$7,000.00</td>
<td></td>
</tr>
<tr>
<td>Less expenses in pesos</td>
<td>150,816.56</td>
</tr>
<tr>
<td>Less expenses in dollars</td>
<td>871.00</td>
</tr>
<tr>
<td>Sub-total</td>
<td>$260.65</td>
</tr>
</tbody>
</table>

**Daily Subsistence Allowance**

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>$5,000.00</td>
<td></td>
</tr>
<tr>
<td>Less expenses in pesos</td>
<td>118,514.80</td>
</tr>
<tr>
<td>Less expenses in dollars</td>
<td>560.00</td>
</tr>
<tr>
<td>Sub-total</td>
<td>$171.47</td>
</tr>
<tr>
<td>Total</td>
<td>($5,046.22)</td>
</tr>
</tbody>
</table>

**Received from UNIDO**

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>$20,000.00</td>
<td></td>
</tr>
</tbody>
</table>

**Less:**

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Expenses</td>
<td>$25,046.22</td>
</tr>
</tbody>
</table>

**Balance:**

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>($5,046.22)</td>
<td></td>
</tr>
</tbody>
</table>
LIST OF IMPORTANT TECHNICAL PROBLEMS PRESENTED AND SUGGESTED SOLUTIONS

<table>
<thead>
<tr>
<th>Problems</th>
<th>Suggested Solutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Contamination of spawn</td>
<td>Proper pasteurization procedure and improved post-pasteurization handling procedure</td>
</tr>
<tr>
<td>2. Contamination of growing substrates</td>
<td>Fabrication of drum as cheap steam generators using wood and rice hull as fuel.</td>
</tr>
<tr>
<td>4. Low yielding composted substrate for Volvariella</td>
<td>Shift to new culture.</td>
</tr>
<tr>
<td>5. Degenerated strain of Volvariella</td>
<td>Maintain culture in wood chip to prevent degeneration.</td>
</tr>
<tr>
<td>6. Degeneration of strain of Pleurotus</td>
<td>Pleurotus strain improvement thru mass spore culture and single-fruit body selection.</td>
</tr>
<tr>
<td>7. Alternative low cost production system</td>
<td>Outdoor cultivation technology for Volvariella using dried banana leaves as substrate</td>
</tr>
<tr>
<td>8. Alternative spawn formulation</td>
<td>New substrate formulations were presented.</td>
</tr>
</tbody>
</table>

In Nepal, the straw substrate for growing Pleurotus is inoculated "in bulk" after pasteurization. The spawn is mixed with the pasteurized substrate in a closed room but with people using their bare hands.

In the countries represented, only the Filipino mushroom grower uses banana leaves as substrate for Volvariella (with good biological efficiency, 25% of dry weight).