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21462

**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
  - PCW 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 Thrai St., Hanoi  
Vietnam
3. RAHMAN, Habibhur      Technomushroom Farm, D.M.C.  
725 North Karful, Dhaka 1206  
Bangladesh

- |     |                   |  |
|-----|-------------------|--|
| 4.  | DONGOL, Rama Hari | Plant Pathology Division<br>Nepal Agricultural Research Council<br>Kumaltar, Lalitpur<br>Nepal   |
| 5.  | NGUYEN, Hong Ha   | Institute of Biotechnology<br>National Center for Natural Science and<br>Technology, Hanoi<br>Vietnam  |
| 6.  | SHRESTHA, Gyan    | Green Energy - Nepal<br>Ghatte Kulo, Anaam Nagar<br>Kathmandu<br>P.O. Box 10647<br>Nepal   |
| 7.  | DIVINA, Cynthia   | Mushroom Technology Laboratory<br>Department of Biology<br>College of Arts and Sciences<br>Central Luzon State University<br>Muñoz, Nueva Ecija<br>Philippines |
| 8.  | ABELLA, Evaristo  | Mushroom Technology Laboratory<br>Department of Biology<br>College of Arts and Sciences<br>Central Luzon State University<br>Muñoz, Nueva Ecija<br>Philippines |
| 9.  | LAPITAN, Lina     | Bureau of Plant Industry<br>Roxas Blvd., Manila<br>Philippines   |
| 10. | JACABAN, Patricio | Jacaban Mushroom Farm<br>Agoon, La Union<br>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 on 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<br>Director<br>BIOTECH<br>U.P. at Los Baños |
|             | - Opening Remarks   | Dr. Emerlito Borromeo<br>Project Manager<br>QCTC, BIOTECH          |
| 11:00-12:00 | Tour of BIOTECH and QCTC Facilities                                       |  |
| 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. Calilung
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

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

**PARTICIPANTS' PROFILE**

Phase I. 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  
(Academe)
3. Name: DUC, PHAN HUUY      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: LANZAR, 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: RAIHMAN, HABIBUR Age: 28 Sex: Male  
Nationality: Bangladesh  
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**

Date	Particulars	O.R. No.	Amount	
			In Pesos	In Dollar
<u>Training Program Preparation</u>				
9/26/95	Airfreight	9036139	35.00	
	Airfreight	9036138	35.00	
	Airfreight	9036137	35.00	
10/10/95	Photocopying	38569	7.50	
10/5/95	Training supplies	395687	2,286.00	
	Training supplies	395914	216.75	
	Film	97193	178.00	
	Battery	253643	184.50	
	Slide Film	253642	365.00	
10/6/95	Training supplies	125148	862.00	
	Mailing		14.00	
10/12/95	Binding (Training Manual)		300.00	
	Photocopying	0066	7,800.00	
10/13/95	Re-prints	5692	234.50	
	Mailing		6.00	
10/10/95	Morocco paper	125304	150.00	
10/17/95	Training supplies	125551	188.25	
10/18/95	Photocopying	25700	5.40	
10/20/95	Expanding Envelope			
		1140	500.00	
	Airfreight	9341434	35.00	
10/20/95	Photocopying	111128	110.00	
10/22/95	Envelope	1147	47.80	
	Vehicle rental	0001	1,500.00	
	Training bags		2,500.00	
	Pp bags	26306	391.50	
	G.I.Wire	58654	15.00	
10/19/95	Streamer	2093	520.00	
	Photocopying		56.25	
10/26/95	Fax charge	7864	15.00	
	Fax charge	7866	240.00	
	Supplies	131861	104.50	
	Catering (socials)		3,000.00	
	Honorarium		500.00	
10/25/95	Fax charge		30.00	

10/30/95	Telephone bill	4.50	
	Printing & developing	147.30	
	Professional fee	91,500.00	
	Vehicle rental	5,000.00	
	Vehicle rental	18,000.00	
	Professional Fees/Honorarium for 2 Resource Persons (7 man-days each @ \$200/day)		\$ 2,800.00

Registration Fees

	US\$ 500.- x 10 participants		\$ 5,000.00
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Return Tickets

10/17/95	Air tickets	132,455.41	
	Reimbursement (Kuswanto)	2,832.90	
	Airport tax	3,000.00	
10/30/95	Taxi fare	400.00	
11/2/95	Airticket & visa fees	10,008.25	
	Reimbursement (Duc)		\$ 80.00
	Reimbursement (Shrestha)		128.00
	Reimbursement (Dongol)		153.00
	Reimbursement (Hong Ha)		80.00
	Reimbursement (Rahman)		134.00
	Reimbursement (Calilung)	2,120.00	\$ 296.00

Daily Subsistence Allowance

10/23/95	Accommodation	17,869.80	
	Catering Services	5,925.00	
10/25/95	Board and Lodging	67,500.00	
10/30/95	Hotel Accommodation	600.00	
	Hotel Accommodation	600.00	
	Hotel Accommodation	900.00	
	Dr. Calilung		\$ 560.00
10/20/95	Per diem	2,000.00	
	Per diem	7,250.00	
	Per diem	450.00	
	Per diem	6,000.00	
10/25/95	Per diem	9,420.00	

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	<b>Total</b>	<b>P 406,451.11</b>	<b>\$ 9,231.00</b>
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## SUMMARY

<i>Training Program Preparation</i>		\$ 8,000.00
Less expenses (in pesos)	137,119.75 =	\$ 5,335.40
Less expenses (dollars)		\$ 2,800.00
Sub-total		(\$ 135.40)

### *Registration Fees*

Less expenses (in dollars)		(\$ 5,000.00)
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### *Return Tickets*

Less expenses (in pesos)	150,816.56	= \$ 5,868.35
Less expenses (in dollars)		\$ 871.00
Sub-total		\$ 260.65

### *Daily Subsistence Allowance*

Less expenses (in pesos)	118,514.80	\$ 4,611.47
Less expenses (in dollars)		\$ 560.00
Sub-total		(\$ 171.47)

Total		(\$ 5,046.22)
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Received from UNIDO	\$ 20,000.00
Less:	
Total Expenses	\$ 25,046.22
Balance:	(\$ 5,046.22)

## LIST OF IMPORTANT TECHNICAL PROBLEMS PRESENTED AND SUGGESTED SOLUTIONS

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

<sup>1</sup> 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.

<sup>2</sup> In the countries represented, only the Filipino mushroom grower uses banana leaves as substrate for Volvariella (with good biological efficiency, 25% of dry weight)