

Table 8.4.4 (1) Basic Concept Calculation for Coffee Processing Machine

(1) Processing Days

| | |
|---|------------------------------|
| Total beneficiaries | 80 families |
| Total coffee area | 40 manzana |
| Yield | 120 qq (fresh-bean)/manzana |
| Total Production (fresh-bean) | 4,800 qq (fresh-bean) |
| Capacity of processing machine, hand operated | 5 qq (fresh-bean)/hr |
| Working hours per day | 8 hrs/day |
| Coffee Processing Days | 70 days |
| From fresh bean to dry beans | 20% |
| From fresh bean to wet beans | 30% |
| Total production (beans) | 1,440 qq (beans) |

(2) Drying Yard

| | |
|--|------------------------------------|
| Capacity of processing machine, hand operated | 5 qq (fresh-bean)/hr |
| Working hours per day | 8 hrs/day |
| Maximum fresh bean processing per day per machine | 40 qq (fresh-bean)/day |
| Wet beans processed per day per machine | 12.0 qq(wet beans)/day |
| Required area for drying yard per pulping machine | 1.43 m ² /qq(wet beans) |
| Required area of drying yard per day per pulping machine | 17.2 m ² |
| Drying-up days (1 rotation) | 5 days |
| Required area of drying yard per pulping machine | 86 m² |
| Number of pulping machines | 6 |
| Total area of drying yard | 515 m² |

(3) Required Water

| | |
|--|---|
| Required water rate | 20 liters/qq(fresh-bean) |
| Average fresh bean processing per day | 40 qq (fresh-bean)/day |
| Average water required per day | 800 liters/day |
| Required discharge (24hrs average) | 0.009 lit./s = 0.56 lit./min |
| Required discharge (8hrs average) | 0.028 lit./s = 1.67 lit./min |
| Times of 1 house domestic water consumption | 1.3 times of 1 house consumption |

Note : Domestic Water Consumption

| | |
|--|------------------------------|
| Domestic water consumption (1house=6.9person, 90lit/day/person) | 621 liters/day/house |
| Average for 24 hours | 0.007 lit./s = 0.43 lit./min |
| Average for 8 hours | 0.022 lit./s = 1.29 lit./min |

Table 8.4.4 (2) Cost and Benefit Flow for Pulping Coffee in Panyebar

(unit : Q.)

| Year | Cost | | | | Benefit | Net Cash Flow |
|------|-----------------|------------|--------------------|------------|---------|---------------|
| | Capital Cost *1 | O&M Cost*2 | Replacement Cost*3 | Total Cost | | |
| 1 | 75,370 | 1,000 | | 76,370 | 16,800 | -59,570 |
| 2 | | 1,000 | 2,000 | 3,000 | 16,800 | 13,800 |
| 3 | | 1,000 | 2,000 | 3,000 | 16,800 | 13,800 |
| 4 | | 1,000 | 2,000 | 3,000 | 16,800 | 13,800 |
| 5 | | 1,000 | 2,000 | 3,000 | 16,800 | 13,800 |
| 6 | | 1,000 | 2,000 | 3,000 | 16,800 | 13,800 |
| 7 | | 1,000 | 2,000 | 3,000 | 16,800 | 13,800 |
| 8 | | 1,000 | 2,000 | 3,000 | 16,800 | 13,800 |
| 9 | | 1,000 | 2,000 | 3,000 | 16,800 | 13,800 |
| 10 | | 1,000 | 75,370 | 76,370 | 16,800 | -59,570 |
| 11 | | 1,000 | 2,000 | 3,000 | 16,800 | 13,800 |
| 12 | | 1,000 | 2,000 | 3,000 | 16,800 | 13,800 |
| 13 | | 1,000 | 2,000 | 3,000 | 16,800 | 13,800 |
| 14 | | 1,000 | 2,000 | 3,000 | 16,800 | 13,800 |
| 15 | | 1,000 | 2,000 | 3,000 | 16,800 | 13,800 |
| 16 | | 1,000 | 2,000 | 3,000 | 16,800 | 13,800 |
| 17 | | 1,000 | 2,000 | 3,000 | 16,800 | 13,800 |
| 18 | | 1,000 | 2,000 | 3,000 | 16,800 | 13,800 |
| 19 | | 1,000 | 2,000 | 3,000 | 16,800 | 13,800 |
| 20 | | 1,000 | 75,370 | 76,370 | 16,800 | -59,570 |
| 21 | | 1,000 | 2,000 | 3,000 | 16,800 | 13,800 |
| 22 | | 1,000 | 2,000 | 3,000 | 16,800 | 13,800 |
| 23 | | 1,000 | 2,000 | 3,000 | 16,800 | 13,800 |
| 24 | | 1,000 | 2,000 | 3,000 | 16,800 | 13,800 |
| 25 | | 1,000 | 2,000 | 3,000 | 16,800 | 13,800 |
| 26 | | 1,000 | 2,000 | 3,000 | 16,800 | 13,800 |
| 27 | | 1,000 | 2,000 | 3,000 | 16,800 | 13,800 |
| 28 | | 1,000 | 2,000 | 3,000 | 16,800 | 13,800 |
| 29 | | 1,000 | 2,000 | 3,000 | 16,800 | 13,800 |
| 30 | | 1,000 | 2,000 | 3,000 | 16,800 | 13,800 |

| |
|--------------|
| EIRR : 16.7% |
|--------------|

Note:

*1 : Capital cost includes labor cost for the unskilled labors provided by the beneficiaries.

*2 : O & M Cost consists of cost for lubricant, payment for operators and so on.

*3 : Replacement Cost : pulping machines and others facilities, every 10 years.

Table 8.5.1 (1) Project Cost of Reforestation Plan in Pachum

| Items | Specification | Amount | Unit | Unit Price | Total (Q) | Remark |
|-----------------------------------|-----------------------------------|--------|------------|------------|-------------------|----------------------|
| 1. Nursery Facilities | | | | | | |
| 1.1 | Installation of irrigation system | 2 | unit | 896.00 | 1,792.00 | |
| 1.2 | Nursery Construction | 10 | unit | 714.70 | 7,147.00 | 1 unit = 40 blocks |
| 1.3 | Materials for greenhouse | 2 | unit | 2,890.80 | 5,781.60 | |
| 1.4 | Purchase of seedlings and seeds | | | | | |
| 1) | Seed | 0.5 | kg | 1,250.00 | 625.00 | |
| 2) | Seed | 0.5 | kg | 1,250.00 | 625.00 | |
| 3) | Seed | 0.5 | kg | 800.00 | 400.00 | |
| 4) | Seedling | 200 | unit | 10.00 | 2,000.00 | |
| 5) | Seedling | 1333 | unit | 11.00 | 14,663.00 | |
| 6) | Cutting graft | 350 | unit | 0.75 | 262.50 | |
| 1.5 | Seedling pot | | | | | |
| 1) | Size for Needle-leaf tree | 8,000 | 1,000 unit | 21.56 | 172.48 | |
| 2) | Size for Fruit tree | 2,000 | 1,000 unit | 37.73 | 75.46 | |
| 1.6 | Purchase of farming tools | 2 | set | 5,597.50 | 11,195.00 | |
| | Sub-total | | | | 38,306.74 | |
| 2. Storage Construction | | | | | | |
| | 3.0 x 3.0 x 2.4m | 2 | unit | 3,675.70 | 7,351.40 | |
| 3. Plantation Tools | | | | | | |
| | 3 kinds | 2 | set | 1,769.00 | 3,538.00 | |
| Sub-Total of Material Cost | | | | | | |
| | | | | | 49,196.14 | |
| 4. Training | | | | | | |
| | | 60 | day | 1,300.00 | 78,000.00 | |
| 5. Study Tour | | | | | | |
| | 15 persons/bus | 4 | time | 2,147.00 | 8,588.00 | |
| Sub-Total of Training Cost | | | | | | |
| | | | | | 86,588.00 | |
| 6. Transport | | | | | | |
| | | | | | 4,919.61 | 10% of Material Cost |
| TOTAL | | | | | | |
| | | | | | 140,703.75 | |

Table 8.5.1 (2) Implementation Schedule for Reforestation Plan in Pachum

| Project No: | C-3 | 2002 | | | | | | | | | | | | | | | | |
|---|--|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| | | Aug | Sep | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
| Project Name | Reforestation Plan | | | | | | | | | | | | | | | | | |
| Target Community | Pachúm, Santa María Chiquimula, Totonicapán | | | | | | | | | | | | | | | | | |
| Operation Group | Plantation Committee | | | | | | | | | | | | | | | | | |
| Objectives | To promote soil conservation in steep farmlands and plantation in forest areas by construction of nurseries and implementation of trainings related to soil conservation in order that local people will be able to conserve environment in the area by himself. | | | | | | | | | | | | | | | | | |
| CONTENTS | | | | | | | | | | | | | | | | | | |
| 1. Installation of Nursery Facilities | | | | | | | | | | | | | | | | | | |
| 1) Field work and confirmation of water rights | | | | | | | | | | | | | | | | | | |
| 2) Confirmation of species and number of seedling | | | | | | | | | | | | | | | | | | |
| 3) Purchase and transport of materials | | | | | | | | | | | | | | | | | | |
| 4) Construction | | | | | | | | | | | | | | | | | | |
| 2. Nursery Works | | | | | | | | | | | | | | | | | | |
| 1) Collection and purchase of seeds | | | | | | | | | | | | | | | | | | |
| 2) Preparation of seedbed | | | | | | | | | | | | | | | | | | |
| 3) Collection and transport of soil for seedbed and pot | | | | | | | | | | | | | | | | | | |
| 4) Disinfections of soil | | | | | | | | | | | | | | | | | | |
| 5) Sowing | | | | | | | | | | | | | | | | | | |
| 6) Soil filling into pots | | | | | | | | | | | | | | | | | | |
| 7) Transplantation | | | | | | | | | | | | | | | | | | |
| 8) Purchase of grafts | | | | | | | | | | | | | | | | | | |
| 9) Graftage | | | | | | | | | | | | | | | | | | |
| 10) Seedling raising | | | | | | | | | | | | | | | | | | |
| 11) Carrying out | | | | | | | | | | | | | | | | | | |
| 2. Plantation | | | | | | | | | | | | | | | | | | |
| 1) Selection of plantation sites | | | | | | | | | | | | | | | | | | |
| 2) Purchase and transport of seedlings | | | | | | | | | | | | | | | | | | |
| 3) Mowing works before plantation | | | | | | | | | | | | | | | | | | |
| 4) Plantation works | | | | | | | | | | | | | | | | | | |
| 5) Pest management (Insects and fungus) | | | | | | | | | | | | | | | | | | |
| 3. Trainings | | | | | | | | | | | | | | | | | | |
| 1) Technical training and environmental education | | | | | | | | | | | | | | | | | | |
| 2) Environmental education for women | | | | | | | | | | | | | | | | | | |
| 3) Environmental education for students | | | | | | | | | | | | | | | | | | |
| 4. Monitoring and Evaluation | | | | | | | | | | | | | | | | | | |
| 1) Initial monitoring | | | | | | | | | | | | | | | | | | |
| 2) Periodic meeting of plantation committee | | | | | | | | | | | | | | | | | | |
| 3) General meeting | | | | | | | | | | | | | | | | | | |
| 4) Evaluation | | | | | | | | | | | | | | | | | | |

General Explanations
 General works
 Fruit tree
 Pine, Alder

Table 8.5.1 (3) Statement of Balance for Nursery Management in Pachum (1/4)

| (1) Total Balance | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | Remarks |
|-----------------------------------|-------|--------|--------|--------|---------|---------|---------|---------|---------|---------|------------|
| (Income) | | | | | | | | | | | (1/4) |
| (1) Seedlings | | | | | | | | | | | |
| Pines, Alder | 1,700 | 200 | 2,000 | 2,000 | 2,000 | 2,000 | 2,000 | 2,000 | 2,000 | 2,000 | |
| Peach | 1,600 | 2,400 | 2,400 | 3,200 | 4,800 | 4,800 | 4,800 | 4,800 | 4,800 | 4,800 | |
| Avocado | 2,250 | 6,000 | 6,000 | 6,000 | 9,000 | 9,000 | 9,000 | 9,000 | 9,000 | 9,000 | |
| Sub-total (Q) | 5,550 | 8,600 | 10,400 | 11,200 | 15,800 | 15,800 | 15,800 | 15,800 | 15,800 | 15,800 | |
| (2) Fruits | | | | | | | | | | | |
| Peach | 0 | 0 | 0 | 35,000 | 96,250 | 218,750 | 315,000 | 385,000 | 420,000 | 420,000 | |
| Avocado | 0 | 563 | 1,500 | 4,502 | 19,850 | 35,402 | 50,873 | 67,226 | 79,065 | 94,828 | |
| Sub-total (Q) | 0 | 563 | 1,500 | 39,502 | 116,100 | 254,152 | 365,873 | 452,226 | 499,065 | 514,828 | |
| Total Income (Q) | 5,550 | 9,163 | 11,900 | 50,702 | 131,900 | 269,952 | 381,673 | 468,026 | 514,865 | 530,628 | |
| (Expenses) | | | | | | | | | | | |
| (3) Seedling Production | | | | | | | | | | | |
| Pines, Alder | 0 | 0 | 135 | 135 | 135 | 135 | 135 | 135 | 135 | 135 | |
| Peach | 0 | 2,295 | 2,944 | 4,054 | 5,349 | 6,459 | 7,384 | 7,754 | 7,754 | 7,754 | |
| Avocado | 0 | 1,925 | 2,389 | 3,314 | 4,239 | 4,979 | 5,719 | 6,089 | 6,089 | 6,089 | |
| Sub-total (Q) | 0 | 4,220 | 5,468 | 7,503 | 9,723 | 11,573 | 13,238 | 13,978 | 13,978 | 13,978 | |
| (4) O & M Cost | | | | | | | | | | | |
| Renewing of plastic sheet | 0 | 0 | 1,500 | 0 | 0 | 1,500 | 0 | 0 | 1,500 | 0 | |
| Purchase of Farming Tools | 0 | 0 | 0 | 0 | 0 | 2,500 | 2,500 | 0 | 0 | 0 | |
| Repairing of Storage | 0 | 0 | 50 | 0 | 0 | 50 | 0 | 0 | 50 | 0 | |
| Sub-total (Q) | 0 | 0 | 1,550 | 0 | 0 | 4,050 | 2,500 | 0 | 1,550 | 0 | |
| Total Expenses (Q) | 0 | 4,220 | 7,018 | 7,503 | 9,723 | 15,623 | 15,738 | 13,978 | 15,528 | 13,978 | (A) |
| TOTAL (Q) | 5,550 | 4,943 | 4,882 | 43,199 | 122,178 | 254,329 | 365,935 | 454,049 | 499,337 | 516,650 | |
| (Management Fund of Nursery) | | | | | | | | | | | |
| Income by seedling | 5,550 | 8,600 | 10,400 | 11,200 | 15,800 | 15,800 | 15,800 | 15,800 | 15,800 | 15,800 | |
| Fund Saving / person / month | 0.50 | 0.50 | 0.50 | 1.00 | 2.00 | 5.00 | 5.00 | 5.00 | 5.00 | 5.00 | |
| Revolving Fund / year | 288 | 288 | 288 | 576 | 1152 | 2880 | 2880 | 2880 | 2880 | 2880 | |
| Total (Q) | 5,838 | 10,506 | 14,176 | 18,450 | 25,679 | 28,736 | 31,678 | 36,381 | 39,533 | 44,235 | (B) |
| (B) - (A) in the next year | 1,618 | 3,488 | 6,674 | 8,727 | 10,056 | 12,998 | 17,701 | 20,853 | 25,555 | - | |

Table 8.5.1 (3) Statement of Balance for Nursery Management in Pachum (2/4)

| (2) Balance of Pines (red and white) and Alder | (2/4) | | | | | | | | | | | |
|--|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|---------|
| | year | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | Remarks |
| (Income) | | | | | | | | | | | | |
| (1) Seedling | | | | | | | | | | | | |
| Amount of raised seedling | 4,000 | 4,000 | 6,250 | 6,250 | 6,250 | 6,250 | 6,250 | 6,250 | 6,250 | 6,250 | 6,250 | 6,250 |
| Germination rate | 0.80 | 0.80 | 0.80 | 0.80 | 0.80 | 0.80 | 0.80 | 0.80 | 0.80 | 0.80 | 0.80 | 0.80 |
| Amount of production | 3,200 | 3,200 | 5,000 | 5,000 | 5,000 | 5,000 | 5,000 | 5,000 | 5,000 | 5,000 | 5,000 | 5,000 |
| Planted seedling (production) | 1,500 | 3,000 | 3,000 | 3,000 | 3,000 | 3,000 | 3,000 | 3,000 | 3,000 | 3,000 | 3,000 | 3,000 |
| Planted seedling (purchase) | 1,500 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Amount for plantation | 3,000 | 6,000 | 9,000 | 12,000 | 15,000 | 18,000 | 21,000 | 24,000 | 27,000 | 30,000 | 30,000 | 30,000 |
| Amount for sale | 1,700 | 200 | 2,000 | 2,000 | 2,000 | 2,000 | 2,000 | 2,000 | 2,000 | 2,000 | 2,000 | 2,000 |
| Unit price (Q) | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| Proceeds of seedling (Q) | 1,700 | 200 | 2,000 | 2,000 | 2,000 | 2,000 | 2,000 | 2,000 | 2,000 | 2,000 | 2,000 | 2,000 |
| Total Income (Q) | | | | | | | | | | | | |
| (Expenses) | | | | | | | | | | | | |
| (2) Purchase of materials | | | | | | | | | | | | |
| Seedling pots | 4,000 | 4,000 | 6,250 | 6,250 | 6,250 | 6,250 | 6,250 | 6,250 | 6,250 | 6,250 | 6,250 | 6,250 |
| Unit price (Q/1,000 units) | 0 | 0 | 21.56 | 21.56 | 21.56 | 21.56 | 21.56 | 21.56 | 21.56 | 21.56 | 21.56 | 21.56 |
| Cost of Materials (Q) | 0 | 0 | 135 | 135 | 135 | 135 | 135 | 135 | 135 | 135 | 135 | 135 |
| Total Expenses (Q) | 0 | 0 | 135 | 135 | 135 | 135 | 135 | 135 | 135 | 135 | 135 | 135 |
| TOTAL (Q) | 1,700 | 200 | 1,865 | 1,865 | 1,865 | 1,865 | 1,865 | 1,865 | 1,865 | 1,865 | 1,865 | 1,865 |

Table 8.5.1 (3) Statement of Balance for Nursery Management in Pachum (3/4)

| (3) Balance of Fruit Tree (Peach) | (3/4) | | | | | | | | | | | |
|------------------------------------|-------|-------|-------|--------|---------|---------|---------|----------|----------|----------|----------|----------|
| | year | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | Remarks |
| (Income) | | | | | | | | | | | | |
| (1) Seedling | | | | | | | | | | | | |
| Amount of raised seedling | 834 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 |
| Germination and graft success rate | 0.60 | 0.60 | 0.60 | 0.60 | 0.60 | 0.60 | 0.60 | 0.60 | 0.60 | 0.60 | 0.60 | 0.60 |
| Amount of production | 500 | 600 | 600 | 600 | 600 | 600 | 600 | 600 | 600 | 600 | 600 | 600 |
| Planted seedling (production) | 300 | 300 | 300 | 200 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Planted seedling (purchase) | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Amount for plantation | 400 | 700 | 1,000 | 1,200 | 1,200 | 1,200 | 1,200 | 1,200 | 1,200 | 1,200 | 1,200 | 1,200 |
| Amount for sale | 200 | 300 | 300 | 400 | 600 | 600 | 600 | 600 | 600 | 600 | 600 | 600 |
| Unit price (Q) | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 |
| Proceeds of seedlings (Q) | 1,600 | 2,400 | 2,400 | 3,200 | 4,800 | 4,800 | 4,800 | 4,800 | 4,800 | 4,800 | 4,800 | 4,800 |
| (2) Harvest | | | | | | | | | | | | |
| Crop (quintal/tree) | 0 | 0 | 0 | 0.25 | 0.50 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Amount (quintal) | 0 | 0 | 0 | 100.00 | 275.00 | 625.00 | 900.00 | 1,100.00 | 1,100.00 | 1,200.00 | 1,200.00 | 1,200.00 |
| Amount for sale (quintal) | 0 | 0 | 0 | 70.00 | 192.50 | 437.50 | 630.00 | 770.00 | 770.00 | 840.00 | 840.00 | 840.00 |
| Unit price (Q/lb) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Proceeds of Fruits (Q) | 0 | 0 | 0 | 35,000 | 96,250 | 218,750 | 315,000 | 385,000 | 385,000 | 420,000 | 420,000 | 420,000 |
| Total Income (Q) | 1,600 | 2,400 | 2,400 | 38,200 | 101,050 | 223,550 | 319,800 | 389,800 | 424,800 | 424,800 | 424,800 | 424,800 |
| (Expenses) | | | | | | | | | | | | |
| (3) Cutting Graft | | | | | | | | | | | | |
| Number of graft | 834 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 |
| Unit price (Q) | 0.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| Sub-total (Q) | 0 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 |
| (4) Pest management | | | | | | | | | | | | |
| Chemicals for soil disinfections | 0 | 0 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 |
| Insecticide and fungicide | 0 | 1,295 | 1,850 | 2,960 | 4,255 | 5,365 | 6,290 | 6,660 | 6,660 | 6,660 | 6,660 | 6,660 |
| Sub-total (Q) | 0 | 1,295 | 1,906 | 3,016 | 4,311 | 5,421 | 6,346 | 6,716 | 6,716 | 6,716 | 6,716 | 6,716 |
| (5) Materials | | | | | | | | | | | | |
| Seedling pots | 834 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 |
| Unit price (Q/1,000 units) | 0.00 | 0.00 | 37.73 | 37.73 | 37.73 | 37.73 | 37.73 | 37.73 | 37.73 | 37.73 | 37.73 | 37.73 |
| Cost of Materials (Q) | 0 | 0 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 |
| Total Expenses (Q) | 0 | 2,295 | 2,944 | 4,054 | 5,349 | 6,459 | 7,384 | 7,754 | 7,754 | 7,754 | 7,754 | 7,754 |
| TOTAL (Q) | 1,600 | 105 | -544 | 34,146 | 95,701 | 217,091 | 312,416 | 382,046 | 417,046 | 417,046 | 417,046 | 417,046 |

Note : Number of plantation of peach tree per family is equal to 8 trees of which 6 trees are for agro-forestry and 2 ones for garden, and the amount is calculated for 150 families in the community.

Table 8.5.1 (3) Statement of Balance for Nursery Management in Pachum (4/4)

| (Income) | year | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | Remarks |
|------------------------------------|------|-------|-------|-------|--------|--------|--------|--------|--------|--------|---------|---------------|
| (4/4) | | | | | | | | | | | | |
| (1) Seedling | | | | | | | | | | | | |
| Amount of raised seedling | | 500 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 | |
| Germination and graft success rate | | 0.60 | 0.60 | 0.60 | 0.60 | 0.60 | 0.60 | 0.60 | 0.60 | 0.60 | 0.60 | |
| Amount of production | | 300 | 600 | 600 | 600 | 600 | 600 | 600 | 600 | 600 | 600 | |
| Planted seedling (production) | | 150 | 200 | 200 | 200 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Planted seedling (purchase) | | 150 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Amount for plantation | | 300 | 500 | 700 | 900 | 900 | 900 | 900 | 900 | 900 | 900 | |
| Amount for sale | | 150 | 400 | 400 | 400 | 600 | 600 | 600 | 600 | 600 | 600 | |
| Unit price (Q) | | 15.0 | 15.0 | 15.0 | 15.0 | 15.0 | 15.0 | 15.0 | 15.0 | 15.0 | 15.0 | |
| Proceeds of seedlings (Q) | | 2,250 | 6,000 | 6,000 | 6,000 | 9,000 | 9,000 | 9,000 | 9,000 | 9,000 | 9,000 | |
| (2) Harvest | | | | | | | | | | | | |
| Crop (lb/tree) | | 0 | 2.5 | 5 | 16 | 50 | 75 | 100 | 112.5 | 125 | 150 | 1 lb = 45.4 g |
| Amount (lb) | | 0 | 750 | 2,000 | 6,003 | 18,905 | 33,716 | 48,450 | 64,025 | 75,300 | 90,313 | |
| Amount for sale (lb) | | 0 | 375 | 1,000 | 3,001 | 13,234 | 23,601 | 33,915 | 44,818 | 52,710 | 63,219 | |
| Unit price (Q/lb) | | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | |
| Proceeds of Fruits (Q) | | 0 | 563 | 1,500 | 4,502 | 19,850 | 35,402 | 50,873 | 67,226 | 79,065 | 94,828 | |
| Total Income (Q) | | 2,250 | 6,563 | 7,500 | 10,502 | 28,850 | 44,402 | 59,873 | 76,226 | 88,065 | 103,828 | |
| (Expenses) | | | | | | | | | | | | |
| (3) Cutting Graft | | | | | | | | | | | | |
| Number of graft | | 500 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 | |
| Unit price (Q) | | 0.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | |
| Sub-total (Q) | | 0 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 | |
| (4) Pest management | | | | | | | | | | | | |
| Chemicals for soil disinfections | | 0 | 0 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | |
| Insecticide and fungicide | | 0 | 925 | 1,295 | 2,220 | 3,145 | 3,885 | 4,625 | 4,995 | 4,995 | 4,995 | |
| Sub-total (Q) | | 0 | 925 | 1,351 | 2,276 | 3,201 | 3,941 | 4,681 | 5,051 | 5,051 | 5,051 | |
| (5) Materials | | | | | | | | | | | | |
| Seedling pots | | 500 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 | |
| Unit price (Q/1,000 units) | | 0.00 | 0.00 | 37.73 | 37.73 | 37.73 | 37.73 | 37.73 | 37.73 | 37.73 | 37.73 | |
| Cost of Materials (Q) | | 0 | 0 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | |
| Total Expenses (Q) | | 0 | 1,925 | 2,389 | 3,314 | 4,239 | 4,979 | 5,719 | 6,089 | 6,089 | 6,089 | |
| TOTAL (Q) | | 2,250 | 4,638 | 5,111 | 7,188 | 24,611 | 39,423 | 54,154 | 70,137 | 81,976 | 97,739 | |

Note : Number of plantation of avocado tree per family is equal to 6 trees of which 4 trees are for agro-forestry and 2 ones for garden, and the amount is calculated for 150 families in the community.

Table 8.5.2 (1) Project Cost

| Description | Unit | Unit price (Q) | total value (Q) |
|---|--------------|----------------|-----------------|
| 18 weeks chicken | 200 unit | 37 | 7,400 |
| Feed (concentrated) | 264qq | 110 | 29,040 |
| Medicines | | | |
| -colera aviar | 400 dosage | 0.41 | 164 |
| -newcastle cepa lasota | 1,200 dosage | 0.12 | 144 |
| - coriza invecuosa | 400 dosage | 0.12 | 48 |
| -viruela aviar | 400 dosage | 0.40 | 160 |
| -bronquitis infecciosa | 400 dosage | 0.12 | 48 |
| -vitamins | 4,400 gram | 0.41 | 1,804 |
| sub-total | | | 2,368 |
| Hen house materials | | | |
| -lamina(roofing) | 4 sheet | 300 | 1,200 |
| -iron net | 40 yard | 18 | 720 |
| -nails | 30 lbs. | 4 | 120 |
| -nylon net | 40yard | 10 | 400 |
| -cement(500PSI) | 4qq | 60 | 240 |
| -feeder | 12pcs. | 38 | 456 |
| -water container | 8 pcs. | 25 | 200 |
| -Wooden pillar | various | | 876 |
| -Wooden board | various | | 1,320 |
| -Nest | 40 | 5 | 200 |
| -Saw dust | 20bag | 5 | 100 |
| -Labor for hen house construction and transport | | | (2,600) |
| sub-total | | | 8,432 |
| Feeding silo | | | |
| -Feeding silo | 4 | 375 | 1,500 |
| -Labors for construction . | | | 1,800 |
| -Transportation of input materials | | | 800 |
| sub-total | | | 4,100 |
| Training / NGO technical guidance | | | 22,100 |
| Depreciation cost (5% of hen house cost) | | | 422 |
| Operational fee (3% of total income) | | | 1,820 |
| Total Cost | | | 75,682 |

Suported by the project Q.73,082

Born by beneficiaries Q.2,600

Table 8.5.2 (2) List of beneficiaries group

Beneficiaries of Group 1 from Sector 1

| | |
|-----|--------------------------|
| 1. | Juana Ico |
| 2. | Angelica Marina Lux Ico |
| 3. | Maria Teresa Baten |
| 4. | Catarina Lux Mejia |
| 5. | Antonia Estela Lux Mejia |
| 6. | Maria Chiti Lux |
| 7. | Maria Mejia Lopez |
| 8. | Magdalena Mejia |
| 9. | Juana Chiti Lux |
| 10. | Ana Lux Castro |

Beneficiaries of Group 2 from Sector 1

| | |
|-----|---------------------------|
| 1. | Elia Magdalena Lux Castro |
| 2. | Elva Estela Lucas |
| 3. | Ana Patricia Muy Gomez |
| 4. | Elizabeth Chiti Lopez |
| 5. | Magdalena Lopez Joj |
| 6. | Antonia Chacaj Tzoy |
| 7. | Antonia Lopez Chiti |
| 8. | Ana Tosalia Lopez Chiti |
| 9. | Celia Ofelia Muz Chiti |
| 10. | Vilma Magdalena Muz Chiti |

Beneficiaries of Group 1 from Sector 2

| | |
|-----|-------------------------|
| 1. | Juana Lux Lopez |
| 2. | Catarina Pu Chacaj |
| 3. | Antonia Chiti Lux |
| 4. | Maria Chiti Lux Segundo |
| 5. | Magdalena Lopez Lux |
| 6. | Maria Chiti Lux Tercero |
| 7. | Antonia Pu Lopez |
| 8. | Magdalena Lux Lopez |
| 9. | Maria Pu Lopez |
| 10. | Catarina Lux Mejia |

Beneficiaries of Group 2 from Sector 2

| | |
|-----|---------------------------|
| 1. | Cristina Lux Uz |
| 2. | Ana Muz Lopez |
| 3. | Catarina Muz Lopez |
| 4. | Maria Chiti Lux |
| 5. | Magdalena Lux Lopez |
| 6. | Maria Lopez Lux |
| 7. | Juan Lux Muz |
| 8. | Magdalena Chiti Pu |
| 9. | Antonia Luz Lopez |
| 10. | Antonia Muz Lopez |
| 11. | Magdalena Lopez Ixcoteyac |

Table 8.5.2 (3) Cash Flow Analysis of Layer-Chicken Raising Project

| Cycle | 1st | Remark |
|---------------------------------------|--------------------------|--------|
| Stage | 4 members (200 chickens) | |
| <i>In-coming</i> | | |
| 1. Production *1 | 60,660 | |
| 2. Grant from JICA *2 | 27,932 | |
| 3. Transfer from previous period | 0 | |
| 4. Provision for Revolving *3 | 38,808 | |
| 5. Total In-coming | 127,400 | |
| <i>Out-going</i> | | |
| 1. Project Cost | | |
| 1) Young Chicken (16 weeks) | 7,400 | |
| 2) Feed, medicine and vitamin | 31,408 | |
| 3) Labor for Caring Chicken | 10,800 | |
| 4) Hen house | 5,832 | |
| 5) Training / NGO technical guidance | 22,100 | |
| 6) Maintenance & Repair | 422 | |
| 7) Administrative charges | 1,820 | |
| 8) Sub-total | 79,782 | |
| 2. Contingency | | |
| 5% of total production cost : 1)~2) | 1,940 | |
| 3. Total Out-going | 81,722 | |
| <i>Balance</i> | | |
| Current Balance | 45,678 | |
| (Necessary investment for next cycle) | 38,808 | |
| Net Saving | 6,870 | |

*1 : 24 eggs/month/chickin x 200 chickins x 1 cycle(18 months) = 86,400 eggs/cycle
86,450 eggs/chickin x 0.65 Q/egg = 56,160 Q
150 old chickins x 30 Q/chickin = 4,500 Q
total 60,660 Q

*2 : Training / NGO technical guidance fee = 22,100 Q
Hen house construction including labor fee = 5,832 Q
total 27,932 Q

*3 : (Cost for young chickin) + (feed,medicine and vitamin)

Table 8.5.2 (4) Implementantion Schedule on the Project for Layer-Chicken Raising for Women's Group

| Project No | B-6 | 2001 | | | | | | | | | | | | 2002 | | | | | | | | | | | | 2003 | | |
|---|--|------|---|---|---|---|---|---|---|---|----|----|----|------|---|---|---|---|---|---|---|---|----|----|----|------|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 1 | 2 | 3 |
| Name of Plan | Project for Chiken raising by Village Women Grroup | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Target area | Pachum, Santa Maria Chiquimura, Totonicapan | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Implementatio Agency | Housewives' Group in Pachum | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Project purpose | Layer-chickens are raised by village houses' group and sell them in local market. Thereby, it plans to improve the incoe of the local inhabitants. | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Project execution | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1) Detail Studies | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| i) Detail studies on project sites | * (attended at meeting with villagers) | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ii) Meeting with village women | * (Selection of contact persons) | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| iii) Cosultation with MAGA stuff | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2) Establishment of organization | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| i) Selection of raising farmers' wives | ■ | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ii) Formation of chicken raising group | ■ | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| iii) Roles, duties of groupmembers | ■ | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3) Introduction of technologies | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| i) Programing of Training by MAGA | * (1) * (2) * (3) * (4) * (5) * (6) | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ii) Periodical patrol | x x x x x x x x x x x x x x x x | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4) Raising activities | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| i) Construction of chicken house | ■ | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ii) Supply of young chicken, feed etc. | ■ | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5) Sales of Egg | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| i) Collection of egg from members | ←.....→ | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ii) Egg marketing, and accounting | ←.....→ | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4) Monitoring and evaluation | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| i) Establishment of indicators | → | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ii) Monitoring and evaluation | → | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | △ | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | △ | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Training by MAGA: (1) Modern raising practices, (2) Book keeping, (3) Disease diagnosis and its countermeasures, (4) Effective feeding, (5) Sales of eggs, (6) Group accounting
Term of raising: From Sept. 2001 to Feb. 2003, 18 months
No. of chicken: 100 chickens per farmer, expected no. of eggs: 548 days x 90 % = 493 eggs/chicken
Periodical patrol: Once per month

Table 8.5.3(1) Project Cost for Drinking Water Quality Improvement Plan in Pachum (1/3)

Q1.00=Yen15.5

| Contenido | Especificacion | Cantidad | Unidad de Medida | Precio Unitario (Q.) | Costo (Q.) | Observacion |
|--|----------------|----------|------------------|----------------------|-------------------|-------------|
| Instalacion de Equipo Dosificador | | 2 | unidad | 16,675.73 | 33,351.45 | |
| Construccion de Tanque de Distribucion | | 2 | unidad | 96,928.22 | 193,856.44 | |
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| TOTAL | | | | | 227,207.89 | |

* No incluye obra civil como obra de excavacion, relleno, compactacion.

Table 8.5.3(1) Project Cost for Drinking Water Quality Improvement Plan in Pachum (2/3)

Q1.00=Yen15.5

| Contenido | Especificacion | Cantidad | Unidad de Medida | Precio Unitario (Q.) | Costo (Q.) | Observacion |
|--------------------------------|-----------------------------|----------|------------------|----------------------|------------------|--|
| DOSIFICADOR | DSA 310 RE-IE | 1 | Unidad | 4,886.60 | 4,886.60 | * Tubo de aspiracion transparente, 1.20m |
| VALVULA ESFERA | PLASTICA 1" | 2 | Unidad | 41.08 | 82.16 | de largo equipado con lastre y crepina. |
| MANOMETRO | PRESION 0-100 PSI | 1 | Unidad | 37.44 | 37.44 | |
| RED.BUSHING | PVC 6" x 3" | 2 | Unidad | 186.61 | 373.22 | * La mano de obra no incluye trabajos de |
| RED.BUSHING | PVC 3" x 1" | 2 | Unidad | 22.10 | 44.20 | obra civil. |
| UNION UNIVERSAL | PVC 1" | 4 | Unidad | 28.62 | 114.48 | |
| FILTRO DE 1" | (ANILLOS) MARCA AZUD | 1 | Unidad | 199.00 | 199.00 | |
| TEE | PVC 6" | 2 | Unidad | 588.82 | 1,177.64 | |
| VALVULA MARIPOSA | HF 6" WD-3010-3 | 1 | Unidad | 1,470.56 | 1,470.56 | |
| BRIDA | 6" PVC | 2 | Unidad | 324.89 | 649.78 | |
| TORNILLOS 5/8 x 6" COMP | | 16 | Unidad | 11.47 | 183.52 | 9,218.60 |
| MANO DE OBRA POR INSTALACION | | 1 | Unidad | 5,000.00 | 5,000.00 | |
| ARTICULOS VARIOS Y MISCELANEOS | | 1 | Unidad | 1,100.00 | 1,100.00 | |
| CASETA DE TANQUE DE DEPOSITO | 0.8x0.8xH1.2m | 1 | Unidad | | | |
| BLOQUE DE CONCRETO | Tipo liviano de 14x19x39cms | 0.096 | Millar | 2,546.67 | 244.48 | |
| CEMENTO | Gris nacional | 1 | 42.5kg | 30.10 | 30.10 | |
| ARENA | de rio | 0.8 | m3 | 74.62 | 59.70 | |
| LAMINA GALVANIZADA LISA | 3'x8' | 1 | Unidad | 108.63 | 108.63 | |
| PUERTA DE PLYWOOD | pino de 0.7x1.2m | 1 | Unidad | 400.00 | 400.00 | |
| TANQUE 55 GLS DE HIPOCLORITO | 10% | 1 | 55GLS | 514.22 | 514.22 | |
| TOTAL | | | | | 16,675.73 | |

Table 8.5.3(1) Project Cost for Drinking Water Quality Improvement Plan in Pachum (3/3)

Q1.00=Yen15.5

| Contenido | Especificacion | Cantidad | Unidad de Medida | Precio Unitario (Q.) | Costo (Q.) | Observacion |
|------------------|-----------------------|----------|------------------|----------------------|------------------|-------------|
| Cimiento | grava 3/4" | 1.35 | m3 | 132.50 | 178.88 | |
| Concreto de base | f'c = 2,000psi | 0.45 | m3 | 1,319.71 | 593.87 | |
| Concreto | f'c = 3,000psi | 20.98 | m3 | 1,384.84 | 29,053.94 | |
| Hierro corrugado | Grado 40.0ksi | 66.88 | Hlb | 507.00 | 33,908.16 | |
| Parada de agua | 150mmPVC | 11.41 | ml | 117.00 | 1,334.97 | |
| Escarela | Acero inoxidable 5/8" | 10 | unidad | 522.60 | 5,226.00 | |
| Formaletas | | 58 | m2 | 273.00 | 15,834.00 | |
| Tapa de manhole | | 4 | unidad | 1,560.00 | 6,240.00 | |
| Obra de soporte | | 10 | m3 | 78.00 | 780.00 | |
| Saffording | | 19 | m2 | 156.00 | 2,964.00 | |
| Sleeves | | 1 | Global | 585.00 | 585.00 | |
| Impermeable | | 20 | m2 | 11.47 | 229.40 | |
| | | | | | | |
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| | | | | | | |
| TOTAL | | | | | 96,928.22 | |

* No incluye obra civil como obra de excavacion, relleno, compactacion.

Table 8.5.4 (1) Project Cost : Extension Use of Improved Cooking Stoves and Sauna Bath "Temascal"

A. Summary of Cost

| Items | | Unit | Amount (Q.) JICA's fund | Amount (Q.) Beneficiaries | Amount (Q.) JICA+Beneficiaries |
|--|-----|-------|----------------------------|------------------------------|-----------------------------------|
| 1. Improved Stove | 130 | no | 114,400.00 | 13,000.00 | 127,400 |
| 2. Temascal-1a (Temascal and combustion box) | 10 | no | 16,200.00 | 5,600.00 | 21,800 |
| 3. Temascal-1b (only combustion box) | 30 | no | 15,000.00 | 600.00 | 15,600 |
| 4. Demonstration and Capacitation | - | LS | 20,400.00 | 0.00 | 20,400 |
| | | total | 166,000.00 | 19,200.00 | 185,200.00 |

B. Breakdown

1. Improved Stove

| Items | Quantity | Unit | Unit Cost | Amount (Q.) JICA's fund | Amount (Q.) Beneficiaries | |
|---|----------|------|-----------|----------------------------|------------------------------|-------|
| a. Materials | | | | | | |
| Metal Materials (plancha, chimney, Door etc.) | | LS | | 215.38 | 0.00 | |
| Civil Materials (cement, blocks etc.) | | LS | | 420.40 | 67.50 | |
| Sub-Total | | | | 635.78 | 67.50 | |
| b. Labor and others | | | | | | |
| monpower (skilled) | 1 | day | 75 | 130.00 | | |
| monpower (un-skilled) | 1 | day | 30 | | 30.00 | |
| Transportion and miscellaneous | | | *15% | 95.37 | | |
| Sub-Total | | | | 225.37 | 30.00 | |
| Total | | | | 861.15 | 97.50 | Total |
| | | say, | | 880.00 | 100.00 | 980 |

2. Temascal Type-1a (newly construction of a temascal w/ the combustion box)

| Items | Quantity | Unit | Unit Cost | Amount (Q.) JICA's fund | Amount (Q.) Beneficiaries | |
|---|----------|------|-----------|----------------------------|------------------------------|-------|
| a. Dome | | | | | | |
| Civil Materials (cement, blocks etc.) | | LS | | 712.00 | 420.00 | |
| Sub-Total | | | | 712.00 | 420.00 | |
| b. Combustion Box | | | | | | |
| Metal Materials (plancha, chimney, Door etc.) | | LS | | 212.66 | 0.00 | |
| Civil Materials (cement, blocks etc.) | | LS | | 157.80 | 13.20 | |
| Sub-Total | | | | 370.46 | 13.20 | |
| c. Labor and others | | | | | | |
| monpower (skilled) | 4 | days | 90 | 360.00 | | |
| monpower (un-skilled) | 4 | day | 30 | | 120.00 | |
| Transportion and miscellaneous | | | *15% | 162.37 | | |
| Sub-Total | | | | 522.37 | 120.00 | |
| Total | | | | 1,604.83 | 553.20 | Total |
| | | say, | | 1,620.00 | 560.00 | 2,180 |

3. Temascal Type-1b (only installation of the combustion box into an existing temascal)

| Items | Quantity | Unit | Unit Cost | Amount (Q.) JICA's fund | Amount (Q.) Beneficiaries | |
|--------------------------------|----------|------|-----------|----------------------------|------------------------------|-------|
| a. Combustion Box | | | | | | |
| Chimney, Combustion Box etc. | | LS | | 382.66 | 0.00 | |
| Sub-Total | | | | 382.66 | 0.00 | |
| b. Mon-power | | | | | | |
| monpower (skilled) | 0.5 | days | 90 | 45.00 | | |
| monpower (un-skilled) | 0.5 | day | 30 | | 15.00 | |
| Transportion and miscellaneous | | | *15% | 57.40 | | |
| Sub-Total | | | | 102.40 | 15.00 | |
| Total | | | | 485.06 | 15.00 | Total |
| | | say, | | 500.00 | 20.00 | 520 |

4. Temascal Type-2 (house-type Temascal w/ combustion box)

| Items | Quantity | Unit | Unit Cost | Amount (Q.) JICA's fund | Amount (Q.) Beneficiaries | |
|---------------------------------------|----------|------|-----------|----------------------------|------------------------------|-------|
| a. Temascal House | | | | | | |
| Civil Materials (cement, blocks etc.) | | LS | | 1,711.49 | 0.00 | |
| Sub-Total | | | | 1,711.49 | 0.00 | |
| b. Combustion Box | | | | | | |
| Chimney, Combustion Box etc. | | LS | | 362.50 | 0.00 | |
| Sub-Total | | | | 362.50 | 0.00 | |
| c. Labor and Others | | | | | | |
| monpower (skilled) | 6 | days | 75 | 450.00 | | |
| monpower (un-skilled) | 6 | day | 30 | | 180.00 | |
| Transportion and miscellaneous | | | 15% | 311.10 | | |
| Sub-Total | | | | 761.10 | 180.00 | |
| Total | | | | 2,835.09 | 180.00 | Total |
| | | say, | | 2,840.00 | 180.00 | 3,020 |

5. Demonstration and Construction Supervision

| Items | Quantity | Unit | Unit Cost | Amount (Q.) |
|--|----------|------|-----------|-------------|
| a. materials | | | | |
| demonstration temascal Type-1a | 1 | no | 2,180.00 | 2,180.00 |
| demonstration temascal Type-1b | 1 | no | 520.00 | 520.00 |
| demonstration temascal Type-2 | 1 | no | 3,020.00 | 3,020.00 |
| Sub-Total | | | | 5,720.00 |
| b. Demonstration, capacitation and administration | | | | |
| engineer | 30 | days | 200.00 | 6,000.00 |
| assistants | 60 | days | 100.00 | 6,000.00 |
| Transportation and others | | *20% | | 2,658.00 |
| Sub-Total | | | | 14,658.00 |
| Total | | | | 20,378.00 |
| | | say, | | 20,400.00 |

Table 8.5.4 (2) Materials to be Prepared by Beneficiaries

(Unit : Materials for 1 no.)

1. Improved Stove

| Items | Quantity | Unit |
|--|----------|------|
| a. Materials | | |
| Adobe (sun-dried bricks) | 20 | no |
| White sand | 3 | bag |
| River sand | 3 | bag |
| Panela | 3 | no |
| b. Labor and others | | |
| monpower (un-skilled) | 1 | day |
| Transportion from unloading place to their house | 0.5 | day |

2. Temascal-1 (newly construction of a temascal w/ the combustion box)

| Items | Quantity | Unit |
|--|----------|------|
| a. Dome | | |
| Adobe (sun-dried bricks) | 210 | no |
| b. Stove | | |
| White sand | 3 | bag |
| River sand | 0.5 | bag |
| c. Labor and others | | |
| monpower (un-skilled) | 4 | day |
| Transportion from unloading place to their house | 0.5 | day |

3. Temascal-2 (only installation of the combustion box into an existing temascal)

| Items | Quantity | Unit |
|--|----------|------|
| a. Stove | | |
| | - | - |
| b. Mon-power | | |
| monpower (un-skilled) | 0.5 | day |
| Transportion from unloading place to their house | 0.5 | day |

Table 8.5.4 (3) Implementation Schedule : Improved Cooking Stoves and Sauna Bath "Temascal"

| Items | 2001 | | | | | | | | 2002 | | | | | | | |
|--|------|-----|-----|-----|-----|-----|-----|-----|------|-----|-----|-----|-----|-----|-----|--|
| | Aug | Sep | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | |
| a. Selection of NGO for the implementation | | | | | | | | | | | | | | | | |
| NGO Selection and Contracting Works | ■ | | | | | | | | | | | | | | | |
| b. Design and Demonstration Stage | | | | | | | | | | | | | | | | |
| Preparation of Demo | | ■ | | | | | | | | | | | | | | |
| Construction of Demo-Stove and Temascal | | | ■ | | | | | | | | | | | | | |
| Trial and Observation Period | | | | ■ | | | | | | | | | | | | |
| Interview with Villagers | | | | | ■ | | | | | | | | | | | |
| Final Decision of Design | | | | | | ■ | | | | | | | | | | |
| Selection of Beneficiaries | | | | | | | ■ | | | | | | | | | |
| c. Construction Stage | | | | | | | | | | | | | | | | |
| Arrangement and Delivery of Material | | | | | | ■ | | | | | | | | | | |
| Construction Period | | | | | | | ■ | | | | | | | | | |
| Capacitation and Lecture for O&M | | | | | | | | ■ | | | | | | | | |
| d. Monitoring and Evaluation | | | | | | | | | | | | | | | | |
| Initial Condition Survey | | | | | | | | | | | | | | | | |
| Monitoring and Evaluation Survey | | | | | | | | | | | | | ■ | | | |

Table 8.5.4 (4) Expected Project Benefits

Project : Extansion Use of Improved Cooking Stoves and Sauna Bath"Temascal"

| | |
|---|--|
| - Assumed reduction % of firewood in the Project in a year (*1) 20% | |
| - Cost of firewood (*2) : Q.100 / tarea | 0.3 Q./piece of firewood (1 tarea = 300 pieces of firewood) |
| - No. of Facilities to be constructed | Stove: 130 nos. Temascal: 40 nos. |

| | |
|--|------------------------|
| (Without Project) | |
| - Consuming rate of firewood : | |
| Cooking with open fire (*3) | 26 pcs/day/family |
| Original Temascal (*2) | 32 pcs/time/family |
| - Consuming amount of firewood in a year: | |
| Cooking with open fire | 9,490 pcs/year/family |
| Original Temascal(*4) | 3,338 pcs/year/family |
| | <hr/> |
| | 12,828 pcs/year/family |
| - Total cost for firewood in a year | |
| Cooking with open fire | 2,847 Q./year/family |
| Original Temascal | 1,001 Q./year/family |
| | <hr/> |
| | 3,848 pcs/year/family |
| - Total cost for firewood in a year for the entire project | |
| Cooking with open fire | 370,110 Q./year |
| Original Temascal | 40,056 Q./year |
| | <hr/> |
| | Total 410,166 Q./year |

*1: According to a report of the "PRODETOTO" project, its reduction rate of Improved Stove was 46%.

*2: Based on the results of the survey made by the Study Team/MAGA.

*3: Derived from the report of "PRODETOTO". 1 family = 8persons

*4: Frequency of taking a sauna; 2 times per week in average based on the survey made by the Study Team.

| | |
|-------------------------------------|-----------------|
| (With Project) | |
| - Total cost for firewood in a year | 328,133 Q./year |
| 20% of reduction rare of firewood | |

| | |
|--|----------------|
| (Benefit per Year) | 82,033 Q./year |
| (Initial Project Cost) JICA and Beneficiaries' Cost | 185,200 Q. |
| (Rapairing Cost in every 5 years) | 17,000 Q. |

| | |
|---|-----|
| (Economic Internal Return Rate : EIRR) | 78% |
|---|-----|

| EIRR Calculation | | | | | | (unit : Q.) |
|------------------|--------------|----------|------------|---------|---------------|-------------|
| year | Capital Cost | O&M Cost | Total Cost | Benefit | Net Cash Flow | |
| 1 | 185,200 | | 185,200 | 82,033 | -103,167 | |
| 2 | | | 0 | 82,033 | 82,033 | |
| 3 | | | 0 | 82,033 | 82,033 | |
| 4 | | | 0 | 82,033 | 82,033 | |
| 5 | | 17,000 | 17,000 | 82,033 | 65,033 | |
| 6 | | | 0 | 82,033 | 82,033 | |
| 7 | | | 0 | 82,033 | 82,033 | |
| 8 | | | 0 | 82,033 | 82,033 | |
| 9 | | | 0 | 82,033 | 82,033 | |
| 10 | | 17,000 | 17,000 | 82,033 | 65,033 | |
| 11 | | | 0 | 82,033 | 82,033 | |
| 12 | | | 0 | 82,033 | 82,033 | |
| 13 | | | 0 | 82,033 | 82,033 | |
| 14 | | | 0 | 82,033 | 82,033 | |
| 15 | | | 0 | 82,033 | 82,033 | |

| |
|--|
| Other Benefits and Effects |
| - Conservation of forestries and watershed |
| - Reducing respiratory diseases caused by smoke |
| - Reducing accidental skin burns around a cooking fire |
| - Improving the health condidions with taking bath more frequently |

Table 8.5.5(1) Role and Responsibility of Each Actor for MPU Plan

| | |
|-------------------------|---|
| <p>CDRO (NGO)</p> | <ul style="list-style-type: none"> (1) Supervision and administration of MPU activities (2) Initial training and regular retraining of health promoter and committee members (3) Training and supervision of health committee concerning financing, accounting, stock control and maintenance and operation (Monthly supervision and recording of accounting and stock control done by Health Committee) (4) Initial provision of essential drugs and equipment (5) Providing the patient with prescription by the doctor visiting the village weekly (6) Regular monitoring using appropriate indicators (7) Regular purchasing and selling of drugs to MPU |
| <p>Health Committee</p> | <ul style="list-style-type: none"> (1) Monthly checking and recording of monthly benefit, kinds of drugs sold, stock control, and allocation of incentives to promoter (2) Coordination between MPU and CDRO (3) Coordination among health related personnel in the villages such as health promoter, health guards and health committee (4) Monitoring MPU activities |
| <p>Health Promoter</p> | <ul style="list-style-type: none"> (1) Selling drugs and provide basic first aid treatment at MPU (2) Regular purchasing of drugs with admission from health committee through CDRO (3) When the patient is in serious situation or when they need prescription, advice them to go to appropriate health facilities such as Health Center (4) Checking and recording daily benefit, kinds of drugs sold, stock control (5) In case there are some problems, contact to CDRO through health committee (6) Receiving regular retraining from CDRO |
| <p>Users</p> | <ul style="list-style-type: none"> (1) Appropriate use of the drugs according to the guidance given by health promoter (2) Avoid giving the drugs bought to the others (3) Avoid self-treatment and go to the appropriate health facilities in case symptoms do not disappear |
| <p>JICA Study Team</p> | <ul style="list-style-type: none"> (1) Supervision of CDRO Activities (2) Financing for initial input (3) Monitoring and Evaluation |

Table 8.5.5(2) Cost Estimation for Plan for Installation of Minimal Pharmacy Unit

| Items | Unit price | Amount | Total | Particular |
|--|------------|--------|--------|---|
| 1. Training from NGO(CDRO) | | | | |
| (1) Training for 1 community promoter | | | | First Aid treatment included Pharmaceutical issues |
| Salary for trainer | 600 | 10 | 6,000 | |
| Material cost | 600 | 2 | 1,200 | |
| Transportation/lunch for trainees | 50 | 20 | 1,000 | |
| Transportation/lunch for trainers | 50 | 10 | 500 | |
| (2) Training for health committee members | | | | one day training accounting methods |
| transportation/lunch for trainers | 100 | 1 | 100 | |
| transportation/lunch for trainees | 50 | 5 | 250 | |
| Materials | 100 | 5 | 500 | |
| salary for trainer | 400 | 1 | 400 | |
| (4)One day job on training in MPU | | | 500 | On the job training at MPU for 1 day |
| (5) Retraining of community pharmacist and committee members(2 times) | | | | |
| human resource | 450 | 2 | 900 | |
| transportation/lunch for trainers | 150 | 2 | 300 | |
| transportation/lunch for trainees | 50 | 12 | 600 | |
| (6)Monthly follow-up and monitoring for one year | | | | supervision given by NGO |
| human resource | 85 | 12 | 1,020 | |
| transportation | 45 | 12 | 540 | |
| (7)Purchasing of initial drugs and Transportation | 1300 | 1 | 1,300 | |
| subtotal for Training | | | | 15,110 |
| 2. Drug input | | | | |
| | 3193 | 6 | 19,158 | for MPU during 6 months |
| subtotal for drug input | | | | 19,158 |
| 3. Equipment | | | | |
| a. essential equipment for first aid, | | | | |
| Mertiolate bottle(for 3 months) | 27.9 | 1 | 28 | |
| Cotton(for 3 months) | 22 | 3 | 66 | |
| 1 Thermometer | 4.5 | 1 | 5 | |
| Antibacterial soap × 2 | 3.25 | 2 | 7 | |
| 1 Soap box | 2.5 | 1 | 3 | |
| 1 Stainless steel tray | 225 | 1 | 225 | |
| 1 Surgeon scissors | 24 | 1 | 24 | |
| 1 Pinze | 32 | 1 | 32 | |
| Fabric bandage (for 3months) | 7 | 5 | 35 | |
| 1 towel | 15 | 1 | 15 | |
| b.Equipment for MPU | | | | |
| Shelf | 900 | 2 | 1,800 | |
| Chair | 200 | 2 | 400 | |
| Table | 239 | 1 | 239 | |
| Money Boxes | 115 | 2 | 230 | |
| c. Adminisstration equipment-notebook and pen | | | | |
| 5 notebooks and 4 pens | 50 | 1 | 50 | |
| d. Minimal Pharmacy Unit building | | | | |
| subtotal for equipment | 13967 | 1 | 13,967 | 17,124 |
| TOTAL | | | | 51,392 |

Table 8.5.5(3) Working Schedule for Plan for Installation of Minimal Pharmacy Unit

| Items | 2001 | | | | | | | | 2002 | | | | | | | |
|---|------|-----|-----|-----|-----|-----|-----|-----|------|-----|-----|-----|-----|-----|-----|-----|
| | Aug | Sep | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov |
| Training for Community Pharmacist | | ■ | | | | | | | | | | | | | | |
| Training for committee members | | | ■ | | | | | | | | | | | | | |
| Building of MPU | | ■ | | | | | | | | | | | | | | |
| Purchasing and provision of drugs and equipment | | ■ | | | | | | | | | | | | | | |
| MPU starts functioning | | | | | | | | | | | | | | | | |
| Monthly supervision by Health Committee | | | | | | | | | | | | | | | | |
| Monthly follow-up and monitoring by CDRO | | | | | | | | | | | | | | | | |
| Regular retraining for community pharmacist and committee | | | | | | | | ● | | | | | | ● | | |
| Evaluation by JICA Study Team, CDRO and Health Committee | | | | | | | | | | | | | | | ● | |

Table 8.5.5(4) Variety and amount of drugs for initial inputs in MPU in Pachum

| drug | CDRO estimatío | FIS estimation | Averag | study team suggestion | unit price proam | Initial drug input |
|---|-------------------|-------------------|--------|-----------------------------|------------------------|--------------------------|
| acetaminofen 100 mg/ml | 167 | 11 | 89 | | 2.84 | 252.29 |
| acetaminofen 120 mgs/5ml | 167 | 28 | 97 | | 2.21 | 214.55 |
| acetaminofen 500 mg tab. | 167 | 165 | 166 | 300 | 0.07 | 21.00 |
| acetaminofen 80 mg tabs | 0 | 0 | 0 | 20 | 0.07 | 1.40 |
| acido folico | 333 | 110 | 222 | | 0.09 | 19.95 |
| albendazol 200 mgs tab | 17 | 110 | 63 | 100 | 0.11 | 11.00 |
| albendazol 200mgs/5ml suspencion | 17 | 28 | 22 | 30 | 1.35 | 40.50 |
| alcohol isopropilico | 8 | 1 | 5 | | 2.5 | 11.79 |
| alum. Y mag. Hidroxido/dimetilpolisilox | 33 | 110 | 72 | | 6.16 | 441.47 |
| amoxicilina 250 mgs/5 ml fco | 17 | 28 | 22 | 40 | 5.52 | 220.80 |
| amoxicilina 500 mgs cap | 67 | 110 | 88 | 300 | 0.36 | 108.00 |
| bencilo benzoato 25% | 0 | 28 | 14 | 30 | 3.12 | 93.60 |
| bromexina 4mg/ml jarabe | 0 | 11 | 6 | 20 | 1.97 | 39.40 |
| cloranfenicol 0.5% sol. Oft gotero | 0 | 0 | 0 | 10 | 2.15 | 21.50 |
| cloranfenicol 1% sol. Oft tubo | 0 | 11 | 6 | | 2.76 | 15.18 |
| clorfeninamina maleato 2mg/5ml | 17 | 0 | 8 | | 2.33 | 19.42 |
| clorferinamina maleato 4 mg | 17 | 0 | 8 | | 0.06 | 0.50 |
| clotrimazol 2% crema tubo | 8 | 28 | 18 | | 8.5 | 152.29 |
| dimenhidranato | 0 | 28 | 14 | | 0.24 | 3.30 |
| ferroso sulfato frasco | 333 | 0 | 167 | 180 | 2.98 | 536.40 |
| guayacolato de glicerilo | 0 | 17 | 8 | 20 | 1.66 | 33.20 |
| hidroxido de magnesio 360 ml | 0 | 11 | 6 | | 6.15 | 33.83 |
| ibuprofen 400 mgs | 167 | 110 | 138 | | 0.08 | 11.07 |
| ketoconazol 2% crema | 0 | 0 | 0 | 10 | 5.15 | 51.50 |
| ketoconazol 200 mgs tab | 0 | 0 | 0 | 30 | 0.33 | 9.90 |
| mebendazol 100 mgs/5ml | 0 | 11 | 6 | 25 | 0.98 | 24.50 |
| metrodinazol 125mg/5ml | 67 | 28 | 47 | 50 | 1.94 | 97.00 |
| metronidazol 500 mgs tabs | 0 | 110 | 55 | 150 | 0.1 | 15.00 |
| peroxido hidrogeno 3% | 0 | 0 | 0 | 5 | 0.73 | 3.65 |
| ranitidina 150mgs | 67 | 0 | 33 | | 0.17 | 5.67 |
| salbutamol 2mg/5ml | 0 | 28 | 14 | 30 | 1.12 | 33.60 |
| sro | 0 | 110 | 55 | | 0.85 | 46.75 |
| secnidazol 500 mgs tabs | 0 | 110 | 55 | 75 | 0.74 | 55.50 |
| sulfacetamida 10% oft | 0 | 28 | 14 | | 2.4 | 33.00 |
| tinidazol | 17 | 0 | 8 | 80 | 0.28 | 22.40 |
| trimetropin sulfa 160/800 tabs | 83 | 110 | 97 | 150 | 0.2 | 30.00 |
| trimetropin sulfa 40/200 fco | 17 | 55 | 36 | 50 | 2.16 | 108.00 |
| vitaminas multiples capsula | 167 | 275 | 221 | 300 | 0.13 | 39.00 |
| vitaminas multiples gotero | 0 | 110 | 55 | 100 | 3.15 | 315.00 |
| Total per month | | | | | | 3193 |

is from Venta Social List.
The others are all from Botequine list