

CB-NRM Technical Manual

Vol. 3: Income Generating/Livelihood Development



Prepared by

**The Project for Community-Based Sustainable Natural Resource
Management in the Democratic Republic of Timor-Leste**



From
the People of Japan

FOREWORD

Forest degradation and deforestation is one of the critical issues that the Government of Timor-Leste (GoTL) needs to tackle to achieve sustainable socio-economic development in the country. The study made in 2013 shows that approximately 184,000 ha of forest has disappeared between 2003 and 2012 and around 170,000 ha of dense forest has been degraded into sparse canopy forests for the same period.

Community-Based Natural Resource Management (CB-NRM) is an approach to nature conservation by recognizing the rights of local communities to benefit from sustainable management of natural resources (forests, lands, water, and biodiversity) within a designated area. This is an alternative to a top-down regulatory approach, which has not been necessarily effective in many countries, especially when the regulations do not fully cope with the changes in social, cultural, and economic contexts in the countries.

The Project for Community-Based Sustainable Natural Resource Management (the CB-NRM Project) jointly implemented by the Japan International Cooperation Agency (JICA) and the Ministry of Agriculture and Fisheries (MAF), particularly the National Directorate of Forest and Watershed Management (NDFWM), has developed an operative mechanism for CB-NRM in Timor-Leste. The same project has also issued the following manuals over the course of the project to help MAF expand the same mechanism in major river basins in the country.

- ◆ Operation Manual for Establishment of the CB-NRM Mechanism at the Village Level
- ◆ CB-NRM Technical Manuals
 - Vol. 1: Seedling Production and Tree Planting Promotion
 - Vol. 2: Sustainable Upland Farming Promotion
 - Vol. 3: Income Generating/Livelihood Development
- ◆ Manual for Formation of a Watershed Management Council

The CB-NRM Technical Manuals introduce key techniques/skills relevant to sustainable land and forest management as well as livelihood development along with the detailed procedures for provision of hands-on training. They are based on learning from experiences in the field; therefore, we, as representatives of the MAF, strongly recommend that the manuals should be widely used by field practitioners of not only MAF but also other organizations working in the forestry and agriculture sectors as a guiding tool for provision of agriculture and forestry extension services to local communities.



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About the CB-NRM Manuals

The CB-NRM Manuals have been developed and published by the JICA and MAF Joint Project named the Community-Based Sustainable Natural Resource Management to provide practical and useful tools for planners and practitioners in the forest sector in Timor-Leste to enable them to protect and manage natural resources in a collaborative and sustainable manner. There are three (3) types of manuals as shown below.

- i) Operation Manual for Establishment of the CB-NRM Mechanism at the Village Level
- ii) CB-NRM Technical Manuals
 - Vol. 1: Seedling Production and Tree Planting
 - Vol. 2: Sustainable Upland Farming Promotion
 - Vol. 3: Income Generating/Livelihood Development
- iii) Manual for Formation of the Watershed Management Council

The Operation Manual is the main document which spells out the standard operation procedures for introduction and establishment of the CB-NRM mechanism at the village level. It is designed for use by planners, field practitioners, and researchers working/studying in the forest sector in Timor-Leste, especially those who engage in forest protection, watershed conservation, and community forestry in the National Directorate of Forest and Watershed Management (NDFWM).

The CB-NRM Technical Manuals supplement the Operation Manual by introducing relevant techniques and skills which can help rural communities use and manage natural resources, especially lands and forests, in a productive and sustainable manner. They will be used mainly by field extension workers (such as MAF municipal staff: namely, municipal officers, extension officers, and forest guards) and NGO staff, as technical references for their field works.

The Manual for Formation of the Watershed Management Council introduces the process to develop a collaboration platform/framework for sustainable natural resource management at the sub-municipal or sub-watershed level, which can also lay groundwork for expansion of the CB-NRM mechanism on watershed scale. As one of the key approaches to improvement of environmental governance at the watershed level by enhancing coordination and networking among local stakeholders, this manual can be of help for those who engage in watershed management.

Furthermore, the JICA and MAF Joint Project has also developed and issued simplified versions of those manuals to help users in the field easily follow the procedures or apply the techniques described in the manuals.

It is hoped that these manuals with their simplified versions will serve as practical references for a wide range of stakeholders in the forest sector in Timor-Leste.

CB-NRM Technical Manual

Vol. 3: Income Generating / Livelihood Development

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Vol.3: Income Generating and Livelihood Development (IG/LD)

1. Introduction

1.1 Rationale for the Techniques

Improvement of livelihoods of local communities is one of the essential activities to reduce human pressure on forest resources in rural areas since many of them have heavily relied on forest and forest-related natural resources for their livelihoods. In particular, the well designed resource-based income generating/livelihood development (IG/LD) activities can not only lessen the human pressure on forest and natural resources by providing alternative livelihoods to local communities, but also contribute to building of a mechanism that would encourage them to protect and manage natural resources in a sustainable manner on their own initiatives.

At the same time, IG/LD techniques would highly meet local communities' needs, as they could develop alternative sources of cash income or reduce losses or expenses in the daily life. It is also worth noting that IG/LD support could build the capacities and skills of women and enhance their self-belief simultaneously over the course of the activities.

1.2 Objectives of the Techniques

The main objective of the income generating and livelihood improvement (IG/LD) techniques is to enable local communities, especially women, to use their natural and agricultural resources for improving their livelihoods, possibly developing an alternative source of income. Specifically, the techniques aim to enable them to:

- assess potentials of existing natural and agricultural resources available in the localities for livelihood development;
- produce marketable products made of existing natural and agricultural resources or long-life food made of perishable food by using food processing techniques;
- reduce living expenses by introduction of simple techniques/tools/equipment;
- promote processed products to sell them to major markets in Dili; and
- manage earnings from IG/LD activities in a transparent manner.

1.3 Objectives of the Manual

This manual aims to guide field practitioners and planners who intend to introduce IG/LD techniques in rural areas in Timor-Leste, specifically targeting MAF Municipal Officers in the relevant technical fields, Extension Coordinators, and technical staff of NGOs and relevant projects supported by MAF Development Partners, to name a few.

As the CB-NRM Information Kit¹ prepared in 2015 introduces a wide range of IG/LD options which could be applied by local communities in Timor-Leste, the emphasis of the manual is put on the introduction of key IG/LD techniques, especially food processing techniques, referring the results of the IG/LD support done by the JICA CB-NRM Project, so that the users of the manual could deepen the understanding of the processes of and procedures for introducing IG/LD techniques in the local settings with some important tips.

¹ The CB-NRM Information Kit which compiles the existing techniques and skills useful for CB-NRM prepared by the JICA CB-NRM Project in July 2015.

2. Approaches to Effective Transferring of Techniques

2.1 Hands-on Training and Follow-up On-the-Job Training (OJT)

Hands-on training is one of the training methods to give trainees opportunities to practice and learn techniques through the following steps during the hands-on training course.

i) Observation of demonstration by a trainer

Trainees first observe the demonstration made by a trainer to grasp the process and have a clear image of the final product.

ii) Imitation of techniques with guidance from a trainer

After the demonstration done by a trainer, trainees would imitate the process that they observed with the technical assistance from a trainer. By doing so, trainees are expected to learn the process of and procedures for producing products. Trainees should be given sufficient time and opportunities for them to practice techniques in the course of training.

It is advisable to give opportunities for trainees to continuously practice techniques as OJT so that they could fully acquire the same. In follow-up OJT, core members who have learned techniques in the hands-on training course might be able to be trainers or mentors for other trainees. Furthermore, OJT could be good opportunities for such members who have learned techniques to improve and upgrade their skills.

Some important elements considered for effective hands-on training and OJT are summarized below.

Important Elements for Effective Hands-on Training and OJT on IG/LD

Elements	Descriptions
a. Participants in training	A training course should be designed for not more than 10 participants in principle to maintain the effectiveness of the training course. In case the number of participants is expected to be more than 10, at least two (2) trainers should be allocated for the course.
b. Venue of training	In principle, the center of the village, such as suco office or aldeia office, should be used as a venue for training since the majority of trainees are accessible to such places; hence, they do not feel a sense of impartiality in selection of the venue.
c. Trainers / Facilitators	A resource person or trainer should be hired from external sources or found among technical officers of the National Directorate of Agribusiness since the majority of extension officers are not familiar with IG/LD techniques, especially food processing techniques. Extension officers should collaboratively work with the trainer to learn the process so that they could help trainees/local communities practice techniques in the follow-up OJT.
d. Target groups	Women in communities should be the targets of training courses as the majority of IG/LD activities would directly relate to women's domestic tasks, such as food processing, handcrafting, etc.
d. Monitoring	The hygiene conditions and quality of final products should be checked periodically in the course of OJT on food processing techniques to maintain the quality of products.
e. Training opportunities	Sufficient number of hands-on training and OJT courses should be arranged so that trainees/local communities could properly apply techniques and produce quality products.

Source: JICA Project Team (2015)

2.2 Resource-based

“Resource-based” is one of the crucial concepts that could make IG/LD activities at the village level sustainable, as it might not be easy for local communities to continue any activity that requires materials to be procured from outside sources. Hence, IG/LD activities in a village should be based on resources available in its locality. Due attention should be paid to not only natural resources but also cultural and human resources.

2.3 Participatory

Topics for hands-on training should be selected by trainees/local communities in a participatory manner, so that they could accept and apply the techniques without hesitation. It is, therefore, important to involve them in the entire processes of introduction of IG/LD techniques (i.e., i) assessment of existing resources available in the locality; ii) examination and prioritization of potential/possible IG/LD activities; iii) practice of techniques in hands-on training and OJT, and iv) evaluation of the results of the activities) to enable them to evaluate the necessity of IG/LD activities properly and at the same time enhance a sense of ownership of the same.

2.4 Women Centric

Women should be the main target group of IG/LD support, since the majority of the IG/LD activities, especially food processing-typed ones, directly relate to women’s daily tasks. IG/LD activities would also be good opportunities to involve women in the framework of CB-NRM since other CB-NRM activities, such as seedling production, tree planting, and sloping land agriculture, are rather male-centered activities.

2.5 Continuous Coaching

It is unrealistic to expect that trainees/local communities could fully learn and acquire IG/LD techniques only by having a set of hands-on training course. Continuous training and coaching are indispensable for ensuring that they could be capable enough to operate IG/LD activities using techniques introduced in the training course.

2.6 Framework to Transfer Techniques

The following table shows the overall framework and procedures for transferring techniques/skills of introducing IG/LD activities selected by trainees/communities.

Proposed Framework of Transferring of Techniques

Items	Outlines
Duration	2 years
Extension method	Hands-on training and Follow-up OJT
Target group	10 trainees or women/group or aldeia
Activities planned in the 1 st year	<ul style="list-style-type: none"> a. Assess existing resources available in the locality and select potential IG/LD activities based on the availability of resources in a participatory manner. b. Develop a training curricula composed of hands-on training courses on the selected potential IG/LD activities. c. Conduct hands-on training courses at suco office to provide opportunities for trainees/women to practice techniques relating to the selected IG/LD activities. d. Help them continue to practice the techniques at the aldeia level after the training courses. e. Help them evaluate the results of the activities and check if any of the IG/LD activities should be replaced with any other options in the 2nd year training curricula.

Items	Outlines
Activities planned in the 1 st year	<ul style="list-style-type: none">a. Conduct hands-on training courses at suco office to help trainees/women recapture the process and techniques needed for the selected IG/LD activities.d. Hold OJT courses on IG/LD activities to help trainees/women improve the quality of products for sales.c. Encourage them to help each other practice the techniques in OJT courses.d. Help them sell their products to major buyers in Dili or other markets.d. Hold a training course and provide daily coaching on financial management of the group.

Source: JICA Project Team (2015)

3. Process of Introduction of Potential IG/LD Activities

3.1. Overall View

Introduction of potential IG/LD activities should involve trainees/women in the whole process from selection of potential IG/LD activities to operations and management of the same in addition to provision of hands-on training/OJT on specific topics, so that trainees/women could continue the same with a sense of ownership and enjoy benefits from the activities. Hence, the process of introduction of potential IG/LD activities should be composed of the following steps.

- 1) Assessment of resources available in the locality and selection of potential IG/LD activities
- 2) Hands-on training/OJT on potential IG/LD activities (food processing techniques)
- 3) Hands-on training/OJT on potential IG/LD activities (other techniques)
- 4) Assistance in marketing products and managing a small scale enterprise

Food processing-typed IG/LD activities are the typical options of the resource-based approach. The food processing techniques aim to preserve perishable food for a long period of time and/or add values to local products so that they could be sold at markets in Dili. On the other hand, other IG/LD activities are not necessarily based on existing resources, but focus on building up skills that would help them reduce living expenses and possibly run a small-scale enterprise using a simple technique or tool/equipment.

Needless to say, marketing is one of the crucial aspects to enable trainees/women to benefit from IG/LD activities. In particular, promotion of products and negotiations with buyers are essential for effective marketing.

Due consideration should also be given to financial management in the operations of IG/LD activities to ensure the continuous operations. Among others, bookkeeping is requisite for sound operations of a business as it is the basis for assessments of costs and benefits of a business and benefit sharing among women/communities who engage in a business.

3.2 Assessment of Resources in the Locality and Selection of Potential IG/LD Activities

3.2.1 Resource Inventory

(1) Objective

The main objective of an inventory of resources available in the locality is to help trainees/women assess natural, customary and human resources existing in a village and identify useful ones for IG/LD options.

(2) Procedures for Application

The following Participatory Rural Appraisal (PRA) tools shall be used for assessment of existing resources in a village.

- i) Resource mapping
 - ii) Seasonal calendar
 - iii) Resource assessment by group discussion
- a. Resource mapping (Please refer **Attachment-1: Methods of Resource Mapping and Seasonal Calendar** for more detail.)
- i) Organize a meeting with trainees/women and other communities and explain the purpose of the meeting.
 - ii) Select a proper place for preparing a resource map in consultation with village leaders.
 - iii) Ask them to show the major resources and land marks of a village, such as river, roads, mountains, and village boundaries, by depicting them on a large-sized paper or putting/using materials locally available (chalks, stones, twigs, leaves, etc.) on ground.
 - iv) Ask them to show other major land marks, such as settlement, water sources, church, school, suco office, and sacred subjects on the paper or ground in the same manner.
 - v) Ask them to add information on land uses (e.g., forests with density and species, coffee plantations, areas for shifting cultivation, permanent farms with crops, grassland, and grazing land) and other natural resources (places for collection of firewood, honey, tua mutin, and other products) on the paper or ground in the same manner.
 - vi) Organize a small group (less than 10 members) and conduct a short observation walk to validate and observe land uses and available resources.
 - vii) Reflect any information collected by the field validation to the resource map prepared.
 - viii) Transcribe the resource map and all the information added to the map into a flipchart.
- b. Seasonal calendar (Please also refer **Attachment-1: Methods of Resource Mapping and Seasonal Calendar**.)
- i) Prepare a blank format for a seasonal calendar composed 14 columns (1 column for name of resources, 12 columns for month, and the last one for remarks) and lines as

- many as major resources available in a village. (**Attachment-2** shows a sample of seasonal calendar.)
- ii) Fill names of natural and agriculture resources in lines in the format.
 - iii) Tick or mark the columns of months when such natural and agricultural resources are harvested.
 - iv) In case any of natural resources are planted by communities, take notes in the column of remarks.
- c. Resource assessment
- i) Make a list of resources (natural, cultural, and human resources) existing in a village based on the results of the sessions described above.
 - ii) Discuss possible uses of the identified resources for production of processing foods and other types of IG/LD activities.
 - iii) Assess and discuss the volume/prevalence of resources that can be used for IG/LD.
 - iv) Identify the potential food processing-type IG/LD activities.

(3) Preparation of materials

The following materials should be prepared for the meeting.

- ▶ Flipcharts
- ▶ Felt-type pens with several colors
- ▶ Pens and pencil
- ▶ Masking tape

(4) Timeframe of training

This meeting shall be held prior to selection of potential IG/LD activities. The standard timeframe of the meeting is shown below.

Standard Timeframe of Resource Inventory

Activities	Timing	Duration of the Session
i) Resource mapping	Beginning of introduction	One day
ii) Seasonality bar chart	Beginning of introduction	One day
iii) Selection of activities	Beginning of introduction	One day

Source: JICA Project Team (2015)

(5) Further references

Lists of agricultural and natural resources existing in Timor-Leste are shown in the following attachments annexed in this manual. The same attachments give some ideas on how to use the respective resources.

Attachment 3: Agricultural Resources (Vegetables, Fruits and Other Commercial Products in Timor-Leste)

Attachment 4: Natural Resources (Medicinal Plants in Timor-Leste)

3.2.2 Selection of Potential IG/LD Activities

(1) Objective

The main objective of this session is to help trainees/women select potential IG/LD activities in a participatory manner considering applicability, potential impact, sustainability, and affordability of the initial costs of the activities.

(2) Procedures for Selection of Potential IG/LD Activities

Potential IG/LD activities shall be selected in the following manners and steps.

- i) Make a list of potential resources with possible future uses based on the results of the resource inventory.
- ii) Explain the following evaluation criteria for selection of potential IG/LD activities.

Evaluation Criteria for Selection of IG/LD Activities

Criteria	Point of discussions
Applicability	Possibility of applying techniques used for production of processed products
Impact	Estimated number of household who might be able to benefit from techniques/skills introduced for production of processed products
Sustainability	Volume of and accessibility to resources used for production
Marketability	Possibility of marketing of processed products
Affordability	Estimated costs of start-up and operations of potential IG/LD activities.

Source: JICA Project Team (2015)

- iii) Prepare the following matrix in a flipchart and ask trainees/women to evaluate potential IG/LD activities in terms of evaluation criteria using 3 or 5 rating system.

Activities	Applicability	Impact	Sustainability	Marketability	Affordability

- iv) Help them assess the respective criteria properly giving them necessary information for assessment, e.g., difficulty in application of techniques, marketability of products, and estimated costs for initial operations.
- v) Prioritize potential IG/LD activities based on the results of the previous session.
- vi) Select 3~5 priority activities in the list based the results of discussion.

(3) Preparation of materials

The basic stationary, namely flipcharts, fet-type pens, and masking tapes, should be prepared for the meeting.

(4) Timeframe of training

The standard timeframe of the meeting is shown below.

Standard Timeframe of Resource Inventory

Activities	Timing	Duration of the Session
i) Evaluation of options	After resource inventory	Half a day
ii) Selection of priority options	After resource inventory	Half a day

Source: JICA Project Team (2015)

3.3 Hands-on Training/OJT on Potential IG/LD Activities (Food Processing Products)

This section introduces the process of and procedures for introduction of key food processing techniques. The main aim of food processing is to convert i) perishable crops/resources into long-life foods and/or ii) less valuable crops/resources in the raw into value-added/marketable products. The following four (4) methods are employed for processing crops and natural resources into long-life/valuable foods.

Four Methods of Food Processing

Processing method	Techniques	Process	Products
Drying method	Sun dry	Dry food materials to reduce water content to less than 13% to suppress propagation of bacteria.	Dried fruits, dried vegetables, dried herbs, dried nuts, dried spices, dried fishes, dried meat and their powder
Heating method	Heating	Heat food materials packed in a can/bottle/poly bag to sterilize it by heat.	Canned food, bottled food and packed food
Soaking method	Salted Syrupped Pickled	Soak food materials in salted/syrupped/pickling water.	Salted vegetables, salted fish, syrupped fruits, jam and pickles
Frying method	Frying	Fry food materials in oil to reduce water content and convert them into crisp and flavored chips for marketing.	Chips of fruits and root crops

Source: JICA Project Team (2015)

Among other things, this manual introduces the following five (5) products made by using the drying, soaking, and frying methods as they are rather easy to apply even under the current circumstances of rural areas in Timor-Leste.

- a. Drying Herbal tea
 Dried sweet potato
- b. Soaking Salted vegetables
 Pickled vegetables
- c. Frying: Cassava Chips

3.3.1 Drying Method: Herbal Tea Production

(1) Objective

The main objective of the technique is to enable trainees/women to produce herbal tea made of plants and leaves locally available, which can be marketed in Dili or exported to other countries as a healthy food.

(2) Procedures for Application

The following four (4) steps shall be taken to produce herbal tea.

a. Collection of healthy leaves

- i) Collect healthy leaves from trees and medicinal/herbal plants in clean areas, which are far from kitchen, toilet, and animal pen.
- ii) Select healthy leaves and remove dirty, insect-eaten, diseased and oddly-shaped parts of leaves.

b. Cleaning and sorting of collected leaves

- i) Wash leaves well to remove dirty matters, such as mud, sand, worms, and eggs of insects.
- ii) Check the size and color of leaves and remove bad ones.
- iii) Wipe up water well on leaves.
- iv) Cut leaves to uniform their size for faster infusion if necessary.

c. Drying of leaves

- i) Spread leaves on a mesh tray to dry them evenly.
- ii) Cover the tray with a black cloth to protect leaves from being exposed to direct sunshine to avoid discoloring.
- iii) Dry leaves for 1 week. Keep the tray under the roof during the night and when it rains.

d. Sorting out of leaves and packing with labeling

- i) Put dried leaves on a white paper to check their color, size and dryness and sort out the leaves which meet the quality standard from those below the standard.
- ii) Pick ten (10) dried leaves among the quality ones and make tea using them (Put them in a cup, pour hot water and wait for 3 minutes with a lid.).
- iii) Check the color of leaves and tea water and tasting it with a clean spoon.
- iv) Weigh and segment them in small portions for packing.
- v) Pack them into poly-bags or other packages.



Kitchen, toilet and animal pen are generally unhygienic and sources of bacterium and viruses.

Quality control should be kept in mind from collection of leaves.

Contamination of foreign matters should be avoided, e.g., hair, threads, weeds, insects, stems, nails, stones, sands, and mud.



- vi) Seal the bags with a sealer or using a candle.
- vii) Label the bags with product information (e.g., the name and quantity of product, date of manufacture, producers' name, expiration date, and lot number).
- viii) Store the packed herbal tea in a clean stocker with dry silica gel.

Important Tips



- ▶ *Not process herbal tea when you are sick to avoid contact of bacteria with herbal tea.*
- ▶ *Use only healthy leaves to produce quality tea.*
- ▶ *Moisture content in dried leaves should be less than 10%.*
- ▶ *Check if they can be easily crushed when grabbing some of them.*

(3) Materials, instruments and outfits used for production

- ▶ **Raw materials of herbal tea:**
Leaves of daretta (Indian pennywort), mint, lime, avocado, guava, basil (holy basil), shell ginger, and/or lemon grass
- ▶ **Instruments:**
 - 1 unit of washing bowl for cleaning
 - 2 units of drainer baskets
 - 2 units of metal plates as drying trays
 - 2 units of poly net for spreading leaves
 - Drying stand made of wood poles (4 leg poles and 4 beams/sticks)
 - 1 sheet of black cloth to cover the drying stand
- ▶ **Materials for packaging:**
Poly bags, packages, labels, candles/sealer (1 unit), stocker, and silica gel
- ▶ **Outputs:**
Aprons, head caps, masks and poly gloves for trainees

(4) Timeframe of training

In the northern part of the country which has clear distinction between the wet and dry seasons, the first hands-on training course should be held in May/June as it is easy for trainees/women to find leaves and also dry them. Sorting out of dried leaves and packing should be held 2~7days after the session for collection, washing, and drying.

Standard Timeframe of Herb Tea Production (4 times)

Activities	Timing	Duration of the Session
i) Collection of leaves, washing, and drying	May/June	One day
ii) Sorting out of leaves, and packing with labeling	May/June	Half a day

Source: JICA Project Team (2015)

Important Tips



- ▶ *It is advisable to conduct at least 4-times training so that trainees/women could acquire the techniques/skills.*
- ▶ *Herbal tea can be produced all year round if weather permits.*

3.3.2. Drying Method: Dried Sweet Potato Production

(1) Objective

The main objective of the technique is to enable trainees/women to convert sweet potato into a long-life food which can also be consumed as snack in a family.

(2) Procedures for production

The following four (4) steps shall be taken to produce dried sweet potato.

a. Making of a drying stand with a tray

- i) Procure a drying stand with a dry tray using wooden/bamboo poles, a metal plate, and a poly net.



b. Washing and cutting-off of dirty parts.

- i) Select firm sweet potatoes with smooth surface among those procured.
- ii) Wash sweet potatoes well in water to remove mud.
- iii) Cut dirty parts off.



c. Steaming

- i) Steam sweet potatoes in a steamer until they became tender.
- ii) Peel the steamed sweet potatoes' skins manually while they are still hot.
- iii) Slice the peeled sweet potatoes into 8-9 mm pieces after they get cool.



d. Drying

- i) Spread the sweet potatoes on a mesh tray.
- ii) Dry them by exposing them to sunshine for two (2) days to produce semi dried sweet potatoes or one week for fully-dried type.

Important Tips



- ▶ Peel skins of sweet potatoes when they are still hot, otherwise it is difficult to remove skins since they adhere to flesh of sweet potato when they get cool.
- ▶ Cut the peeled sweet potatoes when they get cold. It is difficult to slice them smoothly when they are still hot because they are tender and fragile.
- ▶ Do not produce dried sweet potato during the rainy season as they get easily rotten or moldy.

e. Packing and labeling

- i) Select quality dried sweet potatoes in terms of shape, color and dryness.
- ii) Weigh the selected potatoes.
- iii) Put them into poly-bags.
- iv) Seal the poly-bags with a candle or tape.
- v) Label the bags with product information (i.e., name of product, ingredients, quantity, date of production, date of expiration, and producer's name).



(3) Materials, instruments and outfits used for production

- ▶ Raw materials:
Purple or orange colored sweet potatoes are preferable to make the final product colorful and attractive.
- ▶ Instruments:
 - 2 units of large-sized bucket, 2 units of washing bucket, 2 units of drainer, and 5 pieces of washing brush for washing
 - 1 unit of cooking stove and 1 unit of steamer for steaming
 - Several units of hand knife or hand-made slicer (4 board frames with fishing lines) for slicing
 - 2 units of drying tray made of metal plate and poly net, 1 unit of drying stand, and 1 unit of insect net for drying
- ▶ Materials for packaging:
Poly bags, packages, labels, candles/sealer (1 unit), 1 unit of scale and 1 unit of stocker
- ▶ Outputs:
Aprons, head caps, masks and poly gloves for trainees

(4) Timeframe of Application

Hands-on training on this topic should be held in the dry season since dried sweet potatoes can be easily molded if they are produced during the rainy season.

Standard Timeframe of Hands-on Training on Dried Sweet Potato Production

Activities	Timing	Duration of the Session
i) Building of a drying tray and drying stand	July	One day
ii) Processing of dried sweet potatoes	July	One day
iii) Packing and labeling	July	One day

Source: JICA Project Team (2015)

3.3.3. Soaking Method: Salted Vegetable Production (Long Period Soaking)

(1) Objective

The main objective of this technique is to enable trainees/women to preserve perishable vegetables for a long period using a traditional technique with some additional arrangements. There is also a possibility that the product might be marketed in Dili if a certain amount of the products could be stably produced in a village.

(2) Procedure of application

The following three (3) steps shall be taken to produce salted vegetables in the marketable form.

a. Washing and slicing of vegetable

- i) Select fresh vegetables.
- ii) Cut off their roots and remove dirty parts.
- iii) Wash vegetables well with water to remove dirty matters and worms.
- iv) Dry vegetables for half a day to one day to reduce the moisture contents in leaves.

b. Salting and pickling

- i) Place the semi-dried vegetable in a big poly-bag put in a big bucket.
- ii) Put salt in between leaves of the vegetables and pour water in the poly bag.
- iii) Close up the top of the poly bag and press the poly bag by foot until it becomes less flexible.
- iv) Open the poly bag and add a pinch of chili and one spoonful of turmeric powder in the bag.
- v) Close up the top of the bag loosely and place weight stones on the bag to pickle vegetables.
- vi) Cover the container with an insect net to prevent the vegetables from insect contamination.
- vii) Put the container in a cool and dark place to keep the vegetables pickled for two (2) to three (3) months.
- viii) Check the condition of the vegetables once a week and remove excessive water when necessary.

c. Packing and labeling for marketing

- i) Take the salted vegetables from the bucket and measure out them by 200 gram.
- ii) Put the measured vegetables (200 gram) each into poly bags and tie the top of the poly bags.



- iii) Label the poly bags with production information (i.e., name of product, ingredients, quantity, date of production, date of expiration, and producer's name).
- iv) Keep them in a cool and dark place until they are marketed.

(3) Materials and instruments

- ▶ Raw materials and ingredients:
 - Mustard /other leafy vegetables
 - Salt
 - Chili and turmeric powder
- ▶ Instruments for salting and pickling
 - 2 units of container/big bucket
 - 1 piece of poly bag (45 L)
 - 2 pieces of weight stone
 - 1 piece of sponge
- ▶ Packaging and labeling:
 - Poly bags for packing
 - Label
 - Tape/rubber band for tying and labeling

(4) Timeframe of Application

Hands-on training on this topic should be held according to the following timeframe.

Standard Timeframe of Hands on Training on Salted vegetable (long period pickling)

Activities	Timing	Duration of the Session
i) Washing, drying, salting and pickling	May	Two days
ii) Quality checking, packing and labeling	August	One day

Source: JICA Project Team (2015)

Important Tips



- ▶ *Put an insect net to prevent the infestation of maggot, or the product get easily damaged.*
- ▶ *Any leafy vegetables can be used for salted vegetables. Those with thick leaves are more suitable for pickling.*
- ▶ *Apply much salt if the shelf life of the products needs to be prolonged, but wash them with water to desalinate when eating.*

3.3.4. Soaking Method: Pickled Vegetable Production (Short Period Soaking)

(1) Objective

The main objective of this technique is to enable trainees/women to produce pickled vegetables made of chayote (Lakeru mutin) using a simple technique for a short period of time. Although the shelf life of the products is shorter than that of the salted vegetables introduced in the previous section (section 3.3.3), the products might be rather suitable for marketing as they can be produced in a short cycle.

(2) Procedure of application

The following three (3) steps shall be taken to produce salted chayote.

- a. Washing and slicing of chayote before pickling
 - i) Select fresh and young (green) chayote.
 - ii) Peel skins of chayote (use poly gloves for protection of skin of hand.)
 - iii) Slice chayote in 3 mm pieces and cut them in evenly sized pieces (3 cm long and 3cm wide).
- b. Preparation of ingredients mixed with chayote
 - i) Wash and slice unpeeled limes in 3mm pieces.
 - ii) Peel skins of washed pineapple/papaya and slice it in 3 mm pieces.
 - iii) Cut chili in pieces and remove its seeds.
- c. Salting and pickling
 - i) Prepare salted water by mixing 100 g of salt with 1 little of water.
 - ii) Soak sliced chayote in salted water for 30 minutes.
 - iii) Mix the ingredients with 0.5 lit of water, 1 tablespoonful of salt and 2 tablespoonfuls of brown sugar (if available).
 - iv) Wash salted chayote with water and drain it well.
 - v) Soak chayote in the mixture of ingredients with crushed ginger and garlic.
 - vi) Pickle chayote for one day.
- d. Packing and labeling for selling
 - i) Put pickled chayote into poly-bags and measure out them by 200 g.



- ii) Put pickled water into the poly bags to keep chayote fresh.
- iii) Tie the top of the poly bags with tape or rubber bands.
- iv) Label the poly bags with production information (i.e., name of product, ingredients, quantity, date of production, date of expiration, and producer's name).
- v) Keep them in a cool and dark place until they are marketed.



(3) Materials and instruments

- ▶ Raw materials and ingredients:
 - Chayote (Lakeru mutin)/other fruit vegetables
 - Ginger and garlic
 - Salt
 - Fruits (apple, pineapple, papaya, guava)/Sugar
- ▶ Instruments for salting and pickling
 - 2 units of container/big bucket with a lid
 - 2 units of drainer
- ▶ Packaging and labeling:
 - Poly bags for packing
 - Label
 - Tape/rubber bands for tying and labeling
- ▶ Outputs:
 - Aprons, head caps, masks and poly gloves for trainees

(4) Timeframe of application

The hands-on training on this topic should be held according to the following timeframe.

Standard Timeframe of Hands on Training on salted vegetable (short period pickling)

Activities	Timing	Duration of the Session
i) Slicing chayote, salting and pickling	June	One day
ii) Packing and labeling	June	Half a day

Source: JICA Project Team (2015)

Important Tips



- ▶ Use slices of fruits to add sweetness and color to pickled chayote.
- ▶ Use garlic and ginger to add flavor to pickled chayote.
- ▶ This method can also be applicable to leafy vegetables.

3.3.5 Cassava Chips Production

(1) Objective

The main objective of this technique is to enable trainees/women to process local farm products (cassava and other tuber crops) into value-added and long-life processed food (chips) which can be marketed in Dili.

(2) Procedure of application

The following nine (9) steps shall be taken to produce marketable cassava chips.

- a. Washing and peeling of skins of cassava
 - i) Wash cassava with a brush in water to remove mud from tubers.
 - ii) Cut/remove dirty parts from tubers.
 - iii) Peel skins of cassava with a knife/peeler.
 - iv) Wash peeled cassava well until their surface is not sticky.
- b. Slicing of cassava
 - i) Slice washed cassava into thin (1 mm) pieces with a slicer. (Variable thickness of sliced cassava would result in nonuniform texture/hardness.)
 - ii) Remove sliced cassava which are thick and deformed.
- c. Pre-treatment to improve color and texture of cassava chips
 - i) Put 3 kg of sliced cassava into 5 lit of water mixed with 1 spoonful of salt and 1/2 spoonful of lime (calcium hydroxide)(ahu in Tetum).
 - ii) Soak sliced cassava into the mixed water for 10 minutes.
- d. Washing and drying of sliced cassava
 - i) Wash sliced cassava five (5) times with water and put them in a drainer to drain water.
 - ii) Spread sliced cassava on a big mesh tray.
 - iii) Dry sliced cassava by exposing them to sunshine for 10 minutes.
- e. Preparation of seasonings and toppings

<Lime and chili flavor >

 - i) Remove seeds of chili and slice them in small pieces.



- ii) Pound dried lime leaves and mix them with sliced chili and salt.

<Garlic and pepper flavor>

- i) Ground pepper and salt in a stone grinder.
- ii) Slice garlic horizontally.
- iii) Fry sliced garlic in heated oil (170°C-185°C) in a big pan until their color turns golden.
- iv) Take them out from oil and put them on a kitchen paper.



f. Frying of sliced cassava

- i) Heat 2 liter of cooking oil in a frying pan until the oil becomes 170 °C-185°C.
- ii) Put sliced cassava into heated oil. Do not put many sliced cassava at once, or the temperature of oil would lower and chips would become not crispy.
- iii) Stir and fry sliced cassava until their color turns light brown (golden).
- iv) Scoop chips with a metal net drainer and spread them on a open paper on a tray to cool down chips.



g. Seasoning and topping

- i) Pour seasoning powder using a tea strainer before chips get cold.
- ii) Mix round chips by hand with gloves to coat chips with seasoning powder fully.
- iii) Add topping on seasoned chips.



h. Weighing and packing of chips

- i) Measure out chips by the volume decided in advance for packing.
- ii) Put them into packages before they absorb moisture.
- iii) Pack and seal the packages by a candle or sealer.



i. Labeling

- i) Label the package with production information (i.e., name of product, ingredients, quantity, date of production, date of expiration, and producer's name)

(3) Materials and instruments

- ▶ Raw materials and ingredients:
 - Cassava

- Cooking oil
- Ahu (limestone powder)
- Seasonings (salt, chili, garlic, pepper, dried lime leaves)
- ▶ Instruments:
 - 1 unit of wash tub/ bucket and 1 unit of knife/peeler for washing and peeling of cassava)
 - 1 unit of slicer for slicing
 - 1 unit of drainer and 1 unit of mesh tray for washing and drying of sliced cassava
 - 1 unit of stove, 1 unit of frying pan, and 1 unit of metal mesh drainer for frying
 - 1 unit of grinder, 1 unit of pounder, and 1 unit of tea strainer for preparation of seasonings and topping
 - 1 unit of scale for packaging
- ▶ Packaging and labeling:
 - Packages (Aluminum bags)
 - Label
 - Sealer
- ▶ Outputs:
 - Aprons, head caps, masks and poly gloves for trainees

(4) Timeframe of application

The hands-on training on this topic should be held according to the following timeframe.

Standard Timeframe of Hands on Training on cassava chips production

Activities	Timing	Duration of the Session
i) Slicing of cassava, frying and seasoning/topping	October	One day
ii) Packing and labeling	October	One day

Source: JICA Project Team (2015)

Important Tips



- ▶ *Select and use quality cassava tubers.*
- ▶ *Do not waste ingredients and materials to save expenses for production.*
- ▶ *Produce chips under hygienic conditions.*
- ▶ *The same techniques can be applied to production of chips of other root/tuber crops, such as sweet potatoes, taros, kontas and arrow roots.*

3.4 Hands-on Training/OJT on Potential IG/LD Activities (Other Activities)

Handcrafting (e.g., weaving, carving, and ceramic art) and home manufacturing (e.g., sewing, brick making, and carpentering) are other IG/LD activities than food processing which local communities can possibly engage in. The main aim of such techniques is to use skills, sometime crafting techniques, to i) produce some value-added goods/commodities made of materials locally available and/or ii) repair or mend daily commodities to reduce daily expenses. Among other things, this section introduces the sewing technique as an example of IG/LD activities that women in local communities can easily introduce and smoothly accept. In fact, other techniques might take more time for local communities/women to acquire the same until they could earn cash income from the activities.

3.4.1 Sewing Techniques

(1) Objective

The main objective of this technique is to enable trainees/women to mend and make clothes using a sewing machine.



(2) Procedure of application

The following four (4) steps shall be taken to sew clothes.

- a. Making of a pattern of clothes.
 - i) Make a pattern of a clothes/dress.
 - ii) Trace the pattern on a cloth with a chalk.
- b. Cutting of a cloth
 - i) Cut the cloth along with the drawn lines with a scissors and make parts of a clothes/dress. (Leave some seam allowance when cutting the cloth.)
 - ii) Attach the parts to each other with marking pins.
- c. Baste and fitting of a clothes
 - i) Baste the parts roughly.
 - ii) Fit/Adjust the basted clothes to/with a person who put it.
- d. Sewing of a clothes
 - i) Sew the parts together after re-basting the clothes according to the adjustments made.
 - ii) Remove basting thread.
 - iii) Press the clothes with an iron for finishing.



(3) Materials and instruments

- ▶ Materials
 - Cloth
 - Tread

- Sewing patterns (Pattern papers)
- Basting thread
- ▶ Instruments:
 - 1 unit of sewing machine
 - 1 set of needles
 - 1 set of marking pin
 - 1 unit of scissors
 - 1 box of basting chalk
 - 1 unit of iron

(4) Timeframe of application

The hands-on training on this topic should be held according to the following timeframe.

Standard Timeframe of Hands on Training on Sewing (2 times)

Activities	Timing	Duration of the Session
i) How to use sewing machine	December	One day
ii) Pattern making and cutting	December	One day
iii) Basting/fitting	December	One day
iv) Sewing	December	One day
v) Finishing	December	One day

Source: JICA Project Team (2015)

Important Tips



- ▶ *There is a need to hold at least two (2) sets of the training course so that trainees/women can acquire sewing techniques/skills to make a clothes/dress. They should first learn to sew a simple product, such as head kerchief/table cloth in the first course, and then could learn to make a clothes/dress in the second courses.*
- ▶ *Check the condition of a sewing machine after use of the machine. In particular, remove waste threads, clear cotton dust, and oil the sewing machine, especially parts of movement.*
- ▶ *Check and collect needles after use of the machine to prevent injury.*

3.5 Assistance in Marketing of Products and Operations and Management of IG/LD Activities

Even though trainees/women could acquire techniques/skills through hands-on training and OJT arranged/held as described in the previous sections, it would still be difficult for them to earn cash income unless they could market their products/commodities. It is, therefore, important for them to gain knowledge and skills of marketing their products/commodities. Moreover, proper financial management is crucial for sound and sustainable operations of any IG/LD activities. In particular, bookkeeping including record keeping is a requisite skill to be learnt/acquired by anyone/any group who intends to run a small scale enterprise using IG/LD techniques.

In this connection, this section introduces and describes:

- i) how to promote IG/LD products/commodities for marketing; and
- ii) how to manage cash earnings gained by IG/LD activities.

In addition to operation and management of IG/LD activities, this section also introduces a micro credit scheme as one of the options to utilize profits gained by IG/LD activities to directly contribute to improving the economic status of trainees/women, because there is a possibility that some IG/LD activities might be able to earn cash income as shown in the village where the JICA CB-NRM Project has supported. In fact, the same village has operated the micro credit scheme to effectively utilize the earnings from the IG/LD activities for improvement of livelihoods of local women.

3.5.1 Promotion of Products

(1) Objective

The main objective of this technique is to enable trainees/women to promote their products/commodities so that they could sell the same to major markets in Dili.

(2) Procedure of application

The following are the key activities to be taken for promotion of a product/commodity.

- a. Assessment and development of product's information
 - i) Discuss among trainees/women sales points to be stressed in marketing the product/commodity, such as key features of the product, potential positive effects, a history/story of the product, and any local characteristic relating to the product.
 - ii) Make an advertisement material, such as a leaflet and pop advertisement for the product, which describes the sales points of the product/commodity.
- b. Participation in an exhibition held in Dili
 - i) Check the schedule of exhibitions to be held in Dili (e.g., the exhibition of local products) and discuss whether or not they take part in any of the exhibitions.
 - ii) Make a schedule to participate in the exhibition/s.
 - iii) Select members who will participate in the exhibition/s.
 - iv) Arrange a transportation mean, accomodation, and cash necessary for any expenses to attend the exhibition/s.
 - v) Prepare advertisement materials (e.g., leaflet and pop advertisement) developed under item a.
 - vii) Attend the exhibition/s with advertisement materials and promote/sell the product to guests in the exhibition/s.
 - viii) Manage the sales in the exhibition/s properly.
 - ix) Report the results of the exhibition/s to other trainees/women when the persons who attend the exhibition/s come back to a village.
- c. Promotion of the product directly to major buyers (markets) in Dili
 - i) Prepare advertisement materials developed under item a.
 - ii) Select members who visit major buyers in Dili.
 - iii) Arrange a transportation means, accomodation, and cash necessary for any expenses for promotion.
 - iv) Arrange meetings with major buyers.
 - v) Promote the product explaining the sales points in the meetings with buyers.
 - vi) Negotiate terms for the delivery of the product to buyers, if possible.
- d. Negotiations with buyers
 - i) Estimate the production and marketing costs based on the amount of ingredients and other materials (e.g., packages and labels).

- ii) Set up the selling price based on the production and marketing costs estimated.
- iii) Negotiate with buyers about the price.
- iv) Discuss the mode and conditions of the payment to be made by the buyer.

(3) Materials

- Materials for promotion (e.g., hands-outs)
- Cardboard paper for POP
- Paper for leaflet
- Felt type pens (several colors)
- Note and pen

(4) Timeframe of application

The hands-on training on this topic should be held according to the following timeframe.

Standard Timeframe of Hands on Training on Promotion of Products

Activities	Timing	Duration of the Session
i) Assessment and development of product's information (OJT)	September	Half a day
ii) Participation in an exhibition (OJT)	October	Two days
iii) Visit to the buyers for direct promotion (OJT)	December	Two days
iv) Negotiations with buyers (OJT)	When necessary	Half a day~One day

Source: JICA Project Team (2015)

Important Tips



- ▶ Fully understand the sales points of the product prior to the promotion.
- ▶ Prepare an attractive advertisement material with a history/story of the product.
- ▶ Start the negotiation with the price rather higher than the price set up to secure some room for negotiations. (Do not offer the price lower than the selling price.)
- ▶ Preferably exchange a written agreement with the buyer on the sale of the products.

- ▶ Issue an invoice whenever delivering the products to buyers.
- ▶ Keep records of production, delivery, and payment collected periodically.

The following attachments annexed in this manual could further explain the necessary marketing skills and how to make as materials.

Attachment-5: Basic Marketing Knowledge and Skills

Attachment-6: How to Make POPs

Attachment-7: How to Make a Leaflet

3.5.2 Bookkeeping

(1) Objective

The main objective of this technique is to enable trainees/women who are responsible for management of earnings to keep books of account in a proper manner.

(2) Procedure of application

The following steps shall be taken to let woman's group understand bookkeeping.

- a. Basic knowledge of bookkeeping
 - i) Explain the necessity and importance of bookkeeping to the participants.
 - ii) Explain the structure of an account book and how to record data in an account book.
 - iii) Ask the participants to practice data entry and calculate the balance between income and expenditures using a pre-made exercise with a format
- b. Cost and profit analysis
 - i) Explain the major cost and profit items.
 - ii) Explain other types of costs, such as variable costs, fixed costs and mixed costs.
 - iii) Explain how to set up the selling price of product based on costs.
 - iv) Ask the participants to calculate the production cost and set the selling price using a pre-made exercise with a format

(3) Materials

- Flipcharts and felt-type pen
- Premade formats transcribed in flipcharts and hands-outs
- Pens and notes

(4) Timeframe of application

The hands-on training on this topic should be held according to the following timeframe.

Standard Timeframe of Hands on Training on bookkeeping (2 days x 2 times)

Activities	Timing	Duration of the Session
i) Basic knowledge of bookkeeping	January & June	Two day
ii) Costs and profits analysis	January & June	Two day

Source: JICA Project Team (2015)

Important Tips



- ▶ *Take enough time to enable the participants to understand the costs and benefits.*
- ▶ *Give due attention to visible (direct) costs and invisible (indirect) costs when setting the price.*

A manual on bookkeeping and sample forms are given in the following attachments.

Attachment-8: Guideline for Training in Bookkeeping

Attachment-9: A Form of Cashbook

Attachment-10: A Form of Sales Record

Attachment-11: A Form of Stock Record

3.5.3 Micro Credit using Earnings from Operations of IG/LD Activities

(1) Objective

The main objective of this technique is to enable a group of trainees/women which has earned cash income from IG/LD activities to use the savings for the operations of a micro credit scheme for trainees/women who engage in IG/LD activities.

(2) Procedure of application

The following three (3) steps shall be taken to help the group decide how to use earnings from IG/LD activities and start the operations of a micro credit scheme for improvement of the economic conditions of trainees/women who engage in IG/LD activities.

- a. Discussion on how to use the earnings in a group
 - i) Help trainees/women discuss the status of savings and the major sources of income of the group.
 - ii) Help them assess how the group has earned the savings and spent the same over the course of the operations of IG/LD options.
 - iii) Help them calculate the necessary amount for the operations of IG/LD options.
 - iv) Facilitate their discussion on how to use the savings/earnings explaining the possible uses, such as i) continuation of the operations of existing IG/LD options, ii) future expansion of any other IG/LD options, iii) micro credit, iv) distribution of savings, and iv) deposit in the group .
 - v) Help them decide how to use the earning/savings.
- b. Finalization of rules on microcredit
 - i) Facilitate their discussion on the basic rules on the micro credit scheme, such as eligibility, guarantee, pay-back period, interest, and upper limit of a loan.
 - ii) Help them develop draft rules on the scheme based on the results of the discussion above.
 - iii) Introduce to them a passbook and a form to be used for a contract on a loan showing samples of both documents (passbook and loan contract form) and help them understand the necessity of the same.
 - iv) Help them select members of the management committee (chair person, secretary, accountant/redcord keeper, and treasurer) and discuss roles and responsibilities of the committee and its members.
 - v) Help them discuss and finalize the by-laws of the scheme.
- c. Assistance in the operations of the micro credit scheme
 - i) Provide daily coaching to the management committee to enable them manage and operate the micro credit scheme in a proper and transparent manner.
 - ii) Monitor the repayment made by trainees/women who borrow money from the earnings/savings from time to time and help the management committee remind the borrowers of repayment of the loans.

(3) Materials

- Flipcharts and felt-type pen

- Pens and notes
- A sample of passbook
- A sample of a loan contract form
- Draft rules and regulations with roles and responsibilities of the committee

(4) Timeframe of application

The hands-on training on this topic should be held according to the following timeframe.

Standard Timeframe of Discussion on the Use of the

Activities	Timing	Duration of the Session
i) Discussion on how to use the earnings in a group	February	One day for explanation and discussion
ii) Discussion and finalization on rules on microcredit	March	One day for discussion
iii) Assistance in the operations of the micro credit	-	Periodical monitoring during the operations

Source: JICA Project Team (2015)

Important Tips



- ▶ *Allocate sufficient time to discuss how to use the savings/earnings and rules on the micro credit, as they could affect the operations and management of IG/LD activities.*

The sample handouts and manuals that can be used for the discussions are attached to this manual.

Attachment-12: Guideline for Discussion on Group Savings

Attachment-13: A Sample Form of Passbook

Attachment-14: Guideline for Discussion on Use of Earnings

Attachment-15: A Sample of Rules and Regulations of a Micro Credit Scheme

Attachment-16: A Sample of Loan Contract Form

4. Standard Training Modules

The following table shows the standard training modules for the respective techniques introduced in Sections 3.2 to 3.5. All the training courses are assumed to be held at the center of suco (suco office).

Standard Training Module for the Techniques

Training course	Items	Description
Resource inventory	Objectives	To help trainees/women assess existing resources useful for IG/LD activities.
	Timeframe	<u>1st session: Resource mapping (1.5 days)</u> a. Introduction and resource mapping (0.5 day) b. Field observation (transect walking) (0.5 day) c. Finalization of a resource map (0.5 day) <u>2nd session: Seasonal calendar (1.0 day)</u> a. Introduction and identification of resources and farming activities (0.5 day) b. Discussion on the seasonality of resources and activities (0.5 day) <u>3rd session: Resource assessment (1.0 day)</u> a. Introduction and recapturing of the previous sessions (0.2 day) b. Listing of potential resources and discussion of possible uses of the resources (0.5 day) c. Identification of potential IG/LD activities (0.3 day)
	Materials	Flipcharts, Felt-type pens, Masking tapes, Notes, and Pens
	Expected outputs	List of potential IG/LD options
	Selection of potential IG/LD activities	Objectives
	Timeframe	a. Introduction and explanation of the process and method of evaluation (0.2 day) b. Evaluation of potential IG/LD activities (0.5 day) c. Selection of priority IG/LD activities (0.3 day)
	Materials	Flipcharts, Felt-type pens, Masking tapes, Notes, and Pens
	Expected outputs	List of priority IG/LD activities
Herbal tea production	Objectives	To enable trainees/women produce herbal tea made of plants and leaves available in the locality.
	Timeframe	<u>1st session: Collection, washing, and drying (1 day)</u> a. Collection and sorting (0.25 day) b. Washing (0.25 day) c. Drying (0.5 day) <u>2nd session: Sorting out and packing with labeling (1.0 day)</u> a. Quality check, packing, and labeling (The 2 nd session should be held 1 week after the 1 st session.)
	Materials	Raw materials: leaves of dareta, lime, avocado, etc. Instruments: washing bowl, drainer, drying tray, poly net, drying stand, black cloth, poly bags, and labels
	Expected outputs	Women can produce herbal tea made of plants/leaves naturally grown in the locality using a simple technique.
Dried sweet potato	Objectives	To help trainees/women produce dried sweet potato as a long-life food using sweet potato harvested in the locality.
	Timeframe	<u>1st session: Washing, steaming, and drying (1.0 days)</u> a. Washing and cleaning (0.25 day) b. Steaming (0.25 day) c. Drying (0.5 day) <u>2nd session: Packing and labeling (1.0 day)</u> a. Packing and labeling (1.0 day)

Training course	Items	Description
		(The 2 nd session should be held 3 days after the 1 st session.)
	Materials	Raw materials: sweet potatoes Instruments: steamer, slicer, drying stand with tray, insect net, poly bags, and labels
	Expected outputs	Women can produce dried sweet potatoes which can be stored for a long period of time.
Salted vegetables (long period)	Objectives	To help trainees/women preserve perishable vegetables for a long period in the form of salted vegetables.
	Timeframe	<u>1st session: Washing, drying, salting, and pickling (2.0 days)</u> a. Washing, drying, and salting (1.0 day) b. Re-salting and pickling (1.0 day) <u>2nd session: Quality checking, packing and labeling (1.0 day)</u> a. Packing and labeling (1.0 day) (The 2 nd session should be held 2~3 months after the 1 st session.)
	Materials	Raw materials: mustards (mode metan) Instruments: large-sized container, big poly bag, insect net, heavy stone, poly bags, and labels
	Expected outputs	Women can produce quality salted vegetables using the traditional techniques with some modifications.
Salted vegetables (short period)	Objectives	To help trainees/women produce pickled vegetables using a simple techniques for a short period of time.
	Timeframe	<u>1st session: Washing, slicing, salting, and pickling (1.0 days)</u> a. Washing, removing skin & seeds, and slicing (0.5 day) b. Salting and pickling (0.5 day) <u>2nd session: Packing and labeling (1.0 day)</u> a. Packing and labeling (1.0 day) (The 2 nd session should be held 1 week after the 1 st session.)
	Materials	Raw materials: chayote, garlic, fruits, chili, salt, sugar, and water Instruments: container, drainer, cutting board, knife, rubber band, poly bags, and labels
	Expected outputs	Women can produce quality pickled vegetables using a simple technique.
Chips making	Objectives	To enable trainees/women to produce long-life and value-added products (flavored chips) made of local products, such as cassava and kontas.
	Timeframe	<u>1st session: Washing, peeling, slicing, and frying (1.0 day)</u> a. Selection, washing, and peeling of cassava (0.2 day) b. Slicing, pre-treatment, and drying (0.3 day) c. Frying (0.5 day) <u>2nd session: Frying, seasoning, and packing (1.0 day)</u> a. Repeating of the activities of the 1 st session (0.5 day) b. Preparation of seasoning and topping (0.1 day) c. Seasoning and topping (0.2 day) d. Packing (0.2 day)
	Materials	Raw materials: tuber crops (e.g., cassava, kontas, and sweet potato) Instruments: slicer, big frying pan, oil strainer, spread tray, poly bags/aluminum bags, and labels
	Expected outputs	Women can produce quality chips made of local products, such as cassava and other tubers, which can be sold at major markets in Dili.
Sewing	Objectives	To enable trainees/women to make clothes and utensils using a sewing machine.
	Timeframe	<u>1st training course: Practice of sewing (5.0 days)</u>

Training course	Items	Description
		<p>a. How to use a sewing machine (1.0 day)</p> <p>b. Practice of sewing (4.0 days)</p> <p><u>2nd training course: Making of a clothes/dress (5.0 day)</u></p> <p>a. How to make a dress pattern (1.0 day)</p> <p>b. Cutting (0.5 day)</p> <p>c. Sewing (3.5 days)</p>
	Materials	Sewing machine, cloth, threads, sewing pattern, and ciseaux
	Expected outputs	Women can mend their clothes and/or make a dress/clothes with a sewing machine.
Promotion of products	Objectives	To enable trainees/women or a group of them to take promotion activities necessary to sell their products in Dili and other markets.
	Timeframe	<p><u>1st session: Development of product's information (1.0 day)</u></p> <p>a. Discussion on sales points of the product (0.5 day)</p> <p>b. Making of an draft advertisement material (0.5 day)</p> <p><u>2nd session: Participation in exhibition (2.0 day)</u></p> <p>a. Discussion on the participation in an/ exhibition/s (scheduling, selection of members, and arrangements needed) (1.0 day)</p> <p>b. Participation in an exhibition held in Dili (1.0 day)</p> <p><u>3rd session: Visit to buyers for direct promotion (2.0 day)</u></p> <p>a. Preparation of advertisement materials and discussion on the visits to buyers for promotion (scheduling, selection of members, and arrangements needed) (1.0 day)</p> <p>b. Visit to buyers for promotion (1.0 day)</p> <p><u>Negotiations with buyers (OJT)</u></p> <p>a. Discussion on the negotiation price</p> <p>b. Visit to a/ buyer/s for negotiations</p>
	Materials	Cardboards, papers, felt-type pens/markers, notes, and pens
	Expected outputs	Women are able to learn the needs/demands of major buyers so that they could identify the necessary improvements to be made in their product. At the same time, they are expected to learn the process and necessary actions to be taken for promotion of the product.
Bookkeeping	Objectives	To enable trainees/women or a group of them to keep books of account with records of costs, profits, account receivables, and stock of the product.
	Timeframe	<p><u>1st session: Basic knowledge of bookkeeping (2.0 days)</u></p> <p>a. Basic knowledge of bookkeeping (0.5 day)</p> <p>b. Exercise of bookkeeping (0.5~1.0 day)</p> <p>c. Exercise in calculation of a balance between costs and profits (0.5~1.0 day)</p> <p><u>2nd session: Cost and profit analysis (1.0 day)</u></p> <p>a. Explanation of costs and profits (0.5 day)</p> <p>b. Explanation of how to set up the selling price (0.5 day)</p> <p>c. Exercise in calculation of the production cost and the selling price (1.0 day)</p>
	Materials	Flipcharts, premade formats for exercises, hands-outs, felt-type pens, masking tapes, notes, and pens.
	Expected outputs	Women or a group of women can manage their earnings/savings as well as assets in a proper and transparent manner.
Micro credit using earnings from IG/LD activities	Objectives	To enable trainees/women or a group of them to decide how to use their earnings/savings gained from IG/LD activities to benefit trainees/women who engage in the activities.
	Timeframe	<u>1st session: Discussion on how to use the earnings (1.0 day)</u>

Training course	Items	Description
		<p>a. Discussion on status of savings and major sources of income (0.25 day)</p> <p>b. Assessment of earnings and expenditures over the course of IG/LD activities (0.25 day)</p> <p>c. Calculation of necessary amount for operations of IG/LD activities (0.25 day)</p> <p>d. Discussion on how to use earnings/savings (0.25 day)</p> <p><u>2nd session: Discussion on rules of micro credit scheme (1.0 day)</u></p> <p>a. Discussion on rules of a micro credit scheme and develop a draft rules of the scheme (0.5 day)</p> <p>b. Introduction and explanation of forms and systems of the scheme (0.2 day)</p> <p>c. Selection of members of a management committee and discussion on roles and responsibilities of the members (0.3 day)</p> <p><u>3rd session: Finalization of rules and by-laws of the scheme (1.0 day)</u></p> <p>a. Discussion on and finalization of roles and responsibilities of the members (0.3 day)</p> <p>b. Finalization of the rules and by-laws of the scheme (0.7 day)</p>
	Materials	Flipcharts, hands-outs, felt-type pens, masking tapes, notes, and pens.
	Expected outputs	Women or a group of them can decide how to utilize their earnings/savings in an effective and efficient manner and develop rules and by-laws of the micro credit scheme.

Source: JICA Project Team (2015)

5. Cost Estimates

This chapter introduces how to estimate the budget necessary to hold a series of training courses and discussions at the suco or aldeia level. The estimation of cost is one of the essential skills/techniques to prepare a convincing plan which can get the financial and administrative support from top management. The following sections explain the ways to estimate the budgets per session as well as per suco/aldeia introducing the cost items to be considered in the estimation.

5.1 Estimate of Cost for Training

The major cost items for training course/meeting are: i) materials used for a session, ii) food for the members/participants, iii) transportation cost for a/ facilitator/s, iv) other miscellaneous cost, and v) cost for a/ facilitator/s if external a/ facilitator/s is/are hired/used for a session. Each cost item is estimated by multiplying the quantity of the item by the unit cost. The following format can be used for the estimation.

Format for Cost Estimation of Training Session

Standard cost item	Quantity (a)	Unit cost (b)	Cost (a x b)
1. Materials for training (for those which cannot be collected in a village)			
2. Snack and food for the participants			
3. Transportation cost for facilitators			
4. Cost for facilitators (payment to facilitators)			
5. Other miscellaneous cost			
Total cost for one training session (1+2+3+4+5)	-	-	

Source: JICA Project Team (2015)

5.2 Estimate of Cost for Self-practices/OJT

Aside from hands-on training, the members will engage in self-application/practice of IG/LD techniques by themselves as OJT at the aldeia level with the technical assistance of facilitators. The major cost items for self-practice/OJT are: i) snack or food for the participants, ii) transportation cost for a/ facilitator/s, iii) cost for a/ facilitator/s, and iv) other miscellaneous cost. The same format shown above can be used for estimation.

5.3 Cost Estimate per Suco

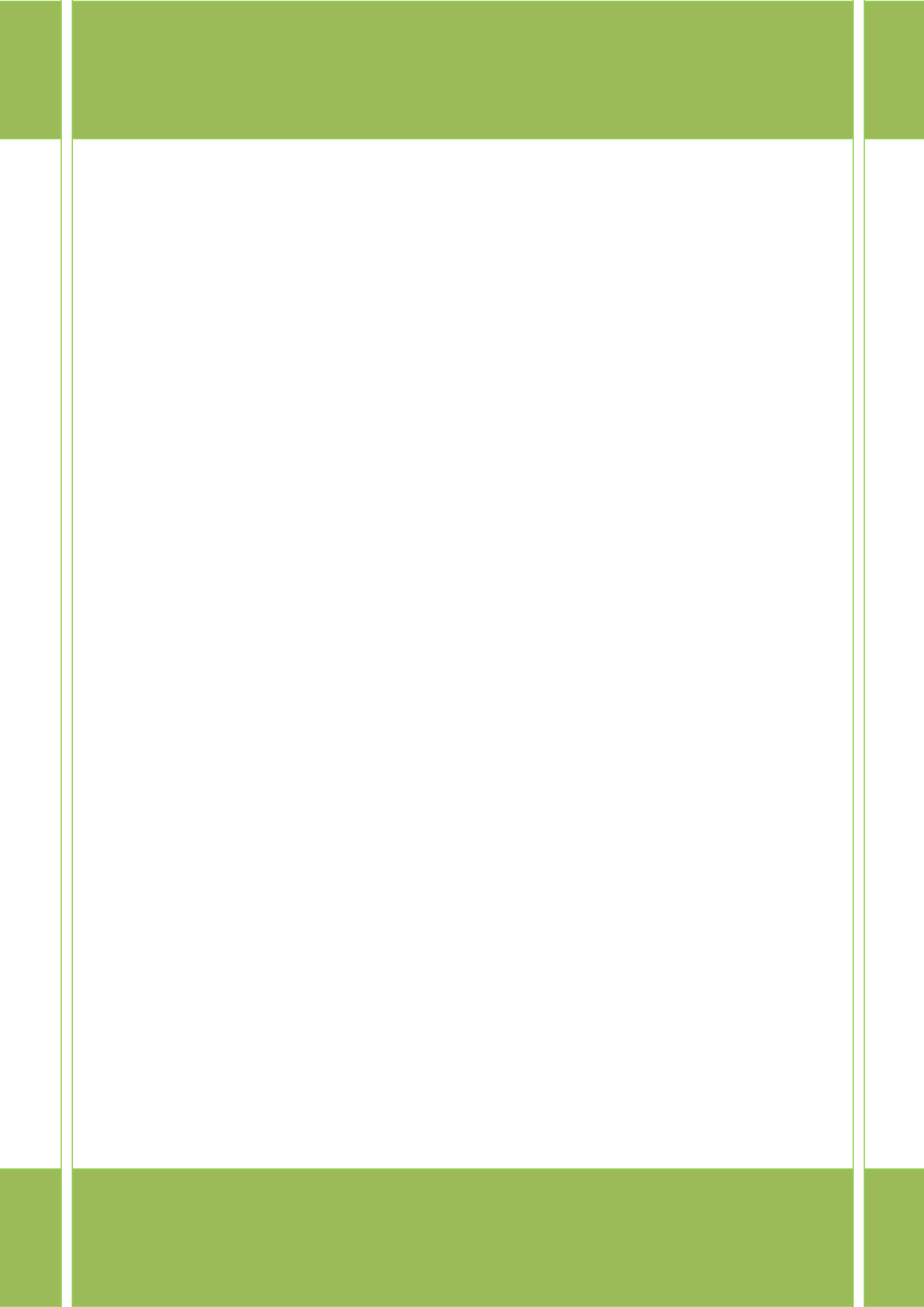
The cost for one cycle of IG/LD training curricula in a village is estimated by summing up the costs for all the training sessions/meetings described above. In case that sessions are held at the aldeia level, the costs of the respective sessions should be multiplied by the number of aldeias in a suco to estimate the cost at the suco level. Consequently, the following format can be used for the estimation.

Format for Cost Estimation of Training Session in the First Year

Standard cost item	No. of Group (a)	Unit cost (b)	Cost (a x b)
1. Resource inventory and selection of potential IG/LD options			
2. Hands-on training in producing product A			
3. OJT in producing product A			
4. Hands-on training in producing product B			
5. OJT in producing product B			
6. Hands-on training in producing product C			
7. OJT in producing product C			
8. Hands-on training in sewing			
9. OJT in sewing			

Standard cost item	No. of Group (a)	Unit cost (b)	Cost (a x b)
10. Hands-on training in promotion of products			
11. Hands-on training in bookkeeping			
12. Discussion on use of earnings/savings			
Total cost for training sessions per suco	-	-	

Source: JICA Project Team (2015)



Attachment-1 Methods of Resource Mapping and Seasonal Calendar

How to find out the materials for processing

The objective of this manual is to improve the capacity of mainly woman's group for income generating and livelihood improvement activities by accumulating their knowledge and experiences through building on their existing skills and resources. Therefore, when starting an income generating and livelihood development activity, knowing the capacity and constraints of the people and the environment in which they live is crucial. This part of the manual includes some exercises that the group facilitator (Extensionist/NGO staff) can do together with the people in the village to learn more about their skills and knowledge, their village, and their resources. In this manual, we put stress on how to find out resources.

1. Village resource map - What is growing where?

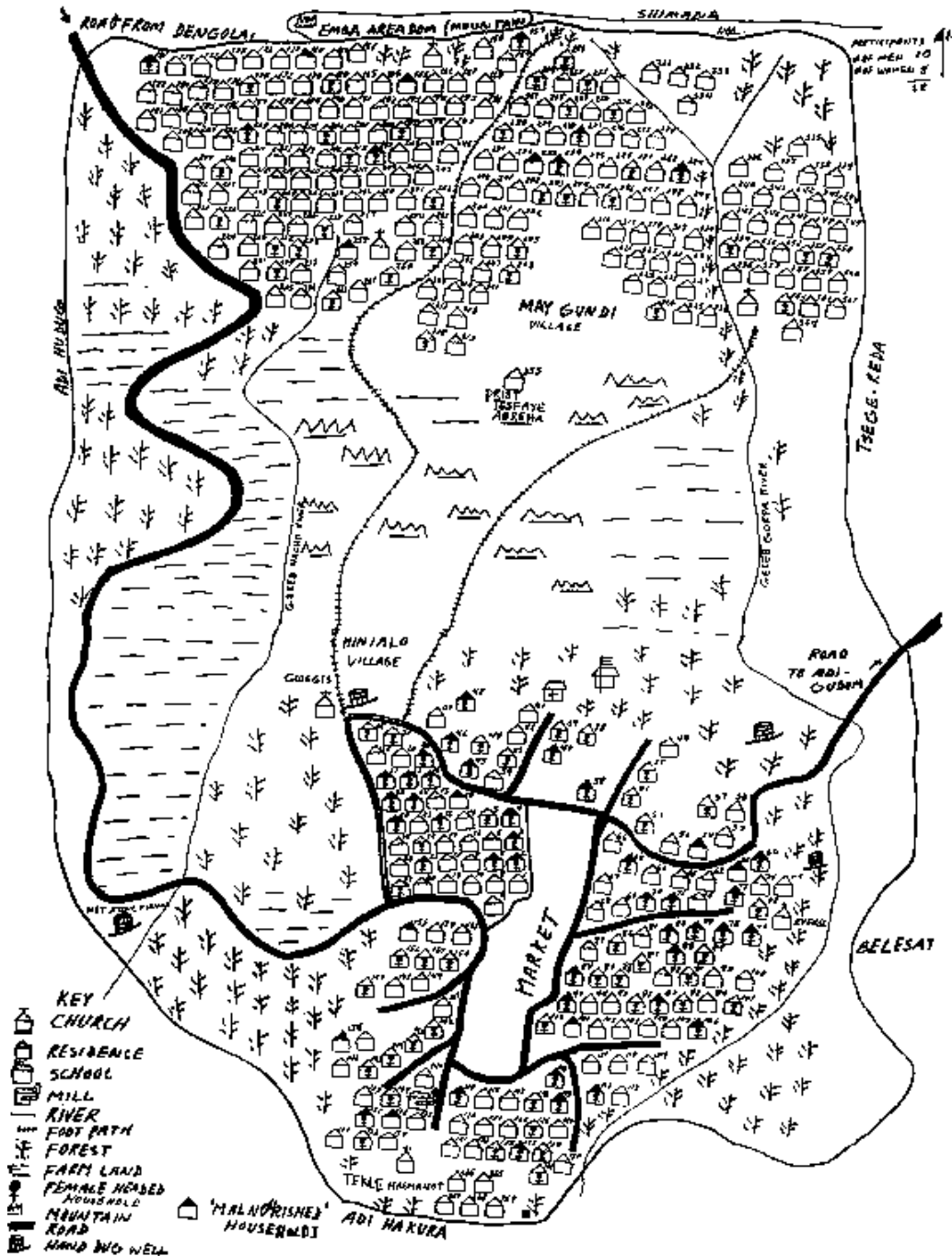
You can find out what grows where in the village by drawing with the natural/cultivated resources on a *village resource map*. This map shows the different natural/cultivated resources such as trees, shrubs, herbs, fruits and vegetables found in the vicinity. The map indicates the resources' characteristics in the village (e.g. natural resources, reproducible natural resources, cultivated resources and etc.). Resource mapping is best carried out at the beginning of the appraisal, and can provide you with the information you may need for other appraisals, such as *reproduction* and *processing*.

Objectives

- To visualize what is growing where.
- To learn about the natural and cultivated resources by trees, shrubs, herbs and etc. and understand the certain characteristics.
- To learn about the different natural/cultivated resources and how people use them.
- To identify the plant, facilitator or farmers can refer to resource inventories (natural and cultivated resources) with photos which are attached with the guideline.

Prepare original resource map

Example of a village resource map¹



Social map of Hiniato Kuset, Hintalo Tabia (including nutrition mapping)

¹ FAO project: "Improving Household Food Security and Nutrition in Northern Shewa (Amhara region) and Southern zone (Tigray region), Ethiopia"

Who is this exercise for?

Depending on the local situation, you may want to do this exercise in separate groups of men and women to increase participation or with other groupings of people. In Timor-Leste, women tend to refrain talking in front of men. It is better to divide groups to men and women to promote free and voluntary remarks.

Steps

1. *Ask the participants to draw a map of the village*, showing all households. For orientation it will be helpful first to draw roads and significant landmarks of the village such as rivers and springs.
2. *Ask the participants to also show institutions and places* that offer some kind of social service or which are popular places to meet (e.g. schools, churches, health service center, local administration office, village leaders, kiosk, village community center, etc.).
3. *Ask to depict cultivated area, forest area and animal grazing area on the map.*
4. *Ask the group to indicate where distinguishable trees and herbs are.* Make sure that everybody has the same understanding.
5. *When someone has given an answer, ask the others whether they agree, disagree or want to add something.* Encourage discussion throughout the exercise.

Materials needed

Large sheet of paper, resource inventories (Natural and cultivated), pencils and color markers

If drawing on the ground, find a soft ground and use sticks, stones, leaves, bottle caps, beans, or any other local materials for symbols. Make sure to copy the map on large paper afterwards.

2. Seasonality – When is it available?

After identifying natural/cultivated resources that has potential to utilize for income generating activity, make a list of resources. Then you shall find out when the natural/cultivated resources are available. You shall make a **bar chart** for each resource since it would directly influence on production. This exercise can help you characterize the seasonality of production and start a discussion on what factors are important determinants of production. Seasonality bar chart is

best carried out immediately following resource mapping in order to be able to understand physical location of resources (specific trees and herbs) and link to seasonality of production.

Objectives

- To identify and understand where and when each resource is available.
- To identify and understand when and how each resource can be preserved.
- To identify and understand when each resource can be sown if it is possible.

Steps

1. *Make a list of potential natural/cultivated resources that has potential for income generating activity.*
2. *Ask the participants to draw a bar chart, showing availability of each resource. For orientation it will be helpful first to draw columns with resource name and 12 months.*

Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

3. *Ask the participants to fill the name in the column of **Name** identified natural/cultivated resources that are written in village resource map.*

Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Cassava												
Dareta												
Kontas												

4. *Ask to draw a line with a ruler in **available months***

Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Cassava	—————											
Dareta	—————											
Kontas			—————									

Attachment-2 A Sample of Seasonal Calendar

Production Schedule		Month											
Name of Crop	Time	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
Cassava (Ai farina)	Sowing												
	Harvesting	■	■	■	■	■	■	■	■	■	■	■	■
Cassavachips	Production	■	■	■	■	■	■	■	■	■	■	■	■
	Sales	■	■	■	■	■	■	■	■	■	■	■	■
Edible canna (Kontas)	Sowing												
	Harvesting			■	■	■	■	■	■	■	■		
Kontas chips	Production			■	■	■	■	■	■	■	■		
	Sales			■	■	■	■	■	■	■	■	■	■
Mustard leaf (Modo metan)	Sowing	■	■	■	■								
	Harvesting	■	■	■	■	■							
Modo masin	Production	■	■	■	■	■							
	Sales	■	■	■	■	■	■	■	■	■	■	■	■
Chayote (Lakeru mutin)	Sowing	■	■	■	■								
	Harvesting			■	■	■	■	■	■	■	■		
Salada	Production			■	■	■	■	■	■	■	■		
	Sales			■	■	■	■	■	■	■	■	■	■
Lime (Derok masin)	Sowing												
	Harvesting		■	■	■	■	■	■	■	■	■		
Lime paste	Production		■	■	■	■	■	■	■	■	■		
	Sales		■	■	■	■	■	■	■	■	■	■	■
Sweet potato (Fefuk midar)	Sowing												
	Harvesting												
Dried sweet potato	Production												
	Sales												
Gotukola (Dareta)	Sowing												
	Harvesting	■	■	■	■	■	■	■	■	■	■	■	■
Herb tea	Production	■	■	■	■	■	■	■	■	■	■	■	■
	Sales	■	■	■	■	■	■	■	■	■	■	■	■
Lime leaf	Sowing												
	Harvesting		■	■	■	■	■	■	■	■	■		
Herb tea	Production		■	■	■	■	■	■	■	■	■		
	Sales	■	■	■	■	■	■	■	■	■	■	■	■
Clove leaf	Sowing												
	Harvesting		■	■	■	■	■	■	■	■	■		
Condiment for chips	Production		■	■	■	■	■	■	■	■	■		
	Sales	■	■	■	■	■	■	■	■	■	■	■	■
Ginger	Sowing												
	Harvesting	■	■	■	■	■	■	■	■	■	■	■	■
Condiment for chips	Production	■	■	■	■	■	■	■	■	■	■	■	■
	Sales	■	■	■	■	■	■	■	■	■	■	■	■
Garlic	Sowing					■	■	■	■	■	■		
	Harvesting					■	■	■	■	■	■		
Condiment for chips	Production					■	■	■	■	■	■		
	Sales					■	■	■	■	■	■	■	■
Green chili	Sowing					■	■	■	■	■	■	■	■
	Harvesting	■	■	■	■	■	■	■	■	■	■	■	■
Lime paste	Production	■	■	■	■	■	■	■	■	■	■	■	■
	Sales	■	■	■	■	■	■	■	■	■	■	■	■
Pepper	Sowing												
	Harvesting									■	■	■	■
Condiment for chips	Production									■	■	■	■
	Sales									■	■	■	■

Attachment 3.1: Agriculture Resources (Vegetables, Grains, Beans and Sea Weeds in Timor-Leste)

	Tetun	Indonesian	English	Scientific name	Use
Fruit vegetables					
1	Tomate	Tomat	Tomato	<i>Lycopersium esculentum</i> Mill.	Paste, dried fruit
2	Berinjela	Terong, Terung	Eggplant	<i>Solanum melongena</i> L.	Paste, dried fruit
3	Kaha, Pepinu(Pipinu)	Mentimun, Ketimun	Cucumber	<i>Cucumis sativas</i> L.	Pickles
4	Pateka mutin	Sewangica	Cucumber	<i>Cucumis sativas</i> L.	Pickles
5	Ai manas	Cabe, Cabai	Chilli	<i>Capsicum annum</i> L.	Paste, dried chili
6	Kumus	Pement	Sweet pepper	<i>Capsicum annum</i> L.	Puree, pickles
7	Lakeru	Labu kuning	Pumpkin	<i>Cucurbita moschata</i> Duch.	Paste, puree
8	Baria	Paria, Pare	Bitter Gourd	<i>Momordica charantia</i> L.	Fried, dried chips
9	Patola	Oyong	Angled loofah	<i>Luffa acutangula</i> Roxb.	Astringent from stem sap
10	Patola	Oyong	Loofah,Sponge gourd	<i>Luffa cylindrica</i> Roem.	Astringent from stem sap
11	Okura	Koni, Bendi	Okura	<i>Abelmoshus esculentus</i> Moench	Pickles
12	Lakeru Lilin	Labu air	Bottle gourd	<i>Lagenaria siceraria</i> Standley	Juice
13	Babuar	Baligo, Kundur	Wax gourd, White gourd	<i>Benincasa fispida</i> Cogn.	Syrupped, pickles, juice
14	Lukeru Mutin,Jepang	Labu siam, Jepang	Chayote	<i>Sechium edule</i>	Pickles
15	-	Paria belut	Snake gourd	<i>Trichosanthes cucumerina</i>	Chips
16	Babuar lotuk		Melon	<i>Cucumis melo</i> L.	Puree
17	Pateka	Semangka	Water melon	<i>Citrullus lanatus</i>	Juice
18	Pateka mutin	Semangka putih			Juice, syrupped
19	Koto mean	Kacang gude	Pigeon pea	<i>Cajanus cajan</i> Millsp.	Paste, syrupped, canned
20	Koto-nurak, Tunis, Turis	Kacang buncis	Kidney bean, common bean	<i>Phaseolus vulgaris</i> L.	
21	Ervilla	Kacang kapri	Snow pea	<i>Pisum sativum</i>	
22	-	Kacang botor	Winged bean	<i>Psophocarpus tetragonobus</i> DC.	Fried chips
23	Fore-tali	Kacang panjang	Yard long bean	<i>Vigna sinensis</i> var. <i>sesquipedalis</i> L.	
24	Koto moruk	Kacang besar	Scarlet runner bean	<i>Phaseolus coccineus</i> L.	
25	Favas	Kacang babi	Broad bean	<i>Vicia fava</i>	Fried chips, dried beans
26	Uhi		Aerial yam	<i>Dioscorea bulbifera</i> L.	Powder

Attachment 3.1: Agriculture Resources (Vegetables, Grains, Beans and Sea Weeds in Timor-Leste)

	Tetun	Indonesian	English	Scientific name	Use
Flower Vegetables					
27	Kori	kol kembang, kol bunga, kubis bunga	Cauliflower	<i>Brassica oleracea</i> L.	Pickles
28	Kori Italia	Brokoli	Italian Broccoli	<i>Brassica oleracea</i> var. <i>italica</i> Plen	
29	-		Garlic flower	<i>Allium sativum</i> L.	
30	-	Antung pisang	Banana flower	<i>Musa sapientum</i>	
31	-	Turi	Sesbania flower	<i>Sesbania Grandiflora</i>	Powder
32	Ai-dila funan	Bunga pepaya	Papaya flower	<i>Carica papaya</i> L.	
Leafy Vegetables					
33	Repollu	Kubis, Kol	Cabbage	<i>Brassica oleracea</i> L.	Pickles
34	Modo Mutin	Sawi putih	Chinese cabbage	<i>Brassica campestris</i> L.	Pickles
35	Modo Mutin	Sawi putih	Chinese white cabbage	<i>Brassica rapa</i> L.	Pickles
36	Modo metan	caisim	Leaf mustard	<i>Brassica juncea</i> Czern.et Coss.	Pickles
37	Alfase	Daun Selada	Lettuce	<i>Lectuca sativa</i> L.	
38	Kobi Tahan		Chinese cale	<i>Brassica oleracea</i> L.	
39	Lis tahan	Kucai	Chinese chive	<i>Allium tuberosum</i> Roxb.	
40	Salsa	Selederi	Celery	<i>Apium graveolens</i> L.	Powder
41	Agriaun	Salada Air, Selada air	Watercress	<i>Nasturtium officinate</i>	
42	Kankun	Kangkung	Swamp cabbage	<i>Ipompea aquatica</i>	
43	Bayaun	Bayam	Slender amaranth	<i>Amaranthus gracilis</i>	
44	-	Daun ubi jalar	Sweet potato sprout	<i>Ipompea batatas</i> Lam.	
45	Lakeru	Labu kuning	Pumpkin	<i>Cucurbita moschata</i> Duch.	
46	Markisa/Markujas	Daun markisa	Passion fruit	<i>Passiflora foetida</i> L.	
47	Babasa tahan		Ivy gourd	<i>Coccinia indica</i> Wight et Arnott	Pickles
48	Ai farina	Daun ubi kayu	Cassava leaf	<i>Manihot esculenta</i> L.	
49	-	Daun pepaya	Papaya leaf	<i>Carica papaya</i> L.	Juice, dried leaves, powder
50	Fore-mungu	Tauge	Mung bean sprout	<i>Phaseolus radiatus</i>	

Attachment 3.1: Agriculture Resources (Vegetables, Grains, Beans and Sea Weeds in Timor-Leste)

	Tetun	Indonesian	English	Scientific name	Use
Attachment 1-3: Root Vegetables					
51	Ai farina	Ubi kayu	Cassava	<i>Manihot esculenta</i> L.	Fried chips, starch
52	Talas	Talas	Taro	<i>Colocasia esculenta</i> Schott	Fried chips, starch
53	Fehuk-midar	Ubi jalar	Sweet potato	<i>Ipomoea batatas</i> Lam.	Fried chips, starch
54	Fehuk-ropa	Kentang	Potato	<i>Solanum tuberosum</i>	Fried chips, starch
55	Kumbili	Ubi kemali	Greater Yam	<i>Dioscorea alata</i> L.	Starch, powder
56	-	-	Wild yam	<i>Dioscorea tamarisciflora</i> P.etB.	Starch, powder
57	Singomas	Sengkuang/Bungkuan	Yam bean	<i>Pachyrrhizus erosus</i> L.	Fried chips
58	Same	-	Arrow root, Kuzu	<i>Pueraria lobata</i> Lour.	Starch
59	Ai-raruut, Taros metan	Talas hitam	Arrowroot, Black Javanese s ente	<i>Maranta arundinacea</i> L.	Fried chips, starch
60	-	Lobak	White radish	<i>Raphanus sativas</i>	Dried, pickles
61	Senoura	Wortel	Carrot	<i>Daucus carota</i>	Pickles
62	Kontas	-	Edible Canna	<i>Canna edulis</i> Ker.	Fried chips, starch
63	Liis	Bawang Bombay	Onion	<i>Allium cepa</i>	Chips, starch
64	Liis-mean	Bawang merah	Shallot	<i>Allium ascalonicum</i> L.	Pickles
65	Liis-asu, Liis-mutin	Bawang putih	Garlic	<i>Allium sativum</i> L.	Pickles, powder, paste
66	Maek	Pasak bumi, Tutup	Elephant foot yam	<i>Amorphosphallus</i> sp.	Fried chips, pickles
Herbs and Spices					
67	Ruku fuik	Kemangi	Holy Basil	<i>Ocimum sanctum</i> Linn	Condiment, herbal tea
68	Ruku	-	Thai basil	<i>Ocimum basilicum</i> Sims.	Condiment, herbal tea
69	Kumis kucing	Kumis kucing	Cat whiskers	<i>Orthosiphon stamineus</i> Benth	Condiment, herbal tea
70	Pimenta Tahan	Ketumbar	Coriander	<i>Coriandrum sativum</i> L.	Condiment, herbal tea, spice
71	-	Adas	Fennel	<i>Foeniculum vulgare</i> Mill L.	Condiment, herbal tea, spice
72	-	Adas sowa	Dill	<i>Anethum graveolens</i> L.	Condiment, herbal tea, spice
73	-	-	Anise	<i>Pimpinella anisum</i> L.	Condiment, herbal tea, spice
74	Pimenta	Lada	Pepper	<i>Piper nigrum</i>	Spice, medicine
75	Aimanas ai leten	Karuk	Wild betel, Leaf bush	<i>Piper sarmentosum</i> Roxb.et Hunter	Condiment, spice, medicine
76	Ortelaun, Ortelán, Karudu, Kandolar	Janggat	Mint	<i>Mentha cordifolia</i> Opiz.	Condiment, herbal tea
77	-	Po'o	Cool mint	<i>Mentha arvensis</i> L.	Condiment, herbal tea
78	Dareta	Pegaga(n)	Indian penny wort	<i>Centella asiatica</i>	Condiment, herbal tea
79	Du'ut-morin	Serai	Lemon grass	<i>Cymbopogon citratus</i> Stapf.	Condiment, herbal tea
80	Hedan, Boro	Pandan	Pandan, Screw pine	<i>Pandanus amaryllifolius</i> Roxb.	Condiment, medicine
81	-	-	Roselle , Indian sorrel , Jamaica sorrel	<i>Hibiscus sabdariffa</i> L.	Herbal tea
82	Kinur	Kunyit	Turmeric	<i>Curcuma domestica</i> Valetton	Spice, medicine
83	Lankuas	Laos, Lenngkuas	Galangal	<i>Languas galanga</i> L.	Condiment, medicine
84	Ai lia	Jahe, Halia	Ginger	<i>Zingiber officinale</i> Rosc.	Condiment, medicine
85	-	Kepulaga, Kardamunggu	Cardamon	<i>Elettaria cardamomum</i>	Spice, medicine
86	-	Chengkeh	Clove	<i>Syzygium aromaticum</i>	Spice, medicine
87	Baunilla	Panili	Vanilla	<i>Vanilla fragrans</i>	Flavoring, cosmetics

Attachment 3.1: Agriculture Resources (Vegetables, Grains, Beans and Sea Weeds in Timor-Leste)

	Tetun	Indonesian	English	Scientific name	Use
Grains					
88	Hare(plant) , Foos(grain)	Padi(plant) , Beras(grain)	Rice	<i>Oryza sativa</i> L.	Flour, alcohol
89	Foos-belit	Ketan	Sweet rice	<i>Oryza sativa</i> L.	Flour, alcohol
90	Terig		Wheat	<i>Triticum aestivum</i>	Flour
91	Batar	Jagung	Corn, Maize	<i>Zea mays</i> L.	Flour, canned, paste, popcorn
92	Batar ainaruk		Sorghum	<i>Sorghum bicolor</i> Moench	
93	Lena	Wijen, Bijan	Sesame	<i>Sesamum indicum</i> L.	Paste
Beans					
94	Fore-rai	Kacang tanah	Peanut	<i>Arachis hypogaea</i> L.	Paste, fried, roasted
95	Ervilla	Kacang kapri	Snow pea	<i>Pisum sativum</i>	Paste, fried
96	Fore-keli	Kacang kedelai	Soy bean	<i>Glycine max</i>	Powder, tofu, tempe, roasted
97	Tunis	Kacang turis	pigeon pea	<i>Cajanus cajans</i>	
98	Fore-mungu	Kacang hijau	Mung bean	<i>Phaseolus radiatus</i>	Sprout, paste, powder, noodle
99	Fore-metan	Kacang tunggak	Cow pea	<i>Vigna sinensis</i> Savi et Hassk.	Paste
100	Koto-nurak, Tunis, Turis	Kacang buncis	Kidney bean, common bean	<i>Phaseolus vulgaris</i> L.	Paste, syrugged, canned
101	Koto moruk	Kacang besar	Scarlet runner bean	<i>Phaseolus coccineus</i> L.	Syrugged
102	Koto moruk	Kacang besar	Scarlet runner bean	<i>Phaseolus coccineus</i> L.	Canned
103	Favas	Kacang babi	Broad bean	<i>Vicia fava</i>	Roasted
Others					
104	Audubun nurak	Rebung	Bamboo shoot	<i>Bambusa spp., Phyllostachys spp.</i>	Salted, pickles
105	Kabura	Paku, Pakis	Edible fern	<i>Pteridium aquilinum</i>	Salted, dried
106	Kulat	Jamur	Mushroom		Salted, dried
107	Akar	Sagu	Sago palm	<i>Metroxylon spp.</i>	Flour, starch, sago pearl
Sea weeds					
108	Budu tasi	Anggur Laut	Sea weed	<i>Caulerpa racemosa</i>	Salted
109	Budu tasi	Agar-agar	Red algae, Graceful Red Weed	<i>Gracilaria</i>	Dried
110	Budu tasi	Agar-agar	Cottoni	<i>Kappaphucus alvarezii</i> Doty	Dried

Attachment 3.2: Agriculture Resources (Fruits and Other Commercial Products in Timor Leste)

	Tetun	Indnesian	English	Scientific name	Use
Fruits					
111	Sabraka, Saburaka	Jeruk	Tangerine orange	<i>Citrus sinensis</i>	Juice, marmalade, peel
112	Sabraka-midar	Jeruk manis, Lemau manis	Mandarin orange	<i>Citrus aurantiaca</i> , <i>Citrus reticulata</i> var.	Juice, canned
113	Derok-lotuk, Sabraka-lotuk	Jeruk nipis	Lime	<i>Citrus aurantifolia</i> Christm. et Panz.	Juice, paste, peel
114	Sabraka-masiin	Jeruk limun	Lemon	<i>Citrus limon</i> L.	Juice, paste, peel
115	Sabraka-kiik	Jeruk limau	Calamondin	<i>Citrofortunella mitis</i>	Juice
116	Derok-fahi-inur	Jeruk purut	Kaffir lime	<i>Citrus hystrix</i> A.DC	Juice, paste
117	Jambua	Jeruk bali	Pomelo	<i>Citrus grandis</i> Osbeck	Juice, syrugged peel
118	N/A	N/A	Kumquat	<i>Fortunella japonica</i>	Syrugged
119	Hass/Haas	Manga	Mango	<i>Mangifera indica</i>	Dried, puree, pickles
120	Hudi	Pisang	Banana	<i>Musa sapientum</i>	Fried chips, dried
121	Ananá, Ai-naná	Nanas	Pineapple	<i>Ananas Comosum</i> Merr.	Juice, jam, dried
122	Goiabas	Jambu biji	Guava	<i>Psidium guajava</i> L.	Juice, puree
123	Abokat, Abokati	Advokat, Apokat	Avocado	<i>Persea americana</i> Mill.	
124	Durian	Durian	Durian	<i>Durio zibethinus</i>	Pickles
125	Mangis	Manggis, Manggistan	Mangostine	<i>Garcinia mangostana</i> Linn.	Syrugged, canned
126	Rambutan	Rambutan	Rambutan	<i>Nephelium lappaceum</i>	Syrugged, canned
127	Jambu-laun	Jamubu air	Java apple	<i>Syzygium samarangense</i> MARRY	
128	Uhak	Jambu merah	Rose apple	<i>Syzygium jambos</i>	
129	-	Mengkudu, Bengkudu	Indian mulberry	<i>Morinda citrifolia</i>	Juice, medicine
130	Ai-ata nona, Ai-nona, Nona	Buah nona, Srikaya, Serikaya	Sugar apple	<i>Annona squamosa</i>	
131	Ai-ata	Sirsak	Sour sop	<i>Annona muricata</i> L.	
132	Markisa, Markujas	Markisa, Markisah	Passion fruit	<i>Passiflora foetida</i> L.	Juice
133	Sawo	Sawo, Sauh Manila	Sapodilla Plum	<i>Manikara achras zapota</i>	Medicine
134	-	Ara	Fig	<i>Ficus carica</i> L.	Dried, syrugged
135	Abruinhos	Prem	Plum	<i>Prunus salicina</i> L.	Jam, dried
136	Pesikus	Persik	Peach	<i>Amygdalus persica</i>	Jam, juice
137	Nespra	N/A	Japanese loquat	<i>Eriobotrya japonica</i> ,	Syrugged
138	Masán	Apel	Apple	<i>Malus pumila</i> var. <i>domestica</i>	Juice, syrugged, dried

Attachment 3.2: Agriculture Resources (Fruits and Other Commercial Products in Timor Leste)

	Tetun	Indnesian	English	Scientific name	Use
139	-	Anggur	Grape	<i>Vitis spp</i>	Juice
140	-	Kurma	Jujube, Chinese date	<i>Ziziphus jujuba</i>	Dried, medicine
141	Salak	Salak	Snake fruit	<i>Salacca edulis</i>	
142	Kulu, Kulu-tunu, Kulu-uhi	Sukun	Bread tree	<i>Artocarpus altilis</i>	Fried chips
143	Kulu-jaka, Kulu-naka	Nangka	Jackfruit	<i>Artocarpus heterophilla</i>	
144	Ai dila	Papaya, Pepaya	Papaya	<i>Carica papaya</i> L.	Pickles
145	Karanbola	Belimbing	Star fruit	<i>Averrhoa carambola</i>	Pickles, medicine
146	-	Belimbing asam	Cucumber tree	<i>Averrhoa bilimbi</i>	Pickles, medicine
147	Morangu fuik	Miik	Raspberry	<i>Rubus idaeus</i>	Jam
148	Morangu	Arbei	Strawberry	<i>Fragaria x ananassa</i> Duch.	Jam
149	-	Asem jawa	tamarind	<i>Tamarindus indica</i> L.	Paste, dried
Other Commercial Products					
150	Kafé	Kopi	Coffee	<i>Coffea canephora</i>	Drink
151	Kafé	Kopi	Coffee	<i>Coffea arabica</i> L.	Drink
152	Kamii, Ai-kamii	Keminting, Kemiri	Candlenut tree	<i>Aleurites moluccana</i> WILLd	Cosmetics, condiment
153	-	Jarak pagar	Jatropha,	<i>Jatropha Curcas</i>	Fuel
154	-	Jarak ulung	Bellyache Bush	<i>Jatropha gossypifolia</i> Linn.	Medicine, fuel
155	-	Buah zaitun	Olive	<i>Olea europaea</i>	oil
156	Kajú, Ai-Kajú	Jambu mede, Jambu mente	Cashew nuts	<i>Anacardium occidentale</i> L.	Dried nut
157	-	Ketapang	Tropical almond, Indian almond	<i>Terminalia catappa</i>	Dried nut
158	Nuu	Kelapa	Coconuts	<i>Cocos nucifera</i>	Dried, oil
159	Tohu	Tebu	Sugar cane	<i>Saccharum officinarum</i> L.	Sugar, juice
160	-	Aren	Sugar palm	<i>Borassus flabellifer</i>	Palm sugar
161	Kakau	Cokelat, Coklat	Cocoa	<i>Theobroma cacao</i>	Drink
162	Tabaku	Tembakau, Tembako	Tobacco	<i>Nicotiana tabacum</i> L.	Smoke
163	Bua	Pinang	Betel nut palm	<i>Areca catechu</i> L.	Chewing
164	Malus	Sirih	Betel leaf	<i>Piper betel</i> L.	Chewing, medicine
165	Amora	Besaran, Bebesaran	Mulberry	<i>Morus indica</i> L.	Herbal tea, juice
166	Rota, Rotan	Rotan	Rattan	<i>Calamus spp.</i>	Handcraft
167	Kabas	Kapas, Katun	Cotton	<i>Gossypium herbaceum</i> Linn.	Handcraft
168	-	Sisal	Sisal	<i>Agave sisalana</i>	Handcraft
169	-	Kapok	Cotton tree	<i>Ceiba pentandra</i> Gaertn.	Handcraft

Attachment 4: Natural Resources (Medicinal Plants in Timor-Leste)

No.	Family	Botanical Name	English name	Tetun	Specific Uses	Reference
1	Acanthaceae	<i>Justica gendarussa</i> Burm f.	Willow-leaved justica		Anti-arthritic, anti-inflammatory activity	3,4
2	Agavaceae	<i>Agave sisalana</i>	Sisal hemp		Cytotoxic steroidal saponins	2,3,4,5
3	Agavaceae	<i>Cordyline indivisa</i> Hook.F.	Spikes, Dracena spikes		Food rich in linoleic acid, injury, acupuncture	2,3,4
4	Amaranthaceae	<i>Alternanthera sessilis</i> (L.) R.Br.	sessil joyweed		Hematitic activity	2,3,4
5	Anacardiaceae	<i>Mangifera indica</i> L.	Mango	Haas	Wounds	1,2,3,4,5
6	Anacardiaceae	<i>Mangifera timorensis</i> Blume	N.A.		Antioxidant, antiviral, antiparasitic, antiseptic, antitussive	2
7	Anacardiaceae	<i>Pleiogynium timoriense</i> (DC.) Leenh.	Scented maple		The decoction of bark: thrush and gastritis	2
8	Anacardiaceae	<i>Rhus taitensis</i> Guill.	smac		Antimycobacterial activity against Tuberculosis	3,4
9	Annonaceae	<i>Annona glabra</i> L.	Pond apple		Anticancer effect	2,3,4
10	Annonaceae	<i>Uvaria rufo</i> Blume	Calabao		Antitubercular activity	2
11	Apiaceae	<i>Centella asiatica</i> (L.)	Gotukola	Dareta		2,3,4
12	Apocynaceae	<i>Asclepias curassavica</i> L.	Tropical milkweed		Anticancer , cytotoxic activity to cancer cells	2
13	Apocynaceae	<i>Alstonia scholaris</i> R. Br.	Devil's bit, white cheesewood		Ayurvedic medicine called Dita. Antidiabetic, antihyperlipidic, antibacterial, antioxidant, anticancer, antiinflammatory, analgesic activities and immunostimulating effect. Antitussive, anti asthmatic and expectorant activities. Hepatoprotective activity, anti anxiety and anti depressant effect. Anti diarrhoeal and spasmolytic activity	2,3,4
14	Apocynaceae	<i>Plumeria rubra</i> L.	Plumeria		Antibacterial activity	3,4
15	Apocynaceae	<i>Tabernaemontana pandacaqui</i> Lam.	Banana bush		Anti-inflammatory, antipyretic and antinociceptive activities	2,4,5
16	Apocynaceae	<i>Thespesia peruviana</i> K. Schum.	Yellow oleander		Poisonous plant. antimicrobial activity	3,4
17	Apocynaceae	<i>Cerbera manghas</i> L.	Beach milkwood, dog bone		Lactation stimulant, poison	1,2
18	Apocynaceae	<i>Wrightia javanica</i> A.DC	N.A.		Antibacterial, antiviral, antifungal, antitumor, analgesic, hypotensive, antiinflammatory, and immune enhancing effects	2,4,5
19	Apocynaceae	<i>Dischidia major</i> (Vahl) Merr.	Raffles' Dischida		Antioxidative and tyrosinase inhibition activities, cosmetic use	2,4,5
20	Araceae	<i>Acorus calamus</i> Linn.				3,4
21	Araceae	<i>Amorphophallus paeoniifolius</i> (Dennst.) Nicolson	Elephant foot yam		Ayurvedic medicine, piles, abdominal pains, tumors, spleen enlargement, asthma and rheumatism	2,3,4
22	Araceae	<i>Colocasia gigantea</i> (Blume) Hook.f.	Elephant ear		Ayurvedic medicine, heal, revive and restore balance	2,3,4,5
23	Araliaceae	<i>Schefflera elliptica</i> (Bl.) Harms.	Climbing umbrella-plant		Barks: bronchodilator activity, Leaves: relief of asthmatic attacks, inotropic action, bronchodilator action	2
24	Arecaceae	<i>Cocos nucifera</i> L.	Coconut palm	Nuu	Fractures	1,2,3,4,5
25	Arecaceae	<i>Caryota rumphiana</i> Mart.	Fishtail palm		Jaggery (unrefined sugar), starch	2,3,4,5
26	Arecaceae	<i>Metroxylon sagu</i> Rottb.	Sago palm	Akar	Antioxidant, food for allergy patient	2,3,4,5
27	Arecaceae	<i>Borassus flabellifer</i>	Lontar palm (Palmyra palm)	Akadiru	Food, fruits,	2,3,4,5
28	Arecaceae	<i>Arenga pinnata</i> Merr.	Sugar palm		Roots provide medicinal products, such as a tea decoction used to cure bladder trouble. The roots of <i>A. pinnata</i> are a useful insect repellent.	2,3,4,5
29	Asclepiadaceae	<i>Calotropis gigantea</i> (Willd) Dryand ex W.T.Ait	Akra		Latex used for Inflammation	2,3,4
30	Aspleniaceae	<i>Asplenium nidus</i> L.	Bird's nest fern		Antibacterial, antioxidative, Tyrosinase inhibiting activity, asthma, sores and weakness	2,3,4,5

Attachment 4: Natural Resources (Medicinal Plants in Timor-Leste)

No.	Family	Botanical Name	English name	Tetun	Specific Uses	Reference
31	Asteraceae	<i>Chromolaena odorata</i> (L.) R.M.King & H.Rob.	Siam weed		Hemostatic and Wound Healing Properties	2,3,4,5
32	Asteraceae	<i>Melanthera biflora</i> (L.) Willd.	Sea daisy, beach daisy		Cold	2,3,4,5
33	Asteraceae	<i>Tridax procumbens</i> L.	Coat buttons		Anticoagulant, hair tonic, antifungal and insect repellent	2
34	Bombacaceae	<i>Bombax ceiba</i> L.	Silk cotton tree, red cotton tree		Hypotensive, Antioxidant, Analgesic, Antiangiogenic, Hypotensive and hypoglycaemic, Antimicrobial and antibacterial, Cytotoxicity, Hepatoprotective, Inhibitory effects on fatty acid syntheses, Antipyretic, Aphrodisiac activities	2,3,4
35	Bombacaceae	<i>Ceiba pentandra</i> (L.) Gaertn.	Kapok		Anti-fungal, Anti-diarrhoeal, Anti-ulcer, Hepatoprotective, Anthelmintic, Angiogenesis, Anti-inflammatory, Hypoglycaemic, Hypolipidaemic activities	2,3,4
36	Boraginaceae	<i>Cordia dichotoma</i> G.Forst.	Indian cherry		Normoglycemic and diabetes, Wound healing activity, Antimicrobial and antifungal Analgesic, antibacterial and cytotoxic, Degenerative disorder, Antidiabetic, Anthelmintic, Ulcerative colitis, Gastroprotective and antiulcer effect, Anti-inflammatory activity, Behavioral changes and hypoperfusion effect, Antimplantation activity. Ayurvedic medicine	2,3,4
37	Boraginaceae	<i>Cordia monoica</i> Roxb. subsp. <i>subpubescens</i> (Decne.) Reidl	Sandpaper saucer-berry		Significant activity against E.coli , Diarrhoea	2
38	Boraginaceae	<i>Tournefortia argentea</i>	Tree heliotrope, octopus bush		Antiviral, antibacterial, antioxidant and anti-inflammatory properties	2,3,4,5
39	Burseraceae	<i>Garuga floribunda</i> Decne.	Garuga		Leaves for antimalarial	3,4
40	Burseraceae	<i>Haplolobus floribundus</i> (K.Schum.) H.J.Lam.	N.A.		Veterinary medicine, plant decoction for cough of cattle	2
41	Fabaceae	<i>Senna sophora</i> (L.) Roxb., <i>Cassia sophora</i>	Kasunda, Baner		Leaves and seeds: Skin diseases, especially paste is applied to ringworm. Seeds: patches for psoriasis and psoriasis	3,4,5
42	Caesalpiniaceae	<i>Caesalpinia bonduc</i> (L.) Roxb.	Nicker nut		Seed coat extract for anti-inflammatory and analgesic activity	2
43	Caesalpiniaceae	<i>Caesalpinia furfuracea</i> (Prain) Hattink	Sun letthe		Antibacterial activity against some of coli and methicillin-resistant bacteria	2,4
44	Caesalpiniaceae	<i>Cassia fistula</i> L.	Golden shower		Antioxidant activity, Central Nervous System activities, Wound healing activity, Antifungal and Antibacterial activity, Antitumor activity, Antifertility activity, Anti-leishmaniac activity, Ayurvedic medicine.	2,3,4
45	Caesalpiniaceae	<i>Intsia bijuga</i> (Colebr.) Kuntze	Borneo teak		Gastrointestinal diseases, antiulcer activity	2
46	Caesalpiniaceae	<i>Senna surattensis</i> (Burm.f.) H.S.Irwin & Barneby	Golden senna, scruambled egg plant		Hypoglycemic plant. Antidiabetic	2,3,4
47	Caesalpiniaceae	<i>Senna timorensis</i> (DC.) H.S.Irwin & Barneby			Food and drink, medicine (antianemia), antiruritic	2
48	Caesalpiniaceae	<i>Senna tora</i> (L.) Roxb.	Shickle senna, Wild senna, Sensitive-plant		Skin and gastrointestinal disorders	2,3,4,5
49	Cannabaceae	<i>Trema tomentosa</i> (Roxb.) H.Hara	Poison peach		Poison to cattles and horses	2
50	Cannaceae	<i>Canna edulis</i> Ker.Gawl.	Edible canna	Kontas	Starch. Antioxidant,	3,4,5
51	Capparaceae	<i>Capparis sepiaria</i> L.	Indian caper		Leaves for diabetes	2
52	Capparaceae	<i>Cleome hassleriana</i> Chodat	Cat's whiskers cleome		Antimicrobial activity	2,3,4,5
53	Capparaceae	<i>Cleome viscosa</i> L.	sticky spider-flower		Ayurvedic medicine. rheumatic arthritis, hypertension, malaria, neurasthenia, and wound	2,3,4
54	Caricaceae	<i>Carica papaya</i> L.	Papaya	Ai-dila	Cancer, gastro treatments, leave extra used for dengue fever and malaria	1,2,3,4,5
55	Casuarinaceae	<i>Casuarina equisetifolia</i> J.R.Forst. & G.Forst.	Austrarial beefwood		Root extract used for dysentery, diarrhoea and stomach-ache, powdered bark is used for treating pimples	2,3,4,5
56	Ceratophyllaceae	<i>Ceratophyllum demersum</i> L.	Coontail, hornwort		Antiulcer	2
57	Clusiaceae	<i>Calophyllum soulattri</i> Burm.f.	Bitangor Bunut		Antiproliferative xanthone derivatives	2
58	Clusiaceae	<i>Mammea</i> sp.	Mamey		Antifungal property	2
59	Combretaceae	<i>Terminalia catappa</i> L.	Bengal almond		Antioxidant /hepatoprotective properties	2,3,4,5
60	Commelinaceae	<i>Commelina diffusa</i>	Climbing day flower		Antioxidant and antifungal, treat wounds	3,4

Attachment 4: Natural Resources (Medicinal Plants in Timor-Leste)

No.	Family	Botanical Name	English name	Tetun	Specific Uses	Reference
61	Compositae	<i>Artemisia indica</i> var. <i>maximowiczii</i>	Mugwort		The leaves and flowering stems are anthelmintic, antiseptic, antispasmodic, emmenagogue, expectorant and stomachic.	4
62	Convolvulaceae	<i>Hewittia sublobata</i> (L.f.) Kuntze	Wild morning-glory		Leaf: antioxidant, antibacterial, anti-inflammatory, antiviral, immune system stimulant and detoxification activities.	2
63	Convolvulaceae	<i>Ipomoea pes-caprae</i> (L.) R.Br. <i>subsp. brasiliensis</i> (L.) Ooststr.	Beacn morning-glory		Antifungal, antibacterial, anti-inflammatory and Analgesic activity	2,3,4,5
64	Crassulaceae	<i>Bryophyllum pinnatum</i> (Lam.) Kurz	Air plant, maternity plant		Gastroprotective effect	2,3,4,5
65	Cucurbitaceae	<i>Momordica charntia</i> L.	Bitter gourd	Baria	Malaria	1,2,3,4,5
66	Cucurbitaceae	<i>Diplocyclos palmatus</i> (L.) C.Jeffrey	Lollipop climber		Seed is poisonous. Indian medicine. rheumatic pain, cough, flatulence and various skin	2,3,4
67	Cyperaceae	<i>Eleocharis dulcis</i> (Burm.f.) Trin. ex Hensch.	Chinese water chestnut		Chinese medicine, wounds	2,3,4
68	Cyperaceae	<i>Scleria lithosperma</i> (L.) Sw. var. <i>lithosperma</i>	Florida Keys nutrush		Veterinary medicine, plant decoction for foot-and-mouth disease of cattle	2
69	Cyperaceae	<i>Scleria polycarpa</i> Boeck.	Nutrush		Antiplasmodial activity, antimalaria	2
70	Dioscoreaceae	<i>Dioscorea bulbifera</i> L.			Wild game poison	1,2,3,4
71	Dioscoreaceae	<i>Dioscorea affinis transversa</i> R.Br.	Long yam		Extra give skin soothing and anti-inflammatory activity	2,3,4
72	Dioscoreaceae	<i>Dioscorea bulbifera</i> f. <i>domestica</i> L.	Air potato		Anticancer, Antioxidant, Antitumor Promoting / Constituents, Hepatotoxicity, Wound Healing, Antihyperglycemic / Antidyslipidemic, Myocardial Protective Effect, Anthelmintic, Analgesic / Anti-inflammatory, Hepatotoxicity, Antidiabetic Activity, Nanoparticles using D. bulbifera / Synergism with Antimicrobial Agents.	2,3,4
73	Ebenaceae	<i>Diospyros maritima</i> Blume	Malaysian persimmon		Bark: Cytotoxic and antimicrobial constituents	2
74	Euphorbiaceae	<i>Suregada glomerulata</i> (Blume) Baill.	N.A.		Chinese medicine, α -Glucosidase inhibitory activity for diabetes	3,4
75	Euphorbiaceae	<i>Aleurites moluccana</i> (L.) Willd.	Kukui nut	Kumii	Post partum bleeding, internal bleeding	1,2,3,4,5
76	Euphorbiaceae	<i>Euphorbia atoto</i> G.Forst.	Spurge		Low quality breast milk	1,2,3,4
77	Euphorbiaceae	<i>Euphorbia heterophylla</i> L., <i>Euphorbia geniculata</i> Ortega	Mexican fireplant		Purgative and laxative	2,3,4
78	Euphorbiaceae	<i>Jatropha curcas</i> L.	Physic nut		Urinary tract infection	1,3,4
79	Euphorbiaceae	<i>Jatropha gossypifolia</i> L.	Bellyache bush, pignut		Toxic plant. Extra from seed: Analgesic activity, Neuropharmacological activities, Anti-diarrheal activity,	1,3,4
80	Euphorbiaceae	<i>Euphorbia antiquorum</i> L.	Antique Spurge Malayalam		Ayurvedic medicine. Antibacterial activity	2,3,4,5
81	Euphorbiaceae	<i>Macaranga tanarius</i> (L.) Mull.Arg.	Blush Macaranga, heart leaf		Anticancer activity, Antioxidant activity, Antimicrobial activity, Anti-inflammatory activity, acetylcholinesterase inhibitory activities (treatment of neurological disorders), antiplasmodial activities	2,3,4
82	Euphorbiaceae	<i>Mallotus mollissimus</i> (Geisler) Airy Shaw	Green kamala		Decoction of bark: Cold, skin disorders, ringworm, scabies, herpes, tumors. Milk sap: dysentery cure	2,3,4
83	Euphorbiaceae	<i>Mallotus philippensis</i> (Lam) Mull.	Kamala, spoonwood		Ayurvedic medicine, high blood pressure, purgative in cold water, extract from bark used for cosmetic because of promoting collagen production	2
84	Euphorbiaceae	<i>Melanolepis multiglandulosa</i> (Reinw. ex Blume) Reichb.f. & Zoll.	N.A.		Baby's gum aches, arthritis, snake bites as a local medicine	2,3,4
85	Euphorbiaceae	<i>Phyllanthus reticulatus</i> Poir.	Potato plant		Antibacterial activity	2,3,4
86	Euphorbiaceae	<i>Ricinus communis</i> Linn	Castor bean		Poisonous plant. Traditionally used as a laxative and a muscle pain. Antioxidant activity, Antinociceptive activity, Anti-fertility activity, Antihistaminic Activity, Hepatoprotective activity, Anti-inflammatory activity, Antimicrobial activity, Antidiabetic activity, Wound healing activity, Lipolytic activity, Molluscicidal, Insecticidal and Larvicidal activity, Antiulcer activity	3,4,5
87	Euphorbiaceae	<i>Codiaeum variegatum</i> (L.) A.Juss. var. <i>moluccanum</i> (Decne.) Mull.Arg.	Croton		Gastric ulcers	2,3,4,5
88	Fabaceae	<i>Albizia lebbbeck</i> (L.) Benth.	Albizia		Pink eye	1,3,4
89	Fabaceae	<i>Pterocarpus indicus</i> Willd.	rosewood		Mouth sores, latex used for tumor and cancer	1,2,3,4
90	Fabaceae	<i>Tamarindus indica</i> L.	Tamarind		Sore joints, gastric and/or digestion	1,2,3,4,5

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No.	Family	Botanical Name	English name	Tetun	Specific Uses	Reference
91	Fabaceae	<i>Canavalia rosea</i> (Sw.) DC.	Bay bean		Plant shoot decoction has been used to treat tuberculosis, while the roots have been used for the treatment of ciguatera fish poisoning, aches, pains, rheumatism, and leprosy Leaf extracts relieve pain, promote healing of burns, stop bleeding, and counter some enteric infections caused by certain gram-positive bacteria.	2,3,4
92	Fabaceae	<i>Derris scandens</i> (Roxb.) Benth.	Malay jwellvine		Osteoarthritis.	2
93	Fabaceae	<i>Desmodium triflorum</i> (L.) DC.	Creepind tick trefoil		Diarrhoea, dysentery, and also as a mouthwash and antipyretic (Setyowati-Indarto & Brink, 1999). Laboratory studies also showed analgesic, anti-inflammatory, and antioxidant effects of <i>Desmodium triflorum</i> (Lai et al., 2009; Lai et al., 2010).	2,3,4
94	Fabaceae	<i>Leucaena leucocephala</i> (Lam) de Wit.	Miracle tree, white leadtree		Anti-microbial activity	3,4
95	Fabaceae	<i>Mucuna pruriens</i> (L.) DC. var. utilis (Wight) Burck	Velvet beans	Lehe	Anti-diabetic, aphrodisiac, anti-neoplastic, anti-epileptic, and anti-microbial activities, anti-venom activities, anti-helminthic activity, neuroprotective, analgesic and anti-inflammatory activity	3,4
96	Fabaceae	<i>Peltophorum pterocarpum</i> (DC.) Backer ex K.Heyne	Yellow poinciana		Bark for dysentery, tooth powder, eye lotion, embrocation for pains and sores	3,4
97	Fabaceae	<i>Uraria lagopodioides</i> (L.) Desv. ex DC.	Prickitch		Ayurvedic medicine, Analgesic, anti-inflammatory,	2,3,4
98	Fabaceae	<i>Erythrina variegata</i> L. var. <i>orientalis</i> (L.)	Coral tree		Indian medicine, antiobesity, menstrual disorder	2,3,4
99	Fabaceae	<i>Pueraria lobata</i> (Willd.) Ohwi	Kudzu		Chinese medicine: Cold. Starch. Source of Puerarin; Daidzein; Rutin; Isoflavones; Aglycones. Antioxidant activity. Antipyretic activity. Antispasmodic activity.	3,4
100	Fabaceae	<i>Entada phaseoloides</i> (L.) Merr.	Matchbox bean, Gogo		Seeds: anti-inflammatory effect	2,3
101	Flacourtiaceae	<i>Flacourtia</i> sp. <i>large leaves</i> (F. rukam)	Cape plum		Phytochemical, Anti-oxidant and Anthelmintic activities	2
102	Flacourtiaceae	<i>Flacourtia indica</i> (Burm.f.) Merrill	Governor's plum		Antioxidant, Hepatoprotective, Antimalarial, Antibacterial, Anti-Diabetic, Anti-Inflammatory and Antimicrobial, Hepato Protective, Hepatoprotective activities and Anti-Asthmatic Potential.	2
103	Gnetaceae	<i>Gnetum gnemon</i> L.	Spanish koint fir		Seed extract: Reduction of serum uric acid. Increase of HDL cholesterol level. It means benefit in the prevention of atherosclerosis	2
104	Goodeniaceae	<i>Scaevola taccada</i> (Gaertn.) Roxb.	Beach Naupaka		Antibacterial, Antifungal activity	2,3,4,5
105	Gossypieae	<i>Gossypium speciosum</i> L.	Mexican cotton		Ayurvedic medicine. arthritis, anorexia, cardiac debility	2
106	Hydrocharitaceae	<i>Ottelia alismoides</i> (Linn.) Pers.	Duck lettuce		Anticancer	2,3,4,5
107	Lamiaceae	<i>Ocimum basilicum</i> L.	Thai basil		Antidepressant and an antiseptic	3,4,5
108	Lamiaceae	<i>Ocimum basilicum</i> (L.) Back	Sweet basil		Memory retention	3,4
109	Lamiaceae	<i>Ocimum sanctum</i> Linn, <i>Ocimum tenuiflorum</i> L. var. <i>anisodorum</i> (F.Muell.) Domin	Holy basil		Bronchitis, bronchial asthma, dysentery, skin diseases, arthritis, painful eye diseases, chronic fever. Improvement of immune system	2,4,5
110	Lamiaceae	<i>Orthosiphon grandiflorus</i> Bold	Cat whiskers		Urinary stones	3,4,5
111	Lamiaceae	<i>Hyptis suaveolens</i> (L.) Poit.	Chinese mint		Antifungal activity, especially against <i>Aspergillus</i> species	2,3,4,5
112	Lamiaceae	<i>Tectona grandis</i>	Teak	Ai-teka	Antibacterial, Antioxidant, Antifungal, Anti-inflammatory, Antiasthmatic, Analgesic Activity, Diuretic Activity, Hypoglycaemic, Antidiabetic, Antipyretic, Wound Healing, Anti-ulcer, Antinociceptive, Antitumor, Anti-metastatic, Hair growth activities	3,4,5
113	Lamiaceae	<i>Gmelina philippensis</i> Lam.	Parrot's beak		Hepatitis	1
114	Lamiaceae	<i>Callicarpa candicans</i> (Burm.f.) Hocker.	Great wooly Malayan lilac		Chinese medicine, antitumor, skin cancer, fish poison	2
115	Lamiaceae	<i>Clerodendrum floribundum</i> R.Br.	Wild jasmin		Ayurvedic medicine. Antimalarial and Antioxidant activity. Antihepatoprotective Effects. Anti-Inflammatory, Antimicrobial, Antiviral, Antihemolytic, Antihypotensive, Antifungal activity	2
116	Lauraceae	<i>Persea americana</i> Mill	Avocado, alligator pear		Blood pressure reducing effect	3,4,5
117	Lauraceae	<i>Cassytha filiformis</i> L.	Love-vine		Anti-platelet and vasorelaxant activity, Cytotoxicity activity, Antioxidant activity, Anti-trypanosomal activity, Diuretic activity,	2
118	Lauraceae	<i>Litsea glutinosa</i> (Lour.) C.B.Rob.	Indian laurel, Bollywood,		Bark: Diarrhea, dysentery, rheumatic gouty joints, sprains, bruises. Leaves: Bruises and wounds, Roots: Rheumatism	2,3,4
119	Lecythidaceae	<i>Barringtonia asiatica</i> (L.) Kurz	Fish poison tree		inflammation	1,3,4

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120	Lecythidaceae	<i>Barringtonia racemosa</i> (L.) Spreng.	Powderpuff tree		Antioxidant and inflammatory activities	2
121	Leeaceae	<i>Leea indica</i> Merr.	Bandicoot berry		Diarrhea	1
122	Leguminosae	<i>Adenanthera pavonina</i> L.	Red sandal wood		Wounds, boils, rheumatism, and arthritis	2,3,4
123	Leguminosae	<i>Sesbania grandiflora</i> (L) Pers.	Agati, Corkwood tree		CNS depressant, hypotensive, cardiac depressant, diuretic, anti-inflammatory, antibacterial, antipyretic, analgesic, hypoglycaemic and cytotoxic activity.	3,4,5
124	Leguminosae	<i>Sesbania grandiflora</i> (L) Pers.	Agati, Corkwood tree		CNS depressant, hypotensive, cardiac depressant, diuretic, anti-inflammatory, antibacterial, antipyretic, analgesic, hypoglycaemic and cytotoxic activity.	3,4,5
125	Liliaceae	<i>Gloriosa superba</i> L.	Flame lily		Poison, antiperiodic, antihelminthic	2,3,4
126	Loganiaceae	<i>Strychnos lucida</i> R. Br.	Strychnine Bush		Growth inhibition on <i>P. falciparum</i> , anti-malarial activity	3
127	Lythraceae	<i>Pemphis acidula</i> J.R.Forst. & G.Forst.	Pemphis		Antibacterial activity	2,3,4,5
128	Malpigiaceae	<i>Hiptage benghalensis</i> (L.) Kurz	Helicopter flower		Indian medicine. Leaves and bark: cough, burning sensation, and inflammation, skin diseases, particularly useful for dermatitis, scabies, rheumatism and asthma	2,3,4,5
129	Malvaceae	<i>Sida acuta</i> Burm.f.	Wireweed		Antimicrobial activity, treatment of opportunistic infections	4,5
130	Malvaceae	<i>Sida retusa</i> Linn	Paddy's lucern		Roots: lumbago and rheumatism	4,5
131	Malvaceae	<i>Sida rhombifolia</i> L.	Bloom weed		Anti-inflammatory and anti-oxidant properties	4,5
132	Malvaceae	<i>Sida spinosa</i> L.	Prickly fanpetals		Antimicrobial activity. Leaves and flowers: bronchitis and coryza	4,5
133	Malvaceae	<i>Sterculia foetida</i> L.	Java-olive skunk tree		Chinese medicine, aperient, diuretic	2,3,4
134	Malvaceae	<i>Thespesia populnea</i> Sol. ex Corréa	Indian tulip tree		Antidiabetic and antihyperlipidemic effects	2,3,4
135	Malvaceae	<i>Urena lobata</i> L.	Caesar weed		Antifertility, antidiarrheal	2,3,4
136	Malvaceae	<i>Hibiscus tiliaceus</i> L.	Sea hibiscus, beach hibiscus		Antidepressant-like effects	2,3,4
137	Melastomataceae	<i>Memecylon</i> sp.	jaywree		Antipsoriatic activity	2
138	Meliaceae	<i>Azadirachta indica</i> A. Juss.	Neem		Sore joints	1,2,3,4
139	Meliaceae	<i>Aglaiia argentea</i> Blume	N.A.		Bioantifungal Activity, Effective to root rot	2
140	Meliaceae	<i>Aphanamixis polystachya</i> (Wall.) R.N.Parker	Rohituka tree		Cell growth inhibition, Analgesic activity, CNS depressant activity, Antimicrobial, Cytotoxic activities, antioxidant activity, reduces radiation-induced chromosome damage, Membrane Stabilizing Activity, Anthelmintic activities,	2
141	Meliaceae	<i>Dysoxylum parasiticum</i> (Osb.) Kosterm.	Yellow mahogany		Ayurvedic medicine, used for dysentery	2,3,4
142	Meliaceae	<i>Dysoxylum acutangulum</i> Miq. subsp. <i>foveolatum</i> (Radlk.) Mabb. (opp lvs)	Persian lilic		Arthritis, anorexia, cardiac debility	2
143	Meliaceae	<i>Dysoxylum gaudichaudianum</i> (A.Juss.) Miq.	Vella akil		Antiviral activity against respiratory syncytial virus (RSV), spasmolytic activity, Cytotoxicity	2
144	Meliaceae	<i>Dysoxylum setosum</i> (Span.) Miq.	Miva mahogany		Decoction of bark: arthritis, anorexia, cardiac debility, to remove intestinal worms, inflammation	2
145	Meliaceae	<i>Swietenia mahogani</i> Jacq.	Mahogani		Ayurvedic medicine. Antibacterial activity, Antimicrobial Activity, Antioxidant activity, Anti ulcer activity, Antifungal activity, Anti – HIV activity, Anti-inflammatory, Analgesic and Antipyretic activity, Hypoglycemic activity, Platelet Aggregation Inhibitors activity	3,4
146	Meliaceae	<i>Swietenia macrophylla</i> King	Broad-leaved mahogani		Anti-hyperglycaemic activity	3,4
147	Melastomataceae	<i>Melastoma malabathricum</i> L.	Indian-rhododendron		Anti-inflammatory, antagonistic activity towards platelet activating factor	3,4,5
148	Menispermaceae	<i>Tinospora smilacina</i> Benth.	Snake vine		Lice infestation, snake bite	1
149	Menyanthaceae	<i>Nymphoides indica</i> (L.) Kuntze	Water snowflake		Ayurvedic medicine, anti-fever of Malaria	2,3,4,5
150	Moraceae	<i>Antiaris toxicaria</i> Lesch. var. <i>macrophylla</i> (R.Br.) Corner	Upas tree		Dart and arrow poison, Anticonvulsant Effect	2
151	Moraceae	<i>Ficus hispida</i> L.f.	Devil fig, hairy fig		Hypoglycemic activity, Cardioprotective effect, Antidiarrheal activity, Antiulcerogenic effect, Sedative and anticonvulsant effects, Neuroprotective effects, Hepatoprotective effect, Antineoplastic activity, Anti-inflammatory and antipyretic.	2,3,4,5
152	Moraceae	<i>Ficus microcarpa</i> L.f.	Laurel Fig, Indian Laurel Fig		Ulcerous wounds of a diabetic patient	2,3,4,5
153	Moraceae	<i>Ficus racemosa</i> L.	Audumber or Umber		Diabetes and high cholesterol, antioxidant, antifungal and antibiotic	2,3,4,5
154	Moraceae	<i>Ficus sagittata</i> J.Konig ex Val	Trailing fig		Antioxidant properties	2,3,4,5
155	Moraceae	<i>Ficus septica</i> Burm. F.	Open fig		Antibiotic, cytotoxic effect on breast cancer	2,3,4
156	Moraceae	<i>Ficus superba</i> (Miq.) Miq.	cedar fig		Juice of leaves: Blister plaster, aerial roots: acute mastitis	2,3,4

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No.	Family	Botanical Name	English name	Tetun	Specific Uses	Reference
157	Moraceae	<i>Streblus affinis taxoides</i> (Heyne ex Roth) Corner	N.A.		Bark for headache, antiulcer drug	3
158	Myrtaceae	<i>Psidium guajava</i> Linn	Guava		Leaves: hyperactive gut disorders, stabilizer	2,3,4,5
159	Myrtaceae	<i>Rhodamnia cinerea</i> Jack	Silverback		Carbohydrate metabolic disorder	2
160	Myrtaceae	<i>Syzygium nervosum</i> DC.	Wax apple		Chinese medicine, antimicrobial and inhibitor of protease	3,4,5
161	Myrtaceae	<i>Syzygium sp. affinis S. samarangense</i>	Java apple		Potent Antimicrobial and Inhibitor	3,4,5
162	Nyctaginaceae	<i>Pisonia aculeata</i> L.	Four o'clock flower		Inflammation, pain, and oxidative stress associated diseases.	3
163	Nyctaginaceae	<i>Pisonia umbellifera</i> (J.R.Forst. & G.Forst.) Seem	Bird lime tree		Antitubercular activity	2
164	Nyctaginaceae	<i>Boerhavia glabrata</i> Blume	Red spiderling		Ayurvedic medicine. antioxidant, thrombolytic activity and less cytotoxic activity	2,3,4
165	Oleaceae	<i>Ximenia americana</i> L.	Wild plum, sour plum		Bioactive polyphenols. throat infections, amenorrhea, as tonic, for wound healing and against pain.	2
166	Opiliaceae	<i>Opilia amentacea</i> Roxb.	N.A.		Antidiabetic and Antihypertensive Activities, to cure dermatitis	3
167	Pandanaceae	<i>Pandanus tectorius</i> Parkinson	Screw pine		Traditional medicine for leprosy, smallpox, fever, wounds, stomach spasms and strengthens the gum	2,3,4,5
168	Passifloraceae	<i>Passiflora foetida</i> L.	Bush passion fruit		Antiulcer and antioxidant activity, antibacterial properties: diarrhea, intestinal tract, throat, ear infections, fever and skin diseases.	3,4,5
169	Phyllanthaceae	<i>Bridelia tomentosa</i> Blume	Pop-gun Seed		Leaves are used as medicine for traumatic injury; the roots are used to treat epidemic influenza and neurasthenia	2
170	Phyllanthaceae	<i>Breynia cernua</i> (Poir.) Mull.Arg.	Breynia, fart bush		Antifungal, anti bacterial activity	2
171	Piperaceae	<i>Piper betle</i> L.	Betel leaf		Anticancer benefits and bio-guided fractionation	2,3,4,5
172	Piperaceae	<i>Piper sp. affinis P. retrofractum</i> Vahl	Long pepper		Diabetes prevention	3,4
173	Piperaceae	<i>Pothomorphe subpeltata</i> (Willd.) Miq.	Wild pepper		Neurasthenia	3,4
174	Pittosporaceae	<i>Pittosporum moluccanum</i> (Lam.) Miq.	N.A.		Antioxidant	3,4
175	Poaceae	<i>Imperata cylindrica</i> (L.) P. Beauv.	Cogon grass		Helminth worm infection, Anti hyper-tension	1,3,4,5
176	Poaceae	<i>Bambusa vulgaris</i> Schrad. ex Wendl.	Common bamuboo		Antioxidant and antibacterial activity	2,3,4
177	Poaceae	<i>Cymbopogon nardus</i> (L.) Rendle	Citronella grass		Culinary use, perfumery use. Essential oil: Insect repellent, Antimalaria activity, Herbal tea: Cold fever, Jaundice	2,3,4
178	Poaceae	<i>Phragmites vallisneria</i> (Pluk. ex L.) Veldkamp	N.A.		Diabetes	2,3,4,5
179	Poaceae	<i>Spinifex littoreus</i> (Burm.f.) Merr.	Spiny rolling grass		Abdominal pain, contortion, arthritis and inflammation	4,5
180	Polygonaceae	<i>Persicaria barbata</i> (L.) H.Hara	Water pepper		Seasoning, anti-inflammatory activities	2,3,4
181	Polypodiaceae	<i>Drynaria quercifolia</i> (L.) J. Sm.	Basket ferns		Throat infections	1,3,4,5
182	Portulacaceae	<i>Portulaca australis</i>	N.A.		Stimulant, food	2,4,5
183	Rhamnaceae	<i>Gouania javanica</i> Miq.	mao ju qian		Leaf extract: antiviral, antifungal, anti-inflammatory and cytotoxic activities	2
184	Rhamnaceae	<i>Ziziphus celtidifolia</i> DC.	jujube		Sedative properties	2,3,4,5
185	Rhizophoraceae	<i>Carallia brachiata</i> (Lour.) Merr.	Fresh water mangrove		Wounds	2
186	Rhizophoraceae	<i>Rhizophora stylosa</i> Griff.	Red mangrove		India, diabetes and after boiling used as an astringent for diarrhea, nausea	3,4,5
187	Rubiaceae	<i>Nauclea orientalis</i> (L.) L.	Cheeswood, yellow cheesewood		Anti-staphylococcal activity, Antianthelmintic activity, pink eye, post partum bleeding, internal bleeding	2
188	Rubiaceae	<i>Saprosma sp.</i>	Madders		Antifungal activity	2
189	Rubiaceae	<i>Guettarda speciosa</i> L.	Beach gardenia		Epilepsy	2
190	Rubiaceae	<i>Ixora timorensis</i> Decne.	Native ixora		Leaves used for stomach problems	2

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No.	Family	Botanical Name	English name	Tetun	Specific Uses	Reference
191	Rubiaceae	<i>Morinda citrifolia</i> L.	Noni, Great morinda		Arthritis, diabetes, high blood pressure, muscle aches and pains, menstrual difficulties, headaches, heart disease, AIDS, cancers, gastric ulcers, sprains, depression, senility, poor digestion, atherosclerosis, circulation problems, and drug addiction.	2,3,4,5
192	Rutaceae	<i>Citrus hystrix</i> DC.	Kaffir lime	Sabraka fahi inur	Hepatitis, inflammation	1,2,3,4,5
193	Rutaceae	<i>Aegele marmelos</i> L. Correa ex Roxb.	Bengal quince		Anticancer effect	2,3,4
194	Rutaceae	<i>Micromelum minutum</i> (G.Forst.) Wight & Arn.	Lime berry		Cytotoxicity: antibacterial activity	2,4,5
195	Santalaceae	<i>Exocarpos latifolius</i> R.Br.	Broad Leaved Ballart		Aboriginal use:the twigs provided a bitter tonic and astringent for stopping infection on sores and cuts.Leaves were used to create a smoke for repelling insects, woman's sterilizations	2
196	Santalaceae	<i>Santalum album</i> L.	sandal wood		Ayurvedic and Chinese medicine.urogenital (internal) and skin (external) antiseptic.	2,3,4
197	Sapindaceae	<i>Allophylus cobbe</i> (L.) Raeusch.	Mangrove titberry		Fever and stomach ache, antimicrobial and brine shrimp lethality (fish poison)	2,3,4
198	Sapindaceae	<i>Cardiospermum halicacabum</i> L.	balloon vine		Antibacterials	2,3,4,5
199	Sapindaceae	<i>Dimocarpus longan</i> Lour. subsp. malesianus Leenh.	Longan, cat's eye		Antioxidant, Chinese medicine for promoting blood metabolism, soothing nerves, and relieving insomnia	2,3,4
200	Sapindaceae	<i>Pometia pinnata</i> J.R. & G. Forst.	Matoa		Leaves for Anti-HIV medicine	2
201	Sapindaceae	<i>Schleichera oleosa</i> (Lour.) Oken	Kusum tree		Menorrhoea, Kusum oil from seed for hair oil, itching, acne and massage oil to relieve pain of rheumatism.	2
202	Sapindaceae	<i>Lepisanthes rubiginosa</i> (Roxb.) Leenh.	Varied		Root: fever, seed: cough?	2
203	Sapotaceae	<i>Mimusops elengi</i> L.	Spanish cherry		Antibacterial, antifungal, anticariogenic, free radical scavenging, antihyperglycemic, antineoplastic, gastroprotective, antinociceptive and diuretic effects	2
204	Sapotaceae	<i>Pouteria obovata</i> (R.Br.) Baehni	Lukuma,		Antioxidant, dietary fiber, vitamins and bet carotene, niacin and 14 minerals	3
205	Smilacaceae	<i>Smilax australis</i> R.Br.	Lawyer vine		Antidiabetic	2
206	Smilacaceae	<i>Smilax blumei</i> A.DC.	N.A.		Prevention of muscular spasms and cramps, increasing sex drive in females	2,3,4
207	Solanaceae	<i>Solanum lycopersicum</i> Linn, Lycopersicum esclurentum Mill	Tomato		Antibacterial activity, antioxidants : prevent prostate, lung, stomach, pancreatic, colorectal, esophageal, oral, breast and cervical cancers	3,4,5,
208	Solanaceae	<i>Solanum tuberosum</i> L.	Potato		Anti-diabetes. Antioxidant effects and protease inhibitor action	3,4,5
209	Sterculiaceae	<i>Helicteres isora</i> L.	East Indian screw tree		Snake bite, diarrhoea and constipation of new born baby	2,3,4,5
210	Sterculiaceae	<i>Melochia umbellata</i> (Hout.) Stapf	N.A.		Hepatoprotective and antioxidant activity, antibacterial activity, anthelmintic activity	3
211	Sterculiaceae	<i>Kleinhovia hospita</i> L.	Guest tree		Antioxidant Activity and moderate cytotoxicity on HepG2 liver cancer cells	2
212	Surianaceae	<i>Suriana maritima</i> L.	Bay cedar		Wounds	3,4
213	Taccaceae	<i>Tacca palmata</i> Blume	Black bat flower		Recovery during the postpartum period	2
214	Verbenaceae	<i>Lantana camara</i> L.	Lantana		Antibacterial activity, Antifungal activity, Antiulcerogenic activity, Hemolytic activity, Antihyperglycemic activity, Wound healing activity, Antimotility activity, Mosquito controlling activity, Antifilarial activity, Antiinflammatory activity, Anti fertility activity (Embryo toxicity), Antirolithiatic activity, Anticancer and antiproliferative activity, Anti mutagenic activity, Antioxidant activity.L. camara is one among the most toxic plants known so far, possibly with in top ten	2,3,4,5
215	Verbenaceae	<i>Phyla nodiflora</i> (L.) Greene	Turkey tangle frogfruit		Acnes, pimples	2,3,4
216	Verbenaceae	<i>Vitex pubescens</i>	Leban,hairy-leafed molave		Antidysentery, analgesic, anti-inflammatory and anti-tumor activities	2
217	Verbenaceae	<i>Vitex rotundifolia</i> L.f.	Beach vitex		Chinese medicine for asthma and other allergic diseases	2,3,4,5
218	Verbenaceae	<i>Vitex trifolia</i> L.	Indian three-leaves vitex		Rheumatism and inflammatory joint conditions	2,3,4,5
219	Vitaceae	<i>Cayratia japonica</i> (Thunb.) Gagn.	Bush killer		Chinese medicine.Leaves and stems:Deuretic, painkiller, neuralgia,	2,3,4,5
220	Vitaceae	<i>Cayratia trifolia</i> L.	Bush grape		Whole plant used for diuretic, in tumors, neuralgia and splenopathy	2,3,4

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221	Zingiberaceae	<i>Alpinia zerumbet</i> (Pers.)B.L.Burt and R.M. Smith	Shell ginger		Antioxidant and skin diseases	3,4
222	Zingiberaceae	<i>Kaempferia galanga</i> L.	Sand lily		Anti-inflammatory and analgesic activity, Nematicidal activity, Mosquito repellent and larvicidal activity, Vasorelaxant activity, Sedative activity, Antineoplastic and apoptotic activity, Anti-oxidant activity, Antimicrobial activity	3,4
223	Zingiberaceae	<i>Zingiber zerumbet</i> (L.) Sm.	Shampoo ginger		Indigestion	2,3,4
224	Zygophyllaceae	<i>Tribulus cistoides</i> L.	Jamaican feverplant		Cardioactive Steroid Saponins and Other Glycosides	2

Notes: These data were compiled by Yoko Nagata.

For providing the list, several sources were used.

1: Sean WM Collins, Xisto Martins, Andrew Mitchell, Awegechew Teshome and John T Arason "Fataluku medicinal ethnobotany and the East Timorese military resistance" (2007)

2:Northern Territory. Dept. of Natural Resources, Environment, the Arts and Sport., "A survey of flora and vegetation of the proposed Jaco, Tutuala, Lore National Park, Timor-Leste (East Timor) : report to Birdlife International from Northern" Territory Herbarium / Ian Cowie (2006)

3: Observed by Mr. Mariano

4: Observed by Yoko Nagata

5: Observed by Takaaki Kagawa

Attachment-5: Basic Marketing Knowledge and Skills

Introduction

Objective of this manual is to familiarize people with Marketing and do efficient marketing by themselves based on the knowledge and skills. Facilitator should understand these knowledge and skills and provide realistic examples for better understanding of people.

I. Definitions of marketing

Marketing is a new term and concept for woman's group in Timor Leste. Therefore you need to start from explanation of definition on "marketing" in "official" and "real world".

Official meaning of marketing is defined as below;

- Marketing means the process of planning and executing the conception, pricing, and services to create exchanges that satisfy the individual and group objectives.
- Marketing means creation and delivery of a standard of living.
- Fundamental social process which evolves within a society to facilitate the effective and efficient resolution of society's needs for exchange of "consumption values"
- Marketing means management process through which goods and services move from concept to the customer. It includes the coordination of four elements called the **4 P's (Product, Price, Place and Promotion)** of marketing:
 - (1) identification, selection and development of a **product**,
 - (2) determination of its **price**,
 - (3) selection of a distribution channel to reach the customer's **place**, and
 - (4) development and implementation of a **promotional strategy**.

In real world, marketing is defined as below:

- Marketing is starting from thinking about the business in terms of customer needs/demands and their satisfaction.
- Marketing differs from selling because "Selling" concerns itself with the tactics and techniques of getting people to exchange their cash for your product. It is not concerned with the values that the exchange is all about. And it does not, as marketing invariable does, view the entire business process as consisting of a tightly integrated effort to discover, create, arouse and satisfy customer needs."

II. Five variables of marketing

There are 5 variables in marketing to consider when you start business.

1. Target: List at least five **viable market segments**
2. Business types: Differentiate by example between **services** and **physical products**
3. 4 marketing mix: Describe the interaction among and between the **four elements of the “marketing mix”**
4. Position: Enumerate the ways **“positioning”** combines the other elements of the marketing mix
5. Competition: Identify possible **competition** for your own products

1) Target

If you want to get profits from your products, it is very important to know the Market, to know about your buyers /customers-their needs and wants.

1. What products are popular and demand?
2. How much is the selling price?
3. How many are sold in a day?
4. Who are making these products?
5. How and where are they being sold?

To know the needs and demand of buyers/customers, you shall survey on target variables. Then you can understand the real demand of them.

Target variables include

- Age
- Income
- Education
- Race
- Gender
- Religion
- National origin
- Place of residence
- Life style

In case of Timor Leste, your targets are local people or foreigners. You need to set lower price if the target is local people. On the other hand, you need to consider quality of product if target is foreigners.

2) Differences between Services and Products

Service

- Services are often intangible -acts, deeds and cannot be physically processed.
Value lies in experience and no transfer of title
- Usually perishable, unused portions cannot be stored
- Quality cannot be separated from the service provider
- Vary in quality over time and are difficult to standardize over time

Products

- Products are often tangible objects or things. Value lies in ownership and use and transfer of title takes place
- Can be stored, and unused portions can be used later
- Quality can be differentiated from the channel member's quality
- Products can be standardized and mass production and quality control are possible

3) The Marketing Mix (4 Ps)

Component of Marketing mix is “Product”, “Price”, “Place” and “Promotion”.

Product Mix

The assortment of goods and services that must be maintained in order to meet customer's needs

Service as a Product

- A service is a product at the instant of delivery; it can be created in advance or held in readiness
- A service cannot be centrally produced, inspected, stockpiled, or warehoused. Usually delivered to the customer, by people beyond the immediate influence of management
- The “product” cannot be demonstrated, nor can a sample be sent for approval
- The person receiving the service has nothing tangible, value depends on personal experience
- The experience cannot be sold or passed on to a third party
- A service cannot be recalled or repeated
- Quality assurance must happen before production rather than after production, as in the case of products
- Delivery of the service requires human interaction; buyer and seller must come

in contact in some relatively personal way to create service

- Receivers' expectations are integral to his/her satisfaction, and are largely subjective
- The more people the customer must encounter during the delivery of the service, the less likely it is that he/she will be satisfied with the service

Results

- The final product class is the anticipated results of the goods and services

Product

- The benefits or positive results (outcomes) that your customers derive out of dealing with you and using the services you offer them

Customers' Perceptions of Products

- Revlon: Cosmetics sell "hope"
- Coca cola: Not sell soft drink but sell "stories"

New Paradigm of your product

Ex. Woman's group presents comfortable time to customers when they taste your product

Customers' Perception of Woman's group

- Woman's group: healthy and tasty food sell "healing time"

Price

The costs or negative effects that customers must bear in order to do business with you, using your services in the way that you offer them

Pricing Considerations

- Nature of the target market (aforementioned)
- Nature of the competition
- Cost of merchandise (IE, successful buying practices by the supermarket manager)
- Familiarity of the customer with price ranges

Pricing

The Pricing Process

- The pricing process involves 5 steps:

- Setting price objectives
- Setting a broad price policy
- Developing a price strategy
- Implementing the strategy
- Making necessary adjustments (fine tuning)

Competitive Objectives

- Meet the competition
- Be the price leader
- Offer the lowest price
- Increase sales volumes
- Prevent competition
- Neutralize price through non-price means

Financial Objectives

- Maximize short-run profits
- Maximize long-run sales
- Stabilize income
- Move high-margin items
- Move slow turnover items
- Sustain a certain gross profit level

Market Objectives

- Build market share
- Build traffic
- Emphasize low price image
- Desensitize customers to price
- Create attention and interest
- Achieve future growth
- Maintain current market share

Price Policy Options

- “One-price” policy
- Variable price policy

Reasons to Vary Prices for Identical Goods

- Different acquisition cost
- Increased record keeping cost
- Cost of credit to the customer or a third party
- Delivery costs
- Frequency of customer buying

Pricing Strategies

- Cost-based
- Demand-based
- Competitive-based

Cost Considerations in Determining Prices

- Advertising and other forms of promotion
- All kinds of customer discounts
- Returns
- Delivery
- Credit and other costs of money
- Administrative costs
- Selling expenses
- Security costs

Pricing Strategies

- Demand-based pricing is related to the customers' willingness to pay

Price Elasticity and Inelasticity

- Elastic" price
 - Price = \$1.00, 100 units sold = \$100.00
 - Price = \$0.50, 300 units sold = \$150.00
 - Price = \$1.50, 50 units sold = \$ 75.00
- "Inelastic" price
 - Price = \$1.00, 100 units sold = \$100.00
 - Price = \$0.50, 125 units sold = \$62.50
 - Price = \$1.50, 75 units sold = \$112.50

Place

The hour's location and physical characteristics that make it possible, easy or difficult for customers to use your products and services

Ways to Manipulate Place

- Delivery
- Parking
- Drive-in windows
- Interior design and atmospherics
- Exterior appearance
- Telephone

The Telephone as an Asset

- Calls to increase buyers compliance
- Calls to buyers to assess customers progress and satisfaction
- Calls to newcomers to the community to alert them to your services
- Calls to old buyers whose accounts have become inactive to determine the reasons

Promotion

The most important of the "P"s

Advertising

According to the American Marketing Association:

"Mass, paid communication, the purpose of which is to impart information, develops attitudes, and induces favorable action for the advertiser."

Why Advertise?

- Attract attention
- Induce interest
- Develop the desire to buy and
- Activate the sale

Advertising Appropriation and Budget

- Establish the objectives for advertising
- Determine the type and amounts of advertising necessary to accomplish these

objectives

- Determine the overall cost of the advertisement
- Schedule the advertisement day by day

Types of Ads

- Institutional -focus on the woman's group services
- Merchandising -emphasize products and services

Selecting the Appropriate Advertising Media

- POP (Point of Purchase advertising)
- Exhibition
- News papers
- Radio
- Television

POP

- Eye-catcher
- Banner
- Leaflet
- Poster

Exhibition

- Once or twice a year, some kind of exhibition for local products. It is good occasion to demonstrate your products.
- Sometimes you can demonstrate processing procedure in front of people.

Newspapers

- Local newspapers -widely read
- Account for 30 percent of all advertising dollars
- Disadvantage -circulation sometimes much larger than supermarket trade area

Radio

- Can be more persuasive than print
- High degree of geographic and audience selectivity
- Local radio-need repetition, brevity
- Lacks visual reinforcement

Television

- Most conspicuous advertising medium
- Products or services must have mass appeal

Advertising Considerations

- Consider clearly defined marketing goals
- Is advertising best medium to accomplish your purpose? Or, would publicity be a better option?
- Do you deliver what you promise?

Positioning

- Position -sum total of its product, price, place, and promotional activities
- Do you match your position (assuming you have found one)?
- Perception becomes reality

Competition

Requisites of Success

For successful marketing in a group, you need to understand requisites of success such as

- Get and keep customers
- In a way that is cost consistent with consumers' evaluation
- Survive and profit regularly
- Define purpose, plan and communicate
- Develop a system of rewards and sanctions

Service Strategy

- Distinctive formula for delivering service
- Vision plays an important role
- Judgment, creativity and the ability to think on a global level -necessary to “see the forest for the trees”
- Organizing principle allowing people in service enterprises to channel their efforts toward benefit oriented services that make a difference in the eyes of the

customer

- Concept that describes the value to be offered
- Being called back when promised
- Receiving an explanation of how a problem happened
- Providing me with information so I know what number(s) to call
- Being contacted promptly when a problem is resolved
- Being allowed to talk to someone in authority
- Being told how long it will take to solve a problem
- Being given useful alternatives if it cannot
- Being treated like a person, not a number
- Being told how to prevent future a problem
- Being given progress reports if a problem cannot be solved immediately

Service Reliability –Recovery Link

- The problem reinforces a recurring pattern of previous shortcomings
- The recovery effort fails to satisfy the customer

Influencers of Quality Assessment

- Reliability
- Tangibles
- Responsiveness
- Assurance
- Empathy

Complaints

Customer complaints:

The least expensive consulting you can get

- The average business never hears from 96 percent of its unhappy customers
- Complainers are more likely than non-complainers to do business again with the company that upset them
- Of the customers who register a complaint, between 54 and 70 % will do business again with the organization if their complaint is resolved
- The average customer who has had a problem with an organization tells 9-10 people about it

Market Audit

- A methodical analysis of the operations, tactics, and strategies used in marketing
- A self-examination

Market Research

The most effective way for woman's group to find out the needs and attitudes of customers and thus effectively market their services

- Self test : What you know and don't know about marketing
- Customer Survey Form : Vital information for the people you serve or want to serve

Conclusion

Marketing your services and products -achieving customers' satisfaction and your satisfaction!

Attachment-6: How to Make POPs

What is POP advertising?

In the retail world, "POP" is used to refer to point-of-purchase advertising displays. Point-of-purchase (POP) advertising is in-store advertising that is meant to catch the attention of shoppers while they're in an establishment.

This type of advertising used to be mostly printed, static signage, banners, shelf call-outs, end cap displays¹, and the like. **POP displays** can take various forms, including shelf-mounted signs, hanging posters, and more.

Since an estimated 70% of purchase decisions are made within the retail store itself, effective POP displays can have a dramatic impact on sales for a particular product category or brand.

It is a simple tool among various advertising media. It is mainly written and illustrated material on paper.

Contents of POP

- ✓ Catch copy
- ✓ Explanation of commodity with price or without price
- ✓ Hand illustration

¹ In retail marketing, an **end cap** is a **display** for a product placed at the end of an aisle. It is perceived to give a brand a competitive advantage. It is often available for lease to a manufacturer in a retail environment.

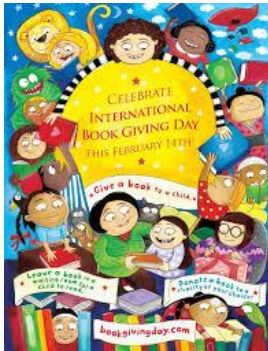
Sample of POP and other advertisement



Sales flyer



Product information



Posters



Price tags



Menus



Big sales



Direct mail (Post card)





Sample of Japanese POP



Sample of Japanese POP

Attachment-7: How to Make a leaflet

Important factors of “5W1H” in fliers

5W means ‘When’, ‘Where’, ‘Who’, ‘What’ and ‘Why’. 1 H means ‘How’. 5W1H are basic factors to convey exact message to people. If flier contains these 5W1H factors, consumers can easily understand and correspond to purchasing motivation.

1. When : day and time or period
2. Where : address of the site of sales or contact
3. Who): who→promoter, to whom→target
4. What : What do you want to inform the target? What do you want to do? What do you want to sell?
5. Why : Purpose of open a store, sales, attracting customers and etc.

+

1. How : the measure and method of distribution

Please make it clear Why (purpose) and to Whom (target). Design of flier would be decided by the objective like to whom you want to convey and to whom you want to attract. The way of distribution would be decided by the sex or generation of target.

How to make flyer

The role of flyer is to convey your word out to advertise and promote your products. First you have to let people to notice it. Next you want them to do something about it.

1. Write a headline



Make it simple, and make it big!

- The headline should be no more than five words, fit in one line across the page, and be centered
- The lettering in the headline should be bigger than any other lettering on the flyer.
- Capital letters in a POP font.
- Use color if possible.
- A color matching the image you use in the flyer is even better.

2. Keep the message simple



Do not make people “read” your flyer

- Communicate your message at an almost intuitive level
- Which headline jumped out at you? If you are like most people, the “BEST PRICE” caught your attention. That is not because everybody likes cheaper price; it is because its bright red, a color that naturally draws the eye.

3. Add a picture or illustration



After having the reader’s attention, take advantage of it! Give the reader something to look at---people tend to remember a message better if there is an image to associate with it.

- Use an image-editing application to increase the contrast; this will make the image more noticeable from a distance once it is printed on the paper.
- The picture should be centered, and its area should be no more than 1/3 of the page.
- Try to use only one image if possible. If absolutely necessary, you can include two images side by side, but any more than this will make the flyer too cluttered, which makes it less likely to catch someone’s eye.

4. Place a description below the image



- You've got the readers hooked, and they're coming in closer for the details. Make your description text as concise and detailed as possible; it should be two or three lines at most.
- To emphasize key words, use capitalization, a slightly bigger or bolder font, italics, and so forth—just do not use all of these options at once as that turns your flyer ugly in a hurry. Use words and phrases that might make your offer more enticing: *free, reliable, only, REWARD.*

5. Add your contact information



- If it is important for people to contact you in response to your flyer, add your first name and whatever form of contact you prefer—phone number, email address, etc.
- You can also employ the time-honored "tear-off" method: create a condensed version of your flyer text in a much smaller font, rotate it 90 degrees and repeat it several times across the bottom of the flyer. Make a partial cut between each occurrence so people can tear off the contact information conveniently

6. Make sure your flier works



- Tape it up on a door and stand back from it about 3 meters.
- Do the main points jump out at you?
- Looking at the sample flyer left side, you can see right away that it's a lost kitten—the cute photo draws you in to want to help, plus there's a big reward!
- Ask a friend or family member who has not seen your flyer to take a look at it, and see if they get its message right away.

7. Make copies

Now that you have completed your flyer and tested it, print as many copies as you need.

- **Black-and-white copies** are generally much cheaper than color. If you decide to go with black-and-white, you might try this: instead of printing the headline and any colored words, **leave those sections blank and write them in by hand with a colored marker**

8. Post your flier

Where should you post it? Well, where are the people that you want to reach?

- Note that in urban areas there are often restrictions on what you can post, and where—since it is easy to find you, do not flaunt the regulations!
- Try coffee shops, public bulletin boards, and if you see a pole that is covered with flyers—it is fair game!

Attachment-8: Guideline for Training in Bookkeeping

Bookkeeping for women's group

Bookkeeping is necessary skills for any group that handle money. It is important for the members to be equipped with a good skill of bookkeeping. However, it is better not to introduce complicated one that will hinder the members to practice and cause more mistakes if the member do not have much experience. Introduce a simple and understandable form and method at the primary stage.

It may worth considering to set the training as per level of understanding of the participants.

Preparation: Facilitation material, sheets of cashbook format (enough for the number of participants), pens for participants, flip chart.

Bookkeeping facilitation material:

Contents: Importance and meaning of keeping cashbook

What is a cashbook?

How to maintain cashbook

Example of cashbook

Important issue in cashbook keeping

Facilitation:

First of all, it is important for the audience to understand concept and importance of bookkeeping, which will highly influence their practice after the training. People can practice by themselves as long as they recognize the necessity being equipped with adequate skills. Therefore, explain the importance citing practical situation as examples during the facilitation.

Secondly, explain how they should maintain the book, including when (wherever a transaction occurs), for what kind of transaction (any incoming and outgoing), compatibility with cash in hand, attachment of proof documents such as receipts.

Then, explain how to enter each transaction into the book, going step by step, starting from the explanation of the format

Exercise of the participants:

After the explanation through presentation, let the audience to practice recording on a cashbook format with some examples of transactions.

Example of transaction
1. There is a balance from the last month \$1,250
2. purchased seeds of vegetables on 5 th November 2012 with cost of \$15
3. purchased fertilizer on 13 th November 2012 with cost of \$150
4. sold seedlings grown by the group for in total \$ 400 on 20 th November 2012

- Prepare blank cashbook format sheets for individual participants to fill and a flip chart with the blank format.
- Distribute a cashbook format to the individual participant.
- Read the example of the cash transaction one by one (the one on the right or one prepared by facilitator), and let the participants to complete the work.
- Give enough time for the participants to complete the work.
- Ask one of the participants to fill the form on the flip chart to explain to other participants.
(This trial is not to test the participant but to create more confidence of the participants. Therefore, never accuse their mistake but encourage them to try!!)
- Make additional explanation if necessary.

A sample answer

Date	Particular	Receipt No.	Incoming	Outgoing	Balance
01/11/2012	Balance from last month		1,250	-	1,250
05/11/2012	Seeds of vegetables	1	-	15	1,235
13/11/2012	Fertilizer	2	-	150	1,085
20/11/2012	Sales of seedlings	3	400	-	1,485

Budgeting and Pricing

Budgeting of the group activity

For the farmers' group be it for farming, for processing, or for any other purpose, simple budgeting can make their activities more fruitful, by planning financial overview of their activities.

1. Cost analysis

At the beginning, let the women to become able to identify all the direct cost of their activity as there are some costs which are somehow forgotten to be taken as a cost.

They will need to consider the following categories;

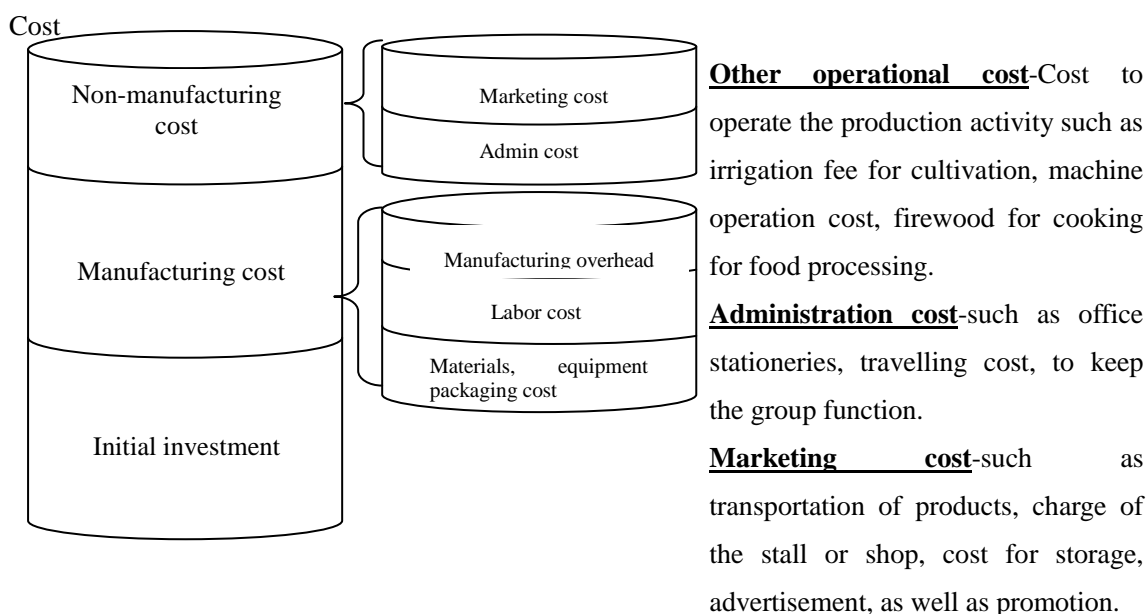
1. Manufacturing Cost (costs directly assigned to a particular production)
 - Direct material
 - Direct labor
 - Manufacturing overhead (cost for operation of manufacturing)
2. Non-manufacturing cost
 - General administrative cost
 - sales cost (expenses that is required in the process of the marketing)
3. Any other indirect cost

Example of the costs to be considered

Materials – This includes raw materials, ingredients of the product, seeds, as well as packaging materials. This is the easiest to be identified, though sometimes they purchase in bulk and utilize for several different purposes.

Equipments-Utensils, equipment, machinery etc. for production process can be identified and to be calculated as a cost. This is a little more complicate to calculate as a cost as some can last for long and can be utilized for several times, thus need to be calculated the cost per unit of the product.

Labor cost- When the group is operating their activity purely by themselves, labor cost may not be counted as a cost but included in their profit. However, it is necessary enough to calculate wage and labor cost even of members if the group step forward to business entity or enterprise.



How to calculate fixed cost

Fixed cost, which is necessary to be born regardless the amount of the product, should be calculate from the total cost divided by the number of products.

e.g. A utensil

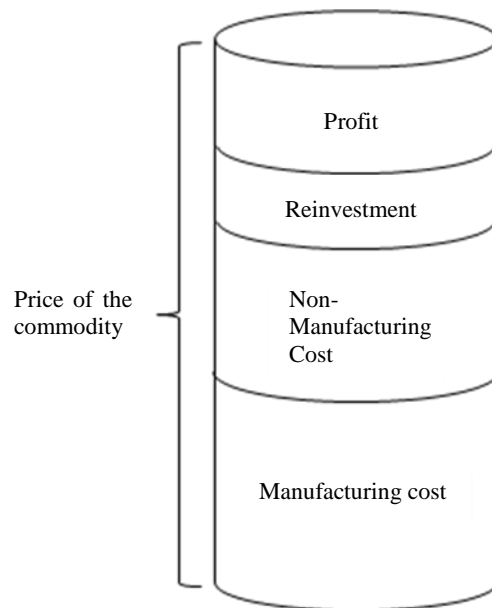
The utensil for processing, which costs \$360, can serve the purpose for about 1 year, producing 10kg of the product per month.

- ◆ Calculate the cost of the utensil per product (per kg)!!
 $\$360 / (10\text{kg} \times 12 \text{ months}) = \$ 3 \text{ per } 1 \text{ kg of the product}$

2. Pricing

In the above you will arrive at a gross total cost at point of sale. To price the product, they will add a profit margin that will be operational and development. Operational should be taken on a daily production basis and development should be retained for expansion. The margins on the above two components should be decided taking the market prices on similar products. If the market prices are less than what they would arrive at because in some other places there would be more economics of scale than a small manufacture, then they should add value to their

products such as handsome or true products of area etc, which will derive a premium to their products and buyer will not mind paying for added value. However, the pricing should be kept constant and not vary as is often the case that the regional small producer is so eager to get money into their hands that they would even sell at a loss with the shorter version and will not sustain for longer period.



The following factors should be considered in pricing

- ◇ **Cost:** Does the price cover all the cost?
- ◇ **Profit:** Can it generate income from the production?
- ◇ **Market price:** Is the price fair for target customers?
Are people willing to buy with the set price
Is the price competitive with other similar products?
- ◇ **Sustainability:** Does the price cover capital for reinvestment to develop production?

Different method of pricing

	Concept	Simplified examples of calculation
Cost based pricing	Price is determined by the cost with a certain rate of profit margin. Profit depends on the volume of product sold.	
Target return based pricing	Price is determined by the total return you expect and the expected profit is divided by expected volume of sales and .be included to unit price of the product.	
Value based pricing	Price is determined by the value of the products judged by the customer, the amount customers are willing to pay for the products	

Example of pricing based on cost plus profit

e.g.: 1 kg of a product

Cost of production	Material cost	Ingredients and utensils	\$40
	Packaging cost	Packing bag, label., price tag printing	\$10
	Labor cost	Payment to the producer	\$30
Operational cost	Shopkeeper	Commission for shop keeper	\$10
	Admin cost	Stationeries	\$ 5
Marketing cost	Promotion	Display, posters, POP	\$10
	Transportation	Transportation for procurement	\$5
Reinvestment		Saving for permanent sales point	\$20
Profit			\$20
Price of the product			\$150

Compare with market price and see if it is marketable

Value addition and price

Why is value addition more profitable?

Value added products have advantage and more profitable when it matches more to the taste of people, is more suitable for a particular need/occasion., such as gifts, health effects of the product, etc., or it is rare thus demand gets higher than the supply. All those increase utility of customers, for which people prefer to have nicer and better quality product even with higher price.

Examples of comparison

	Normal product	Value added product
Cost	\$3.0	\$3.2 (cost difference due to value addition)
Selling price	\$3.5	\$4.0 (can be sold with higher price if it matches customer's taste)
Profit	\$0.5	\$0.8

➤ Practice!!!

Method: Prepare sample cases of procurement, production, marketing etc. and let the producers demonstrate pricing calculation. Start with a simple example even if it does not cover all the complicate cost at the beginning.

	<i>Product A</i>	<i>Product B</i>
◆ Production (including packaging)		
<i>Raw materials:</i>	Locally purchased with \$10/1 kg of the product	Main ingredient is locally collected: \$0 Some other ingredients purchased with cost of \$3/1 kg of product
<i>Transportation for procurement</i>	Return to XX aldeia. \$3 to transport material for 30kg of product	Return to YY aldeia. \$50 to transport material for 25kg of product
<i>Packaging</i>	Package materials \$12 (to pack 40kg of the product)	Package materials \$50 (enough to pack 50kg of the product)
<i>Labor cost</i>	\$15 / 10kg of the product	\$9/10kg of the product
◆ Marketing(setting stall, transportation of products, display)		
<i>Displaying materials</i>	\$60 (durable for 6 months)	\$60 (durable for 4 months)
<i>Transportation</i>	\$10 per 20kg	\$8 per 20kg
◆ Administration cost		
<i>Stationary and tools</i>	\$ 50 (durable /enough to operate for 5 months)	\$60 (durable 4 months)
◆ Profit		
<i>Expected profit</i>	\$1.5	\$2.0
<i>Expected sales per month (kg):</i>	100kg/month	150kg/month
<i>Price per kg</i>	\$ _____	\$ _____
<i>Market price of a similar product</i>	\$ _____	\$ _____

3. Record keeping in sales management

Stock taking

➤ Logic of stock taking

Stock taking is to manage the products understanding which products are sold well, how many of each product have been sold, how many products are produced and laid in stock, which products they should produce more. This will result in good marketing by understanding marketing needs.

➤ How to keep stock record

Stock taking is to confirm the situation of the products in stock. Basic things to be confirmed are as follows;

- Number of products existing in stock
- Number of products newly laid in stock
- Number of products sold
- Number of products remaining in stock

These records should be kept in one sheet for one product.

Sample record;

Item name: Dried sweet potato

Date	Balance Before	New supply	Total in store	Sold	Balance	Signature
2012/6/19	0	10	10	3	7	
2012/6/20	7	5	12	8	4	
2012/6/21	4	10	14	3	11	
2012/6/22	11	0	11	5	6	
2012/6/23	6	10	16	0	16	
2012/6/24	16	5	21	9	12	
Total of this month		40		28	12	

Annotations:

- Balance from the previous day (should be the same as 'balance' of the previous day)
- =Balance Before + New Supply
- Number of the product newly brought by producers
- =Total in store - Sold
- Total number of the product of the month
- Total number of the sales of the month
- Remaining balance of the products at the end of the month

Sale record keeping

➤ Necessity of sales record keeping

Apart from the book keeping, it is necessary to keep record of sales of the day. After checking the stock, all the products in the shop should be recorded before start sales. Each time the products are sold, record by ticking on the record sheet.

As long as they record the items sold and handle the cash as priced properly, calculation of the earning and remaining balance can be done after closing the shop. The earning should be confirmed with the actual cash in hand and the remaining balance of items should be confirmed with the actual products in stall before closing the day.

Sales Record

Date: 21/6/2012

Name of recorder: _____

Items	Unit price	Balance No. of the item	No. of newly arrived item	No. of item in stall	No. of the item sold	Gross earning (\$)	Remaining balance of the item	Signature of recorder	Signature for approval
Potato chips	20	10	5	15	4	80	11		
Herb tea	80	8	2	10	3	240	7		
Dried potato	100	5	3	8	5	500	3		
Total						820			

The record should be confirmed by the record keeper of the day and be approved by a responsible person. As long as the record is kept properly confirmed with the actual cash and products in hand, it can be managed by rotating the shop keeper among the group.

◆ **Practice!!!**

Sales Record keeping

Method:

Divide the participants into 2 groups and practice sell and shopping simulation.

One group to play as customers and the others group keep sale record as shopkeepers.

1. Both groups record their product on the form and prepare the shop
2. One group to purchase from the other group. Shopkeepers keep sale record
3. Turn and change the roles. The other group practice the sale record
4. Both group calculate their sales and confirm with remaining stock in each shop
5. Present their sales

Preparation:

Fake cash notes, products cards, recording sheets

Attachment-12: Guideline for Discussion on Group Savings

PART 1: SAVING

Chapter 1: Saving first

What is saving?

Saving: It means withholding something valuable for future use. There are two elements in saving activity.

- 1) **Discipline and sacrifice:** Withholding something valuable for future use instead of consuming it now.
- 2) **Planning for the future:** Saving is all for the future.
 - ◆ Anticipating and preparing for possible risks and emergencies (a bad harvest, sickness or death),
 - ◆ Preparing for upcoming events and expenditures (payment of school fees, a marriage, old age, or funeral)
 - ◆ Starting a new business or expanding an existing one.

Why people save?

Everybody saves, even the poor. It's just that the poor have fewer resources to start with, and so can only save in small amounts.

People save for a variety of reasons:

- To prepare for future emergencies or risks (natural disasters, injuries, death).
- To smooth out variations in income and consumption: Saving during surplus periods to use during difficult periods.
- To educate their children.
- To be prepared for old age and disability.
- To invest in opportunities potentially profitable (purchasing a cow, starting a small enterprise, storing grain to resell during high price season, etc.).
- To fulfill social and religious obligations (marriage, funeral).

How people save

People save in many ways, as *individuals* or in a *group*. They may save *in goods*, *in cash* (at home or in a bank), or by *giving*.

- **In goods:** When prices are continually rising (high inflation), when there is little cash in circulation (barter economy), or when there is no bank around, saving in goods may make sense. In goods savers normally save in food-grains, like maize or rice, or in livestock, such as cattle, goats, or chickens, and sometimes in items like gold or other valuable goods which increase in value as prices rise and can be easily resold for cash at a later date.

The disadvantages of in goods savings are that they tend to be less portable, more difficult to store and maintain (cattle are vulnerable to diseases, grains can be attacked by insects or rodents), less easily converted into cash, and more visible (sometimes people don't want others to see that they now have more chickens or cows than they used to have).

- **In cash:** Almost everyone, including the very poor, has some need for cash: to buy medicine or pay for school fees or buy new clothes, etc. The main advantages of saving in cash are that cash is very portable, storable, not very visible and can be exchanged for almost anything. In view of these features, saving in cash is generally preferred. The main weakness of keeping cash is that it can lose its value during high inflation. That's why many choose a mixed strategy of saving in goods and in cash.
- **At home or in a bank:** Saving **at home** has its benefits. The savings are nearby and easily accessed, but this means that it is also more easily accessed by other family members or can be easily stolen.

Saving at a **bank** may be a safer option. The problem is that banks only accept cash savings, the cost of opening and maintaining a savings account can be quite high and there are few banks, if any, located in rural areas.

- **By giving:** People give gifts or offer services not just out of generosity, but also sometimes with the hope of receiving the favor back when needed.

A typical example would be volunteering to help a neighbor harvest his crop. By doing this, you expect him to help you when it comes time to harvest your crop.

What about borrowing?

On the surface, using someone else's money and then paying it back later, seems easier than saving. Borrowing doesn't require any immediate sacrifice. You get the money

quickly and don't have to worry about paying it back until later. But is it really easier than saving?

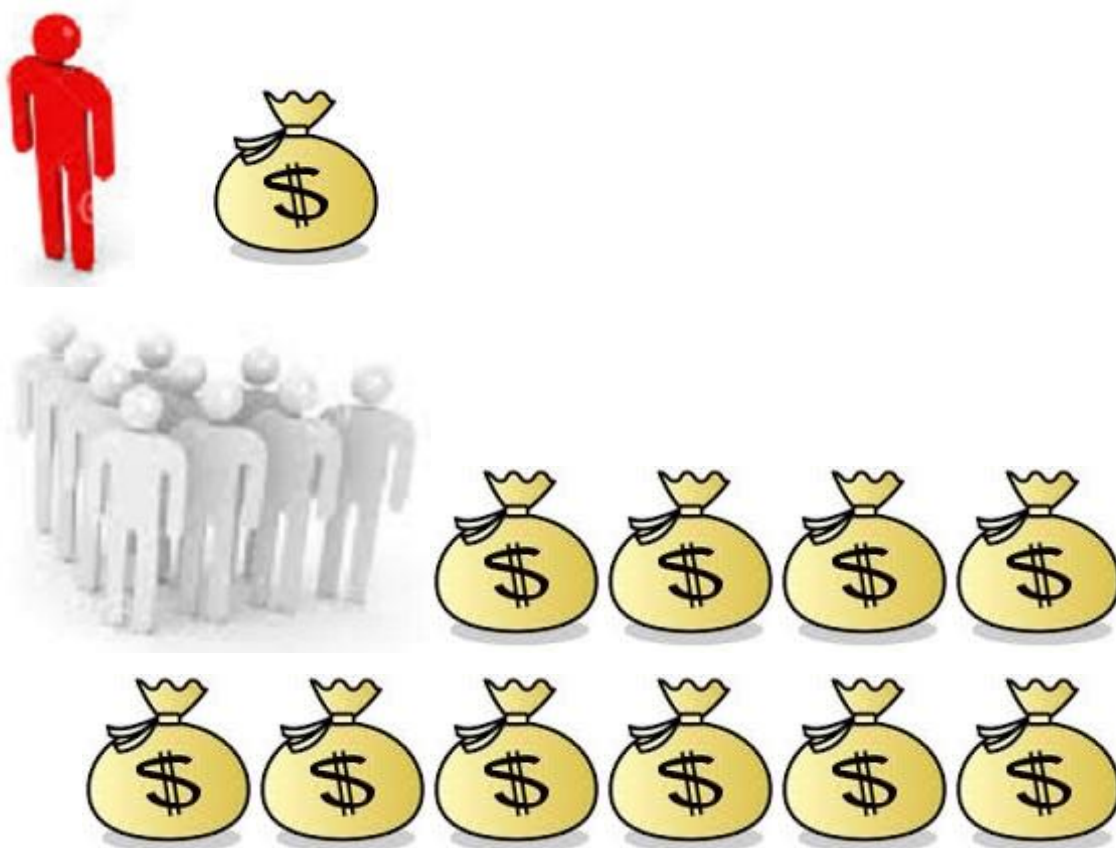
- **Borrowing can be expensive:** The borrower will have to pay back the loan itself, plus pay additional interest on the amount received. This can get expensive! There can also be “hidden” interests. For example, a shopkeeper may lend a person money without charging interest directly on the loan, but instead increase the price of the items the borrower must buy from him (medicines, food, other household items).
- **Borrowing can be risky:** Since the poor are more exposed to risks caused by weather, income fluctuations, diseases, theft and death, they may have repayment problems. Suppose that after borrowing some money a family member becomes ill. The money may then have to be spent on medicine rather than on the planned investment. This will make repayment difficult and worsen their situation.
- **Borrowing can be difficult:** For the above reasons, the poor may also have more difficulties in obtaining loans than would the rich. Lenders, whether a friend, a local moneylender or a bank, are unlikely to lend to people they think will have problems in repaying.
- **Borrowing can be stressful:** A loan involves a promise to repay the lender. Normally the full amount must be repaid within a fixed period of time, often with interest. Failure to repay may mean losing valuable possessions (gold, a cow, a plot of land, etc.) or one's good reputation, being threatened and/or becoming more indebted by building up fines and interest payments.

How can the poor save more?

The poor do save. It may be just a few bags of rice or maize, money to pay for school fees, but they usually save something. However, they have difficulties in becoming better off since they face a lot of problems. By adopting group saving approaches they can overcome some of these problems.

Let's see how.

- The poor can save only **small amounts individually**, which are usually not enough to invest in productive resources.



By saving as a group, the poor can accumulate a larger amount of money more quickly by pooling their savings in a common fund which can then be used by the group or a member of the group for productive investment.

- **Low level of literacy** and numeracy skills make it difficult for the poor to keep track of their savings and to manage their money.

By saving as a group, the poor can help each other learn these skills. As a group, they can more easily receive literacy and money management training from group promoters or trainers from NGOs, and also learn from other more literate members.

- **More vulnerability to risks** like bad harvest, food shortage, sickness, flood, income shortage, etc.

By saving as a group, these risks can be shared between the members. Individual members can rely on other members for help in time of need. Group savings can be used like an **insurance** scheme to help members deal with these emergencies when they arise.

- **No access to safe saving facilities**, such as banks.

By saving as a group, people can create a safe place to put their money. Some group saving methods do not require storing at all, since the money is immediately redistributed after collection. The group can also buy or make a cash box that will be safeguarded by several members.

- **Social values** which expect individual savings to be redistributed to the extended family and regard individual accumulation of resources as selfish behavior.

By saving as a group, the poor can protect themselves from accusations of being selfish, since the savings belong to many individuals, not just one. The threat against a single member of the group is a threat against all members.

CHAPTER 2: Getting started

When looking into starting a saving activity with a group, first find out how people in the village manage their money and other productive and social resources. If you are an external facilitator, one of your most important tasks will be to gain acceptance by the village.

This can take a long time, but it is important that you obtain the support of the village leader(s) and villagers themselves. Work to gain their trust by talking with them regularly. Listen and show respect. You can prepare yourself by gathering information about the village from the local district office, non-governmental organizations (NGOs) and local leaders.

Examples of information to be gathered

- The living conditions of different socio-economic groups in the community - where is the nearest local bank, what are some traditional saving methods, where and when do households get their income from and how do they spend it?
- The needs of the community.
- The way the community solves its problems.
- Social patterns in the community - who talks to whom and why?
- The community power structure - who are the leaders and opinion makers?
- Informal and formal organizations of men and women (both mixed and separate).
- Links between the community and supply of services and who controls them.

Make sure to always crosscheck the information collected from different sources, until you have a good idea of how accurate the information is.

Group formation

Identify the people: Use your own knowledge together with suggestions from villagers to identify men and women in need. In a rural community, often, you will find three broad wealth categories: the big farmers, with land and access to development services, the middle farmers, with sufficient resources to meet their basic needs, and the poor, who live at subsistence level. Remember that identifying and assisting the poor is a sensitive issue. People may not like to be identified as poor, just like the better-off may not want to be identified as rich for fear of being left out of possible assistance. You can get information on socio-economic differences through informal interviews or by doing a wealth ranking if necessary.

- **Discuss group formation:** Identify members of the village who are interested in working in a group. Organize one or more meetings with them to discuss their situation and financial needs and explain what you can do to assist them. It is best to keep the meeting small. A group of 8 to 15 people is ideal, since it allows for more open face-to-face discussions. If the group is too big, form sub-groups with people who have common interests. Large meetings tend to be less effective, since opinions and interests are more diverse which makes reaching agreement more difficult.
- **Identify a clear development goal:** Help the group express their goals and expectations clearly. People usually express their goals in general terms, such as “to generate income for the family”. It is important to establish realistic goals with specific actions. Let the group express their goals and discuss whether they are clear or vague. For example, “I want to improve my children’s education” is vague. “I want to buy school books and uniforms for my children for the next school year” is clearer.

Key to success

- **Discuss saving:** Discuss how they intend to achieve their goals through saving. What are the advantages and disadvantages of saving? Illustrate your discussion with real stories of successful or failed savings groups. Do they know of any similar stories? How do people save? What are some traditional saving methods? How do people deal with emergencies? Discuss the different factors enabling and constraining saving in the community.

Factors enabling or constraining saving

The success of any group saving activity will depend on a number of conditions that may either promote or discourage these approaches. Therefore it is important to know what they are and design a saving activity adapted to the local environment. Careful assessment of the local conditions as well as the skills and resources of group members (existing or potential) should be made. Some of these factors include:

- **Use of cash:** The more cash that is in circulation in the community, the more likely saving in cash will be useful. Although this manual focuses on saving in cash, saving in goods (livestock, grain, gold) can also be important. Many find, for example, saving in livestock (cattle, goats, sheep, and poultry) a better store of value since the livestock produce offspring and/or by-products (meat, hides, wool, eggs) which add value and can be converted back into cash when needed.

The main problems with in-goods savings are that they are not as portable as cash; they are more visible and more difficult to hide from needy friends and relatives; and they may be more subject to diseases as well as to theft. This type of saving requires good knowledge of taking care of livestock and/or storing grains, etc. How useful would saving in cash be for the group members?

- **Access to banking services:** Banks are usually safe places to store money but few are located in rural areas, they often have expensive service fees and very few are interested in providing services to small savers. This may make saving in a group the next best option for safekeeping one's money.

As the group and its savings fund grow, it may need to purchase a cash box or a safe to safely store its cash. The group or individual members may eventually also consider linking-up with a nearby credit union or a bank.

- **Inflation:** Rapidly rising prices decrease the value of the money you save. In other words, as prices continue to rise you find that your cash savings can buy less and less goods. Inflation may discourage people from saving in cash. If prices are rising, saving in kind may be a better option.
- **Social and economic differences:** Friends and neighbors, people of the same ethnic background, gender, age group, religious or social group, or those with similar incomes and expenses may be more inclined to form a savings group

than those who have little in common. That's because they trust each other or have similar potential to save. Forming a savings group with persons of very different backgrounds may be much more difficult and is not encouraged.

- **Traditional saving practices and social values:** In some societies, failure to share one's own resources with friends and family can result in being called selfish or even a witch, and these attitudes may discourage saving. What are the different ways people save in the village and which ways are preferred and why? What are the traditional values associated with saving? Do they encourage or discourage saving? If you are able to accumulate money or resources, are you considered as being selfish, and as taking money from someone else? Do people become jealous? Would saving in a group help one avoid these accusations?
- **Gender:** In most cultures, forming mixed savings groups with male and female members is accepted. However, in some mixed groups, men can dominate decision-making and leadership positions, leaving women members few opportunities to develop and acquire leadership skills or benefit from common resources. Women savings groups can create a legitimate opportunity for women to meet and work together, and gain leadership skills. Separate groups of men and women can be practical as long as both sides are aware of each other's opinions and activities and do not enter into conflict with each other. Raising awareness about gender issues with men is as equally important as empowering women.
- **Investment opportunities:** Raising funds to start a small enterprise, to purchase land, livestock or farming equipment, or simply to meet family food needs, are important saving objectives for many. Using one's own savings for productive investments, as opposed to getting a loan from someone else, may take more time, but it is a safer way for the poor to escape the poverty trap. To succeed, their investments must be well-planned and profitable.
- **Existing groups:** It is easier to organize group saving activities with an active self-help group rather than to start a new one. Promoting saving within a small group is also easier because members know and trust each other and learn more quickly. Record keeping is also less of a problem in smaller groups.

- **Living nearby:** People who live near each other are more likely to have similar problems and needs. They also tend to know more about each other and who is trustworthy and who is not. Also, the closer people live to each other, the easier it will be for them to meet on a regular basis.
- **Education:** Groups with higher literacy rates are better able to keep track of their savings, maintain good records of meetings, etc. Although some group saving methods require little record keeping, the group should continuously encourage members to improve their literacy and numeracy skills and their knowledge of the world around them.
- **Health:** Diseases, such as HIV/AIDS, TB (Tuberculosis), malaria, and disabilities reduce a household's capacity to save. These will affect a group's saving capacity, when some members are no longer able to contribute their savings or when loans are not paid back. Groups should take careful measures to **safeguard** the savings of all members by helping members in those situations better manage their resources. For example, the group can start a savings fund that will help finance the healthcare or funeral costs associated with the illness. Funeral societies (savings groups providing funeral services to their members) are commonly found throughout the world.
- **Institutions and policies:** As long as saving groups operate informally and on a small scale, they can set their own rules and regulations. But as the group's savings grow, it may want to open a bank account and this may require that the group be legally registered. Legal status may bring more opportunities, but may also come with more rules and regulations, hence less flexibility. Find out what process is involved to be registered, and what benefits or constraints are linked with this legal status.

Keys to success

What then, are the basic factors that can contribute to group saving success? There are some key elements which the group should have and these include:

- **A common bond:** The more similar each member's interests, goals, backgrounds and incomes are, the less likely members are to get into conflicts and arguments

and the more likely they are to make quicker decisions that satisfy most members' concerns.

- **A clear saving objective:** Savings should be mobilized for productive uses (that will directly or indirectly increase members' incomes and their ability to save). The group can choose a common goal, such as saving to buy fertilizer for all members, or each member of the group can choose his/her own savings objective, depending on his/her priority and capacity.
- **Small groups:** Successful saving groups tend to be small rather than large. The average size of successful self-help groups is between 8-15 members, but this number can vary. In smaller groups, there is more face-to-face contact, making trust-building among members easier, and decision-making and collective learning more efficient. Small size also means small mistakes. So start small and let the group grow as it gains more experience and when it is ready to do so.
- **Discipline:** Saving requires discipline since it means withholding something for future use instead of consuming it right away. All group members must have discipline and agree on a common set of rules to follow. If the rules are not enforced, then all members suffer. Groups solve this problem by using peer pressure or punishing those members who do not follow the agreed rules. This may include a fine for late payment or for missing a meeting, and even expulsion from the group.
- **Team spirit:** Sometimes having a common interest and being disciplined are not enough. "Team spirit" is also needed. Good group leaders can develop this spirit, but it can also be strengthened by other means: by giving a special name to the group which all members can identify with. The group can also develop a simple list of principles all members agree are important and worth preserving.
- **Trust:** Group saving not only requires that all members adhere to and respect a set of rules but that they trust each other. If they don't, benefits will quickly disappear. Trust is built by showing commitment and discipline. If a member fails to honor his/her commitment, then it should not be left unpunished. Rules that aren't enforced are seldom obeyed.

Features of a successful group

- Members have a common bond.
- Members have clear objectives.
- Members have agreed upon rules to follow.
- Members are honest and work hard to achieve their objectives.
- Members hold regular meetings and participate in discussions and decision-making.
- Members demonstrate leadership.
- Members keep accurate records of their activities and meetings.

Tips for group facilitators

As a group facilitator, your task is to help poor people mobilize more resources for productive use by promoting savings groups or helping existing groups set up saving activities. The ultimate goal is to help people better manage their own resources themselves to improve their lives.

Your assistance to groups may include:

- Visiting and talking to individual members and other people from the community;
- Attending group meetings;
- Visiting groups when they carry out their activities;
- Organizing workshops, training sessions and evaluations for group members;
- Following-up on items discussed in the meetings, workshops, training sessions and evaluations.

Hints for facilitation

Encourage participation. Meet in open areas, where all can observe and comment on charts or maps. Keep the circle open to encourage participation.

- **Minimize your role.** Allow the participants the space to take the lead in activities. You should resist the temptation to move to a higher position (standing over participants, moving into the circle to get more attention or speaking louder, etc.). The more you keep a low profile, the more the participants are likely to take the lead.
- **Keep language simple.** Use simple terms like savings, credit, insurance or

emergency funds, instead of “financial services”. Use words that the community people use in their daily lives.

- **Think about your facial expressions.** An encouraging smiling face can be an asset, just as frowning can create insecurity among participants.
- **Take care of your appearance.** Do not wear sunglasses or clothes that set you apart, distract or intimidate others.
- **Spend time in the village.** This eliminates delays due to travel, but is also an opportunity to create a relationship with the community and learn about the place. This also ensures that you are ready for the participants, and not the other way around.
- **Observe.** You will easily learn who are the leaders in the group and in the community. Listen to reactions.
- **Be a student.** You are here to guide the process, but you are not the expert on the participants’ situation. They are. Listen and learn. Ask questions respectfully and resist the temptation to impose your own ideas.

Attachment-13: A Sample Form of Passbook

Date	Details	Withdrawal	Deposit	Balance
2015		\$	\$	\$
1-Apr	Distribution from chips		25	25
1-Apr	From microcredit		25	50
1-Apr	Cash withdrawal	25		25
1-May	Cash deposit		5	30
1-May	Payback to micro credit	5		25
1-May	Distribution from chips		2	27
1-May	Distribution from dreta		2	29
Total		30	59	29

Attachment-14: Guideline for Discussion on Use of Earnings

Part 2: How to utilized saved money in the woman's group

This section mainly describes the Savings and Credit in woman's group, what they are used for, what their advantages and disadvantages are, and how they operate.

Accumulative Savings and Credit in the Woman's Group

In this woman's group, the contributions collected from production of cassava chips or other income generating activities are accumulated and stored with a help of NGO. With this accumulating fund, the group can do many things. It can lend to its members free of interest or with interest. Interest earned on loans can become income earned for savers, adding incentive for members to keep their savings with the group. This method can serve both savings and credit needs in a flexible way.

How an Accumulative Savings and Credit Association works

In this savings and credit association, members contribute a fixed percentage from generated income for a period of one year or more. After the group has saved enough money, it can start giving out loans to members. The loans can be paid back in installments, or in whole (lump-sum), free-of-charge, or with an additional interest charge.

Charging interest on loans generates additional income which can be used to help the group savings fund grow, to cover any costs in running the group, and/or to pay members an income on their savings.

The group can also decide to accept regular or irregular contributions of equal or unequal amounts or percentage from generated income of members, to keep the fund with the group, to lend the money to more than one member and charge interest on it, and a combination of these.

The woman's group will have to decide on which way it will run its Accumulative Savings and Credit Association to satisfy the needs and capacities of its members.

What it's used for

- Expected expenses (marriage, education, health care)
- Unexpected emergencies (death, injury, fire)
- Investments (buying a cow, starting a small enterprise)

Advantages

- Interest earned on savings can be used to fulfill individual and/or group interests
- Larger amount of savings can be accumulated overtime
- More flexible individual savings and loans options

Disadvantages

- Management and record keeping skills needed
- Risk of default by a borrower
- Safekeeping of funds required (in a cash box or NGO safe or a bank account)

Steps

1. Decide on how often the group will meet. (once a month)
2. How many percentages can each member contribute from their income? Will every member contribute the same amount or different amounts?
3. Agree on a set of rules and regulations to ensure discipline and trust. For example, fines for missing a meeting or late payment of contribution or loan, and expulsion from the group for more serious misbehavior.
4. Decide on who will be the leaders and for how long. Leaders can consist of a chairperson to facilitate the meetings, a secretary to keep minutes of the meetings, record-keeper records on the transactions, and a treasurer to keep the money. In addition, advisory auditor from NGO monitors their activity of micro credit. It is highly advisable to divide these duties to increase transparency and avoid mismanagement of the funds.
5. Find a safe place to keep the money, either in a safe of NGO or in a cash box. One way to safeguard the savings is for one trusted member to keep the box, while another trusted member keeps the key. Another way is to put two locks on the cash box and have each key kept by a different member. This provides some protection against temptation overcoming one person.

6. Decide on how long the group will save before starting to give out loans. Never lend out all the accumulated savings to one person only. Remember, the money belongs to all members of the group. Minimize the risk of loss, and always keep some money in reserve.
7. Decide on the conditions members must meet to receive loans and the terms of repayment. The size of the loan should be limited to a proportion of the total amount saved by the borrower. Each borrower should present one or two members with savings to stand as guarantors (co-signer) in case the borrower cannot pay back. If loans are not repaid on time, a fine should be charged.
8. Close accounts periodically, say at the end of each year, and return the savings to the members. This step helps ensure transparency and members trust that their money has been properly handled.

Some rules-of-thumb on lending

Rule 1: Offer a loan that the borrower is able to repay

Set loan terms that match the cash patterns of borrowers. Loan repayments can be made on an **installment basis** (weekly, biweekly, monthly) or in a **lump sum** at the end of the loan period. For example, for seasonal activities, it may be more appropriate to design the loan such that a lump sum payment is made once the activity is completed (for example, after harvesting of coffee). However, care needs to be taken with lump sum payments, particularly if there is risk that the harvest (or other seasonal activity) may fail. One way to protect against this type of risk is to combine installment with lump sum payments, by collecting a minimum amount of the loan through installments, with the remainder paid at the end of the harvest.

Rule 2: Motivate borrowers to repay loans Create incentives. Groups should have a maximum loan size for first-time borrowers (you can test-start with a loan equal to the size of the borrower's savings), which can increase with each subsequent loan. This creates an incentive (the promise of a future larger loan) to repay the loans. You can also have the borrower pledge a valuable object or property as a guarantee (**collateral**) in case she cannot repay the loan.

Rule 3: Charge loan fees and interest *Set an interest rate that covers risks.* Lending can be risky and may involve costs. Sometimes loans may be repaid late (*delinquency*) or simply left unpaid (**default**), the accumulating fund is subject to inflation, and the management of loans and savings may involve administrative costs (paying a secretary and/or treasurer, bank transaction fees, transportation costs, etc.). If the interest rate is set right, it can cover these costs and provide in addition an income on members' savings. Interest rates are expressed as a percentage of the loan over a period of time (usually annually). Find out what interest rates have been set by the nearest commercial bank or other organizations providing loans in order to get an idea.

Three main ways to cover these risks can be used:

1. **Charge an initial loan service fee:** The simplest way is to charge a service fee at the time of disbursing the loan. The fee is usually a percentage of the initial loan amount and is collected up front.
2. **Set a flat interest rate:** The interest rate is set as a percentage of the loan amount at the time of disbursement and stays the same from the time the money is lent until it is fully paid back. This is easier to calculate as the interest payment amount remains the same throughout the repayment plan.
3. **Set a declining interest rate:** The interest rate is set as a percentage of the loan amount at the time of disbursement, but the rate decreases in proportion to the amount the borrower has left to pay. This method is used most often, as it is also an incentive for borrowers to pay back quickly. However, this requires more advanced record keeping skills.

Minimize your risks!

Always remember, micro credits are from the savings of all members!

Members are free to use their savings as they like; in most cases, savings are used for school fees, fertilizer, seeds, income-generating activities, and food. The savings made during the better season of the year help to overcome food shortages in difficult time, preventing households to sell off valuable assets or become indebted.

Record keeping

The Accumulative Savings and Credit woman's group requires very careful record keeping. Here is an example of record keeping for a group (for simplicity, this group has only 3 members) that meets once a month and each member contributes 10% monthly. The group has a savings book indicating the date of the meeting, names of the members (1st column), individual member's deposit for that meeting (2nd column) and each member's total savings (3rd column).

The Starting Balance shows the group's total savings at the start of the meeting. The Ending Balance shows the group's total savings at the end of the meeting, after deposits have been collected.

Example of records for two meetings on a savings book

DATE: 1 March (1st meeting)		
STARTING BALANCE		0
Member	Deposit	Member Savings
Riany	\$5	\$5
Maria	\$5	\$5
Nora	\$5	\$5
Total Deposit	\$15	\$15
ENDING BALANCE		\$15
DATE: 1 April (2nd meeting)		
STARTING BALANCE		0
Member	Deposit	Member Savings
Riany	\$5	\$10
Maria	\$5	\$10
Nora	\$5	\$10
Total Deposit	15	30
ENDING BALANCE		30

At the 12th meeting, the group has accumulated \$180. Maria asks the group for a loan of \$80 to start a small fish trading business, which she is given. But she must still

continue to meet her monthly contribution and pay back the loan with the interest set by the group. A separate record book should be kept for loans. In this example, the loan book has separate records for each borrower, indicating the amount borrowed and the terms of payment on a **loan contract** and a record tracking the repayment on a payment plan.

Here is an example of a simple loan contract and payment plan:

Example of a Loan contract

Group:	Feto Buka Moris
Borrower:	Maria
Address:	Aldeia Rileu
Purpose of loan:	Fish trading
Date Issued:	10 May, 2015
Loan amount:	\$60
Flat interest rate:	4% per year
Monthly interest amount:	\$0.2
Additional fees:	None
Period of loan:	6 months
Number of payments:	6
Total interest:	\$1.2
Late payment fee:	\$2
Total due:	\$61.2
Due date:	10 November, 2015
Signature of borrower:	Signature of treasurer:
<i>Maria</i>	<i>Nora</i>

Example of a payment plan and tracking record

Date	Loan payment	Interest charge	Payment to be made	Payment made	Late fee	Remaining loan amount
10 May	Loan issued	-	-			\$61.2
10 June	\$10	\$0.2	\$10.2	\$10.2		\$51.0
10 July	\$10	\$0.2	\$10.2	\$10.2		\$40.8
10 August	\$10	\$0.2	\$10.2	\$10.2		\$30.6

10 August	\$10	\$0.2	\$10.2	\$10.2		\$20.4
10 September	\$10	\$0.2	\$10.2			
10 October	\$10	\$0.2	\$10.2			

At the end of each meeting, the group should count how much cash they have in-hand and make sure that the amount matches the records. Everyone should participate, not just the treasurer, so that transparency is ensured.

Starting balance ¹ + Savings deposited ² + Cash in ³ - Cash out ⁴ = Ending balance ⁵
¹ Ending balance from the previous monthly meeting
² Savings deposited by members on that meeting
³ Loan repaid + interest + any late fees
⁴ Loan given out
⁵ Real cash amount left in the group's savings

Example of a savings and loans balance record

Date	1 March	1 April	1 March	1 April	1 May	1 June	1 July	1 August
Starting Balance	0	15	180	150	175.2	200.4	225.6	250.8
Savings deposits (+)	15	15	15	15	15	15	15	15
Cash in (+)	-	-	-	10.2	10.2	10.2	10.2	10.2
Cash out/Loans (-)	-	-	60	-	-	-	-	-
Ending Balance	15	60	150	175.2	200.4	225.6	250.8	276

----- records not shown for meetings held between these dates.

Key Questions

- How much or how many percentage will each member contribute?
- How often will the group meet? Once a month?
- Will members contribute the same amount or different
- What will happen to a member if she does not pay her contribution?
- Who will keep the money?
- Where will the money be kept?
- When can a member take a loan out?
- How much interest will be charged?

Attachment-15: A Sample of Rules and Regulations of a Micro Credit Scheme

Rules and Regulation for Use of Saving as Micro Credit of woman's group "Name of group" in Name of village.....

Rule 1

Title

These Rules and Regulation shall be shared among the woman's group "Name of group" to use their saving properly.

Rule 2

Definition of term

As used in these Rules and Regulation, the following terms shall mean:

- (a) **Micro credit** - a small loans and saving mobilization program exclusively for a woman's group to improve the asset base of household and expand the access to saving of the group. It involves the use of viable alternative credit schemes and saving programs including the extension of small loans, simplified loan application procedures, group character loans, collateral arrangements, alternative loan repayments, minimum requirements for savings, and small denominated instruments.
- (b) In starting stage, NGO "Name of NGO" will support fund management of woman's group "Name of group" to mobilize saving and stabilize credits. Name of NGO is a non-profit organization focusing on improvement of the basic sectors of society by providing advocacy, training on several sectors, community organization, monitoring, research, access to resources and other similar activities.
- (c) Charges on loan shall refer to agreed upon reasonable and conscionable interest rate (% per year), service charges if necessary, penalty, discount, and such other charges incidental to **Micro Credit** lending activity.
- (d) Debtor shall refer to a borrower or person granted a loan by the woman's group "Name of group".
- (e) Monetary Assets shall refer to saving from income generating activities such as Name of activity and Name of activity.
- (f) **Micro credits** – are small loans granted to the basic sectors on the basis of the borrower's cash flow and other loans granted to the members of the woman's group "Name of group" for their microenterprise and small businesses to enable them to raise their income levels and improve their living standards.

Rule 3

Requirement for Structure

(a) Structure of Micro Credit “Name of group”

A **Micro Credit** “Name of group” shall have a management committee to operate their activities. The management committee consists of at least five (5) members such as a president, a secretary, a record keeper, a treasurer and a supervisory auditor

- i. Role of president: She is responsible for the **Micro Credit** operation including call a meeting, organizing a meeting, facilitating a meeting and decision making
- ii. Role of secretary: Taking notes (minutes of meeting) and providing the list of participants in every meeting.
- iii. Role of record keeper: Providing individual loan records, calculating interests, monitoring the balance.
- iv. Role of treasurer: Keeping money (less than \$ from saving) safely, providing transparency to every member in the meeting by providing the report and making sure the balance in every month.
- v. Role of supervisory auditor (Name of NGO): Examining the business and financial records of **Micro Credit** “Name of group”, giving advice how to manage loans and keeping money (Savings over \$) safely.

Rule 4

Capital

- (a) The **Micro Credit** “Name of group” shall have a minimum seed capital of Number () Dollars saved from Activity name.
- (b) The capital (fund for saving credit) of the **Micro credit** shall be increased later in accordance with the profit from cassava chips and other income generating activities such as Name of activity of woman’s group “Name of group”. The group members will decide the amount of money and/or percentage of profit to allocate to the capital for **Micro Credit**. (% for distribution(personal savings): % for expansion of income generating activities: % for seed money for **Micro Credit**).

Rule 5

Membership Requirement

- (a) All of the membership of the **Micro Credit** shall be members of the woman’s group “Name of group” in Name of village.
- (b) Members of Name of activity shall have priority to other members of woman’s group “Name of group”. Other member can join as a member of micro credit if they can

contribute % of their income from group activities such as **Name of activity** and when their saving reached to \$.

- (c) Need of co-signer
- (d) Pledge of collateral (Ex. Cow, pig, goat, chicken)

Rule 6

Amount and Charges on Loans

- (a) A **Micro Credit** may grant loans from a low of \$ to a maximum of \$ subject to such reasonable and considerable imposable interest rates (% per year) and charges as may be agreed upon between the **Micro Credit** “**Name of group**” and the debtor:
- (b) In accordance with the Rules and Regulations of the **Micro Credit** “**Name of group**” prior to the consummation of the transaction, the **Micro Credit** “**Name of group**” shall furnish each debtor a disclosure statement, setting forth, to the extent applicable, the following information:
 - i. The principal amount of loan;
 - ii. Rate of interest of the loan;
 - iii. Service or processing fee, if any;
 - iv. Repayment schedule;
 - v. Any penalty charges for late repayment;
 - vi. Collection fee, if any;
 - vii. All other fees in connection with the loan transaction;
 - viii. Description of the collection and lien enforcement procedures; and
 - ix. Method of calculating the total amount of obligation in case of default.
- (c) Contract should be signed by a debtor, debtor’s co-signer, president of Micro Credit “**Name of group**” and another person from micro credit management committee.

Rule 7

Maintenance of Books of Accounts and Records

- (a) **Micro Credit** “**Name of group**” shall maintain books of capital (saving account) and records of loan.
- (b) Record keeper shall maintain these two books of each member, the saving accounts of each member of woman’s group “**Name of group**” based on the profit distribution from activities and the records of loans based on the micro credit contract.
- (c) Treasurer shall report the transaction and balance of **Micro Credit** in every month.
- (d) Advisory auditor (**Name of NGO**) shall monitor the correct use of **Micro Credit** and keep money safely.
- (e) If any accident, president shall call an internal meeting to solve the problems.

Rule 8

Effectivity of Rules and Regulations

These Rules and Regulations shall take effect from the day, **Day, Month, Year**.

Adopted by the Management committee on **Day, Month, Year, Name of village, Name of sub-district, Name of district** District, Timor-Leste

Name of President

Signature of President

Name of secretary

Signature of Secretary

Name of record keeper

Signature of Record keeper

Name of treasurer

Signature of Treasurer

Name of Auditor

Name of NGO

Position of the person in charge

Signature of the person in charge

Attachment-16 A Sample of Loan Contract Form

Details	
Name of group	Feto Buka Moris
Borrower	Maria Soares
Address	Aldeia Rileu
Purpose of loan	Dried fish trading
Date of issued	10 May, 2015
Loan amount	\$100
Flat interest rate	6% per year
Monthly interest amount	\$0.50
Additional fees	\$0.75
Period of loan	12 months
Number of payments	12
Total interest	\$6
Late payment fee	\$2 per month
Collateral	1 pig
Total due	\$106
Due date	10 May, 2016

Signature of borrower

Signature of President

Signature of Co-signer

Signature of Record keeper or Treasurer