ASSOCIATES FOR ENVIRONMENTAL AND SOCIAL INNOVATION

Development through environmental education and social entrepreneurship

Project Portfolio 2011

What's the real problem?

The Needs Assessment

The study team went to the Chaloem Phra Kiat Thai Prachan National Park (TPNP), Ratchaburi Province in Thailand. TPNP is located in a highland and hilly terrain about 806 meters above sea level. Though it is called national park, it is still under the preparation process of having it officially declared a national park. Back in 1984, the Royal Thai Government has already determined Thai Prachan area as one of the country's "Protected Areas". The latter TPNP and the future TPNP declaration will not impact much on the farming community, as their lands fall within the buffer zone of the national park.

The study team met with a farming village (Moo 5 Thai Prachan Village) whose members live about 3 km from the park's headquarter, which is also located in the head of the watershed area. Historically, the village is composed of Thai natives whose families have occupied their lands for at least 30 years. A look back at 10-20 years ago, a number of migrant farmers moved into this area for farming reasons i.e. due to fertile, suitable climate and sufficient water for growing fruit trees and high value cash crops. There are occasional out-migration from the village, especially those families with high-school aged kids due to the absence of high-school level education and above offered in the existing schools in the village.

The village has a population of 200 families, with an average of four to five members per family. The number of families has doubled in the past 10 years. Nearly 90% of the locals are farmers with fruit plantations such as pineapple, bananas, mangosteen, durian, lanzones, corn, and economic crops like vegetable and rubber. The rest of the 10% are working in weaving handicrafts made from bamboo, and children.

The study team conducted a discussion group participated by 19 local people (with 8 women and 11 men, with ages ranging between 27-69 years old). The participants are mostly farmers, and there was also participation by the head of handicraft group, head of the community's learning center, head of the fertilizer development group, head of village, and head of the commune (Attachment 1).

The workshop participants were all literate in the Thai reading and writing language, so there was no need to use visuals for the 10-seed exercise. In the course of the workshop, men and women tended to naturally group themselves by gender.

The participants identified their needs according to six issues i.e. social, economic, education, health, environment and development. The top 2 priority needs that they described were 'water for agriculture and consumption' and 'community learning center for career development'.

The full list of needs/problems and the vote results:	Votes out of 190
[Economic] Water for agriculture and consumption is lacking	46
[Development] Community learning center for extension and training programs in agriculture practice needed	32
[Social] Drugs – increasing incidence in drug-related problems	19
[Health] Welfare center for the elder people (senior citizens) needed	13
[Economic] Need for increased access to market / channel to sell local products	12
[Economic] Low income	11
[Environment] Unclear demarcation of forest areas / zoning	9
[Education] Lack of qualified teachers and secondary schools	8
[Development] Insufficient public utilities	6
[Economic] High cost in production and labor costs	6
[Social] Illegal gambling in the community	5
[Social] Early age sexual involvement among teenagers	5
[Education] Insufficient food supply for school pupils	4

The full list of needs/problems and the vote results:	Votes out of 190
[Economic] Indebtedness	4
[Development] Lack of community broadcast center	4
[Environment] Natural disasters	3
[Health] General health condition is poor	2
[Economic] Lack of land area for agricultural purposes	1

Anticipating that once the TPNP is legally declared as a national park and with a sufficient budget allocation from the government, the area has high potential to become a tourist attraction, as there are many beautiful spots like waterfalls, hot springs and having fresh ozone. Through this, the local people will benefit from the tourism development and increase their source of income.

The women's group has the privilege to work with the Royal Project of Her Majesty the Queen Sirikit in producing handicrafts made from bamboo materials. The women's group of four local women with highly specialized skills in bamboo weaving, such as an intricate design of lady bags, spearheads the project.

Children's education, nutrition, or health is not a big issue for the community at the moment. Our needs assessment clearly leads us to focus on water availability issue for agricultural and household consumption of the people in the village.

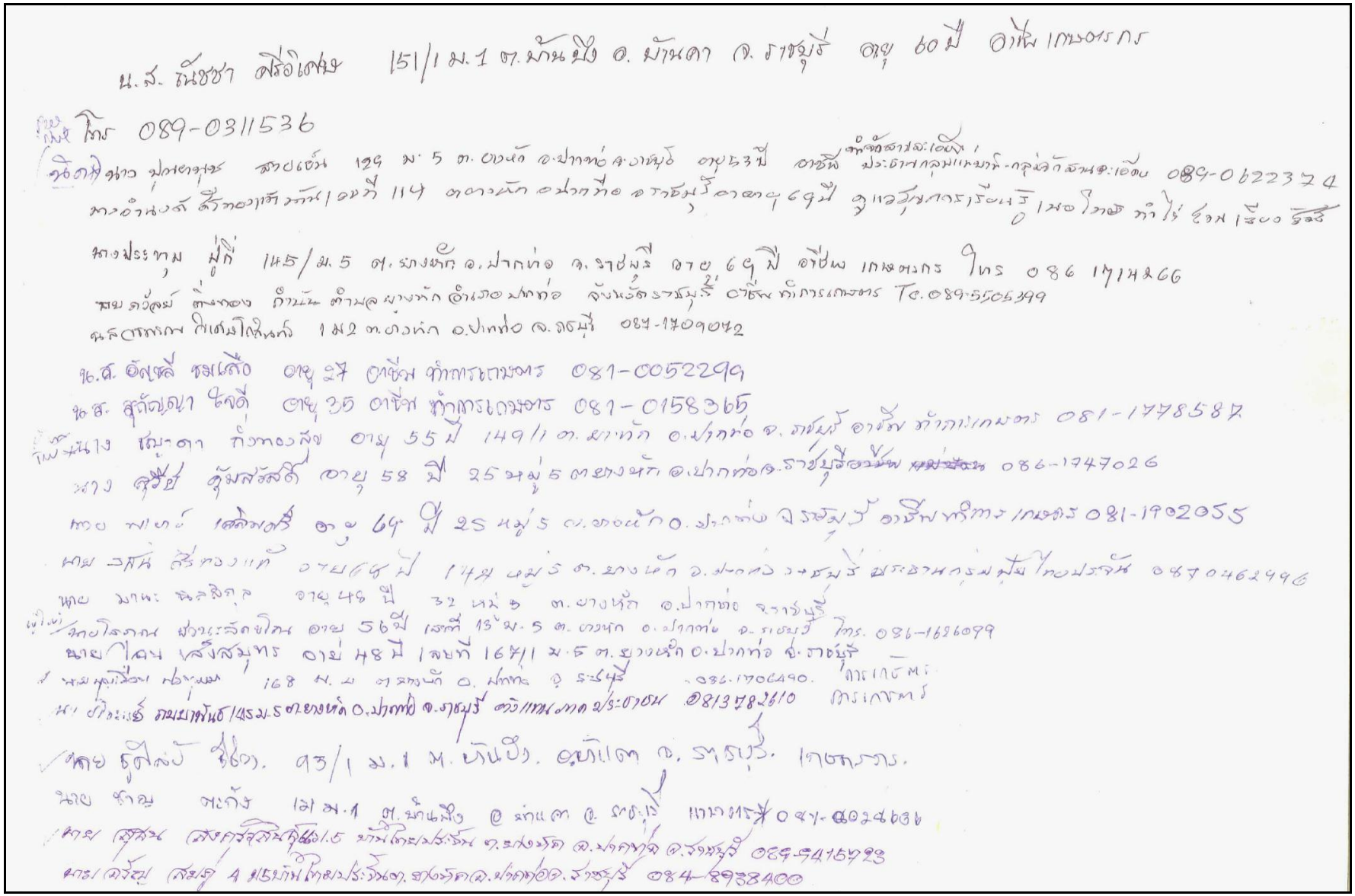
This research project, therefore, captures the village defined problems laid out in a simple project outline below. One of the first challenges was to unravel the mixture of needs, problems, causes and impacts that the community came up with and to organize their top priorities into the simple project outline.

For the purposes of this course, the top two priority issues were considered by the community members and they were asked to choose only one main issue to focus on for further development. The underlying causes discussed therefore concentrated on this top issue. During the process of discussing the causes, the study team had the problem tree model in mind to be able to streamline which causes were direct causes and which ones where indirect . At this point it is worthy to note that the villagers themselves have brought up climate-related matters into the discussion.

Attachment 2 presents the process in photos by which the community members have identified their priority issues, root causes of the problems and their prioritization, as well as their own proposed solutions to the identified causes.

The community members also extensively identified their suggested solutions to the causes of insufficient water resources for irrigation. The study team encouraged the community members to nail down the real action of how to solve the problems that are directly related to the root causes, and who will take a leading role in addressing the problems. First solution is to increase the capacity of water storage by building more water reservoirs. This will be the government intervention using government's budgets to build the reservoir on the federal land. Second is to build check dams and weir across the rivers in order to control the flow of water, and also build small ponds in individually-owned lands. This could be led by the community, private sector, youth/students, and the government. Final solution is to conserve and plant trees at the streams such as bamboo, and standing timbers. This solution can be led by the local people - as only few seedlings were coming from the TPNP, they will buy the seeds themselves.

Attachment 1: List of Participants [representing five categories: farmers (14), head of the handicraft group (1), head of the community's learning center (1), head of the fertilizer development group (1), head of village (1), and head of the commune (1)]



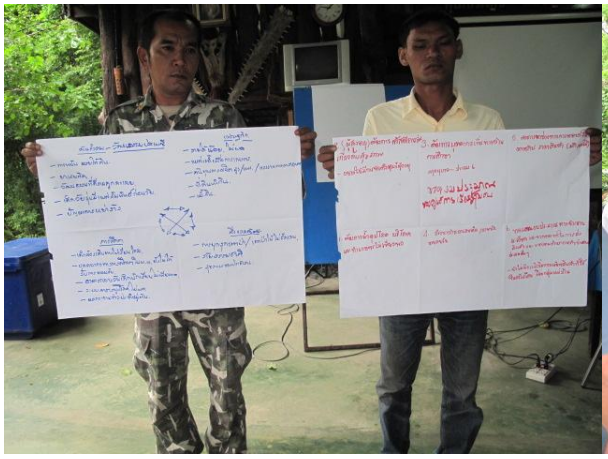
Attachment 2 – Fieldwork in Chaloem Phra Kiat Thai Prachan, Ratchaburi Province, Thailand

Socializing with the villagers over lunch. The national park office has offered their place to be the meeting/workshop venue. Park rangers in uniform joined us for lunch.

Chonchinee in blue, Lilita in red; member of the women's livelihood group seated beside Chonchinee; the other ladies are farmers

Introducing the objectives of the visit and mechanics of the workshop (in local language)

Villagers start discussing problems / issues…

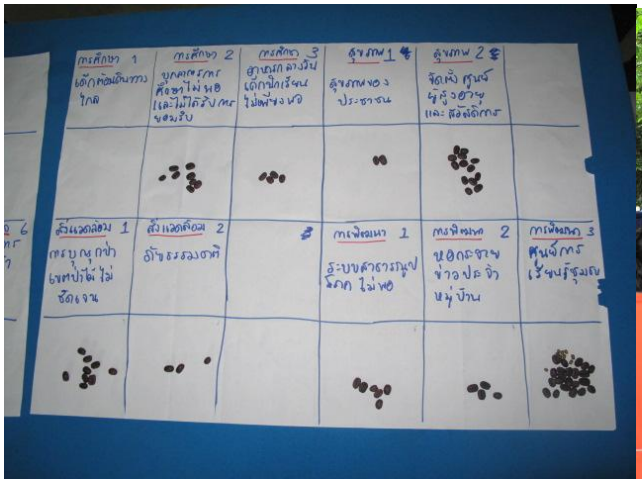



Men's responses in blue and women's in red. A discussion on the issues was made to ensure that both groups understood each other's viewpoints and came to a common agreement on the top priority issues to be considered for prioritization.

Meanwhile, the seeds have been prepared…

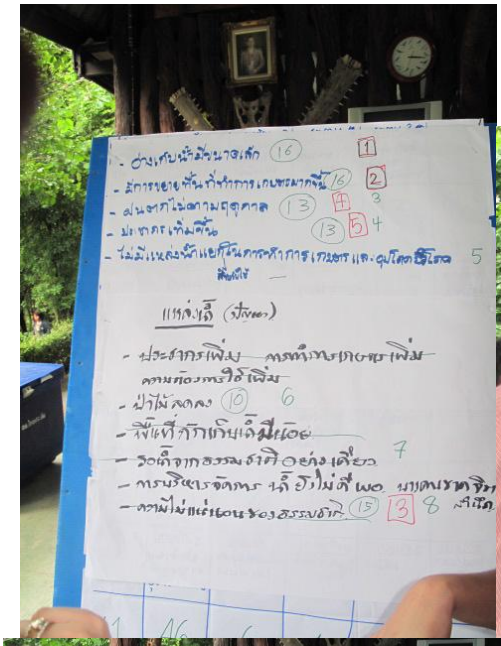

One by one, villagers start to place their seeds on their issues of choice.


Tallying the numbers…

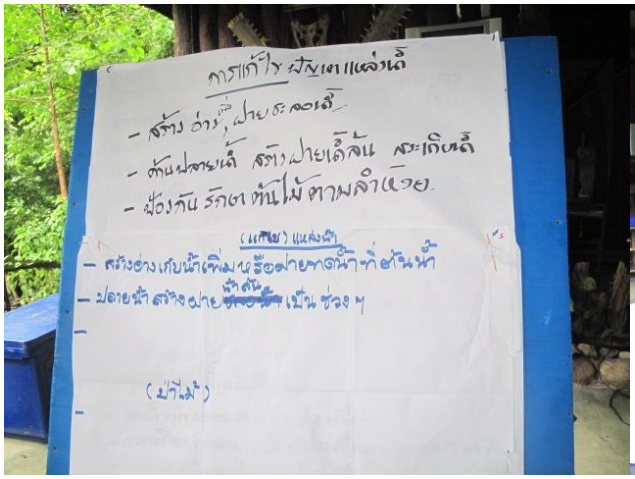


…and presenting the results

Getting group's ideas on the underlying causes of the top priority issue and getting group votes on the top causes



Last but not least, some solutions for consideration and discussion.



At the side, we also learned more about the Queen's project on creation of livelihoods for local women through handicrafts utilizing wild bamboo harvested from the forests. Each handcrafted purse takes a week of individual (manual) labor to complete. Labour + raw material cost ~ USD70.

The purses are then supplied to the Royal Palace at a farm price of roughly 100 USD, which are in turn exported to European and international markets at roughly 300 USD a piece.

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The Simple Project Outline of Problems/Causes/Impacts:

A. Problems:

1. Lack of water for irrigation and consumption
2. Lack of knowledge about adapting to Climate variability (unpredictable start of rainy season and unusual dry periods), and extreme weather events associated with climate change

B. Causes of Top Priority Issue:

1. Ineffective water management approach / Only one check-dam in the village
2. Expanding land areas for agriculture have diminished the amount of water available per unit of land
3. Lack of community learning center for extension and training programs in agriculture practices for adapting to climate
4. Forest degradation

C. Their Negative Impacts:

These challenges will affect the growth and yields of paddy and fruits/vegetables, which in turn will lead to a reduction in per capita and/or household incomes of farmers—and will have an impact on health. In the long term, unsustainable yields from their farmlands will impact on the farmers' quality of life and the development of the community as a whole.

D. Problem Statement:

200 families in the Moo 5 Thai Prachan Villagein the Ratchaburi Province in Thailand lack water for irrigation and consumption caused by ineffective water management, expanding agricultural lands which place pressure for more use of water per unit of land, and forest degradation—and suffer from a lack of knowledge about adapting to unpredictable and changeable weather patterns associated with climate change due to a lack of extension and training programs in agriculture practices for adapting to climate. These challenges will affect the growth and yields of paddy and fruits/vegetables, which in turn will lead to a reduction in per capita and/or household incomes of farmers—and will have an impact on health. In the long term, unsustainable yields from their farmlands will impact on the farmers' quality of life and the development of the community as a whole.

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Theory of a solution: will it work?
We focused on finding scientific papers on the following activities to see if they had shown evidence of solving our project challenge. We searched through Google, Google Scholar, JSTOR and the 'Links to Development Sites" listed on the menu to the left.

Activity 1
Committee participatory workshop on developing a community based Water Use Management Plan
We used the google and search for keywords: *is community based water use management in Asia effective?; IWRM*

1. Integrated Water Resource Management, Institutional Arrangements, and Land-use Planning; Bruce Mitchell http://www.envplan.com/abstract.cgi?id=a37224
2. The Challenges of Inclusive Cross-Scale Collective Action in Watersheds; International Water Resources Association, Water International http://www.sport.leisurestudiesarena.com/journals/pdf/papers/rwin_2006_Swallow.pdf
3. Local Organization and Gender in Water Management: A Case Study from the Kenya Highlands; Journal of International Development http://www.worldagroforestry.org/downloads/publications/PDFs/ja08001.pdf
4. Gendered Participation in Water Management: Issues and Illustrations from Water Users' Associations in South Asia; Agriculture and Human Values, Ruth Meinzen-Dick and Margreet Zwarteveen http://www.generoyambiente.org/arcangel2/documentos/272.pdf

Summary Paragraph:
The papers discuss in general that the concept of integration in watershed resources management is being espoused, more and more, by different countries and international organizations. Integration refers to integrating management of resources: land and water, surface water and groundwater, and giving balanced attention to water quantity and quality. By linking water resources planning to land-use planning and especially using indigenous knowledge of the local people, water management can be given credibility, as well as be systematically connected to land-based issues. Integrated approaches also imply the need for coordination across government agencies and stakeholder participation at all levels, giving utmost consideration to the role that women play in the provision, management and safeguarding of water.

Activity 2
Farmer workshops on water conservation and management techniques
We used the google and JSTOR search using the keywords: *effects of improved water management and land-use Asia*

1. Managing Water Resources for Crop Production; Institute of H.drolog., J. S. Wallance, C. H. Batchelor http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1691982/pdf/J1CNQ1K36BCJ305P_352_937.pdf
2. Farm Size, Factor Productivity and Returns to Scale under Different Types of Water Management; Economic and Political Weekly, Arindam Banik http://www.jstor.org/pss/4402194
3. Synergies between Agricultural Intensification and Climate Change Could Create Surprising Vulnerabilities for Crops; BioScience, Brenda B. Lin, Ivette Perfecto and John Vandermeer http://sitemaker.umich.edu/jvander/files/linperfectvandybioscience.pdf

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Field Guide: How to teach community members to establish a tree-seedling nursery in a workshop.

1. Introduction.

Many people in Asia depend on forests and trees to meet various needs. With growing populations, these resources are being rapidly depleted. Many farmers want to plant trees but cannot readily obtain high-quality tree seedlings. Establishing a tree nursery can help to meet this demand and provide them with extra income..

2. Site Selection.

Make a thorough inspection of your planting site.

- Prepare a sketch of your site, indicating the orientation of the site using a north arrow. Also show the location of the access routes, buildings and any relevant boundaries such as fences or edges of woodlots. Power line corridors and other areas which should not be planted should also be shown on the map. Note the lay of the land. Show any steep slopes or other obstacles that may be a problem for equipment.
- Keep in mind the following features of a good site for a tree nursery:
  - ✓ Reliable, nearby water supply
  - ✓ Source of soil
  - ✓ Access to market for seedlings
  - ✓ A well-drained soil with a gentle slope
  - ✓ A natural shelter, such as tree cover, to provide shade for nursery workers.
  - ✓ Avoid sites with less than 30 cm (1 ft) of soil over bedrock or sites where the year-round water table is very close to the surface.
- Estimate the total area to be planted to determine the total number of trees you will require. Square or rectangular sites can be measured using a long measuring tape or a rope of known length.

$$\text{Total number of trees} = \text{total planting area (ha)} \times \frac{10{,}000}{\text{spacing between rows (meters)} \times \text{spacing between trees (meters)}}$$

3. Preparing the Soil

- A good soil for use in tree nurseries can be made by mixing:
  - ✓ 3 basins of soil collected from under vegetation cover, such as in forests or under large trees
  - ✓ 2 basins of clay soil
  - ✓ 1 basin of sand.
- To test the mixture, roll a damp sample in your hand. A good mixture should roll and hold its shape but break if the roll is bent.
  - ✓ If it does not break, then it has too much clay.
  - ✓ If it crumbles before you can roll it, then it has too much sand.
  - ✓ To ensure adequate fertility of the soil, add one basin of sieved manure or compost to every three or four basins of the standard mixture.

4. Preparing the Seedbed

Ideally, establish the seedbed on a gentle slope. The seedbed should not be wider than one metre to make working on the bed easy. The bed can be of any length.

- Dig a trench about 10 cm deep all around the seedbed.
- Set large pieces of timber, bamboo or flat stones into the trench to a height of at least 15 cm above the ground.
- Put a 5-cm layer of coarse gravel or small stones at the.bottom of the bed to improve drainage.
- Add a 5-cm layer of standard nursery soil mixture on top of the coarse gravel.

5. Sowing the Seeds

- Large seeds, about the size of maize seeds, should be sown in drills running across the beds, 5-10 cm apart.
- Smaller seeds, about the size of pigeon peas, should be broadcast onto the bed and pressed into the soil with a flat board.
- Very small seeds, should be first mixed with fine sand or soil before sowing to allow adequate spacing on germination.
- Cover the seeds with a thin layer of fine soil or sand to a depth of about 5 mm.
- Water twice daily (morning and late afternoon) in hot, dry weather.

6. Transfer of seedlings from the seedbed to pots (Pricking)

When the seedlings develop three or four true leaves, it is now time to transfer the seedlings from the seedbed to pots – a process known as pricking.

- Choose a cloudy day or late in the afternoon to avoid seedlings wilting in the sun.
- Water the seedlings well before pricking-out.
- Remove the seedlings by inserting a small flat stick beneath them and gently lifting them from the seedbed. Take care not to break the small roots.
- Put the seedlings in a tray of water immediately to prevent them from wilting.
- Pot the pricked-out seedlings in containers made from locally available materials, such as banana leaves or bamboo stems, or specially made black polythene bags.
- Fill pots with the soil mixture and make a hole with a stick about the size of a pencil in the middle of the pot, just a little deeper than the roots of the seedlings.
- Carefully lower the seedlings into the hole and refill so that there is no empty space around the roots. Gently press down the soil.
- Put the potted seedlings into a nursery bed under shade.

7. Taking good care of the seedlings.

To ensure good performance of the seedlings, the following measures are recommended:

- Construct the nursery shade in an east to west direction to protect seedlings from hot sun. The shade will also protect seedlings from strong winds and heavy rain.
- Do not overcrowd seedlings in the nursery bed to minimize competition for resources like nutrients and water.
- Water twice daily during hot dry days to protect seedlings from wilting.
- Prune roots that grow out of the pots to prevent roots breaking when pots are lifted for planting out.
- Weed regularly to prevent weeds competing with seedlings for water and soil nutrients.
- Fence off the tree nursery to prevent damage from grazing animals and chickens.
- Control insects and diseases like damping-off that could destroy seedlings. Damping-off is mainly caused by overcrowding the seedlings. It may be controlled by thinning the seedlings to facilitate movement of air among them. Spray the seedlings with appropriate pesticide in case of pest problems.
- Harden-off seedlings by gradually reducing the shade and frequency of watering. This allows them to get used to field conditions before transplanting. Most seedlings will be ready to plant out between two and six months, depending on the type of trees.
- After hardening-off, seedlings can be planted in well-prepared sites, preferably at the beginning of the rainy season.

Summary Paragraph:
These studies show two major findings: 1) poor management is cited as the most frequent cause of inefficient water use on irrigation schemes (Jensen et al. 1990, Wallance et al. 1997) and explains most of the land productivity differential (Banik 1004), 2) farmer-owned and –managed irrigation schemes seem to show better results than large and costly government-lead projects. Improved water management relates to making better use of existing resources, either by increasing the total amount of water available to plants or by increasing the efficiency with which the water is used. The advantage of small scale irrigation is that it can make use of water from a range of sources (for e.g. wells, rivers, small dams). As many problems related to land and water use are interrelated, integrated resource management solutions are necessary. The multilayer integrated approach should include the following dimensions: a) agronomic (introduction of higher-yielding varieties), b) technical (drip irrigation, subsurface irrigation etc), c) managerial (adoption of demand-based irrigation scheduling systems), d) institutional (farmer involvement in scheme operations, disincentives for inefficient use).

Activity 3
Establish tree-seedling nursery
We used the google and search for keywords: *what works on tree seedling nursery in Thailand*

1. Final Report: Enhancing Tree Seedling Supply via Economic and Policy Changes in the Philippines Nursery Sector; Australian Centre for International Agricultural Research 2011 http://www.state.sc.us/forest/refplant.htm
2. Planning for Tree Planting; Land Owner Resource Centre and the Ontario Ministry of Natural Resources http://www.seedlingnursery.com/downloads/PLNGTRPL.PDF
3. Tree Planning Guideline; South Carolina Forest Commission http://www.state.sc.us/forest/refplant.htm

Summary Paragraph:

The papers provide specific guides of how to start up and design propagation systems for indigenous trees for soil and water conservation. They indicate process in planning for tree planting; preparing the sites for tree planting focusing on soil texture and water component; handling nursery stock; policy constraints to agroforestry development on small farms and introduce market oriented practices and utilization of industrial trees and fast-growing agroforestry species. In particular, the literature titled ‘Enhancing Tree Seedling Supply via Economic and Policy Changes in the Philippines Nursery Sector’ (as listed above) includes comprehensive international best practice, but most importantly the paper also includes the case study conducted in Thailand.

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August 2011

Lesson Plan

Establishing a Tree-seedling Nursery 4 hours (3:30 hours)

Assumed Knowledge

An understanding that high-quality seedlings can help the farmers obtain extra income, which is important in face of growing population and depleting resources.

Anticipated Difficulties/Problems

- Information may not be well received due to cultural differences between workshop leaders and participants
- Strong personalities of some community members may dominate workshops.

Solutions

- It is important that the instructor speak the same language as the workshop participants.
- Drawings and illustrations should be appropriate for, and familiar to the community members.
- Strong personalities may be able to be reasoned with in order to understand the importance of the participatory process – or given special projects that will occupy them.

PURPOSE

Goal of Workshop: What workshop participants will be able to do as a result of the lesson.

The purpose of the workshop is to support participants in establishing a tree-seedling nursery (focusing on thatch and bamboo). This is important for farmers in order to obtain high-quality tree seedlings and eventually provide them with extra income.

Objective 1: All participants will be able to prepare a good soil mixture and test it
Objective 2: All will know how to prepare the seedbeds
Objective 3: All participants will successfully be able to sow the seeds and distinguish different sowing techniques based on the seed size and type.

MATERIALS

- Artist's drawings/posters;
- Variety of seed to be provided to participants by the project and by the national park.
- Basic garden tools for instructor to use: Machete, Shovel, Rake, Trowel, Watering Can
- Organic material (leaves, crop residue, manure) for mixing with soil (sourcing from the field).
- How-To Cards without written words for workshop participants to take home.
- Large sheets of newsprint and tape.
- Colored markers.
- A water source.

PREPARATION

- We selected the location: the initiation of the workshop will be held in the national park office center and the practical part directly in the community learning center.
- We planned out a garden for the purposes of the workshop.
- We prepared in advance several beds, so there were enough beds by the end of the day for planting seeds.

- We engaged with national park officers for additional inputs to the workshop, mainly related to the local technical knowledge. National park supported variety of seeds such as wild bamboo, etc.
- We partnered with the community members who run the community learning center so that they will take ownership on the activities and shared their local technical knowledge. Establishing of tree-seedling nursery within the community learning center will have high advantage in centralizing the knowledge and seedlings to be disbursed to other households in the community.

BEGINNING OF LESSON:

INTRODUCTION

Activity 1. Introduction on Tree-seedling Nurseries

This part of the lesson is held in the national park office premises.
Purpose: Introduce and explain what is the value of establishing a high-quality tree-seedling nursery in relation to the farmers' income and demand for crops.

Time: 50 minutes (including a 20 minute ice-breaker and participant introductions)

What to do

1. Introduction to workshop: Tell the participants what they'll be able to do as a result of the lesson
2. Introductions
3. Ice Breaker: Sing a song or play a game.

We added this set of questions for the adaptation component in order it initiate dialogue:

4. Ask the workshop participants:
    a. have they seen any changes in the weather over the past 10 years
    b. have they seen any changes in their ability to grow food crops over the past 10 years
    c. if so, what techniques have they developed to improve crop production
    d. has this affected the amount of food the family has to eat
    e. what experience have they had in growing fruits and vegetables for family consumption
    f. if that had experience, has this improved their ability to feed their families
    g. what do they need to learn more about in order to have greater success in raising food

5. Summarize briefly the experience of impact on crops that the farmers noted as a result of observed changing weather conditions.
    - Use practical examples of:
      Residual contamination, weeds, insects, damage from animals.
    - Use practical examples of:
      Root penetration, drainage, aeration, nutrient availability, structure, micro ecosystem.
    - Use practical examples of
      Crowding of plants, wasted space, seed size and shoot size vs. depth.
    - Simple explanation of watering
      Best times of day, frequency, duration and quantity.

Workshop Participants:
Take 10 minutes to talk about what you do and don't understand, what you do and don't like.

10 minutes to move to the location of the designated garden.

GUIDED PRACTICE

Activity 2. Preparing the Soil

This part of the lesson is held outdoors, at the designated planned out garden
Purpose: Learn how to prepare a good soil and how to test the mixture, in view of ensuring adequate soil fertility

Time: 25 minutes

What to do
Discuss how to prepare good soil

- 3 basins of soil collected from under vegetation cover, such as in forests or under large trees
- 2 basins of clay soil
- 1 basin of sand.

Try to test the soil mixture

- Roll a damp sample in your hand. A good mixture should roll and hold its shape but break if the roll is bent.
- If it does not break, then it has too much clay.
- If it crumbles before you can roll it, then it has too much sand.
- To ensure adequate fertility of the soil, add one basin of sieved manure or compost to every three or four basins of the standard mixture.

Workshop Participants:
Take 5 minutes to talk about what you do and don't understand, what you do and don't like.

BREAK: 10 MINUTES

Activity 3. Preparing the Seedbed

The seedbeds should ideally be established on a gentle slope.
Purpose: Learn how to prepare seedbeds.

Time: 35 minutes

What to do
The participants are given instructions, shown on a practical example and then prompted to try themselves:

- The seedbed should not be wider than one meter to make working on the bed easy. The bed can be of any length.
- Dig a trench about 10 cm deep all around the seedbed.
- Set large pieces of timber, bamboo or flat stones into the trench to a height of at least 15 cm above the ground.
- Put a 5-cm layer of coarse gravel or small stones at the bottom of the bed to improve drainage.
- Add a 5-cm layer of standard nursery soil mixture on top of the coarse gravel.

Workshop Participants:
Take 5 minutes to talk about what you do and don't understand, what you do and don't like.

Activity 4. Sowing the Seeds

Purpose: Learn how to sow and water seeds, depending on their size and type

Time: 40 minutes

What to do

The participants are given instructions, shown on a practical example and then prompted to try themselves:

- Large seeds, about the size of maize seeds, should be sown in drills running across the beds, 5-10 cm apart.
- Smaller seeds, about the size of pigeon peas, should be broadcast onto the bed and pressed into the soil with a flat board.
- Very small seeds should be first mixed with fine sand or soil before sowing to allow adequate spacing on germination.
- Cover the seeds with a thin layer of fine soil or sand to a depth of about 5 mm.
- Water twice daily (morning and late afternoon) in hot, dry weather.

BREAK: 10 MINUTES

(also to move to national park office premises)

CONCLUSION

Activity 5. Conclusion: Principles of Establishing a Tree-seedling Nursery

Purpose: To reinforce what has been learned and to discuss common mistakes and positive solutions observed during independent practice.

Time: 30 minutes

Materials: Drawings/Posters

What to do

Workshop Leader & Workshop Participants:

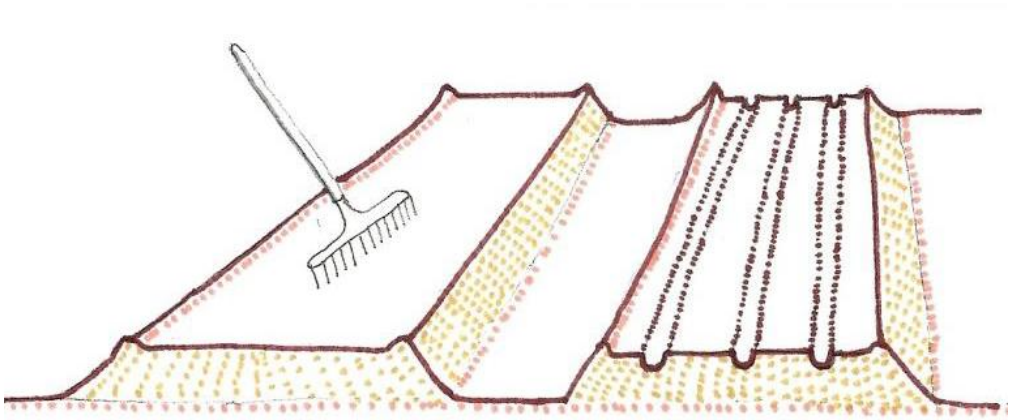
1. Discuss and review what has been learned.
2. Discuss common mistakes and positive solutions observed during independent practice.
3. Reinforce the principles of establishing a tree-seedling nursery
    - Prepare the soil
    - Prepare the seedbeds
    - Sow the seeds

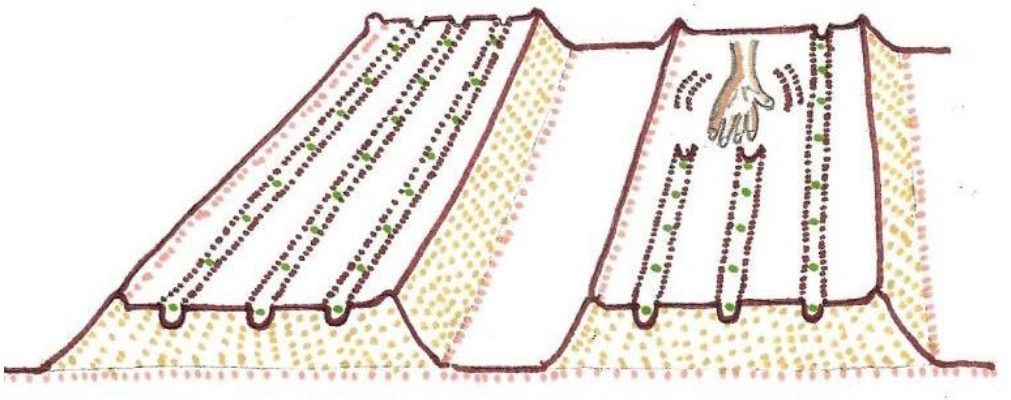
Workshop Participant Feed Back:

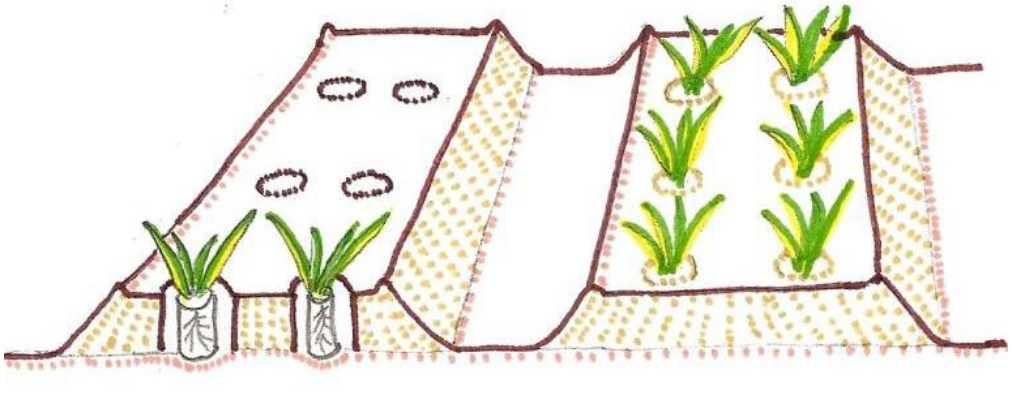
Take 5 minutes to talk about what you do and don't understand, what you do and don't like.

HOMEWORK: The participants are to prepare their plan for establishing a tree-seedling nursery.

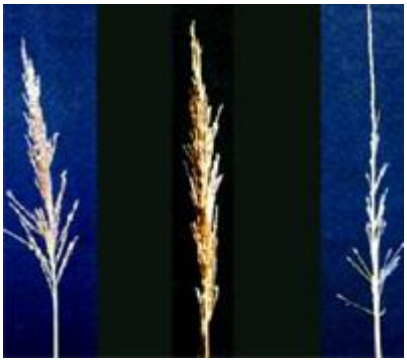
HOW-TO CARD for THATCH SEEDLING



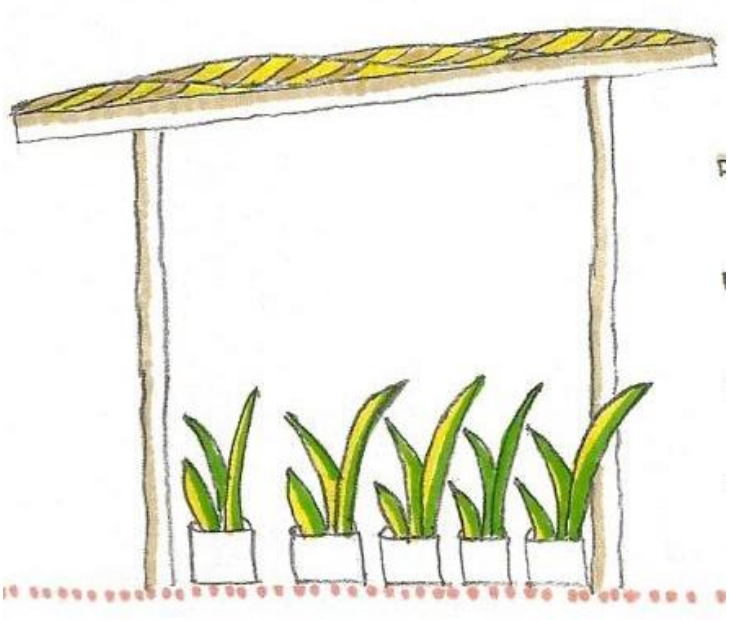





5 cm



1 Month 2 Months 3 Months 4 Months 5 Months




แปลงขยายพันธุ์
สายพันธุ์หญ้าแฝก 10 สายพันธุ์
สถานีพัฒนาที่ดินภูเก็ต กรมพัฒนาที่ดิน

Associates for Environmental and Social Innovation

Logical Framework Analysis						
200 Thai families will enjoy abundant water for irrigation and consumption through an Integrated Water and Landuse Management Program						
http://www.csd-i.org/						
Problem Statement	[Problems and underlying causes] (1) 200 families in the Moo 5 Thai Prachan Village in the Ratchaburi Province in Thailand lack water for irrigation and consumption caused by ineffective water management, expanding agricultural lands which place pressure for more use of water per unit of land, and forest degradation—and (2) suffer from a lack of knowledge about adapting to unpredictable and changeable weather patterns associated with climate change due to a lack of extension and training programs in agriculture practices for adapting to climate. [Negative Impacts] (a) These challenges will affect the growth and yields of paddy and fruits/vegetables, which in turn will lead to (b) a reduction in per capita and/or household incomes of farmers—and (c) will have an impact on health. In the long term, unsustainable yields from their farmlands will (d) impact on the farmers' quality of life and the development of the community as a whole.					
				Objectively Verifiable Indicators	**Means of Verification**	
Goal [Short-term and medium–term outcomes of the activities/outputs/sub-goals of the project]	200 families in the Moo 5 Thai Prachan Village in the Ratchaburi Province in Thailand [Underlying causes to problems as if they have been solved] (1) will have abundant water for irrigation and consumption due to effective water management integrated within a robust landuse management plan—and (2) high awareness and knowledge about adapting to unpredictable and changeable weather patterns associated with climate change due to access to continuing extension and training programs in agriculture practices for adapting to climate. [Positive Impacts] (a) These will lead to higher growth and yields of paddy and fruits/vegetables, which in turn will lead to (b) increased per capita and/or household incomes of farmers—and (c) healthy lives. In the long term, sustainable yields from their farmlands will (d) improve the farmers' quality of life and the development of the community as a whole.					
				[Long-term positive outcome] Impact	100 families in the Moo 5 Thai Prachan Village in Ratchaburi Province in Thailand become economically self-sufficient with sustainable environmental and natural resources and lead to safeguarding and securing their well-being and healthy lives.	
(1) Sub-Goal 1 (Objective) [sub-components of the main goal, which when added together describe the main goal]						
Integrated Water and Land Use Management Program	[Short-term positive outcome influencing mid-term positive outcome] 50% of the families in Moo 5 Thai Prachan Village will benefit from abundant water for irrigation and consumption through a 12 months IW &LU management program + 3 months post program evaluation			**Outcome [Medium-term positive outcome leading to long-term positive outcome (Impact)]**	100 families become well-versed with effective water management and land use practices, which allows for a more rational use of water for irrigation and consumption.	
Output 1.1 [sub-components of the sub-goal, which when added together describe the sub-goal]	100 families will participate in community-based workshops and survey with community members to identify their knowledge of water use; Months 1 &2			100 families participated in the workshop; 100 sets of survey questions completed by the community member; Follow up checklist	Copy of sign-in sheets and photos of the workshops; Copy of signed visit sheets, field staff notes, schedule and photos; Follow up issues identified	
	Activity 1.1.1	Develop survey questionnaire and workshop agenda and materials		Draft and final survey questions and workshop materials prepared	100 printed copy of survey questionnaires	
	Activity 1.1.2	Arrange workshop meetings		Prospective attendees filled in sign-up sheets for workshops & schedules prepared	Copy of attendance; Copy of agenda and workshop materials	
	Activity 1.1.3	Present workshops		Members of 100 families attended workshops on water use	Sign-in sheets with full contact details of participants; Photos of the workshops; Discussion notes	
	Activity 1.1.4	Provide 2 months follow-up		Families visited once after workshops	Copy of signed visit sheets, field staff notes, schedule and photos, follow up results	
Output 1.2 [sub-components of the sub-goal, which when added together describe the sub-goal]	Facilitate the Organization of a community based Water Use Management (WUM)Committee; Month 3			Water Use Management (WUM) Committee established comprises of 5 community members; Set criteria, role and expectations of the Committee; Follow up	Copy summary sheets of Committee role and function; Flyers to inform the community to take part in Committee set up; Copy of sign-in sheets and photos; Meeting schedule	

			checklist	and photos; Follow up issues identified	
	Activity 1.2.1	Develop draft Committee principles (roles and function)	Background paper covering rationale and objectives in setting up the Committee and the principles prepared	Draft copied of the material	
	Activity 1.2.2	Arrange community meeting and discuss Committee principles (frequency of meetings, voting rules and standards of practice, etc.)	Prospective attendees filled in sign-up sheets for workshops; Schedules	Copy of sign-up sheet; Copy of schedule; Agreed statement on Committee principles; Minute of Meeting; Photos	
	Activity 1.2.3	Let community vote on WUM committee members	Counts of the votes and roster of the voted committee members	Records of the votes	
	Activity 1.2.4	Provide 1 month follow-up	Feedback on the Committee principles; Tracking of Committee performance	Notes and assessment results / recommendations	
Output 1.3	Consultation with water management expert to develop a participatory process and training program; Months 4, 5, 6		Consultation meeting conducted; Training program developed; Technical guideline / recommendation from experts; Follow up plan	Copy of sign-in sheets Training materials Discussion note from consultation meeting	
	Activity 1.3.1	Arrange committee meeting with expert	Prospective attendees filled in sign-up sheets for meeting; Schedules	Copy of sign-up sheet; Copy of schedule; Minute of Meeting; Photos	
	Activity 1.3.2	Present results of survey	Survey results presented	Discussion notes and recommendations	
	Activity 1.3.3	Develop training program plan (over 2 months period; 1st draft ready within one month)	Draft training program developed based on Committee and experts feedback	Copy of training program	
	Activity 1.3.4	Present initial & final plans (training plan and scoping water use management plan) to committee and experts and get feedback	Final training program, and scoping of water management plan; Plan development procedure and details	Confirmation received from Committee and experts	
Output 1.4	Community training on participatory mapping of water resources and uses (consciousness raising); Month 7		100 families trained and learned on water resources and uses techniques; Follow up checklist	Copy of sign-in sheets and photos of the training workshops; Copy of signed visit sheets, field staff notes, schedule and photos	
	Activity 1.4.1	Develop training lesson plan and materials	Lesson plan prepared, workshop materials collected	Printed copy of lesson plan; Copy of lesson plan and training materials; Photos	
	Activity 1.4.2	Arrange training meetings with community	Prospective attendees filled in sign-up sheets for workshops & schedules prepared; Plan to inform targeted participants about the training	Copy of sign-up sheet; Copy of schedule; Minute of Meeting; Copy of training program widely distributed to community	
	Activity 1.4.3	Present training workshops	Members of 100 families attended workshops on water resources and uses techniques	Copy of sign-in sheets and photos of the workshops	
	Activity 1.4.4	Provide 1 month follow-up	Families visited once after workshops	Copy of signed visit sheets, field staff notes; Schedule and photos	
Output 1.5	Committee participatory workshop on developing a community based Water Use Management Plan; Month 8		Water Use Management Plan developed with 100 families trained and learned on water use	Copy of sign-in sheets and photos of the training workshops; Copy of signed visit sheets, field	

			management; Follow up checklist	staff notes, schedule and photos; Final Plan developed	
	Activity 1.5.1	Develop workshop lesson plan and materials	Lesson plan prepared, workshop materials collected	Printed copy of lesson plan; Copy of lesson plan and training materials; Photos	
	Activity 1.5.2	Arrange workshop meetings	Prospective attendees filled in sign-up sheets for workshops & schedules prepared; Plan to inform targeted participants about the training	Copy of sign-up sheet; Copy of schedule; Minute of Meeting; Copy of training program widely distributed to community	
	Activity 1.5.3	Present workshops	Members of 100 families attended workshops on water management	Copy of sign-in sheets and photos of the workshops	
	Activity 1.5.4	Present initial & final plans to community and get feedback; (0.5 month follow-up on feedback)	Water Use Management Plan presented; Confirmation / Feedback received from community and experts	Copy of draft WUM Plan; Discussion/Feedback notes	
Output 1.6	(Workshop) Investigate and develop water sourcing alternatives for the community; Month 9		Water sourcing alternatives identified; 100 families trained; Follow up checklist	Location/Geographical maps; Workshop material; Sign-in sheets; Photos	
	Activity 1.6.1	Develop workshop lesson plan and materials	Lesson plan prepared, workshop materials collected	Printed copy of lesson plan; Copy of lesson plan and training materials; Photos	
	Activity 1.6.2	Arrange workshop with community	Prospective attendees filled in sign-up sheets for workshops & schedules prepared; Plan to inform targeted participants about the training	Copy of sign-up sheet; Copy of schedule; Minute of Meeting; Copy of training program widely distributed to community	
	Activity 1.6.3	Present workshops	Members of 100 families attended workshops on water sourcing alternatives for community	Copy of sign-in sheets and photos of the workshops	
	Activity 1.6.4	Provide 1 month follow-up	Families visited once after workshops	Copy of signed visit sheets; Field staff notes; Schedule and photos	
Output 1.7	(Workshop) Investigate and develop an installation and maintenance program (possibly a community based check dam); Month 10		Installation and maintenance program demonstrated to 100 families; Follow up checklist	Location/Geographical maps; Workshop material; Sign-in sheets; Photos	
	Activity 1.7.1	Develop workshop lesson plan and materials	Lesson plan prepared, workshop materials collected	Printed copy of lesson plan; Copy of lesson plan and training materials; Photos	
	Activity 1.7.2	Arrange workshop with community	Prospective attendees filled in sign-up sheets for workshops & schedules prepared; Plan to inform targeted participants about the training	Copy of sign-up sheet; Copy of schedule; Minute of Meeting; Copy of training program widely distributed to community	
	Activity 1.7.3	Present workshops	Members of 100 families attended workshops on installation and maintenance of community check dam	Copy of sign-in sheets and photos of the workshops	
	Activity 1.7.4	Provide 1 month follow-up	Families visited once after workshops	Copy of signed visit sheets; Field staff notes; Schedule and photos	
Output 1.8	Data collection to identify scientific baseline data and facilitate the organization of a community based		Data collection guideline developed; Data collected; Set up Monitoring and	Data collection guideline; Data portal/data sheets; Copy summary details of	

	Monitoring and Evaluation Committee; Months 7 to 12; 3 months evaluation		Evaluation Committee; Follow up checklist	Monitoring and Evaluation Committee's roles and functional principles); Flyers to inform the community to take part in Committee set up; Copy of sign-in sheets and photos; Meeting schedule and photos; Follow up issues identified	
	Activity 1.8.1	Arrange community meeting	Background paper (rationale and objective), prospective attendees filled in sign-up sheets for meeting and schedules prepared	Copy of sign-up sheet; Draft copied of the material	
	Activity 1.8.2	Let community vote on M&E committee members & discuss roles & responsibilities (may be sub-committee of WUM)	Counts of the votes and roster of the voted committee members	Records of the votes	
	Activity 1.8.3	Undertake data collection; 5 months	Data collection guideline developed; Data collected	Data collection guideline; Data portal/data sheets	
	Activity 1.8.4	Present and evaluate results; Provide 3 months follow-up	Feedback on the Committee principles; Tracking of Committee performance	Notes and assessment results / recommendations	
(2) Sub-Goal 2 (Objective) [sub-components of the main goal, which when added together describe the main goal]					
Agriculture Practices for Adapting to Climate Change Training Program	70% of farming families will benefit from their increased awareness and knowledge about adapting to unpredictable and changeable weather patterns associated with climate change; 8 months program		**Outcome [Medium-term positive outcome leading to long-term positive outcome (Impact)]**	The farmers adopt farming techniques and traditional agricultural practices making them less vulnerable to climate change while ensuring sustainable and productive crop harvests.	
Output 2.1 [sub-components of the sub-goal, which when added together describe the sub-goal]	Surveys and interviews to collect traditional knowledge on agriculture, changes in agricultural cycles, vulnerabilities and coping strategies: Months 1 & 2		Survey and interview results; 100 families learned strategies to cope with changeable weather patterns and adaptation to climate change; Follow up checklist	100 printed copy of survey questionnaires; Copy of attendance; Copy of agenda and workshop material	
	Activity 2.1.1	Develop survey questionnaire	Survey questionnaires developed; workshop agenda and material prepared	100 printed copy of survey questionnaires;	
	Activity 2.1.2	Arrange workshop meetings with farmer community	Prospective attendees filled in sign-up sheets for workshops & schedules prepared; Plan to inform targeted participants about the training	Copy of attendance; Copy of agenda and workshop materials	
	Activity 2.1.3	Present workshops	Members of 100 families attended workshops on agriculture, changes in agricultural cycles, vulnerabilities and coping strategies	Sign-in sheets with full contact details of participants; Photos of the workshops; Discussion notes	
	Activity 2.1.4	Provide 2 months follow-up	Families visited once after workshops	Copy of signed visit sheets; Field staff notes; Schedule and photos	
Output 2.2 [sub-components of the sub-goal, which when added together describe the sub-goal]	Develop plan that combines resilient and improved agricultural techniques with traditional knowledge for an overall improvement in productivity. Months 3 to 5		Plan developed; Follow up checklist	Final Plan developed; Copy of sign-in sheets and photos of the meetings; Copy of signed visit sheets, field staff notes, schedule and photos	

	Activity 2.2.1	Arrange committee meeting with expert	Prospective attendees filled in sign-up sheets for meeting & schedules prepared	Copy of background papers; Minute of meeting	
	Activity 2.2.2	Present results of survey	Scoping of the plan based on survey results	Survey questionnaires and interviews on traditional knowledge; Copy of draft plan	
	Activity 2.2.3	Develop Plan	Draft Plan developed	Copy of draft Plan	
	Activity 2.2.4	Present initial & final plans to community and get feedback; (1 month follow-up)	Draft Plan circulated to stakeholders; Feedback and recommendations received; Final plan developed	Confirmed feedback; Copy of notes; Informed Final Plan to wide audience	
Output 2.3	Establish Community Learning Center (CLC) for extension and training programs in agriculture and forestry practices; Month 4-5		Learning center established; Training program developed; 100 families received training on agriculture and forestry practices; Follow up checklist	Basic office and communication equipment and signs; Training material and other related training material	
	Activity 2.3.1	Arrange community meeting	Prospective attendees filled in sign-up sheets for meeting & schedules prepared	Copy of background papers; Minute of meeting	
	Activity 2.3.2	Let community discuss and decide on plans for CLC	Draft function / plan of CLC prepared	Discussion notes or feedback on the CLC plan; Sign-in sheets; Photos	
	Activity 2.3.3	Establishment of CLC	Basic office and communication equipment in placed	Photos; Summary of CLC function and plan	
	Activity 2.3.4	Provide 2 months follow-up	CLC visited; Tracking of CLC performance	Notes and assessment results / recommendations	
Output 2.4	Establish pilot plots demonstrating better cultivation practices; Month 6		2 Pilot plots selected, prepared and established; Follow up checklist	Site sketch; Copy of How-To Card for cultivation practices; Photos	
	Activity 2.4.1	Workshop preparation	Developed lesson plan and materials	Copy of attendance; Discussion notes	
	Activity 2.4.2	Arrange workshop with farmer community	Prospective attendees filled in sign-up sheets for workshops & schedules prepared; Plan to inform targeted participants about the workshop	Copy of attendance; Copy of agenda and workshop materials	
	Activity 2.4.3	Present workshops	Members of 100 families attended workshops on cultivation practices and techniques	Sign-in sheets with full contact details of participants; Photos of the workshops; Discussion notes	
	Activity 2.4.4	Provide 1 month follow-up	Families visited once after workshops	Copy of signed visit sheets; Field staff notes; Schedule and photos	
Output 2.5	Farmer workshops on soil restoration and conservation techniques; Month 7		100 families learned on soil restoration and conservation techniques; Follow up checklist	Copy of sign-in sheets and photos of the training workshops; Copy of signed visit sheets, field staff notes, schedule and photos	
	Activity 2.5.1	Workshop preparation	Developed lesson plan and materials; Prospective attendees filled in sign-up sheets for workshops & schedules prepared; Plan to inform targeted	Copy of attendance; Copy of agenda and workshop materials	

			participants about the workshop		
	Activity 2.5.2	Arrange workshop with farmer community	Prospective attendees filled in sign-up sheets for workshops & schedules prepared; Plan to inform targeted participants about the workshop	Copy of attendance; Copy of agenda and workshop materials	
	Activity 2.5.3	Present workshops	Members of 100 families attended workshops on soil restoration and conservation techniques	Sign-in sheets with full contact details of participants; Photos of the workshops; Discussion notes	
	Activity 2.5.4	Provide 1 month follow-up	Families visited once after workshops	Copy of signed visit sheets; Field staff notes; Schedule and photos	
Output 2.6	Farmer workshops on water conservation and management techniques; Month 8		100 families learned on water conservation and management techniques; Follow up checklist	Copy of sign-in sheets and photos of the training workshops; Copy of signed visit sheets, field staff notes, schedule and photos	
	Activity 2.6.1	Workshop preparation	Developed lesson plan and materials; Prospective attendees filled in sign-up sheets for workshops & schedules prepared; Plan to inform targeted participants about the workshop	Copy of attendance; Copy of agenda and workshop materials	
	Activity 2.6.2	Arrange workshop with farmer community	Prospective attendees filled in sign-up sheets for workshops & schedules prepared; Plan to inform targeted participants about the workshop	Copy of attendance; Copy of agenda and workshop materials	
	Activity 2.6.3	Present workshops	Members of 100 families attended workshops on water conservation and management techniques	Sign-in sheets with full contact details of participants; Photos of the workshops; Discussion notes	
	Activity 2.6.4	Provide 1 month follow-up	Families visited once after workshops	Copy of signed visit sheets; Field staff notes; Schedule and photos	
(2) Sub-Goal 3 (Objective) [sub-components of the main goal, which when added together describe the main goal]					
Participatory Forest Management for Adapting to Climate Change Training Program	100 families will benefit from their increased awareness and knowledge about adapting to unpredictable and changeable weather patterns associated with climate change		**Outcome [Medium-term positive outcome leading to long-term positive outcome (Impact)]**	100 families are involved in forest management and conservation practices for climate resiliency, while benefiting from growing sturdy, high value tree species.	
Output 3.1	Workshop & follow-up on consciousness raising about environmental services and forest stewardship; Month 1		100 families learned on consciousness raising about environmental services and forest stewardship; Follow up checklist	Copy of sign-in sheets and photos of the training workshops; Copy of signed visit sheets, field staff notes, schedule and photos	
	Activity 3.1.1	Workshop preparation	Developed lesson plan and materials; Prospective attendees filled in sign-up sheets for workshops & schedules prepared; Plan to inform targeted participants about the workshop	Copy of attendance; Copy of agenda and workshop materials	
	Activity 3.1.2	Arrange workshop meetings with community	Prospective attendees filled in sign-up sheets for workshops & schedules	Copy of attendance; Copy of agenda and workshop materials	

			prepared; Plan to inform targeted participants about the workshop		
	Activity 3.1.3	Present workshops	Members of 100 families attended workshops on consciousness raising about environmental services and forest stewardship	Sign-in sheets with full contact details of participants; Photos of the workshops; Discussion notes	
	Activity 3.1.4	Provide 1 month follow-up	Families visited once after workshops	Copy of signed visit sheets; Field staff notes; Schedule and photos	
Output 3.2	Participatory forest management committee formation; Month 2		Forest Management Committee established comprises of 5 community members; Set criteria, role and expectations of the Committee; Follow up checklist	Copy summary sheets of Committee role and function; Flyers to inform the community to take part in Committee set up; Copy of sign-in sheets and photos; Meeting schedule and photos; Follow up issues identified	
	Activity 3.2.1	Develop draft Committee principles (roles and function)	Background paper covering rationale and objectives in setting up the Committee and the principles prepared	Draft copied of the material	
	Activity 3.2.2	Arrange community meeting and discuss Committee principles (frequency of meetings, voting rules and standards of practice, etc.)	Prospective attendees filled in sign-up sheets for workshops; Schedules	Copy of sign-up sheet; Copy of schedule; Agreed statement on Committee principles; Minute of Meeting; Photos	
	Activity 3.2.3	Let community vote on the Committee members	Counts of the votes and roster of the voted committee members	Records of the votes	
	Activity 3.2.4	Provide 1 month follow-up	Feedback on the Committee principles; Tracking of Committee performance	Notes and assessment results / recommendations	
Output 3.3	(Workshop) Assessment of appropriate species for planting and locations for planting; Month 3		100 families learned on assessment of appropriate species for planting; Follow up checklist	Copy of sign-in sheets and photos of the training workshops; Copy of signed visit sheets, field staff notes, schedule and photos	
	Activity 3.3.1	Workshop preparation	Developed lesson plan and materials	Copy of attendance; Copy of agenda and workshop materials	
	Activity 3.3.2	Arrange workshop meetings with community	Prospective attendees filled in sign-up sheets for workshops & schedules prepared; Plan to inform targeted participants about the workshop	Copy of attendance; Copy of agenda and workshop materials	
	Activity 3.3.3	Present workshops	Members of 100 families attended workshops on assessment of appropriate species for planting	Sign-in sheets with full contact details of participants; Photos of the workshops; Discussion notes	
	Activity 3.3.4	Provide 1 month follow-up	Families visited once after workshops	Copy of signed visit sheets; Field staff notes; Schedule and photos	
Output 3.4	Development of Participatory Forest Management Plan; Month 4		Forest Management Plan developed with 100 families trained and learned on forest management; Follow up	Copy of sign-in sheets and photos of the training workshops; Copy of signed visit sheets, field staff notes, schedule and	

			checklist	photos; Final Plan developed	
	Activity 3.4.1	Workshop preparation	Developed lesson plan and materials	Copy of attendance; Discussion notes	
	Activity 3.4.2	Arrange workshop with committee	Prospective attendees filled in sign-up sheets for workshops & schedules prepared; Plan to inform targeted participants about the workshop	Copy of sign-up sheet; Copy of schedule; Copy of draft plan	
	Activity 3.4.3	Present workshop	Members of 100 families attended workshops on forest management; Draft Plan presented	Copy of sign-in sheets and photos of the workshops	
	Activity 3.4.4	Present initial & final plans to community and get feedback; (1 month follow-up)	Forest Management Plan finalization; Confirmation / Feedback received from community and experts	Copy of draft Plan; Discussion/Feedback notes from community; Follow up checklist	
Output 3.5	Establish tree-seedling nursery; Month 5		1 pilot site selection and preparation for piloting tree-seedling nursery (if possible the site should be nearby the learning center); Demarcation of the nursery plot areas with fences; Identify source of water; Follow up checklist	Site sketch; Copy of How-To Card for seedling; Checklist of soil and seedbed preparation; Photos	
	Activity 3.5.1	Workshop preparation	Developed lesson plan and materials	Copy of attendance; Discussion notes	
	Activity 3.5.2	Arrange workshop with community	Prospective attendees filled in sign-up sheets for workshops & schedules prepared; Plan to inform targeted participants about the workshop	Copy of agenda and workshop materials; Photos; Copy of sign-in sheets	
	Activity 3.5.3	Present workshops	Members of 100 families attended workshops on tree-seeding nursery	Copy of sign-in sheets and photos of the workshops	
	Activity 3.5.4	Provide 1 month follow-up	Filed visited once after workshops	Copy of signed visit sheets; Field staff notes; Schedule and photos	
Output 3.6	Workshops to plant trees in strategic areas; Month 6		100 families learned on planting trees in strategic areas; Follow up checklist	Copy of sign-in sheets and photos of the training workshops; Copy of signed visit sheets, field staff notes, schedule and photos	
	Activity 3.6.1	Workshop preparation	Developed lesson plan and materials	Copy of attendance; Discussion notes	
	Activity 3.6.2	Arrange workshop with community	Prospective attendees filled in sign-up sheets for workshops & schedules prepared; Plan to inform targeted participants about the workshop	Copy of agenda and workshop materials; Photos; Copy of sign-in sheets	
	Activity 3.6.3	Present workshops	Members of 100 families attended workshops on planting trees in strategic areas	Sign-in sheets with full contact details of participants; Photos of the workshops; Discussion notes	
	Activity 3.6.4	Provide 1 month follow-up	Families visited once after workshops	Copy of signed visit sheets; Field staff notes; Schedule and photos	

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INTEGRATED WATER AND LAND USE MANAGEMENT PROGRAM

BUDGET for Thai Prachan Village, Program 1, Year 1

Activity	Detail	Unit	Quantity	Unit Price	Totals	Totals	Donor	Org
Sub-Goal 1	**Integrated Water and Land Use Management Program**			**$US**	**$US**	**Baht**		
Output 1.1	**100 families will participate in community-based workshops and survey with community members to identify their knowledge of water use**							
Activity 1.1.1	Develop survey questionnaire and workshop agenda and materials							
1	Project director time	Month	0.68	2000	1360	40800		
2	Field staff	Month	0.45	1000	450	13500		
3	Assistant / Finance	Month	0.45	500	225	6750		
6	Classroom materials, printing and photocopying	Unit	1	100	100	3000		
Activity 1.1.2	Arrange workshop meetings with communities (survey phase)							
1	Project director time	Month	0.45	2000	900	27000		
2	Field staff	Month	0.45	1000	450	13500		
3	Assistant / Finance	Month	0.45	500	225	6750		
5	Travel expenses	Unit	1	150	150	4500		
11	Community Workshop (meals and snacks for 20 pax / meeting)	Unit	5	100	500	15000		500
13	Meeting allowance (local participants)	Unit	100	10	1000	30000		
4	Utilities	Day	5	4	20	600		20
9	Rent	Day	5	15	75	2250		75
Activity 1.1.3	Present workshops (awareness raising)							
1	Project director time	Month	0.23	2000	460	13800		
2	Field staff	Month	0.23	1000	230	6900		
3	Assistant / Finance	Month	0.23	500	115	3450		
6	Classroom materials, printing and photocopying	Unit	1	100	100	3000		
5	Travel expenses	Unit	4	35	140	4200		
11	Community Workshop (meals and snacks for 20 pax / meeting)	Unit	5	100	500	15000		
13	Meeting allowance (local participants)	Unit	100	10	1000	30000		
4	Utilities	Day	5	4	20	600		20
9	Rent	Day	5	15	75	2250		75
Activity 1.1.4	Provide 2 months follow-up							
1	Project director time	Month	0.23	2000	460	13800		
2	Field staff	Month	0.23	1000	230	6900		
3	Assistant / Finance	Month	0.23	500	115	3450		
5	Travel expenses	Unit	1	150	150	4500		
					9050	**271500**		**690**
Output 1.2	**Facilitate the Organization of a Community-based Water Use Management (WUM) Committee**							
Activity 1.2.1	Develop draft Committee principles (roles and function)							
1	Project director time	Month	0.23	2000	460	13800		
2	Field staff	Month	0	1000	0	0		
3	Assistant / Finance	Month	0.23	500	115	3450		
6	Classroom materials, printing and photocopying	Unit	1	100	100	3000		
Activity 1.2.2	Arrange community meeting and discuss Committee principles (frequency of meetings, voting rules and standards of practice, etc.)							
1	Project director time	Month	0.14	2000	280	8400		
2	Field staff	Month	0.23	1000	230	6900		
3	Assistant / Finance	Month	0.14	500	70	2100		
5	Travel expenses	Unit	1	150	150	4500		
11	Community Workshop (meals and snacks for 100 pax)	Unit	1	500	500	15000		
13	Meeting allowance (local participants)	Unit	100	10	1000	30000		
4	Utilities	Day	1	4	4	120		4
9	Rent	Day	1	15	15	450		15
Activity 1.2.3	Let community vote on WUM committee members	incorporated in Activity 1.2.2						
Activity 1.2.4	Provide 1 month follow-up							
1	Project director time	Month	0.14	2000	280	8400		
2	Field staff	Month	0.14	1000	140	4200		
3	Assistant / Finance	Month	0.14	500	70	2100		
5	Travel expenses	Unit	1	150	150	4500		
10	Office rent	Month	12	500	6000	180000		6000
					9564	**286920**		**6019**

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INTEGRATED WATER AND LAND USE MANAGEMENT PROGRAM

BUDGET for Thai Prachan Village, Program 1, Year 1

Activity	Detail	Unit	Quantity	Unit Price	Totals	Totals	Donor	Org
Sub-Goal 1	**Integrated Water and Land Use Management Program**			**$US**	**$US**	**Baht**		
Output 1.3	**Consultation with water management expert to develop a participatory process and training program**							
Activity 1.3.1	Arrange committee meeting with expert							
12	Consultant time	Month	0.23	3000	690	20700		
1	Project director time	Month	0.23	2000	460	13800		
2	Field staff	Month	0.23	1000	230	6900		
3	Assistant / Finance	Month	0.23	500	115	3450		
5	Travel expenses	Unit	1	150	150	4500		
11	Meeting (meals and snacks)	Unit	1	100	100	3000		
13	Meeting allowance (local participants)	Unit	20	10	200	6000		
4	Utilities	Day	1	4	4	120		4
9	Rent	Day	1	15	15	450		15
Activity 1.3.2	Present results of survey	incorporated in Activity 1.3.1						
6	Classroom materials, printing and photocopying	Unit	1	100	100	3000		
Activity 1.3.3	Develop training program plan (over 2 months period; 1st draft ready within one month)							
12	Consultant time	Month	1	3000	3000	90000		
Activity 1.3.4	Present initial & final plans (training plan and scoping water use management plan) to committee and experts and get feedback							
12	Consultant time	Month	0.23	3000	690	20700		
1	Project director time	Month	0.23	2000	460	13800		
2	Field staff	Month	0.23	1000	230	6900		
3	Assistant / Finance	Month	0.23	500	115	3450		
5	Travel expenses	Unit	2	150	300	9000		
11	Meeting (meals and snacks)	Unit	2	100	200	6000		
13	Meeting allowance (local participants)	Unit	40	20	800	24000		
4	Utilities	Day	2	4	8	240		8
9	Rent	Day	2	15	30	900		30
					7897	**236910**		**57**
Output 1.4	**Community training on participatory mapping of water resources and uses (consciousness raising)**							
Activity 1.4.1	Develop training lesson plan and materials							
12	Consultant time	Month	0.45	3000	1350	40500		
1	Project director time	Month	0.23	2000	460	13800		
Activity 1.4.2	Arrange training meetings with community (2x)							
12	Consultant time	Month	0.23	3000	690	20700		
1	Project director time	Month	0.23	2000	460	13800		
2	Field staff	Month	0.45	1000	450	13500		
3	Assistant / Finance	Month	0.23	500	115	3450		
6	Classroom materials, printing and photocopying	Unit	2	50	100	3000		
5	Travel expenses	Unit	1	150	150	4500		
11	Community Workshop (meals and snacks for 50 pax/workshop)	Unit	2	250	500	15000		
13	Meeting allowance (local participants)	Unit	100	10	1000	30000		
4	Utilities	Day	10	4	40	1200		40
9	Rent	Day	10	15	150	4500		150
Activity 1.4.3	Present training workshops (2x)	incorporated in Activity 1.4.2						
Activity 1.4.4	Provide 1 month follow-up							
1	Project director time	Month	0.23	2000	460	13800		
2	Field staff	Month	0.23	1000	230	6900		
3	Assistant / Finance	Month	0.23	500	115	3450		
5	Travel expenses	Unit	1	150	150	4500		
					6420	**192600**		**190**

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INTEGRATED WATER AND LAND USE MANAGEMENT PROGRAM

BUDGET for Thai Prachan Village, Program 1, Year 1

Activity	Detail	Unit	Quantity	Unit Price	Totals	Totals	Donor	Org
Sub-Goal 1	**Integrated Water and Land Use Management Program**			**$US**	**$US**	**Baht**		
Output 1.5	**Committee participatory workshop on developing a community based Water Use Management Plan**							
Activity 1.5.1	Develop workshop lesson plan and materials							
12	Consultant time	Month	0.45	3000	1350	40500		
1	Project director time	Month	0.23	2000	460	13800		
Activity 1.5.2	Arrange workshop meetings with committee							
12	Consultant time	Month	0.23	3000	690	20700		
1	Project director time	Month	0.23	2000	460	13800		
2	Field staff	Month	0.45	1000	450	13500		
3	Assistant / Finance	Month	0.23	500	115	3450		
6	Classroom materials, printing and photocopying	Unit	1	100	100	3000		
5	Travel expenses	Unit	1	150	150	4500		
11	Workshop (meals and snacks)	Unit	1	100	100	3000		
13	Meeting allowance (local participants)	Unit	20	10	200	6000		
4	Utilities	Day	1	4	4	120		4
9	Rent	Day	1	15	15	450		15
Activity 1.5.3	Present workshops	incorporated in Activity 1.5.2						
Activity 1.5.4	Present initial & final plans to community and get feedback; (0.5 month follow-up on feedback)							
12	Consultant time	Month	0.14	3000	420	12600		
1	Project director time	Month	0.14	2000	280	8400		
2	Field staff	Month	0.14	1000	140	4200		
3	Assistant / Finance	Month	0.14	500	70	2100		
5	Travel expenses	Unit	2	35	70	2100		
11	Community meeting (meals and snacks for 50 pax/workshop)	Unit	2	250	500	15000		
13	Meeting allowance (local participants)	Unit	100	10	1000	30000		
4	Utilities	Day	2	4	8	240		8
9	Rent	Day	2	15	30	900		30
					6612	**198360**		**57**
Output 1.6	**(Workshop) Investigate and develop water sourcing alternatives for the community**							
Activity 1.6.1	Develop workshop lesson plan and materials							
12	Consultant time	Month	0.45	3000	1350	40500		
1	Project director time	Month	0.23	2000	460	13800		
Activity 1.6.2	Arrange workshop with community (2x)							
12	Consultant time	Month	0.23	3000	690	20700		
1	Project director time	Month	0.23	2000	460	13800		
2	Field staff	Month	0.23	1000	230	6900		
3	Assistant / Finance	Month	0.23	500	115	3450		
6	Classroom materials, printing and photocopying	Unit	2	50	100	3000		
5	Travel expenses	Unit	1	150	150	4500		
11	Community Workshop (meals and snacks for 50 pax/workshop)	Unit	2	250	500	15000		
13	Meeting allowance (local participants)	Unit	100	10	1000	30000		
4	Utilities	Day	10	4	40	1200		40
9	Rent	Day	10	15	150	4500		150
Activity 1.6.3	Present workshops	incorporated in Activity 1.6.2						
Activity 1.6.4	Provide 1 month follow-up							
1	Project director time	Month	0.23	2000	460	13800		
2	Field staff	Month	0.23	1000	230	6900		
3	Assistant / Finance	Month	0.23	500	115	3450		
5	Travel expenses	Unit	1	150	150	4500		
					6200	**186000**		**190**

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INTEGRATED WATER AND LAND USE MANAGEMENT PROGRAM

BUDGET for Thai Prachan Village, Program 1, Year 1

Activity	Detail	Unit	Quantity	Unit Price	Totals	Totals	Donor	Org
Sub-Goal 1	**Integrated Water and Land Use Management Program**			**$US**	**$US**	**Baht**		
Output 1.7	**(Workshop) Investigate and develop an installation and maintenance program (possibly a community based check dam)**							
Activity 1.7.1	Develop workshop lesson plan and materials							
12	Consultant time	Month	0.45	3000	1350	40500		
1	Project director time	Month	0.23	2000	460	13800		
Activity 1.7.2	Arrange workshop with community							
12	Consultant time	Month	0.23	3000	690	20700		
1	Project director time	Month	0.23	2000	460	13800		
2	Field staff	Month	0.23	1000	230	6900		
3	Assistant / Finance	Month	0.23	500	115	3450		
6	Classroom materials, printing and photocopying	Unit	2	50	100	3000		
5	Travel expenses	Unit	1	150	150	4500		
11	Community Workshop (meals and snacks for 50 pax/workshop)	Unit	2	250	500	15000		
13	Meeting allowance (local participants)	Unit	100	10	1000	30000		
4	Utilities	Day	10	4	40	1200		40
9	Rent	Day	10	15	150	4500		150
Activity 1.7.3	Present workshops	incorporated in Activity 1.7.2						
Activity 1.7.4	Provide 1 month follow-up							
1	Project director time	Month	0.23	2000	460	13800		
2	Field staff	Month	0.23	1000	230	6900		
3	Assistant / Finance	Month	0.23	500	115	3450		
5	Travel expenses	Unit	1	150	150	4500		
					6200	**186000**		**190**
Output 1.8	**Data collection to identify scientific baseline data and facilitate the organization of a community based Monitoring and Evaluation Committee**							
Activity 1.8.1	Arrange community meeting							
1	Project director time	Month	0.14	2000	280	8400		
2	Field staff	Month	0.14	1000	140	4200		
3	Assistant / Finance	Month	0.14	500	70	2100		
5	Travel expenses	Unit	1	150	150	4500		
11	Workshop (meals and snacks)	Unit	1	500	500	15000		
13	Meeting allowance (local participants)	Unit	100	10	1000	30000		
4	Utilities	Day	2	4	8	240		8
9	Rent	Day	2	15	30	900		30
Activity 1.8.2	Let community vote on M&E committee members & discuss roles & responsibilities (may be sub-committee of WUM)							
Activity 1.8.3	Undertake data collection							
12	Consultant time	Month	0.5	3000	1500	45000		
1	Project director time	Month	1	2000	2000	60000		
2	Field staff	Month	2	1000	2000	60000		
3	Assistant / Finance	Month	2	500	1000	30000		
Activity 1.8.4	Present and evaluate results; Provide 3 months follow-up							
12	Consultant time	Month	0.14	3000	420	12600		
1	Project director time	Month	0.14	2000	280	8400		
2	Field staff	Month	0.14	1000	140	4200		
3	Assistant / Finance	Month	0.14	500	70	2100		
5	Travel expenses	Unit	1	150	150	4500		
11	Community Workshop (meals and snacks for 50 pax/workshop)	Unit	2	250	500	15000		
13	Meeting allowance (local participants)	Unit	100	10	1000	30000		
4	Utilities	Day	2	4	8	240		8
9	Rent	Day	2	15	30	900		30
					11276	**338280**		**76**
Total					**63219**	**1896570**	**55750**	**7469**
Percentage							88.19%	11.81%

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TRAINING PROGRAM: AGRICULTURAL PRACTICES FOR ADAPTING TO CLIMATE CHANGE

BUDGET for Thai Prachan Village, Program 2, Year 2

Activity	Detail	Unit	Quantity	Unit Price	Totals	Totals	Donor	Org
Sub-Goal 2	**Agriculture Practices for Adapting Climate Change Training Program (8-months)**			**$US**	**$US**	**Baht**		
Output 2.1	**70% of farming families will participate in surveys & interviews for in-depth traditional knowledge on agriculture (months 1-2)**							
Activity 2.1.1	Develop survey questionnaire							
1	Project director time	Month	0.5	2000	1000	30000		
2	Field staff	Month	0.25	1000	250	7500		
3	Assistant / Finance	Month	0	500	0	0		
6	Classroom materials, printing and photocopying	Unit	1	100	100	3000		
Activity 2.1.2	Arrange workshop meetings with farmer communities (survey phase)	incorporated in Activity 2.1.3						
2	Field staff	Month	0.23	1000	230	6900		
Activity 2.1.3	Present workshops (survey phase)							
1	Project director time	Month	0.23	2000	460	13800		
2	Field staff	Month	0.23	1000	230	6900		
3	Assistant / Finance	Month	0.23	500	115	3450		
6	Classroom materials, printing and photocopying	Unit	1	100	100	3000		
5	Travel expenses	Unit	4	35	140	4200		
11	Community Workshop (meals and snacks for 20 pax / meeting)	Unit	5	100	500	15000		
13	Meeting allowance (local participants)	Unit	100	10	1000	30000		
4	Utilities	Day	5	4	20	600		20
9	Rent	Day	5	15	75	2250		75
Activity 2.1.4	Provide 2 months follow-up							
1	Project director time	Month	0	2000	0	0		
2	Field staff	Month	1	1000	1000	30000		
3	Assistant / Finance	Month	0.14	500	70	2100		
5	Travel expenses	Unit	1	150	150	4500		
					5440	**163200**		**95**
Output 2.2	**Consultation with agriculture expert to develop an agriculture plan (months 3-5)**							
Activity 2.2.1	Arrange committee meeting with expert							
12	Consultant time	Month	0.23	3000	690	20700		
1	Project director time	Month	0.23	2000	460	13800		
2	Field staff	Month	0.23	1000	230	6900		
3	Assistant / Finance	Month	0	500	0	0		
5	Travel expenses	Unit	1	150	150	4500		
11	Meeting (meals and snacks)	Unit	1	100	100	3000		
13	Meeting allowance (local participants)	Unit	20	10	200	6000		
4	Utilities	Day	5	4	20	600		20
9	Rent	Day	5	15	75	2250		75
Activity 2.2.2	Present results of survey (activity 2.1.2)	incorporated in Activity 2.2.1						
6	Classroom materials, printing and photocopying	Unit	1	100	100	3000		
Activity 2.2.3	Develop agriculture program plan (over 2 months period; 1st draft ready within one month)							
12	Consultant time	Month	1	3000	3000	90000		
Activity 2.2.4	Present initial & final plans (training plan and scoping water use management plan) to committee and experts and get feedback							
12	Consultant time	Month	0.23	3000	690	20700		
1	Project director time	Month	0.23	2000	460	13800		
2	Field staff	Month	1	1000	1000	30000		
3	Assistant / Finance	Month	0.23	500	115	3450		
5	Travel expenses	Unit	2	150	300	9000		
11	Meeting (meals and snacks)	Unit	2	100	200	6000		
13	Meeting allowance (local participants)	Unit	40	20	800	24000		
4	Utilities	Day	5	4	20	600		20
9	Rent	Day	5	15	75	2250		75
					8685	**260550**		**190**

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TRAINING PROGRAM: AGRICULTURAL PRACTICES FOR ADAPTING TO CLIMATE CHANGE

BUDGET for Thai Prachan Village, Program 2, Year 2

Activity	Detail	Unit	Quantity	Unit Price	Totals	Totals	Donor	Org
Sub-Goal 2	**Agriculture Practices for Adapting Climate Change Training Program (8-months)**			**$US**	**$US**	**Baht**		
Output 2.3	**Establishment of the Community Learning Center (CLC) (months 4-5)**							
Activity 2.3.1	Arrange community meeting							
1	Project director time	Month	0.23	2000	460	13800		
2	Field staff	Month	0.23	1000	230	6900		
3	Assistant / Finance	Month	0.23	500	115	3450		
6	Classroom materials, printing and photocopying	Unit	0	50	0	0		
5	Travel expenses	Unit	1	150	150	4500		
11	Community Workshop (meals and snacks for 50 pax/workshop)	Unit	2	250	500	15000		
13	Meeting allowance (local participants)	Unit	100	10	1000	30000		
Activity 2.3.2	Community planning for CLC	incorporated in Activity 2.3.1						
4	Utilities	Day	2	4	8	240		8
9	Rent	Day	2	15	30	900		30
Activity 2.3.3	Establishment of the CLC	incorporated in Activity 2.3.4						
4	Utilities	Month	12	100	1200	36000		1200
9	Space Rent	Month	12	500	6000	180000		6000
Activity 2.3.4	Provide 2 months follow-up							
1	Project director time	Month	0.23	2000	460	13800		
2	Field staff	Month	0.45	1000	450	13500		
3	Assistant / Finance	Month	0.23	500	115	3450		
5	Travel expenses	Unit	1	150	150	4500		
					10868	**326040**		**7238**
Output 2.4	**Establishment of Pilot Plots for Cultivation Practices (month 6)**							
Activity 2.4.1	Workshop preparation							
1	Project director time	Month	0.23	2000	460	13800		
2	Field staff	Month	0.45	1000	450	13500		
Activity 2.4.2	Arrange workshop with farmer community							
1	Project director time	Month	0.23	2000	460	13800		
2	Field staff	Month	0.23	1000	230	6900		
3	Assistant / Finance	Month	0.23	500	115	3450		
6	Classroom materials, printing and photocopying	Unit	1	100	100	3000		
5	Travel expenses	Unit	1	150	150	4500		
11	Workshop (meals and snacks)	Unit	5	100	500	15000		
13	Meeting allowance (local participants)	Unit	100	10	1000	30000		
Activity 2.4.3	Present workshops	incorporated in Activity 2.4.2						
4	Utilities	Day	5	4	20	600		20
9	Rent	Day	5	15	75	2250		75
Activity 2.3.4	Provide 1 month follow-up							
1	Project director time	Month	0.23	2000	460	13800		
2	Field staff	Month	0.45	1000	450	13500		
3	Assistant / Finance	Month	0	500	0	0		
5	Travel expenses	Unit	2	150	300	9000		
					4770	**143100**		**95**

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TRAINING PROGRAM: AGRICULTURAL PRACTICES FOR ADAPTING TO CLIMATE CHANGE

BUDGET for Thai Prachan Village, Program 2, Year 2

Activity	Detail	Unit	Quantity	Unit Price	Totals	Totals	Donor	Org
Sub-Goal 2	**Agriculture Practices for Adapting Climate Change Training Program (8-months)**			**$US**	**$US**	**Baht**		
Output 2.5	**(Workshop) Soil Restoration and Conservation Techniques**							
Activity 2.5.1	Develop workshop lesson plan and materials							
12	Consultant time	Month	0.45	3000	1350	40500		
1	Project director time	Month	0.23	2000	460	13800		
Activity 2.5.2	Arrange workshop with community (2x)							
12	Consultant time	Month	0.23	3000	690	20700		
1	Project director time	Month	0.23	2000	460	13800		
2	Field staff	Month	0.23	1000	230	6900		
3	Assistant / Finance	Month	0.23	500	115	3450		
6	Classroom materials, printing and photocopying	Unit	2	50	100	3000		
5	Travel expenses	Unit	1	150	150	4500		
11	Community Workshop (meals and snacks for 50 pax/workshop)	Unit	2	250	500	15000		
13	Meeting allowance (local participants)	Unit	100	10	1000	30000		
Activity 2.5.3	Present workshops	incorporated in Activity 1.6.2						
4	Utilities	Day	5	4	20	600		20
9	Rent	Day	5	15	75	2250		75
Activity 2.5.4	Provide 1 month follow-up							
1	Project director time	Month	0.23	2000	460	13800		
2	Field staff	Month	0.23	1000	230	6900		
3	Assistant / Finance	Month	0.23	500	115	3450		
5	Travel expenses	Unit	1	150	150	4500		
					6105	**183150**		**95**
Output 2.6	**(Workshop) Water Conservation and Management Techniques**							
Activity 2.6.1	Develop workshop lesson plan and materials							
12	Consultant time	Month	0.45	3000	1350	40500		
1	Project director time	Month	0.23	2000	460	13800		
Activity 2.6.2	Arrange workshop with community							
12	Consultant time	Month	0.23	3000	690	20700		
1	Project director time	Month	0.23	2000	460	13800		
2	Field staff	Month	0.23	1000	230	6900		
3	Assistant / Finance	Month	0.14	500	70	2100		
6	Classroom materials, printing and photocopying	Unit	2	50	100	3000		
5	Travel expenses	Unit	1	150	150	4500		
11	Community Workshop (meals and snacks for 50 pax/workshop)	Unit	2	250	500	15000		
13	Meeting allowance (local participants)	Unit	100	10	1000	30000		
Activity 2.6.3	Present workshops	incorporated in Activity 1.7.2						
4	Utilities	Day	5	4	20	600		20
9	Rent	Day	5	15	75	2250		75
Activity 2.6.4	Provide 1 month follow-up							
1	Project director time	Month	0.14	2000	280	8400		
2	Field staff	Month	0.23	1000	230	6900		
3	Assistant / Finance	Month	0.14	500	70	2100		
5	Travel expenses	Unit	1	150	150	4500		
					5835	**175050**		**95**
Total					**41703**	**1251090**	**33895**	**7808**
Percentage							81.28%	18.72%

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TRAINING PROGRAM: PARTICIPATORY FOREST MANAGEMENT FOR ADAPTING TO CLIMATE CHANGE

BUDGET for Thai Prachan Village, Program 3, Year 2

Activity	Detail	Unit	Quantity	Unit Price	Totals	Totals	Donor	Org
Sub-Goal 3	**Participatory Forest Management for Adapting to Climate Change Training Program**			**$US**	**$US**	**Baht**		
Output 3.1	**100 families will participate in community-based workshops and to increase awareness and knowledge about climate change adaptation**							
Activity 3.1.1	Develop workshop lesson plan and materials							
12	Consultant time	Month	0.45	3000	1350	40500		
1	Project director time	Month	0.23	2000	460	13800		
Activity 3.1.2	Arrange workshop with community (2x)							
12	Consultant time	Month	0.23	3000	690	20700		
1	Project director time	Month	0.23	2000	460	13800		
2	Field staff	Month	0.23	1000	230	6900		
3	Assistant / Finance	Month	0.23	500	115	3450		
6	Classroom materials, printing and photocopying	Unit	2	100	200	6000		
5	Travel expenses	Unit	1	150	150	4500		
11	Community Workshop (meals and snacks for 50 pax/workshop)	Unit	2	250	500	15000		
13	Meeting allowance (local participants)	Unit	100	10	1000	30000		
Activity 3.1.3	Present workshops	incorporated in Activity 3.1.2						
4	Utilities	Day	5	4	20	600		20
9	Rent	Day	5	15	75	2250		75
Activity 3.1.4	Provide 1 month follow-up							
1	Project director time	Month	0.23	2000	460	13800		
2	Field staff	Month	0.45	1000	450	13500		
3	Assistant / Finance	Month	0.23	500	115	3450		
5	Travel expenses	Unit	1	150	150	4500		
					6425	**192750**		**95**
Output 3.2	**Facilitate the Organization of a Community Forest Management Committee**							
Activity 3.2.1	Develop draft Committee principles (roles and function)							
1	Project director time	Month	0.23	2000	460	13800		
2	Field staff	Month	0	1000	0	0		
3	Assistant / Finance	Month	0.23	500	115	3450		
6	Classroom materials, printing and photocopying	Unit	1	100	100	3000		
Activity 3.2.2	Arrange community meeting and discuss Committee principles (frequency of meetings, voting rules and standards of practice, etc.)							
1	Project director time	Month	0.14	2000	280	8400		
2	Field staff	Month	0.23	1000	230	6900		
3	Assistant / Finance	Month	0.14	500	70	2100		
5	Travel expenses	Unit	1	150	150	4500		
11	Community Workshop (meals and snacks for 100 pax)	Unit	1	500	500	15000		
13	Meeting allowance (local participants)	Unit	100	10	1000	30000		
4	Utilities	Day	1	4	4	120		4
9	Rent	Day	1	15	15	450		15
Activity 3.2.3	Let community vote on FM committee members	incorporated in Activity 3.2.2						
Activity 3.2.4	Provide 1 month follow-up							
1	Project director time	Month	0.14	2000	280	8400		
2	Field staff	Month	0.45	1000	450	13500		
3	Assistant / Finance	Month	0.23	500	115	3450		
5	Travel expenses	Unit	1	150	150	4500		
					3919	**117570**		**19**

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TRAINING PROGRAM: PARTICIPATORY FOREST MANAGEMENT FOR ADAPTING TO CLIMATE CHANGE

BUDGET for Thai Prachan Village, Program 3, Year 2

Activity	Detail	Unit	Quantity	Unit Price	Totals	Totals	Donor	Org
Sub-Goal 3	**Participatory Forest Management for Adapting to Climate Change Training Program**			**$US**	**$US**	**Baht**		
Output 3.3	**(Workshop) Assessment of Appropriate Species for Planting and Locations for Planting**							
Activity 3.3.1	Develop workshop lesson plan and materials							
12	Consultant time	Month	0.45	3000	1350	40500		
1	Project director time	Month	0.23	2000	460	13800		
Activity 3.3.2	Arrange workshop with community							
12	Consultant time	Month	0.23	3000	690	20700		
1	Project director time	Month	0.23	2000	460	13800		
2	Field staff	Month	0.23	1000	230	6900		
3	Assistant / Finance	Month	0.23	500	115	3450		
6	Classroom materials, printing and photocopying	Unit	2	50	100	3000		
5	Travel expenses	Unit	1	150	150	4500		
11	Community Workshop (meals and snacks for 50 pax/workshop)	Unit	2	250	500	15000		
13	Meeting allowance (local participants)	Unit	100	10	1000	30000		
Activity 3.3.3	Present workshops	incorporated in Activity 3.3.2						
4	Utilities	Day	5	4	20	600		20
9	Rent	Day	5	15	75	2250		75
Activity 3.3.4	Provide 1 month follow-up							
1	Project director time	Month	0.14	2000	280	8400		
2	Field staff	Month	0.23	1000	230	6900		
3	Assistant / Finance	Month	0.14	500	70	2100		
5	Travel expenses	Unit	1	150	150	4500		
					5880	**176400**		**95**
Output 3.4	**Developing a community based Participatory Forest Management Plan**							
Activity 3.4.1	Develop workshop lesson plan and materials							
12	Consultant time	Month	0.45	3000	1350	40500		
1	Project director time	Month	0.23	2000	460	13800		
Activity 3.4.2	Arrange workshop meetings with committee							
12	Consultant time	Month	0.23	3000	690	20700		
1	Project director time	Month	0.23	2000	460	13800		
2	Field staff	Month	0.45	1000	450	13500		
3	Assistant / Finance	Month	0.23	500	115	3450		
6	Classroom materials, printing and photocopying	Unit	1	100	100	3000		
5	Travel expenses	Unit	1	150	150	4500		
11	Workshop (meals and snacks)	Unit	2	100	200	6000		
13	Meeting allowance (local participants)	Unit	20	10	200	6000		
Activity 3.4.3	Present workshops	incorporated in Activity 3.4.2						
4	Utilities	Day	5	4	20	600		20
9	Rent	Day	5	15	75	2250		75
Activity 1.5.4	Present initial & final plans to community and get feedback; (0.5 month follow-up on feedback)							
12	Consultant time	Month	0.14	3000	420	12600		
1	Project director time	Month	0.14	2000	280	8400		
2	Field staff	Month	0.14	1000	140	4200		
3	Assistant / Finance	Month	0.14	500	70	2100		
5	Travel expenses	Unit	2	35	70	2100		
11	Community meeting (meals and snacks for 50 pax/workshop)	Unit	2	250	500	15000		
13	Meeting allowance (local participants)	Unit	100	10	1000	30000		
4	Utilities	Day	5	4	20	600		20
9	Rent	Day	5	15	75	2250		75
					6845	**205350**		**190**

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TRAINING PROGRAM: PARTICIPATORY FOREST MANAGEMENT FOR ADAPTING TO CLIMATE CHANGE

BUDGET for Thai Prachan Village, Program 3, Year 2

Activity	Detail	Unit	Quantity	Unit Price	Totals	Totals	Donor	Org
Sub-Goal 3	**Participatory Forest Management for Adapting to Climate Change Training Program**			**$US**	**$US**	**Baht**		
Output 3.5	**(Workshop) Tree-seedling nursery establishment**							
Activity 3.5	Develop workshop lesson plan and materials							
12	Consultant time	Month	0.23	3000	690	20700		
1	Project director time	Month	0.23	2000	460	13800		
Activity 3.5.2	Arrange workshop with community (2x)							
12	Consultant time	Month	0.23	3000	690	20700		
1	Project director time	Month	0.23	2000	460	13800		
2	Field staff	Month	0.45	1000	450	13500		
3	Assistant / Finance	Month	0.23	500	115	3450		
6	Classroom materials, printing and photocopying	Unit	2	50	100	3000		
5	Travel expenses	Unit	2	150	300	9000		
11	Community Workshop (meals and snacks for 50 pax/workshop)	Unit	2	250	500	15000		
13	Meeting allowance (local participants)	Unit	100	10	1000	30000		
Activity 3.5.3	Present workshops	incorporated in Activity 3.5.2						
4	Utilities	Day	5	4	20	600		20
9	Rent	Day	5	15	75	2250		75
7	Materials (seedlings, soil, etc.)	Unit	1	1000	1000	30000		1000
Activity 3.5.4	Provide 1 month follow-up							
1	Project director time	Month	0	2000	0	0		
2	Field staff	Month	0.45	1000	450	13500		
3	Assistant / Finance	Month	0	500	0	0		
5	Travel expenses	Unit	1	150	150	4500		
					6460	**193800**		**1095**
Output 3.6	**(Workshop) Planting Trees**							
Activity 3.6.1	Workshop preparation	incorporated in Activity 3.6.2						
Activity 3.6.2	Arrange workshop with community							
1	Project director time	Month	0.23	2000	460	13800		
2	Field staff	Month	0.45	1000	450	13500		
3	Assistant / Finance	Month	0.23	500	115	3450		
6	Classroom materials, printing and photocopying	Unit	2	50	100	3000		
5	Travel expenses	Unit	1	150	150	4500		
11	Community Workshop (meals and snacks for 50 pax/workshop)	Unit	2	250	500	15000		
13	Meeting allowance (local participants)	Unit	100	10	1000	30000		
Activity 3.6.3	Present workshops	incorporated in Activity 3.6.2						
4	Utilities	Day	5	4	20	600		20
9	Rent	Day	5	15	75	2250		75
7	Materials (seedlings, soil, etc.)	Unit	1	500	500	15000		500
Activity 3.6.4	Provide 1 month follow-up							
1	Project director time	Month	0	2000	0	0		
2	Field staff	Month	0.23	1000	230	6900		
3	Assistant / Finance	Month	0	500	0	0		
5	Travel expenses	Unit	1	150	150	4500		
					3750	**112500**		**595**
Total					**33279**	**998370**	**31190**	**2089**
Percentage							93.72%	6.28%

Miscellaneous Project Information

Budget Categories Used		Output 1	Output 2	Output 3	Total
1	Project Director	13,020	7,260	6,180	26,460
2	Field Staff	6,660	5,670	3,990	16,320
3	Assistant	3,180	1,015	1,130	5,325
4	Utilities	204	1,328	124	1,656
5	Travel	2,610	2,090	1,870	6,570
6	Classroom materials, printing and photocopying	800	600	700	2,100
7	Product Purchases	0	0	1,500	1,500
8	Scholarships	0	0	0	0
9	Rent	765	6,480	465	7,710
10	Office	6,000	0	0	6,000
11	Miscellaneous	4,900	2,800	3,200	10,900
12	Consultants / Technical Expert	14,880	8,460	7,920	31,260
13	Meeting allowance (local participants)	10,200	6,000	6,200	22,400
	TOTAL	63,219	41,703	33,279	138,201

Level of Expert Inputs: person-months

	Project Duration	Project Director	Field Staff	Assistant	Consultants / Technical Expert	Total
Output 1	12	6.51	6.66	6.36	4.96	24.49
Output 2	8	3.63	5.67	2.03	2.82	14.15
Output 3	6	3.09	3.99	2.26	2.64	11.98
	26	13.23	16.32	10.65	10.42	50.62

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INTEGRATED WATER AND LAND USE MANAGEMENT PROGRAM
Project Schedule for Thai Prachan Village, Program 1, Year 1

	Activity	January	February	March	April	May	June	July	August	Septem	October	Novemb	Decemb
SG 1	**Integrated Water and Land Use Management Program**												
OPut 1.1	**100 families will participate in community-based workshops and survey with community members to identify their knowledge of water use**												
A 1.1.1	Develop survey questionnaire and workshop agenda and materials												
A 1.1.2	Arrange workshop meetings with communities (survey phase)												
A 1.1.3	Present workshops (awareness raising)												
A 1.1.4	Provide 2 months follow-up												
OPut 1.2	**Facilitate the Organization of a Community-based Water Use Management (WUM) Committee**												
A 1.2.1	Develop draft Committee principles (roles and function)												
A 1.2.2	Arrange community meeting and discuss Committee principles (frequency of meetings, voting rules and standards of practice, etc.)												
A 1.2.3	Let community vote on WUM committee members												
A 1.2.4	Provide 1 month follow-up												
OPut 1.3	**Consultation with water management expert to develop a participatory process and training program**												
A 1.3.1	Arrange committee meeting with expert												
A 1.3.2	Present results of survey												
A 1.3.3	Develop training program plan (over 2 months period; 1st draft ready within one month)												
A 1.3.4	Present initial & final plans (training plan and scoping water use management plan) to committee and experts and get feedback												
OPut 1.4	**Community training on participatory mapping of water resources and uses (consciousness raising)**												
A 1.4.1	Develop training lesson plan and materials												
A 1.4.2	Arrange training meetings with community (2x)												
A 1.4.3	Present training workshops (2x)												
A 1.4.4	Provide 1 month follow-up												

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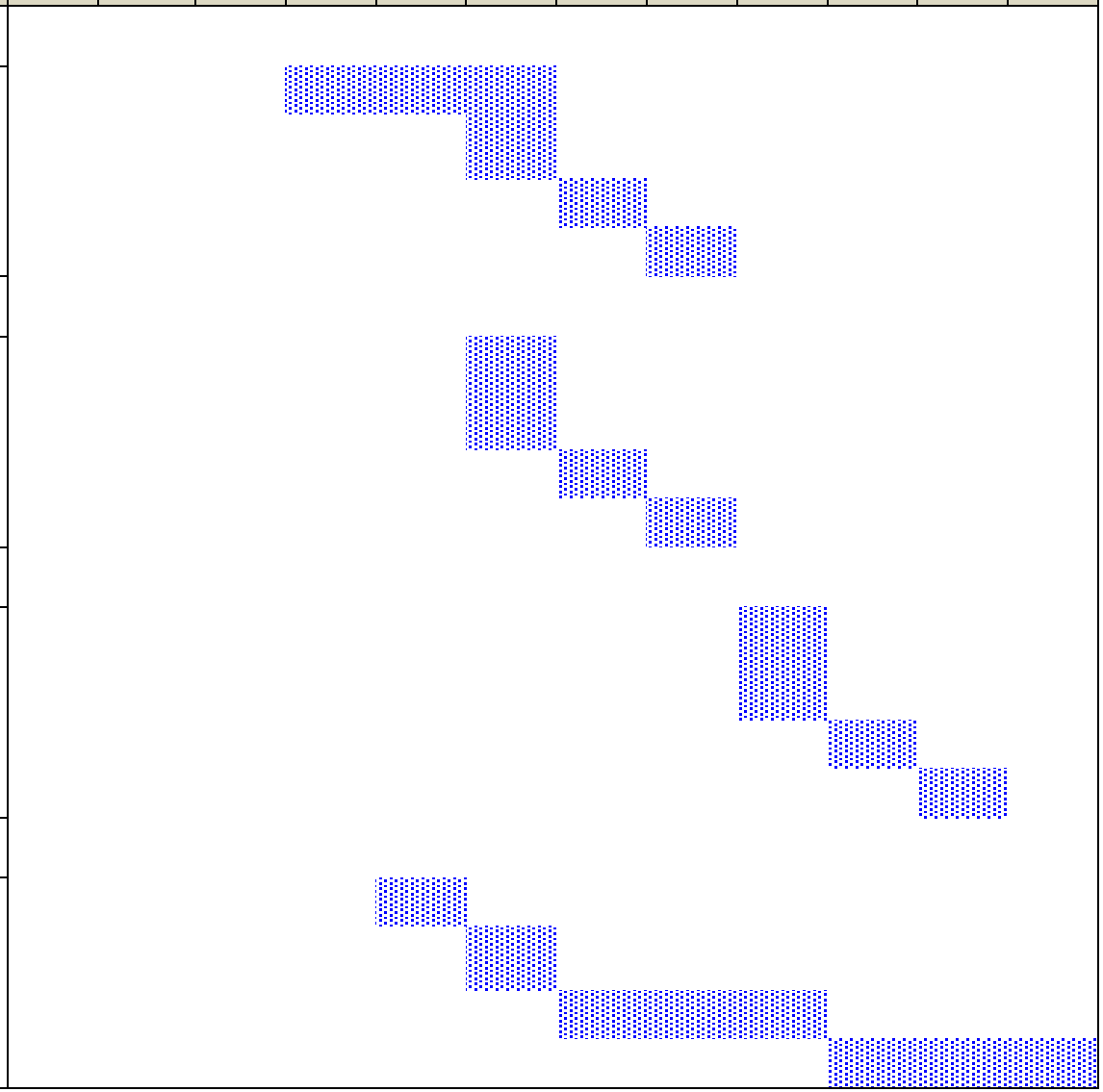
	Activity	January	February	March	April	May	June	July	August	Septem	October	Novemb	Decemb
OPut 1.5	**Committee participatory workshop on developing a community based Water Use Management Plan**												
A 1.5.1	Develop workshop lesson plan and materials												
A 1.5.2	Arrange workshop meetings with committee												
A 1.5.3	Present workshops												
A 1.5.4	Present initial & final plans to community and get feedback; (0.5 month follow-up on feedback)												
OPut 1.6	**(Workshop) Investigate and develop water sourcing alternatives for the community**												
A 1.6.1	Develop workshop lesson plan and materials												
A 1.6.2	Arrange workshop with community (2x)												
A 1.6.3	Present workshops												
A 1.6.4	Provide 1 month follow-up												
OPut 1.7	**(Workshop) Investigate and develop an installation and maintenance program (possibly a community based check dam)**												
A 1.7.1	Develop workshop lesson plan and materials												
A 1.7.2	Arrange workshop with community												
A 1.7.3	Present workshops												
A 1.7.4	Provide 1 month follow-up												
OPut 1.8	**Data collection to identify scientific baseline data and facilitate the organization of a community based Monitoring and Evaluation Committee**												
A 1.8.1	Arrange community meeting												
A 1.8.2	Let community vote on M&E committee members & discuss roles & responsibilities (may be sub-committee of WUM)												
A 1.8.3	Undertake data collection												
A 1.8.4	Present and evaluate results; Provide 3 months follow-up												



Associates for Environmental and Social Innovation

Thai families will enjoy abundant water for irrigation and consumption through an Integrated Water and Landuse Management Program
A two-page project summary for the Blue Mood Fund (BMF)

COMPELLING NEED

Imagine you are a farmer facing chronic lack of water for irrigation and consumption due to forest degradation, expanding agricultural lands and ineffective water management.
If you live in rural Thailand, you are likely a subsistence farmer, illiterate, and dropped out of school by the second grade. With less land to farm than your father and grandfather, your October rice harvest doesn't provide food for your family for a full 12 months. In recent years, you have faced extreme climate conditions resulting in either water shortage for irrigation and consumption during the dry season, and extreme wet conditions and flooding during monsoon season. This has been exacerbated by forest degradation, expanding agricultural lands and ineffective water management in your area. You are most concerned with the negative impacts this problem is manifesting in the medium term period: the growth and yields of paddy and fruits/vegetables are becoming unpredictable, which in turn leads to seasonal fluctuations in your per capita and/or household income. There is now less money to provide for your families' nutritional needs, social and educational needs, etc. which in the long term, will lead to poor health and lower quality of life. If there is unhappiness in the families, daily occupation and concerns shift, leading to new socio-economic problems in the community, thereby impacting on the development of the community as a whole.

APPEAL FOR FUNDING

$56,000.00 will provide 100 families abundant water resources to become economically self-sufficient and lead healthy and environment-friendly lives.
Support from the BMF of $56,000.00 will help the Community Organization Council of YangHuk Sub-district implements an integrated water and land use management program for 100 families in the Moo 5 Thai Prachan Village in Ratchaburi Province in Thailand. The program will help the community village become well-versed with effective water management and land use practices, allowing for more rational use of water for irrigation and consumption. A community program such as this will educate at least 300 individuals to live by the self-sufficiency economy principle, while safeguarding and securing their well-being through protection of the environment and natural resources.

ABOUT YOUR ORGANIZATION

Why invest in the Associates for Environmental and Social Innovation?
AESI is a Thailand-based association of like-minded young professionals who believe in building empowered communities to become self-reliant and sustainable in order to eradicate poverty and restore human dignity. Our approach to development is through environmental education and social entrepreneurship: we believe that educating communities to protect the natural resources and their environments and the services they derive from it will allow them to grow healthy, happy lives that lead to a productive future.

Formed in 2011, AESI's environment program aims to create green communities for environmental protection. Through seminars and workshops, care and protection for the environment are inculcated among community members. The development of environment- friendly projects, which are identified and prioritized by the community, provides the opportunity for a community-owned, action-oriented response. AESI's social entrepreneurship program supports the community by building a culture for entrepreneurship through provision of access to experts and institutions, and facilitating enterprises' access to markets and scaling up.

AESI works in partnership with universities, environment advocacy groups and government agencies.

HOW YOU PLAN TO SOLVE THE PROBLEM

This Proposal: Water and food security, health and quality of life through an integrated water and land use management program
With this proposal, the Community Organization Council of YangHuk Sub-district wants to help 100 families set an example and begin the process of becoming economically self-sufficient through:

- A community-based program for water use management that includes workshops, supplies and follow-up on:
  - The setting up of a water use management committee;
  - Survey with community members to identify their knowledge of water use;

- Water resources mapping;
- Development of catchment management to deal with off-site environmental effects of landuse; and
- Monitoring development of implementing the water use management plan.

This will be an empowering program for these families. Formulation of agreed community principles such as rationalizing water use and monitoring and evaluating development of activities will have long term effects on behavior and attitudes of community members. Short-term investments in the trainings for community mapping of water resources and installation & maintenance of water management mechanisms (e.g. check dam, catchments, etc.) raise immediate awareness and consciousness of the impacts and consequences of human activities on the environment.

MEASUREMENT OF SUCCESS

How do we know our programs will work?

Scientific studies show that poor management is cited as the most frequent cause of inefficient water use on irrigation schemes and that farmer-owned and –managed irrigation schemes seem to show better results than large and costly government-lead projects. Improved water management relates to making better use of existing resources, either by increasing the total amount of water available to plants or by increasing the efficiency with which the water is used. The advantage of small scale irrigation is that it can make use of water from a range of sources (for e.g. wells, rivers, small dams). As many problems related to land and water use are interrelated, integrated resource management solutions are necessary.

By linking water resources planning to land-use planning and especially using indigenous knowledge of the local people, water management can be given credibility, as well as be systematically connected to land-based issues. Integration refers to integrating management of resources: land and water, surface water and groundwater, and giving balanced attention to water quantity and quality. Integrated approaches also imply the need for coordination across government agencies and stakeholder participation at all levels, giving utmost consideration to the role that women play in the provision, management and safeguarding of water.

BUDGET NARRATIVE

The Community Organization Council of YangHuk Sub-district is requesting the Blue Moon Fund $56,000.00 for this $63,000, 12-month project, which will improve the lives of at least 300 people. The funds will provide 26 training workshops & community learning programs in various areas of integrated water resources management (agronomic, technical, managerial and institutional), e.g. adoption of cropping strategies to maximize cropped are during periods of low potential evaporation and periods of high rainfall, adoption of practices to increase effectiveness of rainfall, introduction and/or improvement of integrated catchment management and maintenance of equipment, community resources mapping, understanding and maximizing stakeholder consultations processes and critical role of women's groups, etc. Each workshop activity is reinforced by a follow-up program. The Community Organization Council of YangHuk Sub-district will provide 12% cost-sharing of $7,500 as well as in-kind support of AESI's expert advisory services.

CONCLUSION

Overall, we believe that our program dovetails well with the BMF's development priorities, especially those aimed at supporting the Greater Mekong Subregion's conservation of rich landscapes and addressing poor land use management. By partnering with the Community Organization Council of YangHuk Sub-district, the BMF will help 100 Thai families increase their resilience to climate pressures threatening their local community through capacity building and training. At least 300 individuals enhance their management of the natural resource base, specifically water and land, to become economically self-sufficient, while safeguarding and securing their well-being through protection of the environment and natural resources.

Please don't hesitate to contact us with questions or to receive supporting documentation.

Sincerely,

Chonchinee Amawatana & Lilita Pacudan
Advisers
Associations for Environmental and Social Innovation (AESI)
18-Oct-11