



A practical guide for rural electrification trainers and facilitators

Village Management Team Training Manual

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DIREKTORAT JENDERAL
ENERGI BARU, TERBARUKAN
DAN KONSERVASI ENERGI

VILLAGE MANAGEMENT TEAM TRAINING MANUAL

A practical guide for rural electrification trainers and facilitators

Ing ngarsa sung tulada

Di depan, seorang guru memberi teladan
In front, a teacher sets examples

Ing madya mangun karsa

Di tengah-tengah, seorang guru menciptakan prakarsa dan ide
In the middle, a teacher creates initiatives and ideas

Tut wuri handayani

Dari belakang, seorang guru memberikan dorongan dan arahan
From the back, a teacher provides encouragement and direction

[Ki Hajar Dewantara, Indonesian education figure]

Preface and Writing Team

“Conservation and rural-life policies are really two sides of the same policy; and down at bottom this policy rests upon the fundamental law that neither man nor nation can prosper unless, in dealing with the present, thought is steadily taken for the future” – Theodore Roosevelt

Sustainable development activities in rural area often focus on the utilisation of natural resources, which are directly connected with communities. Natural resources are a community's “safety net” and are critical to their livelihood. It therefore stands to reason that rural development can only occur if social aspirations and natural resource opportunities (and limitations) are addressed in an interwoven, holistic manner.

Rural electrification using renewable energy sources has become an important part of sustainable development in rural area. Access to modern energy opens new hitherto untapped potentials, both socially and economically.

As it is with all potential though, it needs to be harnessed and groomed with care and often coerced into fruition through patience and consistent action.

This manual is a tool. It was formulated, based on several years of experience in Indonesia, and compiled to be user-friendly as well as comprehensive. This tool has one singular objective: to provide rural facilitators and VMT members with the means to conduct their challenging tasks. May it serve you well.

EnDev Indonesia

Glossary & Abbreviation

EnDev	Energising Development, an international programme implemented by GIZ in over 20 countries, to increase communities' access to modern energy, facilitates energy access to households, social institutions and small and medium-sized enterprises in developing countries in Africa, Asia and Latin America
Facilitator	A person in a position of mentoring, teaching and training persons through a participatory and interactive approach
FGD	Focus Group Discussion, a dedicated information exchange platform and activity, involving several different stakeholders, with common interests
GIZ	<i>The Deutsche Gesellschaft für Internationale Zusammenarbeit</i> , an international agency, based in Germany, implementing development programmes internationally
LMP	<i>Lingkungan Mandiri Perdesaan</i> , is a green or environment component of PNPM
NRM	Natural Resources Management, a science of different approaches to promote efficient, effective and accountable exploitation of natural resources
PLTMH	<i>Pembangkit Listrik Tenaga Mikro Hidro</i> , an Indonesian term for micro hydro power generally range from 5 to 200 kW capacity
PLTS	<i>Pembangkit Listrik Tenaga Surya</i> , an Indonesian term for solar mini-grid using photo voltaic technology generally range from 5 to 150 kW capacity
PMD	<i>Direktorat Jenderal Pemberdayaan Masyarakat dan Desa</i> , is a government directorate, under the Indonesian Ministry of Home Affairs, overseeing PNPM
PNPM	<i>Program Nasional Pemberdayaan Masyarakat</i> , is a national programme on community empowerment

Ppt	PowerPoint® presentation is a software used to compile and edit presentation
PUE	Productive Use of Energy/Electricity; within this manual, PUE is defined as a small-scale activity, using a renewable energy-based electric energy source for providing a service or adding value to a product in order to sell the product and/or service to a willing market
RE	Renewable Energy or in other context could also be Rural Electrification
RPJMDes	<i>Rencana Pembangunan Jangka Menengah Desa</i> , is a medium term village development plan over five years
TOT	Training of Trainers is a training approach specifically catering for trainers/facilitators who subsequently train end beneficiaries
VMT	Village Management Team, is a small organization in the village whose responsibilities are to operate and maintain PLTMH and PLTS; VMT can be formal or informal
YAPEKA	<i>Pemberdayaan Masyarakat dan Pendidikan Konservasi Alam</i> is an NGO working on natural conservation education and community empowerment

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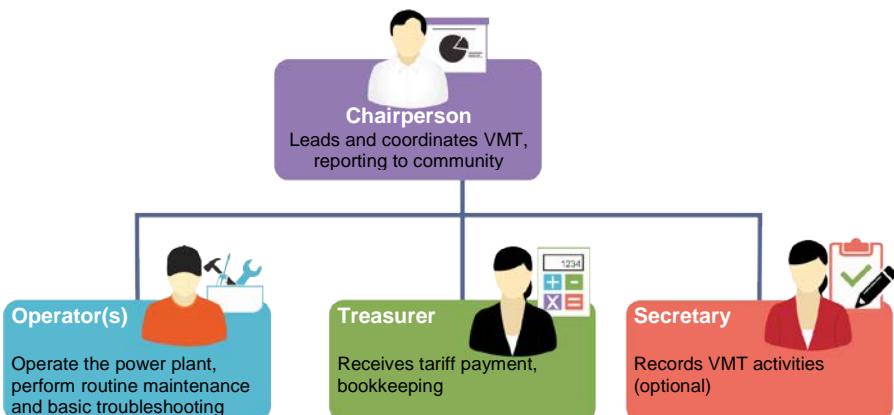
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TOT Training		
	A	B
	C	
VMT Training		
	C	

What is a VMT?

Village Management Team (VMT) is a community organization whose responsibilities are to operate, maintain, manage and administer electricity provision to their village through a PLTMH and or PLTS. VMT members are elected or appointed by the community and report to the community.

A typical structure for a VMT is shown in the diagram below.





INTRODUCTION

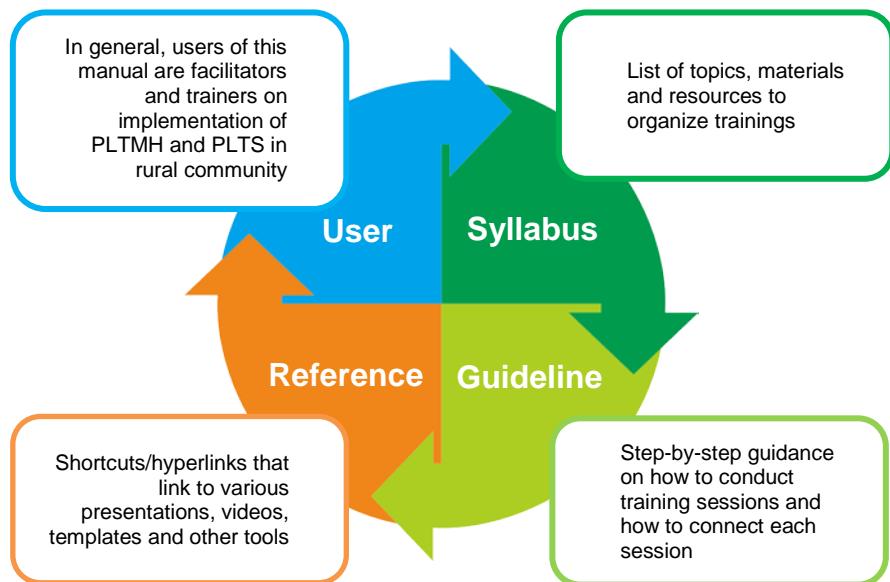
1 About The Manual

"Tell me and I forget, teach me and I may remember, involve me and I learn." — Benjamin Franklin

This is a practical manual for facilitators and trainers on how to establish and capacitate a community VMT to maintain and manage a micro power generation plant and rural mini-grid.

The manual comprises two sets of training materials:

1. **Module A and B:** Training of Trainers (TOT) materials for facilitators and trainers, suitable for improving training and facilitation skills.
2. **Module C:** VMT training materials to be used by facilitators and trainers for providing essential knowledge and tools to VMT members.



Pre-condition:

Participants should have a basic understanding of natural resource management and renewable energy technologies and have some experience in facilitating rural community activities regarding natural resources management and managing PLTMH and PLTS infrastructure

Time required:

Ideally the training will require four (4) full days, including field visit (if feasible). A sample of itinerary is included in this manual

Resource person(s):

Experienced facilitators and other experts as required

Expected results of TOT training:

1. Recognize and understand facilitation philosophy and skills in the context of natural resources management and renewable energy
2. Understand the key elements of successful learning sessions in classroom and under field conditions
3. Demonstrate skills to undertake participatory social and ecological mapping
4. Understand the contents of VMT training materials
5. Be able to deliver training to VMT members

Expected results of VMT training:

1. Understand the basic technical functionality and requirements of a PLTMH or PLTS in order to operate, maintain, and conduct simple troubleshooting
2. Demonstrate skills necessary to effectively manage and administer village-based electrification through a PLTMH or PLTS (organizational structure, roles and responsibilities, technical and financial record keeping)
3. Understand how to optimize the performance and sustainability of the PLTMH or PLTS through PUE and other measures

2 Syllabus Components

"The best way to learn is to do; the worst way to teach is to talk."

— Paul Halmos

There are four (4) components in the training syllabus: training segment, media and tools, activities, and references. It is essential to understand these elements and how to incorporate them to develop VMT training.



TRAINING SEGMENTS are parts of training sessions which typically are divided into four (4) main segments: introduction, main session, assessment and closing.



1 Introduction gives opportunity to warm up and create positive and relaxed atmosphere. This segment also serves to quickly assess the participants' experience, which is useful during next segments and assists to control the pace of the class, and adjust the level of information delivery.

2 Main Session is where actual content is delivered to participants. Knowledge about the participants from previous segment allows to adjust pace. In this segment the trainer may explore the participant a bit more and ignite sharing opportunities if participants have more knowledge and experience. In long or heavy session (e.g. technical session which provides much detail) it is advisable to make short break

or use an ice breaker game, as soon as participants become unresponsive.

3 Assessment is for evaluating whether participants have captured information. A question and answer, quiz, or pre- and post-test methods can be considered.

4 Closing is to wrap up and reinforce the messages. Thanking everybody for their support and participation is also appropriate. This session also serves to address logistical issues and provide a preview for any next sessions.



MEDIA AND TOOLS are essential for making training sessions practical, interactive and entertaining. Adjust and set media and tools according to topic and local circumstances (participants, time allocation, culture, etc.). For example, accessing internet during training in rural area may not be a good idea because data connection is usually bad. Check presentation, marker, paper, pens, etc. beforehand and make sure everything is running well. Always consider for Plan B, for example make sure electricity generator is available when rely on electrical equipment such as projector and computer.



ACTIVITIES are ideal for delivering or emphasizing particular information and to maintain positive learning environment. As with media and tools, be sensible of local circumstances.



REFERENCES are books, documents or other media required by the trainer (and perhaps by the participant later on) to properly implement the training. Generally these resources are reviewed as part of preparing for the training. They offer valuable confidence to the trainer to deliver training in a knowledgeable and informed manner.

3 Training Syllabus

"The key is not to prioritize what's on your schedule, but to schedule your priorities." — Stephen Covey

The syllabus is divided into three main modules:

- Module A for Facilitation and Community Empowerment
- Module B for Village and Rural Community
- Module C for Village Management Team in Rural Electrification

Each module contains specific tools, activities and references required for implementing training segments.

MODULE A

Facilitation and Community Empowerment

MODULE B

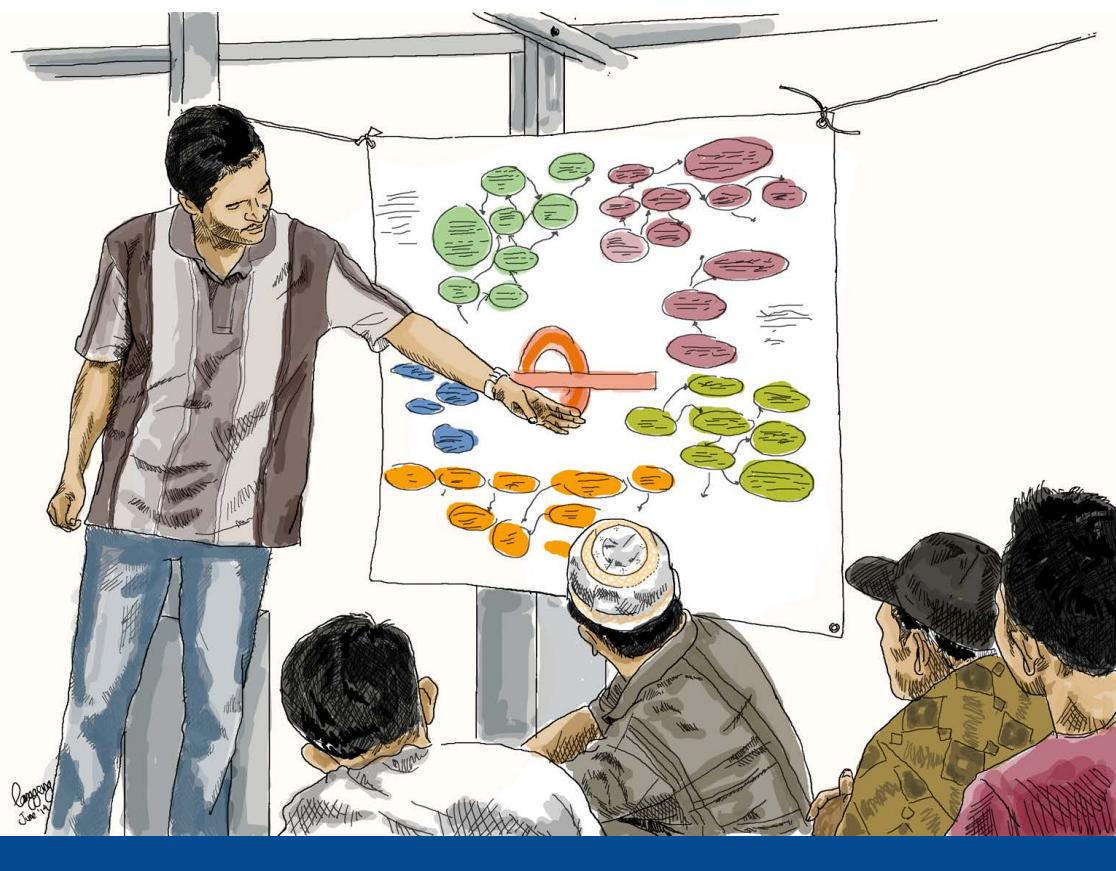
Village and Rural Community

Module A and B are designed for participants to improve their facilitation skills within rural context. The implementation of both module A and B should be done by someone who already has good knowledge/skills in rural facilitation.

MODULE C

Village Management Team in Rural Electrification

Module C caters for VMT members and it is presented by the facilitator (who has improved skills through understanding Module A and B). This module provides all the necessary basic information for VMT members to understand their responsibilities and be able to fulfil them.



HOW TO CONDUCT THE TRAINING

4 Training Preparation

“Before anything else, preparation is the key to success.”

— Alexander Graham Bell

Essential preparation ahead of delivering training includes:



Ensuring the suitable time and place of training



Ensuring accommodation of participants and other required logistics, for example meals and transportation



Preparing and distributing invitation to the members of VMT, ensuring their presence in training is confirmed



Preparing materials to be delivered in training



Preparing stationery and other necessary tools in training

Tips! Consider this manual, and all available reference and resource materials in detail, to ensure that you are able to provide this training.

Tips! Games that have key messages are excellent tools for ensuring the participants' attention.

5 Introduction Stage

“Teaching is the highest form of understanding.”

— Aristotle



This stage provides general information about training course. Total length depends on the participants' background. This stage also initiates positive attitude amongst participants. Alternatively, this stage can be integrated directly into the modules as well.

Participants are expected to develop positive relations among themselves, facilitators and trainers during the training, since open communication and information exchange during the training session will improve overall training quality and experience.

Facilitators could adopt the following steps:

Introduction (2 minutes)

Welcome the participants and pay respects for their attendance. To warm up the training atmosphere, ask these questions: Do you already know each other? Is an introduction necessary? Just to recall names of our friends and get to know recently met friends? Have you travelled far?

Ice Breaking Games (15 minutes)

In a 15 minutes introduction round, participants can be invited to introduce themselves formally or through informal interactive approach like “Reporter Interview” and “Self Comic”. Participants, facilitators and organizers could all be included in establishing communicative and fun atmosphere (see “Various Games”).

Review (10 minutes)

Explore the philosophy of the game (see “Various Games”). Ask participant to provide feedback of their impression about the game. Write down their opinion on board. Underline key words and review the purpose and meaning of the game, then link it to the training.

Confirmation (3 minutes)

Lastly, give affirmation to the meaning of the game: participants, facilitators and organizer need to know each other. Not just limited to the name, but also the personality and character of each person. Such acquaintance will create a friendly and respectful interaction and productive training.

6 Learning Purpose and Process

"If you can't explain it simply, you don't understand it well enough."

— Albert Einstein



This section emphasizes purpose, expectation, and method that will be implemented during the training. Participants focus and contribute actively in the process.

After facilitator explains the purpose and process of learning, participants should be able to explain the purpose and process of training correctly and set expectations and concerns more realistically.

Facilitator could adopt the following steps:

Description

(5 minutes)

Provide description of the flow of training process that includes subject matter and objectives, delivery methods or techniques used, and the length of time required for discussion of each material.

List of Expectations

(15 minutes)

Develop list of participant expectation and concern. Ask participants to fill one meta-plan paper with one expectation. Collect all of these papers and start to group by putting it into larger piano paper.

Brief Explanation

(5 minutes)

Give a brief explanation of adult training methodologies. In principle, it requires that all participants are expected to be actively involved throughout the discussion process. This is thus not a passive learning through absorption, but learning through sharing.

Purpose of Training

(10 minutes)

After training methodology, expectation and concern are understood, explain the purpose of training, which is: to improve the participants' facilitation skill and skill of VMT, including its institutional development as PLTMH/PLTS manager.

7 Organizing Class

“We build too many walls and not enough bridges.”

— Isaac Newton



After both facilitators and participants have an agreement on class organization and learning rules, the participant is expected to be able to:

- Select a class manager who will organize the participant's needs during learning process
- Establish order, learning schedule, and duty schedule which will help the process of learning.

Facilitators could adopt the following steps:



Select and choose a class committee



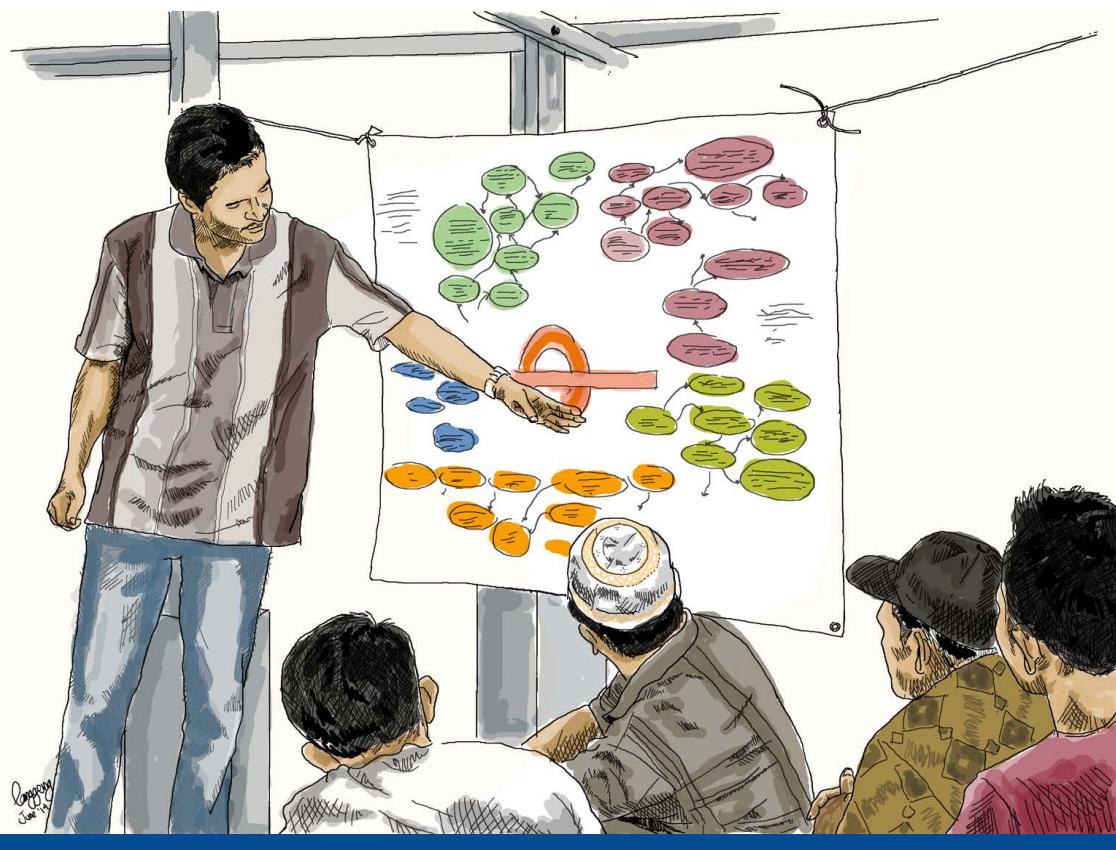
Suggest and determine class rules



Confirmation of committee and rules by all participants

Tips!

- Allocate time for a simple test in the beginning (pre-test) and the end of each module (post-test). Use the same set of exercise format to compare result.
- Organize class notes and activity results. It will be useful when we are organizing a work plan.
- Develop a follow-up plan for things to be completed beyond the training session. In a follow-up plan, the elements that should be covered are:
 - What needs to be done
 - When they need to be completed
 - Who will be in charge for specific action.



MODULES

8 Modules

“Tell me and I forget, teach me and I may remember, involve me and I learn.” — Benjamin Franklin

GENERAL DIRECTION ON SYMBOLS:



Time duration of training session process (in minutes)



Hyperlink button directly to the associate file(s)



Available in video file format



Google Earth

MODULE A

Facilitation and Community
Empowerment

Topic 1: Basics of Facilitation

Topic 2: Facilitation in Community Empowerment Activities

Topic 3: Facilitation in Natural Resources Management and Renewable Energy Activities in Rural Area

Training Segment	Media and Tools	Activities	References
Introduction <ul style="list-style-type: none">Brief explanation on the class sessionQuick assessment through brainstorming	<ul style="list-style-type: none">PowerPoint presentationMeta-planMarker pens (multi colours preferred)Sticky wall/plano paperLCD projectorDouble tape or masking tape	<ul style="list-style-type: none">Program presentationLearning rulesIntroduction gamesBrainstorming session: managing expectation (wishes, concerns) using meta-plan	<ul style="list-style-type: none">Games list
Main course/session, focus on: <ul style="list-style-type: none">A1 Basics of FacilitationA2 Facilitation in Community Empowerment ActivitiesA3 Facilitation in Natural Resources Management and Renewable Energy Activities in Rural Area	<ul style="list-style-type: none">PowerPoint presentation (A1, A2, A3)Sticky wall/plano paperSample movie to develop discussionLCD projectorMarker pens (multi colours preferred)Double tape or masking tape	<ul style="list-style-type: none">Program presentationPracticing issues of mapping using results from brainstorming session aboveRole-playing using FGD approach: select 4-6 topics to discuss per groups, preferably topics required by the whole program (will connect to other activities later on)Games: ice breaker, brain gym after 60 minutes. Might need more during "after lunch session"	<ul style="list-style-type: none">A1: Basics of FacilitationA2: Facilitation in Community Empowerment activitiesA3: Facilitation in Natural Resources Management and Renewable Energy Activities in Rural AreaVideo 1: Overview of PLTMHVideo 2: PNPM LMPVideo 3: Brain gymWahyono, et.al. (2011). <i>Seni Memfasilitasi Masyarakat (PMD, Kemendagri, 2011)</i>Buku Panduan Energi yang Terbarukan (PNPM LMP)
Assessment Provide time for Q and A about the topic delivered	<ul style="list-style-type: none">PowerPointLCD projectorMeta-planMarker pens (multi colours preferred)	<ul style="list-style-type: none">Record Q and A to PowerPoint directly (note taker is recommended)When necessary, participants are allowed to write in meta-plan and give it to facilitator)	
Closing Conclusion from the whole discussion	<ul style="list-style-type: none">PowerPointLCD projector	<ul style="list-style-type: none">Outlining main ideas from the previous sessionsBrief introduction to the next sessionExtra time is allocated to anticipate participant's condition	

Participants need to know the philosophy and benefit of facilitation to implement community empowerment activities well in the field. Participants' ability and knowledge in facilitating processes in community are important to guide them before they engage a rural community.

Learning outcome: Participants understand basic facilitation techniques, to philosophy behind facilitation and the benefits of facilitation.

Process of training session:



A1

Introduction

(5 minutes)

- Greet the participants then explain the purpose and expected outcomes of the subject

Main Session

(20 minutes)

- Present material on "Basics of Facilitation" which relates to participant's prior knowledge
- Give a chance to participants to give opinion about the topic discussed

Assessment

(5 minutes)

- Provide time for Q and A to check participants' understanding

Closing

(5 minutes)

- Conclude the material which have been discussed
- End the session with a summary and confirmation of important points

Notes: Media that should also be prepared are plano papers, meta-plans, markers, LCD projector, and double tapes.

After participants have basic understanding of facilitation, they need to know the facilitation techniques suitably for community empowerment in general, and for VMT members specifically. Participant should be sensitive to village conditions and able to offer solutions to challenges in the community regarding natural resource management and renewable energy.

Learning outcome: Participants understand how to facilitate for VMT members, in the context of nature resources management and renewable energy.

Process of training session:



A2

Introduction

(5 minutes)

- Greet the participants then explain the purposes and expected outcomes of the subject

Main Session

(30 minutes)

- Present the material on "Facilitation in Community Empowerment Activities" which relates with participant's prior knowledge
- Give a chance to participants to give opinion about the topic discussed

Assessment

(5 minutes)

- Provide time for Q and A to check participants' understanding

Closing

(5 minutes)

- Conclude the material which have been discussed
- End the session with a summary and confirmation of important points

Notes: Media that should also be prepared are piano papers, meta-plans, markers, LCD projector, and double tapes.

Tips! Basic attitude of successful facilitators

There are five basic rules of facilitation. These are essential for successful facilitation, both in a class and in a real environment. Each of the rules can be trained and strengthened by simulation, role-playing and interactive discussion. These rules are:

1. Enthusiasm (to instil eagerness in accepting new knowledge)
2. Empathy (to reflect respect and understanding of challenges)
3. Positive thinking (to ensure that confidence is built in applying new knowledge)
4. Trust within the group (to encourage open sharing)
5. Simple approach to community (to avoid over complicating new knowledge)

Tips! Why are facilitators needed?

- Community facilitation often becomes the focal point of rural development processes. Facilitators are key components to integrate technical aspect of development program and the community component. They will somehow “calibrate” both components to maintain development momentum.
- A facilitator is a partner for community to discuss issues related to his/her scope of work. He/she also becomes key contact of knowledge sharing within community. A facilitator needs to be able to address and engage rural community, characterized by its diversity (ecologically, socially, culturally and economically).
- Facilitator is an agent of change. He/she needs to address changes driven by development as well as to maintain momentum of community empowerment and track/anticipate its direction.

Participants' ability in providing training on management will be developed. Facilitation is the process through which a community learns to manage its natural resources and renewable energy technology. To provide good management training classes, participants need plenty of exercise. Exchange of experiences among participants will also significantly develop their facilitation skill as rural facilitation has unique aspects.

Learning outcome: Participants are able to facilitate natural resources management and renewable energy activities in rural context.

Process of training session:



Introduction

(5 minutes)

- Greet the participants then explain the purposes and expected outcomes of the subject

Main Session

(30 minutes)

- Present the material about "Facilitation in Natural Resources Management and Renewable Energy Activities in Rural Area"
- Games and movie important to develop session

Assessment

(5 minutes)

- Provide time for Q and A to check participants' understanding

Closing

(5 minutes)

- Conclude the material which have been discussed
- End the session with a summary and confirmation of important points

Notes: Media that should also be prepared are plano papers, meta-plans, markers, LCD Projector, and double tapes.

MODULE B

Village and Rural Community

Topic 1: Village and Its Dynamic

Topic 2: Village as a Landscape

Topic 3: Village and Target Group

 Training Segment	 Media and Tools	 Activities	 References
Introduction <ul style="list-style-type: none"> Brief explanation on the class session Quick assessment through brainstorming 	<ul style="list-style-type: none"> PowerPoint presentation Meta plan Marker pens (multi colours preferred) Sticky wall/Plano paper LCD projector Double tape or masking tape 	<ul style="list-style-type: none"> Program presentation Learning rules Introduction games Brainstorming: reviewing previous sessions 	<ul style="list-style-type: none"> Games and icebreaker games list (need to be developed or adapted from other sources. Might need formal request)
Main course/sessions, focus on: <ul style="list-style-type: none"> B1 Village and Its dynamics B2 Village as a Landscape B3 Village and Target Group 	<ul style="list-style-type: none"> PowerPoint presentation (B1, B2, B3) Sticky wall/plano paper Sample movie to develop discussion LCD projector Marker pens (multi colours preferred) Double tape or masking tape Basic map (may use Google Earth or other sources) 	<ul style="list-style-type: none"> Presentation Group division: use games Simulation 1: develop participatory mapping → social-ecological, spatial approach, relevant to the renewable energy issues (indoor) and infrastructure mapping Simulation 2: develop seasonal calendar to provide temporal context to the map Simulation 3: develop simple trend analysis based on relevant issues Group presentation 	<ul style="list-style-type: none"> B1: Village and Its Dynamics B2: Village as a Landscape B3: Village and Target Group Law No. 6/2014 on Village. Or consult your local government. Law No. 27/207 on Spatial Planning. Or consult your local government. Wahyono, et.al. (2011). <i>Seni Memfasilitasi Masyarakat (PMD, Kemendagri, 2011)</i> Local RPJMDes Village statistics (usually available in village office) Margolouis and Salafsky (1998) Measures of Success: Designing, Managing, and Monitoring Conservation and Development Projects, Island Press Village regulation (environmental issues as obligatory matter)
Assessment Providing time for Q and A about the topic delivered	<ul style="list-style-type: none"> PowerPoint LCD projector Meta-plan Marker pens (multi colours preferred) 	<ul style="list-style-type: none"> Record Q and A to PowerPoint directly (note taker is recommended) When necessary, participants are allowed to write in meta-plan and give it to facilitator) 	
Closing Conclusion from previous discussion	<ul style="list-style-type: none"> PowerPoint LCD projector 	<ul style="list-style-type: none"> Outlining main ideas from the previous sessions Brief introduction to next session 	

In this session, participants need to be aware that knowledge about village and its dynamic is essential before being able to facilitate rural community in the field.

Learning outcome: Participants will recognize characteristics of village, the dynamics of local community and be able to express observation through a basic spatial map.

Process of training session:



Introduction

(5 minutes)

- Greet the participants then explain the purposes and expected outcomes of the subject

Main Session

(25 minutes)

- Present the material about "Village and Its Dynamic"
- Simulation: develop seasonal calendar and use example from the presentation to showcase a seasonal calendar, how to create it and discuss what type of information are useful for PLTMH/PLTS

Assessment

(25 minutes)

- Provide time for Q and A to check participants' understanding

Closing

(5 minutes)

- Conclude the material which have been discussed
- End the session with a summary and confirmation of important points

Notes: Media that should also be prepared are plano papers, meta-plans, markers, LCD Projector, and double tapes

Participants need to view a village as an integral part of a larger landscape, but also the village as a whole within itself. With the knowledge of its natural landscape, participatory social and ecological map of a village can be developed along with the rural community. Simulation is an approach used by participants in constructing seasonal calendar to provide information on village's landscape.

Learning outcome: Participants can identify the territory of a village, the landscape of a village, and are able to develop participatory social and ecological maps.

Process of training session:



Introduction

(5 minutes)

- Greet the participants then explain the purposes and expected outcomes of the subject

Main Session

(25 minutes)

- Present the material about "Village as a landscape"
- Simulation: participatory mapping to cover natural resources, social and infrastructures
- Identify important elements for PLTMH/PLTS

Assessment

(25 minutes)

- Provide time for Q and A to check participants' understanding

Closing

(5 minutes)

- Conclude the material which have been discussed
- End the session with a summary and confirmation of important points

Notes: Media that should also be prepared are plano papers, meta-plans, markers, LCD Projector, and double tapes

Facilitators need to understand the village and target groups before they facilitate further. Facilitators can then identify target group and whether they are suitable as managers of PLTMH/PLTS. Beneficiaries also need to be identified within community and how their relation is to natural resources. Information is refined through seasonal calendars and simulation will assist in developing simple trend analysis of related issues.

Learning outcome: Participants can identify existing organizational structures in a village, the beneficiaries of PLTMH/PLTS, and are able to develop interim information through participatory seasonal calendar and trend analysis

Process of training session:



Introduction

(5 minutes)

- Greet the participants then explain the purposes and expected outcomes of the subject

Main Session

(20 minutes)

- Present the material about "Village and Target Group"
- Simulation: develop simple trend analysis based on map and seasonal calendar exercise. Apply "a scenario" into previous map and seasonal calendar, landscape and connect the prediction with the PLTMH/PLTS context

Assessment

(5 minutes)

- Provide time for Q and A to check participants' understanding

Closing

(5 minutes)

- Conclude the material which have been discussed
- End the session with a summary and confirmation of important points

Notes: Media that should also be prepared are plano papers, meta-plans, markers, LCD Projector, and double tapes

MODULE C

Village Management Team in
Rural Electrification

- Topic 1: Basics of Mini-grid (PLTMH and PLTS)**
- Topic 2: VMT Institutional Forms and Legal Base**
- Topic 3: Management Aspect**
- Topic 4: Financial Aspect**
- Topic 5: Technical Aspect**
- Topic 6: Productive Use of Energy/Electricity**
- Topic 7: Environmental Safeguard**
- Topic 8: Monitoring and Evaluation**

 Training Segment	 Media and Tools	 Activities	 References
Introduction <ul style="list-style-type: none"> • Brief explanation on the class session • Quick assessment through brainstorming 	<ul style="list-style-type: none"> • PowerPoint presentation • Meta plan • Marker pens (multi colours preferred) • Sticky wall/plano paper • LCD projector • Double tape or masking tape 	<ul style="list-style-type: none"> • Program presentation • Learning rules • Introduction games • Brainstorming: reviewing previous sessions. 	Games list (need to be developed or adapted from other sources, might need formal request)
Main course/session, focus on: <ul style="list-style-type: none"> • C1 Basic of Mini-grid (principal of electricity use and introduction of MHP and its management) • C2 VMT Institutional Forms and Legal Base 	<ul style="list-style-type: none"> • PowerPoint presentation (C1, C2) + specific MHP and PVVP • Sticky wall/plano paper • Sample movie to develop discussion • LCD projector, • Marker pens (multi colours preferred) • Double tape or masking tape 	<ul style="list-style-type: none"> • PowerPoint presentation • Activity 1: develop roles and responsibility of VMT personnel (indoor) • Activity 2: develop the village policy on PLTMH and PLTS management (indoor) • Group presentation 	<ul style="list-style-type: none"> • C1 Principal of Electricity Use • C1 Introduction of PLTMH and Its Management • C2 VMT Institutional Forms and Legal Base • Local RPJMDes • Village statistics (available in village office) • Margolous and Salafsky (1998) Measures of Success: Designing, Managing, and Monitoring Conservation and Development Projects, Island Press. • C2 Poster - VMT
SPLIT SESSION: Management <ul style="list-style-type: none"> • C3 Management Aspect • C4 Financial Aspect and Cooperative 	<ul style="list-style-type: none"> • PowerPoint presentation (C3, C4) • Sticky wall/plano paper • LCD projector, • Marker pens (multi colours preferred) • Double tape or masking tape 	<ul style="list-style-type: none"> • PowerPoint presentation • Activity 3: practice to use adminbooks • Group presentation (for technical team) at the end of the split session 	<ul style="list-style-type: none"> • C3 Institutional Development • C3 Secretariat & Administration 1 • C3 Secretariat & Administration 2 • C4 Tariff and Its Management • C4 Financial Management 1 • C4 Financial Management 2 • C3 Activity Book • C3 Customer Book • C4 Tariff Book • C4 Cash Book
SPLIT SESSION: Technical <ul style="list-style-type: none"> • C5 Technical Aspect PLTMH/PLTS 	<ul style="list-style-type: none"> • PowerPoint presentation (C5) • Sticky wall/plano paper • LCD projector • Marker pens (multi colours preferred) • Double tape or masking tape • Emphasize on PLTMH or PLTS, depends on the need 	<ul style="list-style-type: none"> • PowerPoint presentation • Activity 4: practice use log book • Group presentation (for management team) at the end of the split session 	<ul style="list-style-type: none"> • C5 Basic Maintenance • C5 Mechanical Component • C5 Generator and Control System • C5 Powerhouse • C5 Transmission and Installation • C5 Log book • C5 Poster - Troubleshooting for Common PLTMH/PLTS Problems

<ul style="list-style-type: none"> • C6 Productive Use of Energy/Electricity • C7 Environmental Safeguard (specific needs for PLTMH/PLTS) • C8 Monitoring and Evaluation 	<ul style="list-style-type: none"> • PowerPoint presentation (C6, C7, C8) • Sticky wall/plano paper • LCD projector • Marker pens (multi colours preferred) • Double tape or masking tape 	<ul style="list-style-type: none"> • PowerPoint presentation • Activity 5: focus on example of environmental protocol/safeguard issues (indoor) • Activity 6: develop monitoring plan and safeguard plan (annually) 	<ul style="list-style-type: none"> • C6 PUE Introduction • C6 Concept of Business Development • C6 Steps of Business Development • C6 Pilot Project of PUE • C7 Safeguard: Environmental Preservation • C8 Monitoring and Evaluation: SMS Gateway • Example of village regulations (environmental issues as obligatory matter) • Safeguard protocol (GIZ or other source) • Safeguard specific protocol for PLTS • C7 Poster - Catchment Area Protection • C8 Poster - SMS Gateway
Assessment <ul style="list-style-type: none"> • Provide time for Q and A about the topic delivered 	<ul style="list-style-type: none"> • PowerPoint • LCD projector • Meta plan • Marker pen 	<ul style="list-style-type: none"> • Record Q and A to PowerPoint directly (note taker is recommended) • When necessary, participants are allowed to write in meta-plan and give it to facilitator) 	
Closing <ul style="list-style-type: none"> • Conclusion from previous discussion 	<ul style="list-style-type: none"> • PowerPoint • LCD projector 	<ul style="list-style-type: none"> • Outlining main ideas from the previous sessions • Brief introduction to next session (field visit) 	

VMT members are the target participant in this module. VMT members are responsible for operation, maintenance, management and administration of the village mini-grid installation, using renewable energy technologies (specifically micro-hydro power or PLTMH and solar photovoltaics mini-grid or PLTS).

Learning outcome: Participants understand the basics of PLTMH/ PLTS.

Process of training session:



Introduction

(5 minutes)

- Greet the participants then explain the purposes and expected outcomes of the subject

Main Session

(40 minutes)

- Present the material about "Basic of Mini-grid (PLTMH and PLTS)"
- Use the video as discussion media

Assessment

(10 minutes)

- Provide time for Q and A to check participants' understanding

Closing

(5 minutes)

- Conclude the material which have been discussed
- End the session with a summary and confirmation of important points

Notes: Media that should also be prepared are plano papers, meta-plans, markers, LCD Projector, and double tapes

In this topic, VMT members learn about various VMT institutional forms and their legal base as it relates to the country of training. This information will clarify VMT's tasks in the context of managing a PLTMH and PLTS.

Learning outcome: Participants understand different VMT institutional structures and legal basis.

Process of training session:



Introduction

(5 minutes)

- Greet the participants then explain the purposes and expected outcomes of the subject

Main Session

(40 minutes)

- Present the material about "VMT Institutional Forms and Legal Base"
- Include topic on cooperative and possible support from district government cooperative office

Assessment

(10 minutes)

- Provide time for Q and A to check participants' understanding

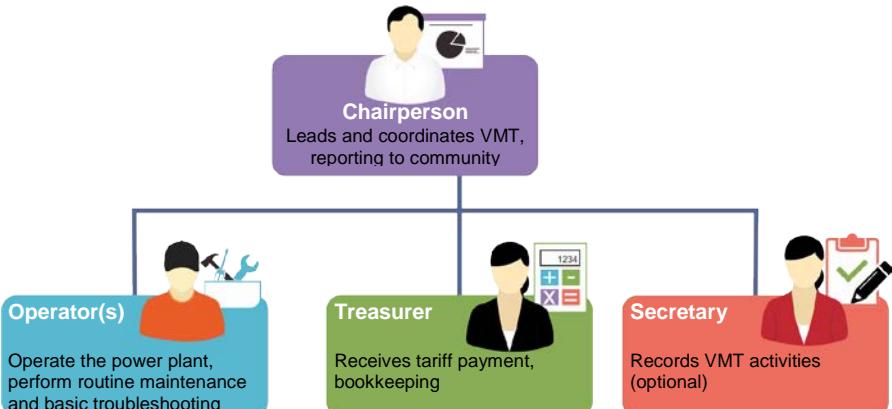
Closing

(5 minutes)

- Conclude the material which have been discussed
- End the session with a summary and confirmation of important points

Notes: Media that should also be prepared are plano papers, meta-plans, markers, LCD Projector, and double tapes

VMT Structure



VMT Roles and Responsibilities

Chairperson

- Prepare legal documents for VMT
- Lead and coordinate VMT
- Planning and budget preparation
- Approve planning and financial reports
- Engage work relation with village/local government
- Report VM activities to local community

Treasurer/ Secretary

- Receive electricity payments
- Financial accounting
- Manage bank book(s)
- Prepare monthly and annual financial reports
- Record all VMT activities
- Record outgoing and incoming letters

Operator(s)

- Operate the power plant
- Perform routine maintenance
- Install a new electrical grid connection for new costumer (ONLY if operator has enough experience and uses appropriate equipment)
- Repair and replace small parts
- Fill and report log book

VMT members need to understand the intricacies of managing a PLTMH and PLTS in a rural context and learn from cases or previous documents from other areas. Simulation is an important part in this topic as well as providing useful hands-on experience in dealing with challenges. Participants should be able to ask the facilitators directly how to overcome various challenges.

Learning outcome: Participants fully understand all management aspect regarding PLTMH/PLTS.

Process of training session:



Introduction (5 minutes)	<ul style="list-style-type: none">Greet the participants then explain the purposes and expected outcomes of the subject
Main Session (20 minutes)	<ul style="list-style-type: none">Present material on "Management Aspects"Ask participants to create a list of challenges that need to be addressed by VMT after their establishment
Assessment (5 minutes)	<ul style="list-style-type: none">Provide time for Q and A to check participants' understanding.
Closing (5 minutes)	<ul style="list-style-type: none">Conclude the material which have been discussedEnd the session with a summary and confirmation of important points

Notes: Media that should also be prepared are plano papers, meta-plans, markers, LCD Projector, and double tapes.

This topic improves skills of VMT members in management and administration of financial aspects. Participant learns to use related books and documents, such as cash book. Facilitator will provide an example of tariff setting to stimulate participant. An exercise using actual cash book is essential to provide real experiences for participants.

Learning outcome: Participants fully understand financial aspects required for managing a PLTMH/PLTS and are able to use financial management tools properly.

Process of training session:



Introduction

(5 minutes)

- Greet the participants then explain the purposes and expected outcomes of the subject

Main Session

(20 minutes)

- Present material on "Financial Aspects"
- Practice to set tariff and how to use admin books
- Presentation by each team

Assessment

(5 minutes)

- Provide time for Q and A to check participants' understanding

Closing

(5 minutes)

- Conclude the material which have been discussed
- End the session with a summary and confirmation of important points

Notes: Media that should also be prepared are plano papers, meta-plans, markers, LCD Projector, and double tapes.

VMT members receive information to strengthen the basic technical skills for operating and maintaining PLTMH/PLTS. They will exercise by filling in the “technical log book”. In addition, the facilitator should use this session to develop a simple work plan related to technical aspect. This could be included when develop a follow-up plan.

Learning outcome: Participants fully understand basic technical aspects of PLTMH and PLTS.

Process of training session:



Introduction
(5 minutes)

- Greet the participants then explain the purposes and expected outcomes of the subject

Main Session
(70 minutes)

- Present material on “Technical Aspects”
- Practice to use the log book

Assessment
(10 minutes)

- Provide time for Q and A to check participants' understanding

Closing
(5 minutes)

- Conclude the material which have been discussed
- End the session with a summary and confirmation of important points

Notes: Media that should also be prepared are plano papers, metaplans, markers, LCD Projector, and double tapes.

Treasurer's Costumer Book, Electricity Tariff Book, and Cash Book

Customer Book

To record customers' data and their power consumption based on appliances owned or used.

No	Customer Name	Contract No	Installation Date	Power Consumption	Appliances Owned

Electricity Tariff Book

To record customers name and their monthly payment.

No	Customer Name	Month: _____		Month: _____		Month: _____	
		Date	Payment	Date	Payment	Date	Payment

Cash Book

To monitor income, expense and savings. The most important information to be recorded monthly.

Date	Transaction	Income (cash-in)	Expenditure (cash-out)	Balance

Above are examples of administration books (activity, costumer, electricity tariff, and cash books). For the ready-to-print template, please refer to **Admin Books PLTMH and PLTS** in "Tool Box".

Operator's Log Book

Log Book

To record the performance of power plant operation, so problems could be recognized before becoming critical.

Date	Hour meter (h)	Battery state of charge (V)	kWh meter 1	kWh meter 2	kWh meter 3	Faults observed	Maintenance and repairs done

Above is an example of a log book to record PLTMH and/or PLTS performance. For the ready-to-print template, please refer to **Admin Books PLTMH and PLTS** in "Tool Box".

Chairman's Activity Book

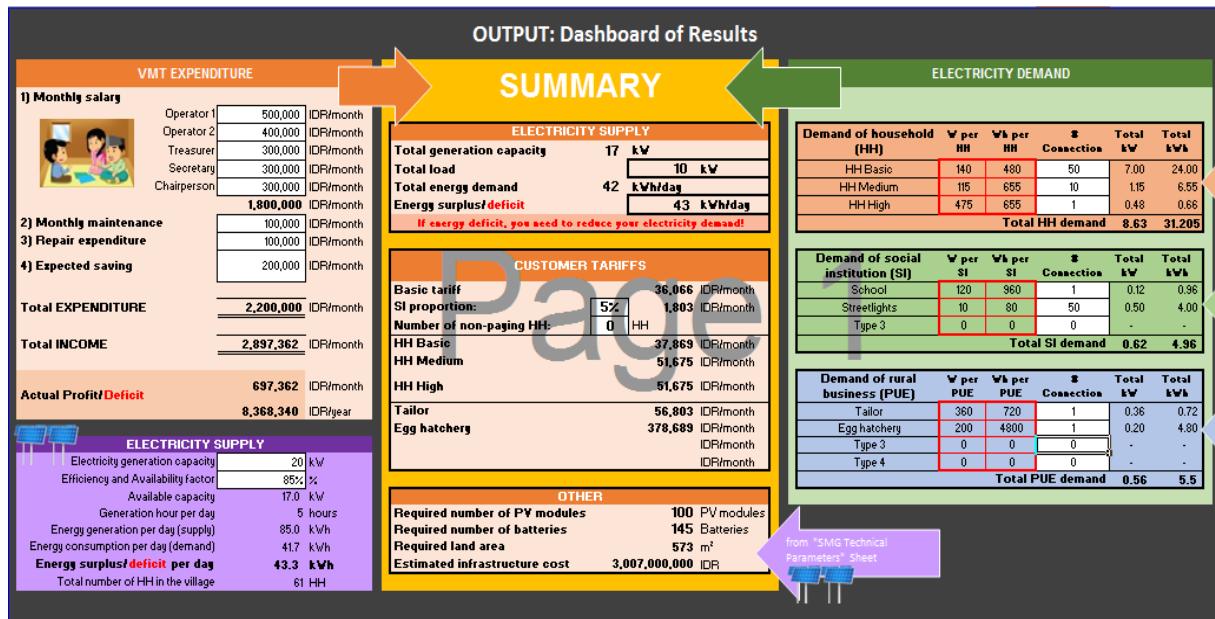
Activity Book

To record the result at each activity such as a meeting. This record will become basis for management.

Date	Attended by	Items discussed	Notes on actions to be taken		
			What?	By who?	When?

Above is an example of an activity book to note activities and meetings related to PLTMH/PLTSF. For the ready-to-print template, please refer to **Admin Books PLTMH and PLTS** in "Tool Box".

Tariff Setting Calculation Tool



Above is an example calculation tool for determining the load and tariff of a PLTS.
For more detail, please refer to **Admin Books PLTMH and PLTS** in "Tool Box".

This session introduces another aspect that can improve the performance, income and sustainability of PLTMH/PLTS, particularly the benefits of using energy productively. Examples are given on enterprises and businesses suitable for most PLTMH and PLTS. This session can use village social-economic mapping and questionnaires to identify economic opportunities and impacts.

Learning outcome: Participants understand the concept and benefits of productive use of energy and are able to identify them within their communities, as well as can prepare a PUE work plan.

Process of training session:



C6

Introduction

(5 minutes)

- Greet the participants then explain the purposes and expected outcomes of the subject

Main Session

(40 minutes)

- Present material on "Productive Use of Energy/Electricity" (needs community mapping to understand specific PUE)
- Questionnaire can be one of tools to strengthen understanding of the area

Assessment

(10 minutes)

- Provide time for Q and A to check participants' understanding

Closing

(5 minutes)

- Conclude the material which have been discussed
- End the session with a summary and confirmation of important points

Notes: Media that should also be prepared are plano papers, meta-plans, markers, LCD Projector, and double tapes.

VMT members are expected to understand environmental safeguard of PLTMH and PLTS. Facilitator provides examples of social and environmental safeguard. In this topic, the practices of making plans for social and environmental safeguards is connected or merged with the result from Module B “Community Empowerment in Rural Context”.

Learning outcome: Participants understand environmental safeguard of PLTMH and PLTS and can prepare a safeguard work plan.

Process of training session:



C7

Introduction

(5 minutes)

- Greet the participants then explain the purposes and expected outcomes of the subject

Main Session

(20 minutes)

- Present material on “Environmental Safeguard”
- Create safeguard work plan to demonstrate measures taken to minimize negative impacts

Assessment

(5 minutes)

- Provide time for Q and A to check participants' understanding

Closing

(5 minutes)

- Conclude the material which have been discussed
- End the session with a summary and confirmation of important points

Notes: Media that should also be prepared are plano papers, metaplan, markers, LCD Projector, and double tapes.

VMT members learn how to monitor and evaluate PLTMH and PLTS performance and what key performance indicators are useful. Facilitator gives examples on how to implement proper monitoring and evaluation. End of the session, VMT members are invited to develop a monitoring and evaluation plan. Use results from previous modules and topics as the reference to develop realistic monitoring plan.

Learning outcome: Participants understand the importance of monitoring and evaluation, and can design a monitoring and evaluation plan.

Process of training session:



Introduction

(5 minutes)

- Greet the participants then explain the purposes and expected outcomes of the subject.

Main Session

(20 minutes)

- Present material on “Monitoring and Evaluation”
- Introducing the SMS Gateway poster.

Assessment

(5 minutes)

- Provide time for Q and A to check participant's understanding.

Closing

(5 minutes)

- Conclude the material which have been discussed
- End the session with a summary and confirmation of important points.

Notes: Media that should also be prepared are piano papers, meta-plans, markers, LCD Projector, and double tapes.



TOOLS AND TEMPLATES

9 Tools and Templates

"It always seems impossible until it's done."

— Nelson Mandela

Field Visits



Initial Check

Check before conducting field visit to determine the location. Field visit should be conducted on the last day of training, with the distance 2-3 hours from training venue.



Permit Check

- Prepare a clearance letter from government to submit to the to-be-visited village. Describe the timing, exact location and how many people will join the visit.
- Consult with relevant agencies if a field visit into a restricted area requires a permit. A formal letter from government might be required as well.



Safety Check

- Ideally divide participants into groups that each consists of 5-7 people with a coordinator to manage the group.
- Identify safety and accident risks and take necessary precautions. Always travel with a first aid kit.
- Identify nearby health and safety facilities and evacuation plan such as hospital, police office, etc.

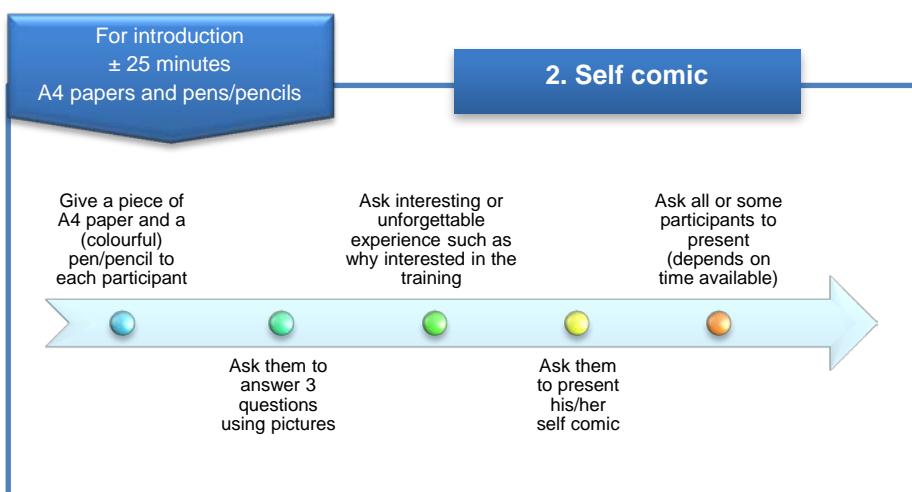
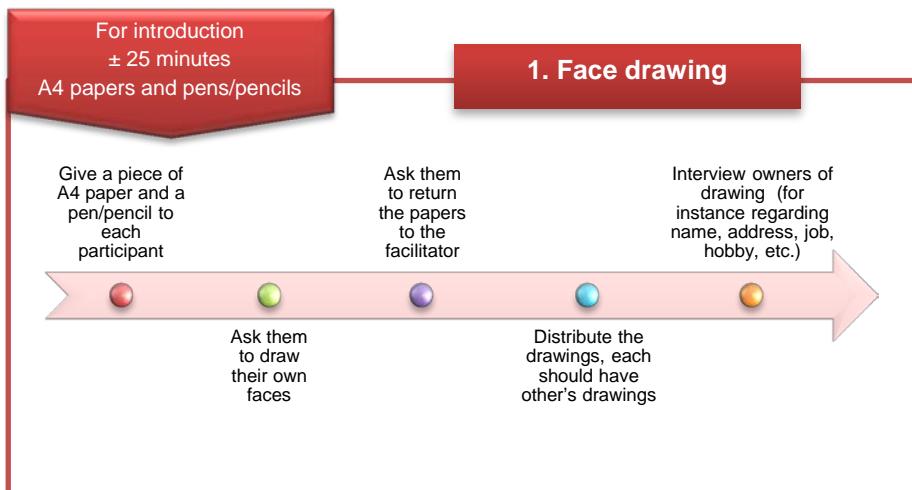


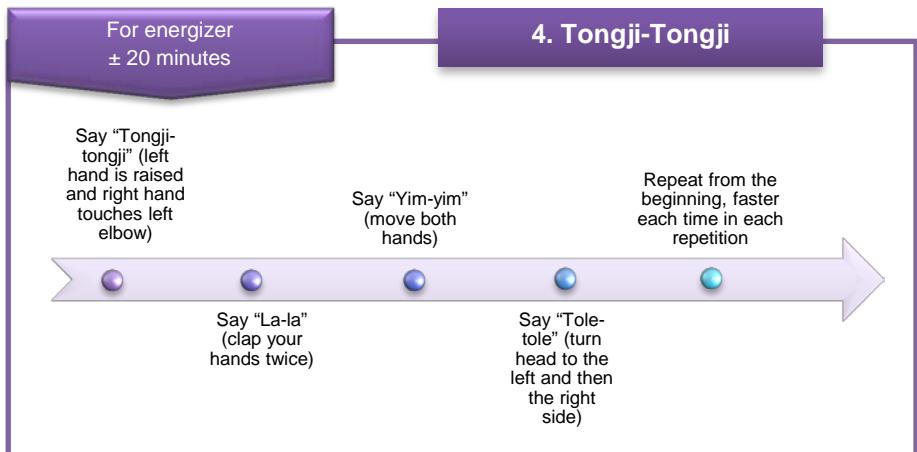
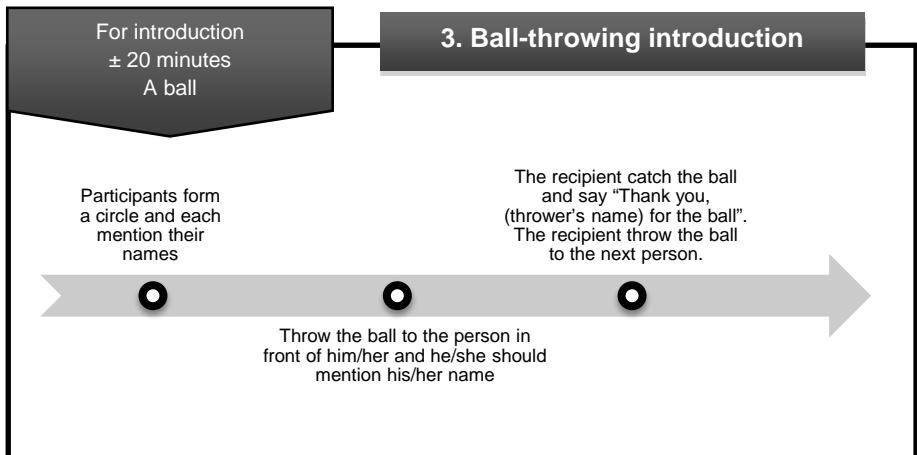
Logistical Check

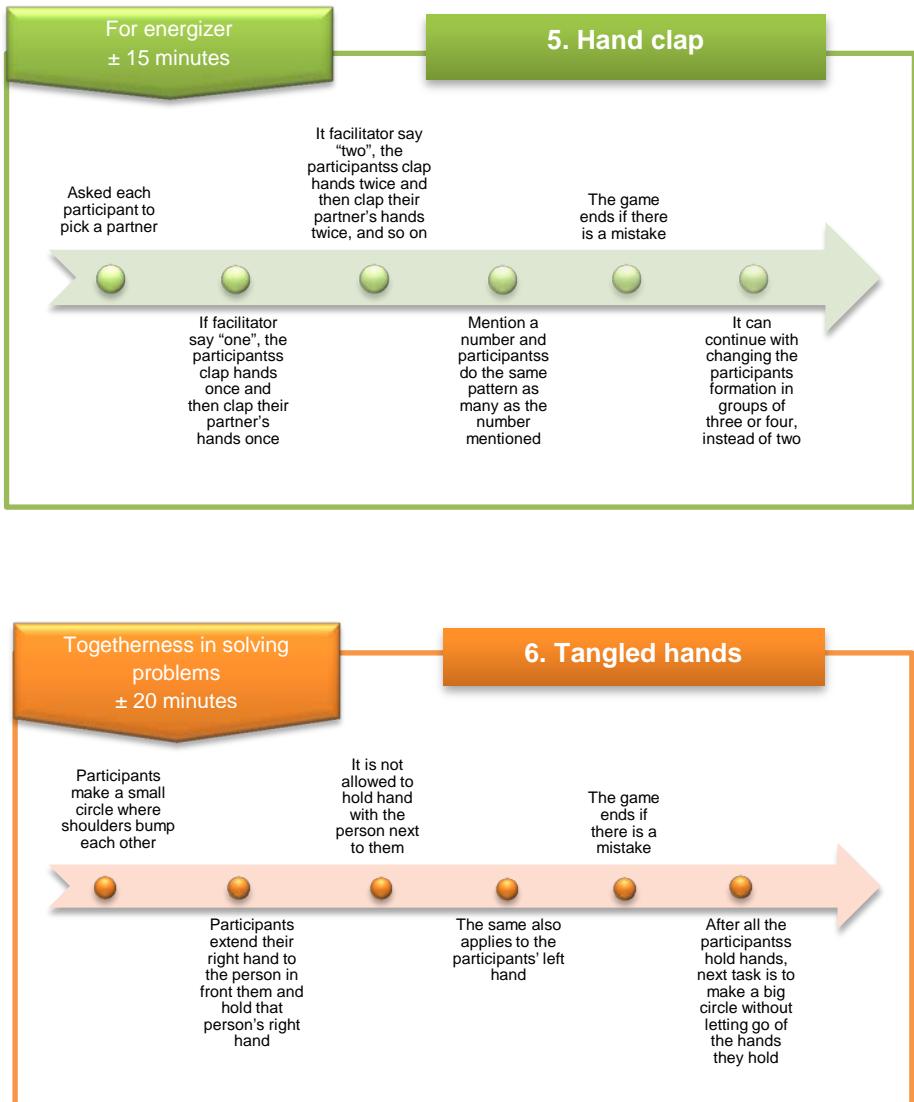
- Itinerary: it is important to manage time.
- Transportation: find the appropriate transportation based on road conditions.
- Accommodation and meals: should be prepared well to anticipate the participant's well-being during trip.
- Local guide: a person familiar with the location and local condition.
- Check for small detail: Useful small items might include raincoat, umbrella, camera, notebook, flash lights, knife, etc.

Various Games

Games can be used for introduction, energizer, focus stimulation, and togetherness in problem solvings.







For togetherness in solving problems
± 20 minutes
50 cm ropes, as many as the number of participants

7. Tangled hands (with ropes)

Facilitator holds the ropes in his/her hand, and the participants stand in a circle

Participants take a random grab at the part of a rope below the facilitator's hand using their left hand

Participants take a random grab at the part of a rope above the facilitator's hand using right hand

After all participants hold parts of the ropes in their hands, next task is to make a big circle without letting go of the ropes they hold

For stimulating concentration
± 15 minutes
2 objects representing 'apple' and 'bottle'

8. Apple and bottle

Participants and the facilitator make a big circle

The person that is holding the 'bottle' now gives it to the second person on the left by saying, "This is a bottle"

The same pattern is done with apple but in the opposite direction

Facilitator gives a 'bottle' to the first person to his/her left by saying, "This is a bottle". The recipient asks the giver, "What?" And the giver says, "It's a bottle"

The recipient asks the giver, "What?" and the giver says, "It's a bottle". And so on

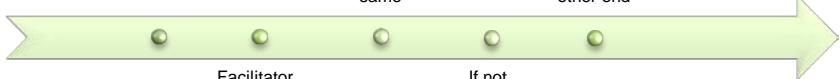
For Ice breaking
± 15 minutes

9. Chain messages

Participants make two groups and form two lines

Message from beginner until end of line must be the same

Two groups competing on which group can forward the message correctly from one end to the other end



Facilitator whispers a message to one end of each line.
The message must be forwarded until the last person on the line

If not, then the facilitator should find out where exactly the message altered

Sample of Training Agenda

Topic: Village Management Team (VMT) Training of Rural PNPM Institutional Strengthening for Renewable Energy (ISRE) in Sulawesi Barat and Sulawesi Selatan

Objective: To strengthen the capacity of VMT members to carry out tasks related to maintenance, operation and financial administration of micro hydro power (MHP) facility in order to ensure the sustainability of electricity supply

Target group: Rural facilitators

Total number of participants: 20 to 40 persons in each training

Estimated date: 10-13 Mei 2014

Course language: Bahasa Indonesia

Course duration: 4 days

Venue: Hotel Maria, Mamuju, Sulawesi Barat

Day 1

Time	Topic/Main Agenda	Material	Trainer/Speaker
08:00 - 08:30	Registration		
08:30 - 09:00	Opening	Speech from GIZ/organizer	
		Opening speech	
09:00 - 09:30	Coffee break		
09:30 - 10:00	Ice breaking	Introduction, class organization, pre-test and learning contract	
10:00 - 11:00	Maintenance	Maintenance of MHP facility based on Rural PNPM experiences	
11:00 - 11:30	Get to know MHP	MHP and the institutional set up	
11:30 - 12:30	Electricity utilization	Good principles in utilization of electricity from micro hydro power	

Time	Topic/Main Agenda	Material	Trainer/ Speaker
12:30 - 13:30	Lunch break		
13:30 - 14:30	Environment and micro hydro power	Why and how to protect environment as well as its relation with micro hydro power	
14:30 - 15:30	Micro hydro power introduction	Micro hydro power and its operation	
		Video of micro hydropower introduction (10 minutes)	
15:30 - 16:00	Coffee break		
16:00 - 17:30	Introduction of micro hydro power management	Principles of micro hydropower management	
		Video on introducing micro hydro power management (25 minutes)	

Day 2

Time	Topic/Main Agenda	Material	Trainer/ Speaker
08:00 - 08:30	Registration		
08:30 - 09:00	Opening	Review of day 1 and plan of day 2	
09:00 - 09:15	Coffee break		

	Topic	Material	Topic	Material	Trainer/ Speaker
	Split session: Managers		Split session: Operators		
09:15 - 10:15	Institutional set up	Structure, role, responsibilities and task division	Introducing technical aspects of MHP	Component of MHP	
10:15 - 10:30	Coffee break				
10:30 - 12:00	Admin management	Group discussion	Technical operation	Technical operation of MHP	
12:00 - 13:00	Lunch break				

	Topic	Material	Topic	Material	Trainer/ Speaker
13:00 - 14:00	Tariff setting and management	Calculating and determining tariff of electricity	Maintenance and repair	Video of maintenance and repair (10 mins)	
14:00 - 14:30	Financial management	Financial management (part 1)	Maintenance and repair	Maintenance of electrical-mechanical equipment	
14:30 - 15:30	Financial management	Financial management (part 2) and practice	Maintenance and repair	Maintenance of civil work facility	
15:30 - 16:00	Coffee break				
16:00 - 16:10	Financial management	Video of financial management (7 minutes)	Maintenance and repair	Practice of turbine maintenance	
16:10 - 17:00	Financial management	Group discussion on financial management			

Day 3

Time	Topic/Main Agenda	Material	Trainer/ Speaker
08:00 - 08:30	Registration		
08:30 - 09:00	Opening	Review of day 2 and plan of day 3	
09:00 - 10:00	Legal Aspect of VMT	Legal aspect of MHP: Preparing MHP statutes, village regulation, and their application	
10:00 - 10:15	Coffee break		

Time	Topic/Main Agenda	Material	Trainer/ Speaker
10:15 - 11:30	MHP legal form	Introduction to cooperatives, one option of VMT legal form	
11:30 - 12:30	Introduction to productive use of micro hydro power	<ul style="list-style-type: none"> • What is productive use of energy (PUE) • Questionnaire regarding PUE potential in participants village 	
12:30 - 13:30	Lunch break		
13:30 - 15:00	PUE from micro hydro power	Video of PUE (30 minutes)	
		Steps for developing business and access to micro credit	
15:00 - 15:30	Coffee break		
15:30 - 17:00	PUE from micro hydro power	Lessons learnt from GIZ PUE pilot project, group discussion	

Day 4

Time	Topic/Main Agenda	Material	Trainer/ Speaker
08:00 - 08:30	Registration		
08:30 - 09:00	Opening	Review of day 3 and plan of day 4	
09:00 - 10:00	Action plan	Introduction to action plan	
10:00 - 10:15	Coffee break		
10:15 - 11:30	Discussion	Regarding follow up action plan	
11:30 - 12:00	Post Test	Post test	
12:00 - 12:30	Closing ceremony		
12:30 - 13:30	Lunch break		

10 List of Materials



Code	Title	Source	File Name
A1	Basics of Facilitation	YAPEKA	A1_Basics of Facilitation_en
A2	Facilitation in Community Empowerment Activities	YAPEKA	A2_Facilitation in Community Empowerment Activities_en
A3	Facilitation in Natural Resources Management (NRM) and Renewable Energy (RE) Activities in Rural Area	YAPEKA	A3_Facilitation in NRM and RE Activities in Rural Area_en
B1	Village and Its Dynamics	YAPEKA	B1_Village and Its dynamic_en
B2	Village as a Landscape	YAPEKA	B2_Village as a Landscape_en
B3	Village and Target Group	YAPEKA	B3_Village and Target Group_en
C1	Basic of PLTMH and PLTS	GIZ	C1_Basic of Mini-grid_en
C2	VMT Institutional Forms and Legal Basis	GIZ	C2_VMT Institutional Forms and Legal Basis_en
C3	Management Aspect	GIZ	C3_Management Aspect_en
C4	Financial Aspect	GIZ	C4_Financial Aspect_en
C5	Technical Aspect	GIZ	C5_Technical Aspect_en
C6	Productive Use of Energy	GIZ	C6_Productive Use of Energy_en
C7	Environmental Safeguard	GIZ	C7_Environmental Safeguard_en
C8	Monitoring and Evaluation	GIZ	C8_Monitoring and Evaluation_en



Code	Title	Source	File Name
C3	Village Management Team for Off-grid Rural Electrification	GIZ	C3_Poster_VMT_en
C5	Troubleshooting poster for PLTMH	GIZ	C5_Poster_Troubleshooting for PLTMH_en
C5	Troubleshooting poster for PLTS	GIZ	C5_Poster_Troubleshooting for PLTS_en
C8	SMS Gateway for PLTMH	GIZ	C8_Poster_SMS Gateway PLTMH_en
C8	SMS Gateway for PLTS	GIZ	C8_Poster_SMS Gateway PLTS_en
C7	Catchment Area Protection in Micro Hydro Scheme	GIZ	C7_Poster_Catchment Area Protection_en



Code	Title	Source	File Name
C1	General Info on PLTMH	GIZ	C1_General Info on PLTMH_en
C2	Institutional Setup of PLTMH/PLTS	GIZ	C1_Institutional Setup of PLTMH and PLTS_en
C4	Financial Management of PLTMH/PLTS	GIZ	C4_Financial Management_en
C5	Technical Aspect of PLTMH	GIZ	C5_Technical Aspects of PLTMH_en
C5	Technical Aspect of PLTS	GIZ	C5_Technical Aspects of PLTMS_en
A3	Green PNPM	YAPEKA	A3_Green PNPM_id
A1	Ice breaking: brain gym		A1_Senam Jari_id



Code	Title	Source	File Name
A2	The Art of Community Facilitation	PMD	A2_SMM PMD_id
A3	Renewable Energy Guide (in Indonesian only)	PMD, DANIDA	A3_Buku Panduan Energi Terbarukan_id
B1	Indonesian Law No. 6/2014 on Village	PMD, GIS, Local Gov.	B1_UU No 6 Tahun 2014 Desa_id
B1	Indonesian Law No. 26/2007 on Spatial Planning	PMD, GIS, Local Gov.	B1_UU RI No 26 Tahun 2007 Rencana Tata Ruang_id
B1	Village Midterm Development Plan	YAPEKA, GIZ, PMD	(Could be obtained at the village)
B1	Village Statistics	BPS, village	(Could be obtained at district office)
A3	Measures of Success: Designing, Managing, and Monitoring Conservation and Development Projects	YAPEKA	(Could be obtained at YAPEKA office)
B1	Village Regulation (environmental and RE issues)	Village, PMD	(Could be obtained at the village)
A3	Safeguard Protocol	GIZ	A3_Safeguards Protocol for PLTMH_en
C7	Safeguard Protocol for PLTS	GIZ	A3_Safeguard Protocol for PLTS_en
C4	Load and Tariff Tool	GIZ	C3_Load and Tariff Tool_en
C3	Customer Book	GIZ	C3_Buku Pelanggan_id
C3	Activity Book	GIZ	C3_Buku Kegiatan_id
C4	Tariff Payment Book	GIZ	C4_Buku Tarif_id
C4	Cash Book	GIZ	C4_Buku Kas_id
C5	Log Book for PLTMH and PLTS	GIZ	C5_Buku Log_id

EnDev Indonesia is a proud project under
Renewable Energy Programme Indonesia/ASEAN



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für Internationale
Zusammenarbeit (GIZ) GmbH

Energising Development (EnDev) Indonesia
Jl. Tebet Barat VIII No. 52
Jakarta 12810, Indonesia
T +62 21 830 9438
F +62 21 830 9032
I www.giz.de; www.endev-indonesia.org