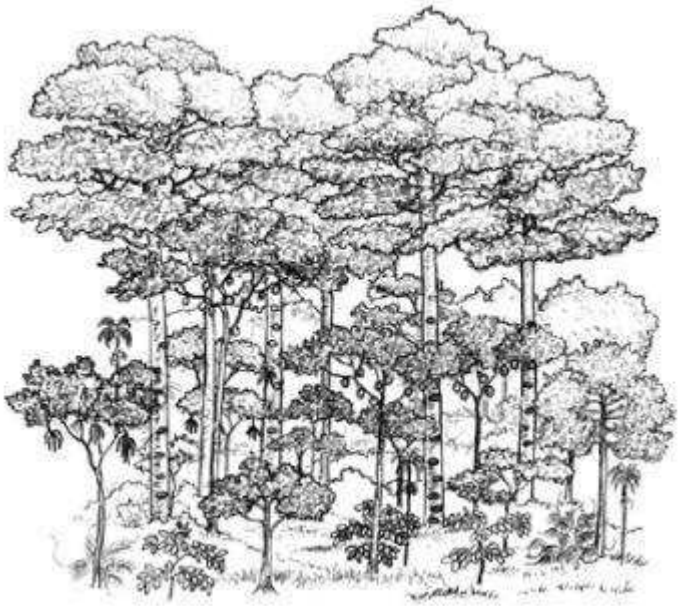
Empowering Community for Ecological Restoration and Sustainable Livelihoods Development :

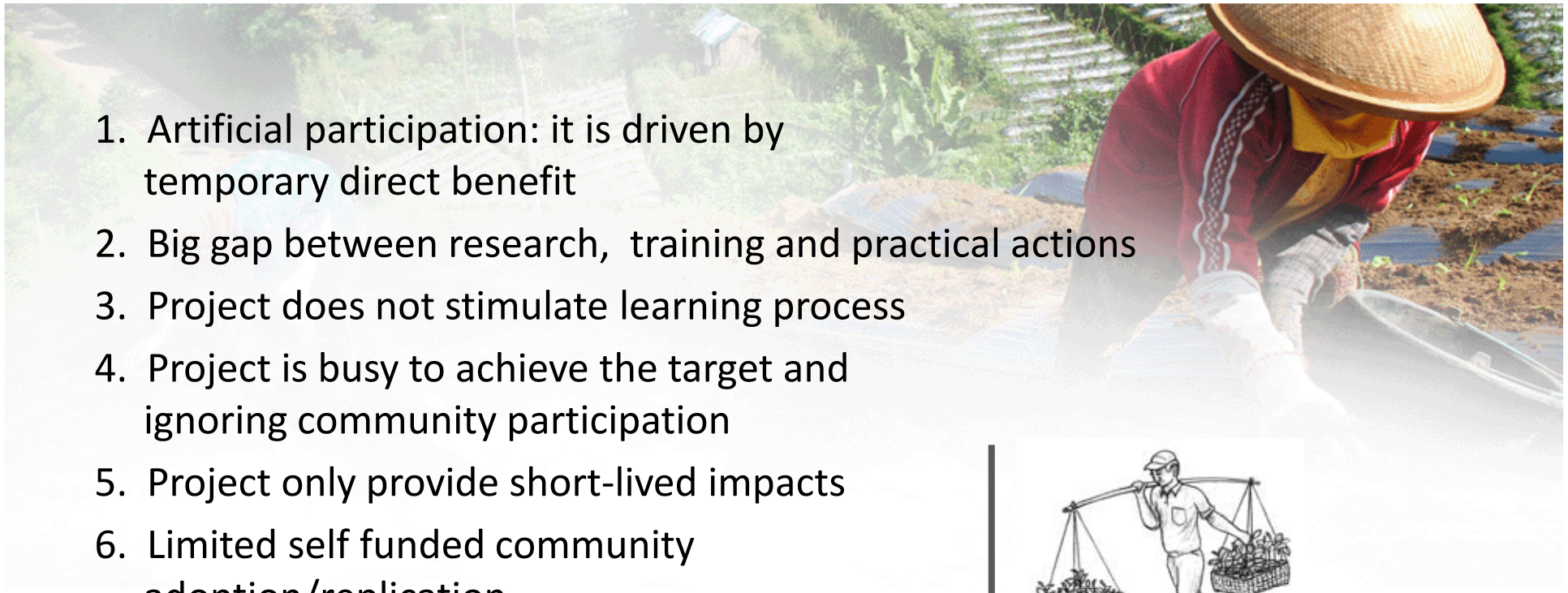
Experience from East Kolaka District (SE Sulawesi), Mamasa District (W. Sulawesi), Agam District (W. Sumatra), Indonesia



Edi Purwanto

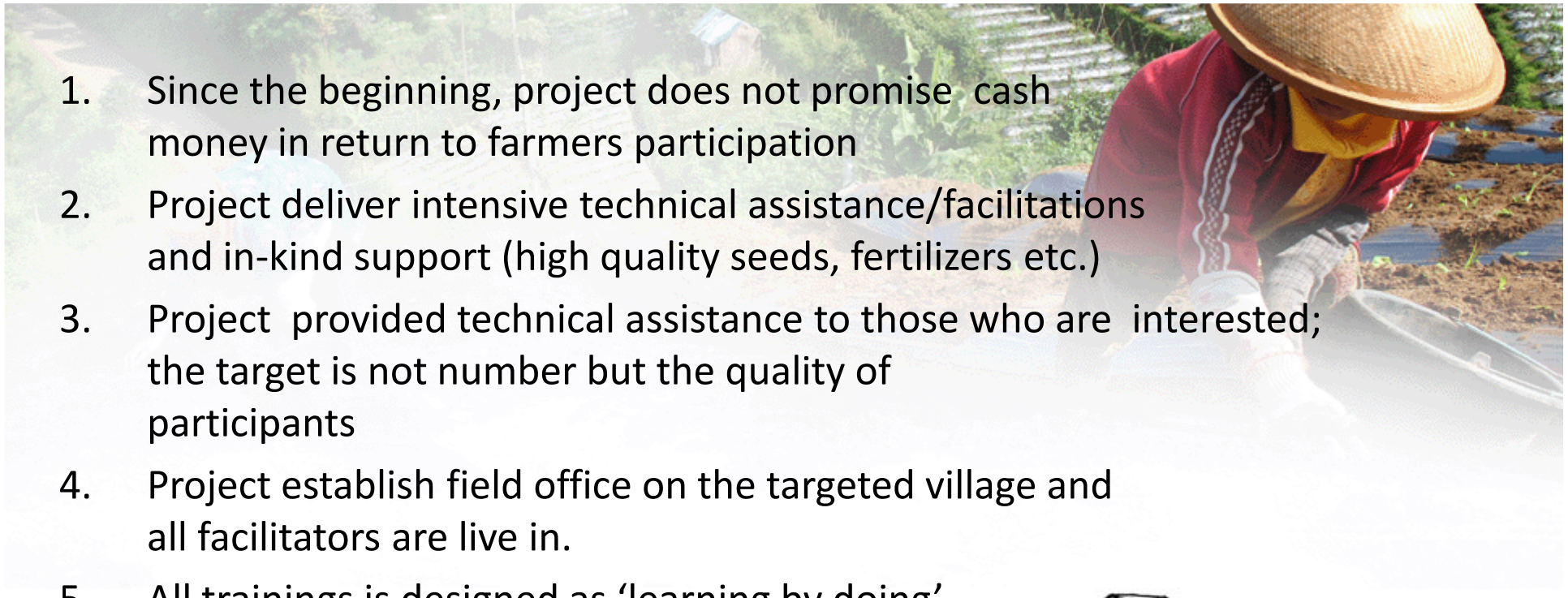
Bersama Masyarakat Melestarikan Alam
OWT
OPERATION WALLACEA TRUST

TROPENBOS INTERNATIONAL
Indonesia



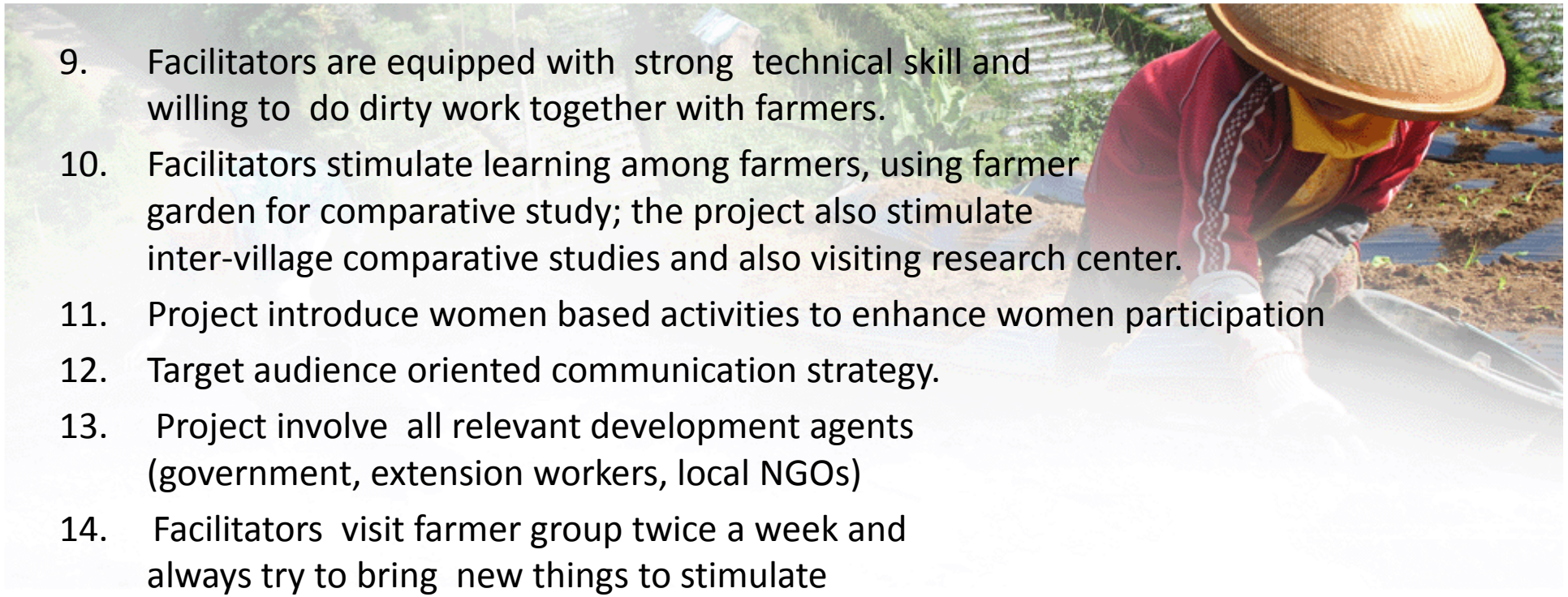
1. Artificial participation: it is driven by temporary direct benefit
2. Big gap between research, training and practical actions
3. Project does not stimulate learning process
4. Project is busy to achieve the target and ignoring community participation
5. Project only provide short-lived impacts
6. Limited self funded community adoption/replication
7. Lack of women participation on decision making process
8. Limited ownership of local government and relevant development agents
9. Project provide extra ordinary inputs,
10. Project tend to build monumental activities, but many of them are ended as soon as the project end

Common Problems on Community Empowerment

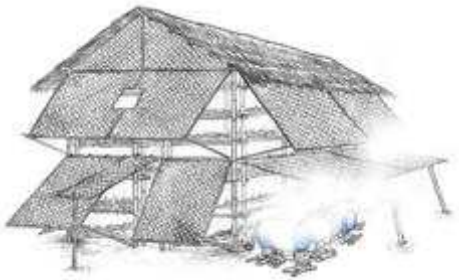


1. Since the beginning, project does not promise cash money in return to farmers participation
2. Project deliver intensive technical assistance/facilitations and in-kind support (high quality seeds, fertilizers etc.)
3. Project provided technical assistance to those who are interested; the target is not number but the quality of participants
4. Project establish field office on the targeted village and all facilitators are live in.
5. All trainings is designed as 'learning by doing' and conducted at field level
6. Selection of training topic is based on community need; Project invite experts to solve farmers technical problem
7. Project make use key village champions as a starter and driver of project interventions
8. Project facilitated the establishment of learning site as demonstration pilot

Project key approaches (1)



9. Facilitators are equipped with strong technical skill and willing to do dirty work together with farmers.
10. Facilitators stimulate learning among farmers, using farmer garden for comparative study; the project also stimulate inter-village comparative studies and also visiting research center.
11. Project introduce women based activities to enhance women participation
12. Target audience oriented communication strategy.
13. Project involve all relevant development agents (government, extension workers, local NGOs)
14. Facilitators visit farmer group twice a week and always try to bring new things to stimulate learning process.
15. Stimulate replication, from pilot to individual farmer and from targeted group to surrounding groups/villages (spontaneous/replication group).
16. Project organize monthly meeting among farmers groups to conduct reflection and learning from each other.
17. Project also deliver technical assistances to solve environmental and governance issues.



Project key approaches (2)

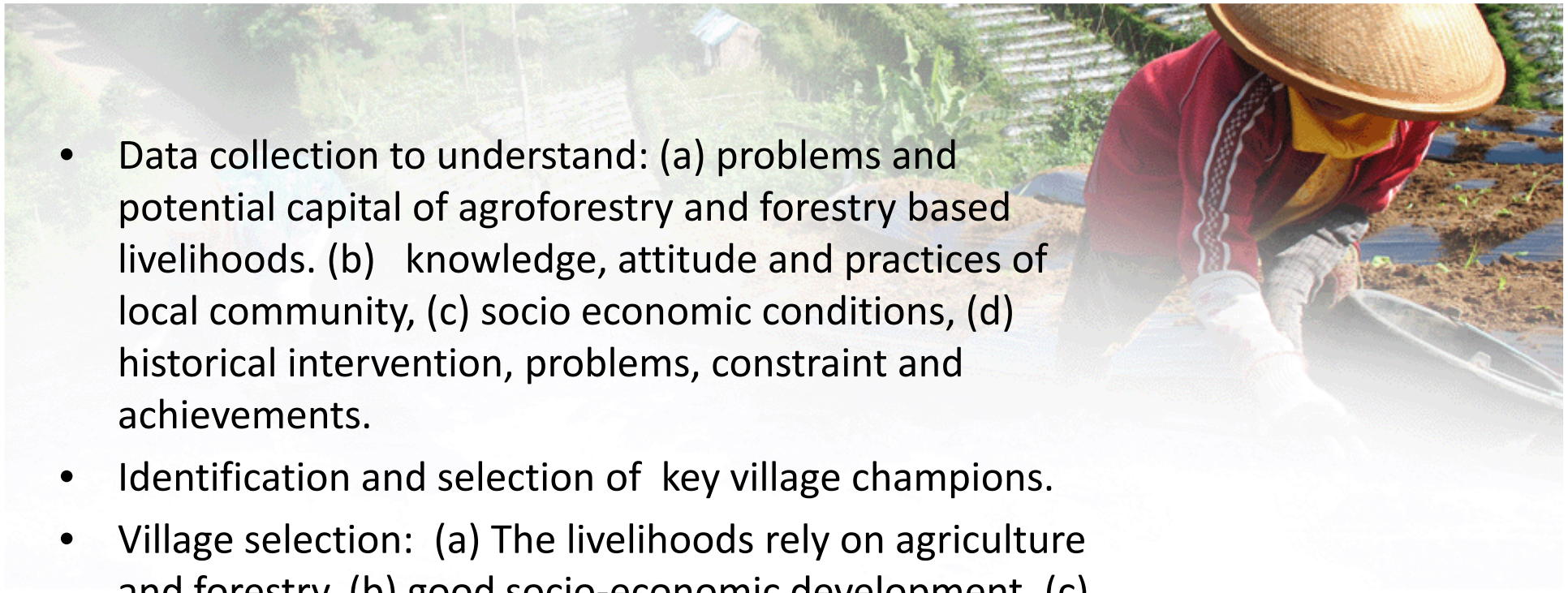
Project Phases

Phase 1: Diagnostic

Phase 2: Capacity building

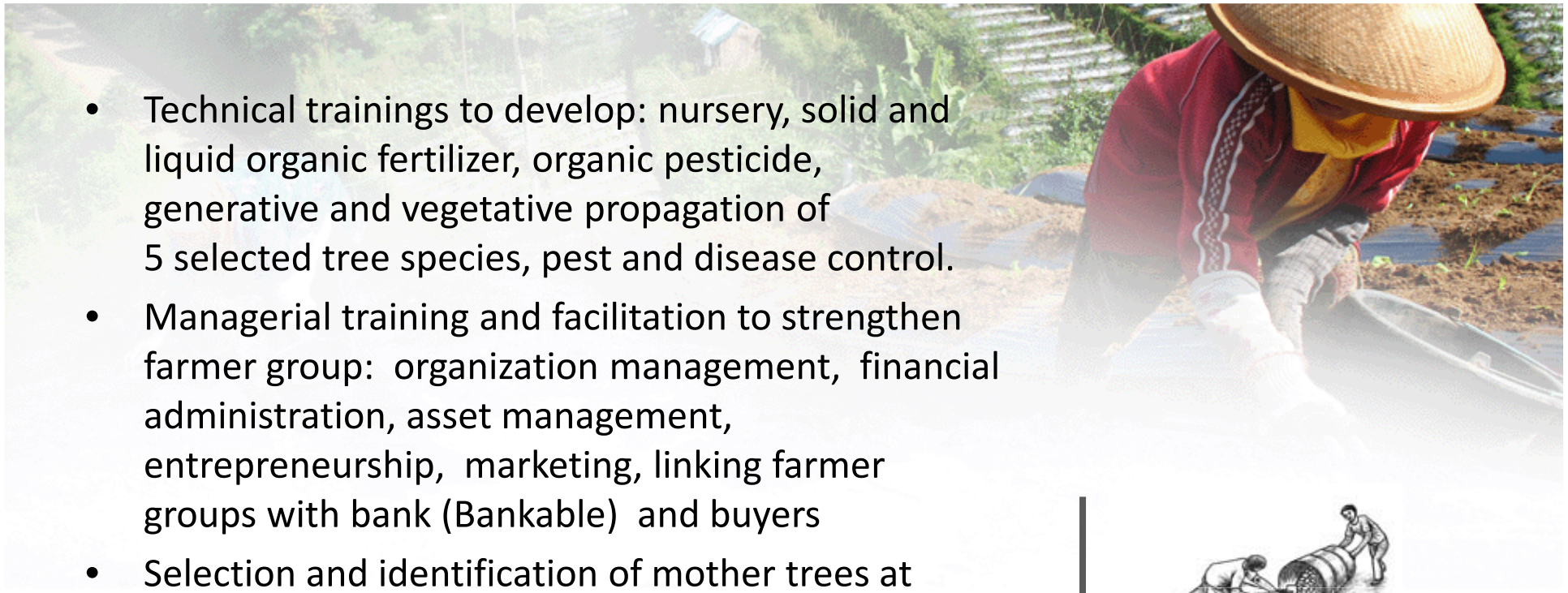
Phase 3: Collaborative Management

Phase 4: Exit Strategy

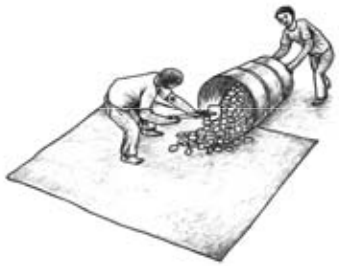


- Data collection to understand: (a) problems and potential capital of agroforestry and forestry based livelihoods. (b) knowledge, attitude and practices of local community, (c) socio economic conditions, (d) historical intervention, problems, constraint and achievements.
- Identification and selection of key village champions.
- Village selection: (a) The livelihoods rely on agriculture and forestry, (b) good socio-economic development, (c) high social capital; (d) Number of key village champions.
- Facilitated the establishment of farmer groups (15 - 25 people)
- Selection of 5 tree species preference to be developed/improved (cacao, rubber, pepper, durian, clove)
- Selection sites to develop agriculture demonstration pilots

Phase 1: Diagnostic



- Technical trainings to develop: nursery, solid and liquid organic fertilizer, organic pesticide, generative and vegetative propagation of 5 selected tree species, pest and disease control.
- Managerial training and facilitation to strengthen farmer group: organization management, financial administration, asset management, entrepreneurship, marketing, linking farmer groups with bank (Bankable) and buyers
- Selection and identification of mother trees at village level
- Facilited the establishment of nursery, farmer group gathering site, Bokashi (organic fertilizer) house, entres garden, appropriate technology, fishery and livestock development.
- Facilited the development of appropriate technologies: simple and cheap organic material chopper machine, pruning knife, grafting knife, preventing pig raids control etc.



Phase 2: Technical training and facilitation

Degraded of forested area due to wrong species selection (*Pinus merkusii*) in Mamasa District, West Sulawesi

Most of the hilly and mountainous terrains area are covered with Pine trees that native from Aceh or North Sumatera. Pines were planted during the 'Regreening Program' introduced to Sulawesi and become 'invasive' and as we can see now, the tree has dramatically changed the landscape of the upland over the last four decades.

Degraded forest area due to *Ucaria gambir* planting in Agam District, West Sumatra

Encroached area for smallholder coffee plantation in Bukit Barisan Selatan National Park, Tanggamus, Sumatra

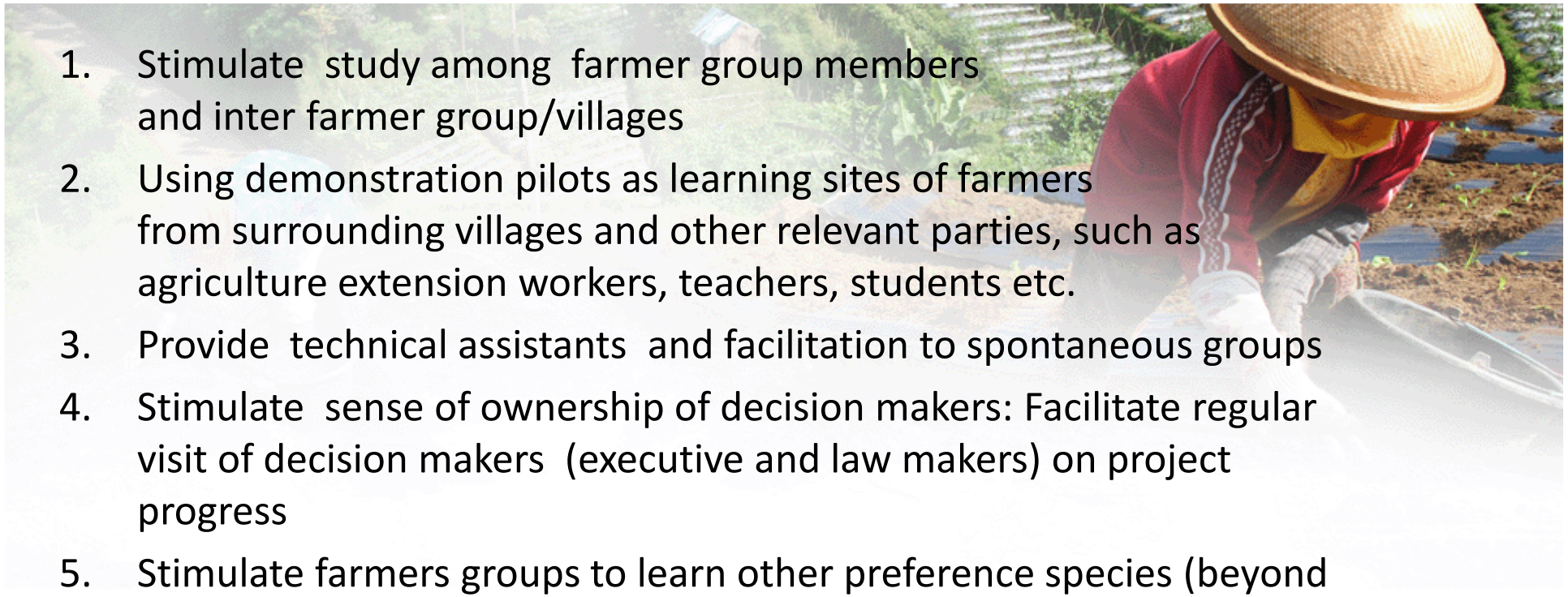
Identification and selection of mother trees in Mamasa District, W Sulawesi

Establishment of village nursery in Agam District, W Sumatra

Deliver Training and Awareness Materials

- Tutorial films
- Environmental awareness films
- Training manuals
- Community radio

Training Materials



1. Stimulate study among farmer group members and inter farmer group/villages
2. Using demonstration pilots as learning sites of farmers from surrounding villages and other relevant parties, such as agriculture extension workers, teachers, students etc.
3. Provide technical assistants and facilitation to spontaneous groups
4. Stimulate sense of ownership of decision makers: Facilitate regular visit of decision makers (executive and law makers) on project progress
5. Stimulate farmers groups to learn other preference species (beyond 5 selected species).
6. Introduce relevant agriculture based sustainable livelihoods: (a) honey bee culture, (b) mushroom cultivation, (c) biogas, (d) charcoal, (e) livestock etc
7. Stimulate key farmer champions to deliver training and facilitation to spontaneous groups.
8. Facilitate District and Province government to include the project initiatives in their annual program (workplan)

Phase 3: Collaborative Management

1. Facilitate working agreement between farmer groups and government to sustain the good practices
2. Facilitate certification of products (cacao, pepper, latex etc.) and planting materials (seeds/seedlings/cuttings) produced by farmer groups
3. Facilitate procurement of high quality planting materials
4. Facilitate MoU between farmers groups and buyers
5. Facilitate the establishment of village regulation to conserve mother trees, sustain village nursery etc.
6. Facilitate District and Province government to replicate the project to other areas
7. Facilitate the establishment of agroforerstry based eco-tourism
8. Promote farmer group products to district and province level
9. Document success story, best practices and lessons learned
10. Promote project initiative and approaches at regional and national level.

Phase 4: Exit Strategy

Project Interventions in East Kolaka District

- **Initiated or improved crop cultivation:**

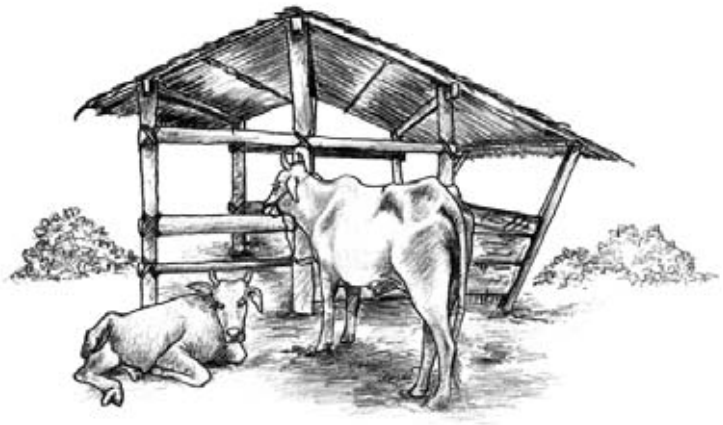
  Rubber, Cacao, Pepper, Clove, Coffe,

  Durian and Pala/Miristica fragrans.

- **Other facilitations:** Making organic fertilizer, mushroom cultivation, vegetative propagation, biogas.

- **Application of Farm technology:** pruning, grafting knife, pig raid control etc.

Standard Cost



Budget for Establishment of Nursery and Seedlings Propagation (Capacity 30,000 seedlings)

No	Budget component	Amount	Unit	Unit cost (Rp)	Total cost (Rp)
1	Procurement of bamboos	60	bedmon	10,000	600,000
2	Establishment of seedlings growing bed 1 m x 5 m (capacity1000/bed)	30	bed	50,000	1,500,000
3	Establishment of seed bed (germination bed) m x 5 m	5	bed	50,000	250,000
4	Procurement of seedbed canopy	5	bed	100,000	500,000
6	Procurement of growth media (include top soil)	50	m3	50,000	2,500,000
7	Procurement of nursery equipments	1	package	1,000,000	1,000,000
8	Procurement of polybag	30000	polybag	50	1,500,000
9	Filling media to the polybag	30000	polybag	75	2,250,000
10	Procurement of wilding (natural seedlings)	30000	pcs	150	4,500,000
11	Seedlings tranplanting to the polybag	30000	seedlings	50	1,500,000
12	Seedlings maintenance in nursery	6	Man-month	1,000,000	6,000,000
13	Procurement of nursery materials	30	bed	20,000	600,000
14	Establishment of compost production house (3m x 4 m)	1	pcs	2,000,000	2,000,000
15	Establishment of labor huts	1	pcs	2,000,000	2,000,000
				Total A	**26,700,000**

Budget for Plantation and current year maintenance (1-3 months) after planting

No	Budget Component	Unit	Unit cost (Rp)
I	**Prepartion of plantation :**		
a	Making of inspection road (2 MD/ha @ Rp 50.000)	ha	50,000
b	Land clearing and (6 MD/ha @ Rp 50.000)	ha	300,000
c	Spacing (3 MD/ha @ Rp 50.000)	ha	150,000
d	Installment of planting sticks (2 MD/ha @ Rp 50.000)	ha	100,000
e	Planting holes and weeding surrounding the hole (11 MD/ha @ Rp 50.000)	ha	550,000
f	Transporting seelings to planting hole (2 MD/ha @ Rp 50.000)	ha	100,000
II	**Planting:**		
a	Planting (6 MD/ha @ Rp 50.000)	ha	300,000
III	**Maintenance Current Year**		
a	Fertilizing (2 MD/ha @ Rp 50.000)	ha	100,000
b	Replanting (2 MD/ha @ Rp 50.000)	ha	100,000
c	Weeding and tillage 2 kali (15 MD/ha @ Rp 50.000)	ha	750,000
IV	**Procurement of planting materials**		
a	Procurement of boundary markers (16 pcs/ha)	ha	160,000
b	Procurement of planting sticks (1100 pcs/ha)	ha	165,000
c	Procurement of an-organic fertilizer (50 gram/btg x 1100 btg/ha)	ha	275,000
d	Procurement of pesticide(1 package/ha)	ha	100,000
e	Proocurement of materails and equipements for planting	ha	100,000
V	**Infrastructure**		
a	Making of name board for planting block (1 pcs/block (100 ha))	ha	10,000
b	Making of name board for planting sub-block (1 pcs/(25 ha))	ha	20,000
c	Making of labor huts(1 unit/25 ha, 3 m x 3 m)	ha	120,000
VI	**Supervition**		
a	Operational of field supervisor (0.32 MM/ha)	ha	48,000
		Total before tax	3,498,000
		Tax (10%)	349,800
		Overhead (15%)	524,700
		Total after tax	**4,372,500**

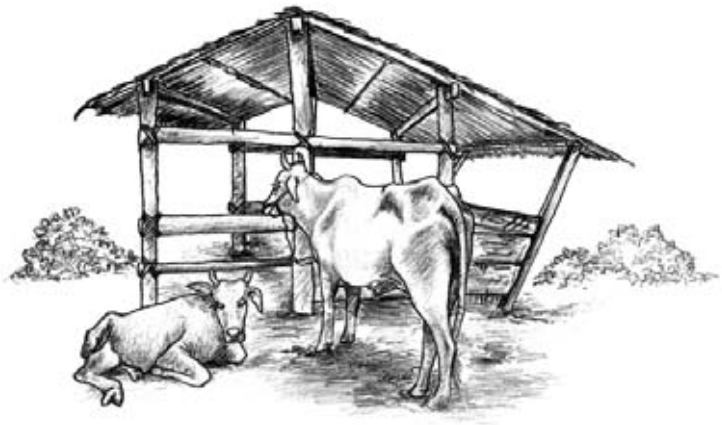
Budget for Maintenance Year I

No	Budget Component	Unit	Unit Cost (Rp)
I	**Preparation of Maintaining Year I :**		
a	Distribusi seedlings ke lubang tanam (0,5 MD/ha @ Rp 50.000)	ha	25,000
II	**Implementation of Maintaining Year I**		
a	Replanting and installment of planting sticks (4 MD/ha @ Rp 50.000)	ha	200,000
b	Weeding, tillage, fertilizing 2 x (10 MD/ha @ Rp 50.000)	ha	500,000
III	**Procurement of materials for Maintaining Year I :**		
a	Procurement of fertilizer (50 gram/btg x 220 btg/ha)	ha	55,000
b	Procurement of planting sticks (ajir) (220 pcs/ha)	ha	33,000
IV	**Supervition**		
a	Operational of field supervisor (0.2 MM/ha)	ha	15,000
	Total before tax		828,000
	Tax (10%)		82,800
	Overhead (15%)		124,200
	Total after tax		**1,035,000**

Budget for Maintenance Year II

No	Budget Component	Unit	Unit Cost (Rp)
I	**Implementation of Maintaining Year II**		
a	Weeding, tillage, fertilizing 2 x (9 MD/ha @ Rp 50.000)	ha	450,000
III	**Procurement of materials for Maintaining Year II :**		
a	Procurement of fertilizer (50 gram/btg x 1100 btg/ha)	ha	275,000
IV	**Supervition**		
a	Operational of field supervisor (0.2 OB/ha)	ha	15,000
	Total before tax		740,000
	Tax (10%)		74,000
	Overhead (15%)		111,000
	Total after tax		**925,000**

Sustainable Livelihood Development



Vegetative propagation of rubber seedlings

Field School on Cacao Cultivation

Field School for Pepper and Clove Cultivation

Vegetative Propagation : Budding Technique

Establishment of Clonal Seed Orchard/Entres garden

Propagation of generative seedlings for *rootstock*

Collecting of *scion* (upper trunk)

Preparation of bud

Preparation of rootstock

Budding process

Vegetative seedlings maintenance

Training on vegetative propagation : Budding Technique

Straw Mushroom (*Volvariealla volvacea*) Cultivation

Establishing of Mushroom House

Preparation of materials

(Straws, cotton waste, mushroom inoculant, etc.)

Soaking

Stacking

Composting I

Composting II
(add lime & bran)

Mushroom harvesting

Steam sterilization

Stacking of compost on the shelf

Musroom production

Compost production

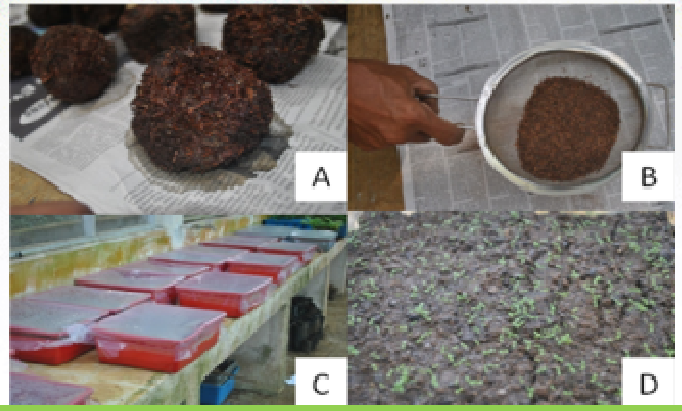
Developing organic fertilizers

Liquid Organic Fertilizer

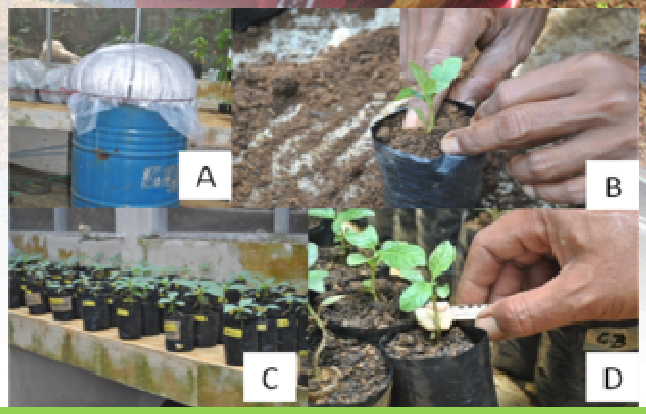
Solid Organic Fertilizer

Rice husk charcoal

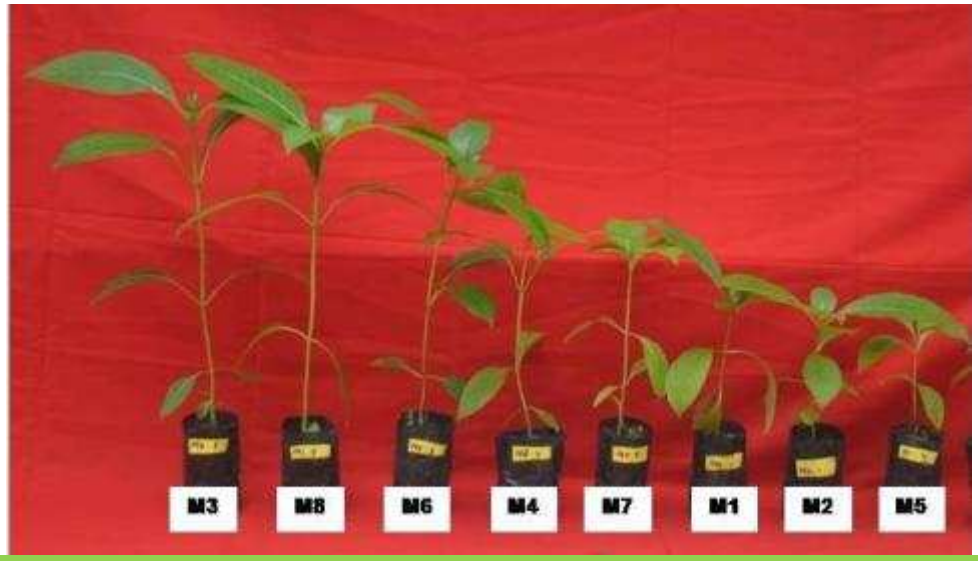
Practical Research



Germination Test (soil is the best media)



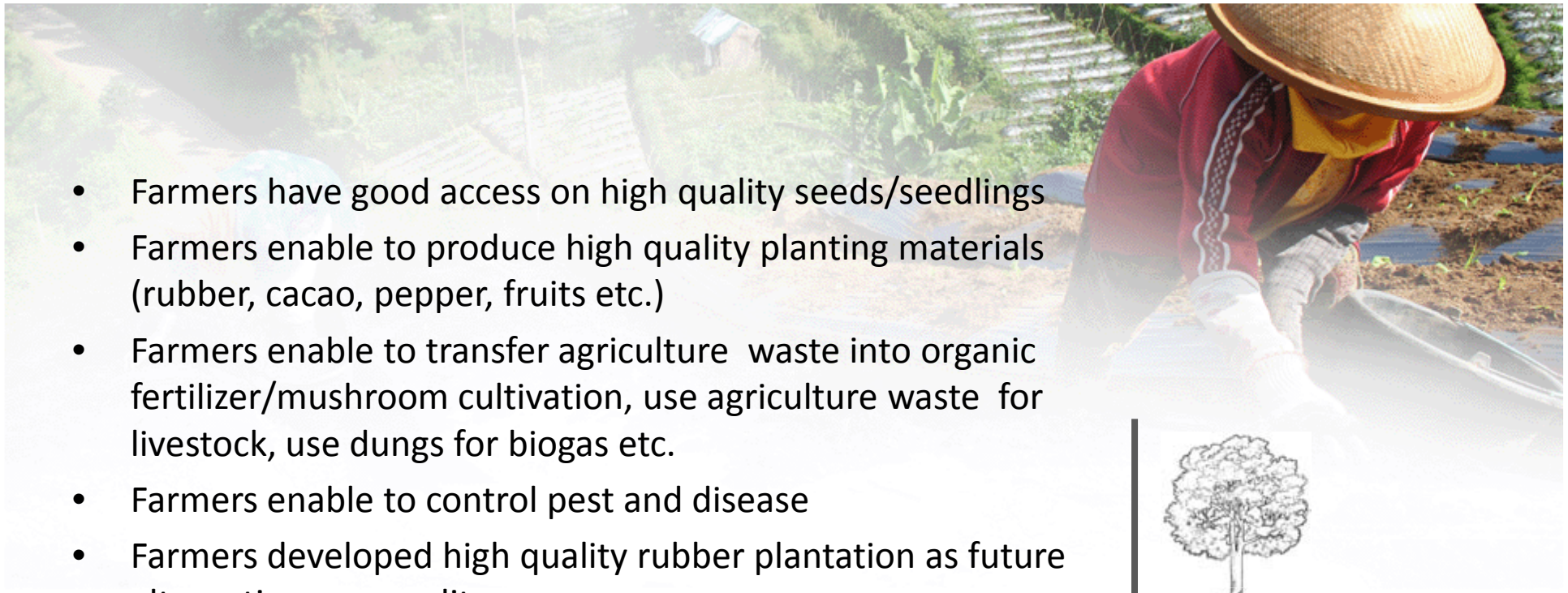
Seedlings growth test



The best media of seedlings growth : mixed media of soil, composted cow manure, and husk charcoal (3:1:1)

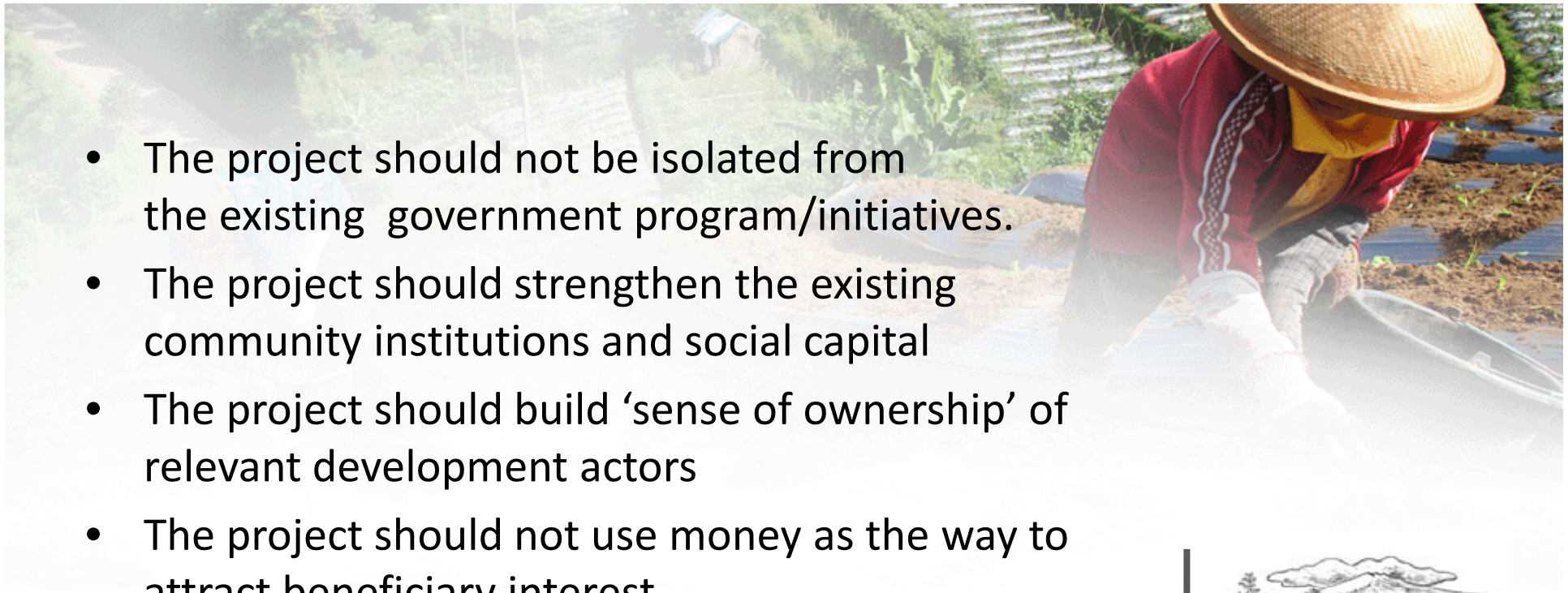
Field school on coffee cultivation

Training on nursery establishment and seedlings propagation



- Farmers have good access on high quality seeds/seedlings
- Farmers enable to produce high quality planting materials (rubber, cacao, pepper, fruits etc.)
- Farmers enable to transfer agriculture waste into organic fertilizer/mushroom cultivation, use agriculture waste for livestock, use dungs for biogas etc.
- Farmers enable to control pest and disease
- Farmers developed high quality rubber plantation as future alternative commodity
- Farmers adopted several types of appropriate technologies
- Farmers have short-term, medium and long terms income generating activities
- The project has successfully produce hundreds of community extension workers.
- The project attracted young generation (students) on agriculture work.
- Farmers groups have been linked to Bank and end- buyers.

Outputs, Impacts and Outcomes



- The project should not be isolated from the existing government program/initiatives.
- The project should strengthen the existing community institutions and social capital
- The project should build ‘sense of ownership’ of relevant development actors
- The project should not use money as the way to attract beneficiary interest.
- The project should provide intensive facilitation and show that facilitators bring strong knowledge and skills.
- The project should stimulate multi-stakeholder collaborative work
- The project should enable to attract government initiative to replicate the program.

Lessons learned

Dr. Edi Purwanto

E-mail: edipurwanto@tropenbos-indonesia.org

purwanto.owt@gmail.com

HP: +62 812 9655233