

Training Manual

Value Chain Development for Green Jobs



REDD+ Opportunities in village landscapes of Central Kalimantan, Indonesia



JANUARY, 2013
GREEN LIVELIHOOD ACCESS FOR CENTRAL KALIMANTAN'S INCLUSIVE
ENVIRONMENTAL RESPONSE TO CLIMATE CHANGE

ILO GLACIER PROJECT

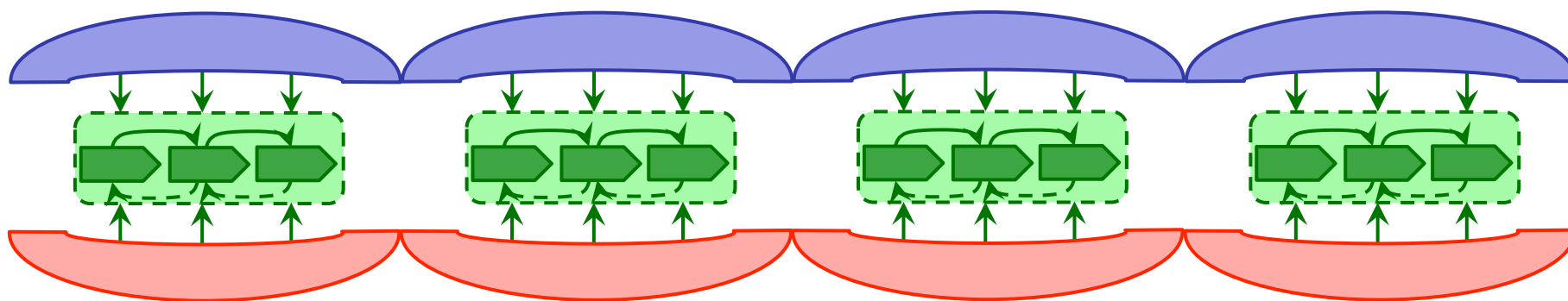


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INTRODUCTION AND OVERVIEW



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Preamble

The present version of this training manual was written by Iain C. Neish as a component of the International Labour Organisation (ILO) GLACIER project (Green livelihood access for Central Kalimantan's inclusive environmental response to climate change). It was written for the diverse array of stakeholders who are involved with value chain development in Central Kalimantan in the area impacted by the Ex-Mega Rice Project (EMRP) and included in the REDD+ program.

The manual is presented in a format that is intended to be easily rendered as hard copies on A-4 format, as an e-book in landscape orientation or as PowerPoint/PDF presentation for use during workshops.

Suggested citation:

ILO GLACIER 2013. Value Chain Development for Green Jobs: REDD+ Opportunities in village landscapes of Central Kalimantan, Indonesia. Training Manual: GREEN LIVELIHOOD ACCESS FOR CENTRAL KALIMANTAN'S INCLUSIVE ENVIRONMENTAL RESPONSE TO CLIMATE CHANGE.

Potential green value chain landscapes

PROTECTED FORESTS



MONOCROP PLANTATIONS



SATOYAMA LANDSCAPES



URBAN & INDUSTRIAL



GJVC landscape options for villagers

PROTECTED FORESTS

- **Green jobs** from conservation and protection activities
- **Human habitation** discouraged



**GLACIER
project focus**

SATOYAMA LANDSCAPES

- **Green jobs** from owner operated small enterprises
- **Human habitation** integral to landscape
- **Community** long-term and integral to landscape
- **Traditions** fostered and respected

MONOCROP PLANTATIONS

- **Green jobs** from wages earned using sustainable agronomy methods (e.g. sustainable oil palm)
- **Human habitation** tends to be company barracks and housing
- **Community** temporary - based on mutual employment

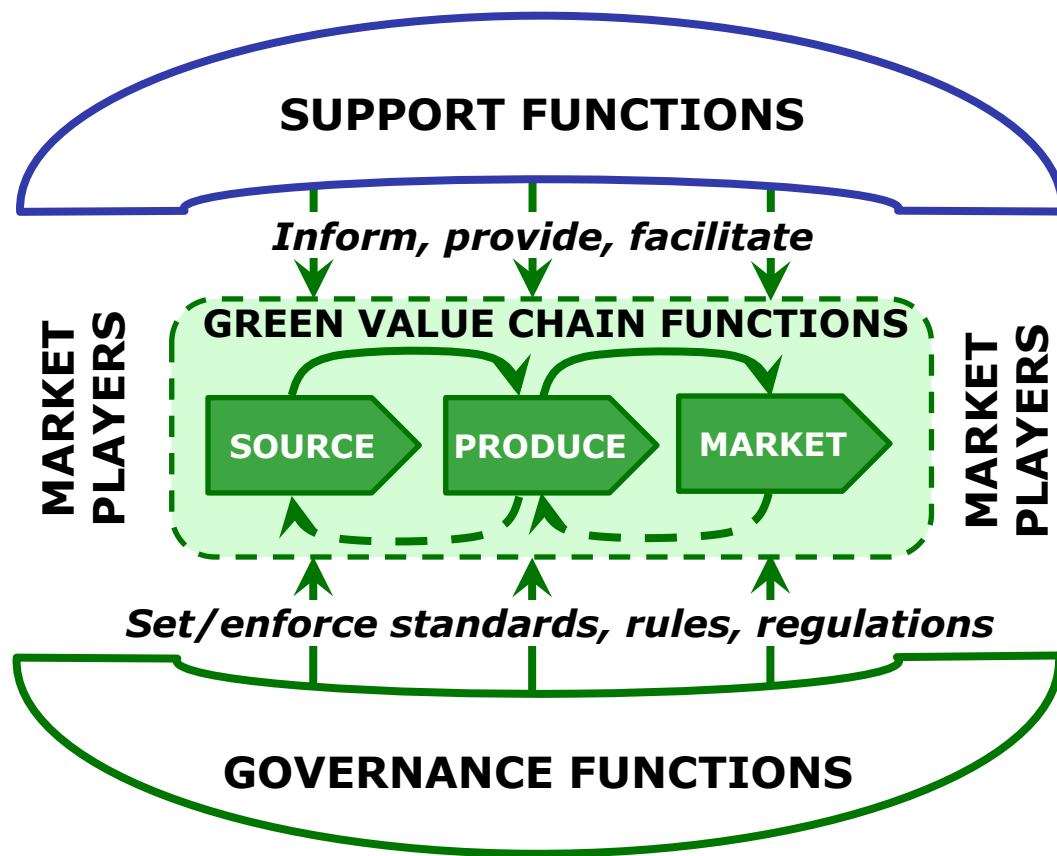
URBAN/INDUSTRIAL

- **Green jobs** sustainable activities with low carbon footprint
- **Human habitation** generally separate from work environment
- **Traditions** tend to be lost
- **Most jobs remote from nature**

Introduction to green jobs value chains

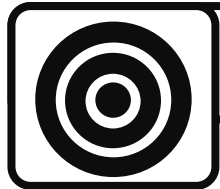
- ❑ **Value chains** embrace the activities required to bring goods and services from conception to end use.
- ❑ **Green Jobs** are direct employment in economic sectors and activities that reduce net environmental impact and seek environmentally sustainable levels.
- ❑ **Decent Work** is productive work for women and men in conditions of freedom, equity, security and human dignity.
- ❑ **Market systems** comprise the frameworks for value chain functions.

Figure I.2. Green value chains function within market systems such as the one illustrated (right).



Using this manual

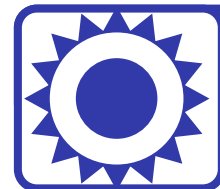
Each section of this manual starts with statements of intended purposes, outcomes and validations/actions. The pages that explain such matters have headers as shown below:



Objectives



Outcomes



Validations / Actions



Objectives of this training manual

This training manual was written for the purposes of:

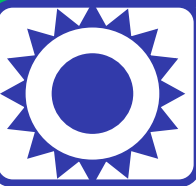
- 1. familiarising GLACIER value chain stakeholders** with the ILO, REDD+ and village landscape frameworks that encompass GLACIER green jobs value chain (GJVC) development; and
- 2. linking GLACIER GJVC market system players, providers and regulators** with key ILO documents that deal with value chain development and enterprise development in a manner far more comprehensive than can be accomplished in the present manual including:
 - a) Herr ML 2007.** *An operational guide to Local Value Chain Development Combining Local Economic Development (LED) with Value Chain Development (VCD) to strengthen competitiveness and integration of SMEs into markets.*
 - b) Herr ML & Muzira, T 2009.** *Value Chain Development for Decent Work: A guide for private sector initiatives, governments and development organizations.*
 - c) ILO 2009.** *Rural skills training: a generic manual on training for rural economic empowerment (TREE).*
 - d) ILO 2011.** *Value Chain Development for Green Jobs in Asia – an ILO Guide. Volume 2.*
 - e) ILO 2012.** *Value chain development for green jobs in Asia: an ILO Guide. Volume 2.*



Outcomes from using this manual

Intended outcomes from utilisation of this training manual during the GLACIER pilot project include:

1. Targeted value chains (i.e. rubber and fish) will be put on the path toward becoming **sustainable green jobs value chains**;
2. Targeted value chains will contribute toward the survival and **sustainable development of village landscapes**;
3. Village-based micro, small and medium enterprises (MSME) will be incorporated and strengthened for **continuing performance of target value chain functions**;
4. Support function providers will be identified and strengthened so they can continue to provide **essential services to village MSME**;
5. Governance function institutions will grant necessary titles, permits and other **instruments of governance that permit village MSME to function legally**.
6. **The GLACIER pilot project will lead toward longer-term GJVC development** initiatives in the targeted villages and value chains and also in other villages and value chains.



Intended users of this manual

This training manual is intended as a tool for the conduct of workshops that engage potential market system participants who can play a role in the successful development of green jobs value chains in the landscapes of GLACIER villages. These include:

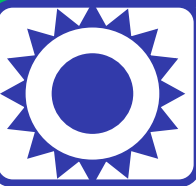
- Support function providers (e.g. BDS and banks)
- Governance function institutions (e.g. industry, government, adat)
- Market players (e.g. MSME owner/operators and their allies)

Interaction among market system participants is based on these fundamental premises:

- Green jobs value chain (GJVC) development requires coordination and integration of all market system functions and players.
- GJVC development starts with identification of opportunities based on consultation with the diverse range of value chain stakeholders.
- ILO strives to facilitate the development of green jobs value chains based on identified opportunities.

If you are attending a workshop that is using this training manual it is because you and/or your organisation can participate in GJVC development and **derive benefits from such participation.**





Field forms for GJVC development

Table I.1. The following forms are attached to this manual for use during research, analysis, monitoring and evaluation of value chains and interventions pertaining to GLACIER green jobs value chains

NO.	NAME (S)	SECTION (APPLICATION)
1	BDS_PROVIDERS	4-5 (linking BDS to village enterprises)
2	COLLECTOR_INTERVIEW	4 (getting the collectors' point of view)
3	GOVERNANCE_INSTITUTIONS	4-5 (linking village enterprises to authorities)
4	LANDSCAPE_MOSAIC	3-4 (mapping satoyama & VC landscapes)
5	PROCESSOR_MARKET	4-5 (getting the processors' points of view)
6	PRODUCER_FOCUS_GROUP	4-5 (these forms should supply the bulk of the information needed to construct, quantify and analyse VC from the standpoint of village MSME).
7	PRODUCER_INTERVIEW	
8	PRODUCER_MARKET	
9	SUPPORT_PROVIDERS	1-4 (information for screening providers)
10	TRADER_MARKET	4-5 (getting the traders' points of view)
11	TRAINING_NEEDS	4-5 (determining MSME BDS training needs)
12	VC_RESEARCH_FORMS	4-6 (VC research, analyses and monitoring)

See section 4 for list of value chain research forms

Sections 1-3: Concepts and Setting

Section 1 Background and Structure

The ILO approach to value chain development for green jobs is summarised in the context of the REDD+ program for reduction of emissions from deforestation and degradation (including a summary overview of carbon credits in REDD+).

Section 2 Socio-ecological production landscapes

How Green Jobs Value Chains (GJVC) in a REDD+ context fit into the framework of Socio-Economic Production Landscapes (SEPL) known as “satoyama landscapes”. The concept of “ecosystem services” is introduced as a concept that links green value chains into traditional systems of SEPL management.

Section 3 Location and Sector Selection

Information concerning villages and the economic sectors selected for GLACIER. Focus on iterative interactions with GJVC stakeholders, especially the villagers who live and work in and near the Ex-Mega Rice Project (EMRP) region of Central Kalimantan.

Sections 4-6: V C Research & Development

Section 4 Value chain research

Green Jobs Value Chain (GJVC) diagnostics and information developed with stakeholders, including villagers who live and work within Central Kalimantan satoyama landscapes.

Section 5 Value chain Analysis

Tools for developing interventions that could lead to development and expansion of GJVC in REDD+ regional landscapes within the GLACIER project area.

Section 6. Intervention M&E

Measures appropriate for monitoring and evaluating results of proposed interventions.



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Suggested scheduling/timing Sessions 1-4

Section 1 (Background and Structure) and Section 2 (Socio-ecological production landscapes) are for background, orientation and screening of potential active project participants.

Sections 1 & 2 can be presented together during a morning session of about 3- 4 hours. Make sure that forms are used to capture pertinent data about participants. Solicit feedback to aid in developing rapport and learning from the participants.

Section 3 (Location and Sector Selection) and Section 4 (Value chain research) should lead to active engagement of providers who are ready, willing and able to usefully link with village enterprises.

Sections 3 & 4 can be presented together during an afternoon session – also of about 3- 4 hours.

During this session participants should become familiar with VC research methods and forms. Serious participants must be recruited to do field work in the five GLACIER villages.

Village landscape field trips should be conducted in the days following presentations of Sections 1-4.

Suggested scheduling/timing Sessions 4-6

Section 4 (Value chain research) can be revisited after field work in a session that leads into **Section 5 (Value chain Analysis)** and **Section 6. (Intervention M&E)**. Participants should come to the sessions with:

- forms and questionnaires that they filled out during field trips; and
- summary overviews of those results.

Morning sessions 2-3 hours can review the material in Sections 4 and then cover the material in Sections 5-6.

Late morning and/or afternoon sessions (about 2-3 hours) should be conducted by work groups (e.g. split out by sector) who may use tools such as card exercises to review results obtained during field survey work. These workshops should produce intervention action profiles and M & E forms.

The afternoon session can finish by groups presenting their findings and proposals.

MOST IMPORTANT: LINKS WILL FORM BETWEEN VILLAGE MSME AND SUPPORT PROVIDERS AND SUSTAINED COLLABORATION WILL RESULT.

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SECTION 1. BACKGROUND AND STRUCTURE



Decent work in green value chains and in the GALCIER project REDD+ context



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Section 1 objectives

Section 1 familiarises GLACIER GJVC market system participants with the ILO approach to value chain development for green jobs. GJVC development is placed in the context of the REDD+ program for reduction of emissions from deforestation and degradation (including a summary overview of carbon credits in REDD+). Subsection objectives include the following:

1.A ILO decent work and green value chain concepts

Workshop participants will understand ILO decent work and green value chain concepts with reference to ILO reference documents (copies to be provided where appropriate).

1.B Overview of the Indonesian REDD+ program

Participants will understand the Indonesian REDD+ program in the context of ILO decent work and green value chain concepts. The course material is based primarily on the Indonesia REDD+ National Strategy. Reference is also made to other programs & concepts complementary to GJVC in REDD+ contexts.

1.C Brief overview of carbon credits

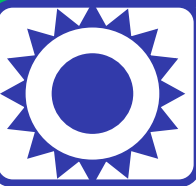
Participants will have a fundamental knowledge of how carbon credits for REDD+ programs are relevant to the GLACIER project in particular and to village landscape development in general.



Section 1 intended outcomes

The intended outcomes from attendance at Section 1 sessions include:

1. An understanding of the **basic principles of ILO** Decent Work and green value chains by GLACIER GJVC market system participants;
2. Introduction to **ILO source documents** that provide in-depth training in ILO value chain and MSME development;
3. An understanding of **what REDD+ is** and how it is relevant to the preservation and development of village socio-economic production landscapes in Central Kalimantan;
4. **Awareness of some programs & concepts complementary** to GJVC in REDD+ contexts;
5. **Fundamental familiarity with what carbon credits are** and why REDD+ carbon credit initiatives place **emphasis on the preservation and development of indigenous village landscapes** such as those of the five targeted GLACIER villages.
6. **MOST IMPORTANT: SUPPORT PROVIDERS WILL BECOME ENTHUSED ABOUT COLLABORATING WITH VILLAGE MSME.**



Section 1 validations and actions

Validation of workshop participants' comprehension of Section 1 materials may include:

- 1. A quiz that asks participants** to give their definitions of Decent work, green values chains, five pillars of the Indonesia National REDD + framework and significance of carbon credits to village landscape preservation/development;
- 2. Feedback from participants** concerning additional programs and that they know of that are developing concepts complementary to GJVC in REDD+ contexts;
- 3. Summaries from participants** explaining how they or their organisation may play a role in the REDD+ context of GLACIER GJVC development including support they need for capacity development (also fill in Support Provider and Governance Institution Profile Forms - ILO GLACIER project);
- 4. Suggestions from participants** as to how this section of the GLACIER GJVC manual – as a “living document” – may be improved.

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SECTION 1.A.

OVERVIEW OF ILO DECENT WORK AND GREEN VALUE CHAIN CONCEPTS



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Decent work & green jobs in value chains

- ❑ **Decent Work** is productive work for women and men in conditions of freedom, equity, security and human dignity.
- ❑ **Green Jobs** are direct employment in economic sectors and activities that:
 - reduce net environmental impact;
 - seek environmentally sustainable levels.
- ❑ **Value chain approaches** embrace the activities required to bring goods and services from conception to end use.
- ❑ **Green value chains:**
 - **Reduce** the environmental impact of existing value chains;
 - **Promote** new, more sustainable economic activities;
 - **Facilitate** a gradual 'just transition' to an economy that delivers:
 - **viable** livelihood opportunities;
 - **improved** environment; and
 - **Decent** Work outcomes.



Green Jobs VC development co-benefits

- ❑ **A value-chain intervention** in a small-scale industrial cluster could simultaneously:
 - **generate** global environmental benefits (e.g reduced GHG emissions);
 - **yield** local environmental benefits (e.g reduced particulate emissions); and
 - **Result** in Decent Work benefits (e.g improved worker safety),
- ❑ **whilst also improving** quality, profitability and growth prospects.
- ❑ **Methodology** uses a market systems approach which involves engagement not only with firms but also with villagers, government bodies and worker's organisations,
- ❑ **Green VC operate within specific economic environments** linked to green economic incentives-regulations and standards that are keys to sustaining green growth.
- ❑ **Ultimate goal is substantial and durable change...**



Decent work in Micro, Small & Medium Enterprises

- ❑ **Most economic activity** in the GLACIER villages takes place within locally owned Micro, Small & Medium Enterprises (MSME) with **most enterprises falling at the “micro” end of the scale** (see Section 3).
- ❑ As owners / operators of MSME, GLACIER village people tend to be **entrepreneurs and enterprise managers** rather than seeking jobs where they work for employers. **They place high value on “being their own boss”**.
- ❑ **Development of decent work and green jobs** is therefore dependent on **building prosperity and improving working conditions** among village enterprises operating in socio-economic production landscapes (SEPL) .
- ❑ **GJVC development must therefore focus** on programs that build, for example:
 - **new skills** development;
 - **economic channels** for non timber forest products;
 - **sustainable infrastructure** development;
 - **entrepreneurship** initiatives;
 - **food production plans...** and others.



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SECTION 1.B.

OVERVIEW OF THE INDONESIAN REDD+ PROGRAM



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What is REDD+ ?

- ❑ **REDD** means “**R**educing **E**missions from **D**eforestation and forest **D**egradation
- ❑ **REDD** was designed under the UN Framework Convention on Climate Change (**UNFCCC**) to enhance the role of forests in curbing climate change (UNFCCC 2007).
- ❑ **REDD+** expanded the REDD concept to include **forest conservation and human activities** that **increase carbon stocks** (UNFCCC 2007, 2009).
- ❑ **REDD+** has the potential to alter the incentives for deforestation and land use change and instead to **encourage sustainable forest management**.



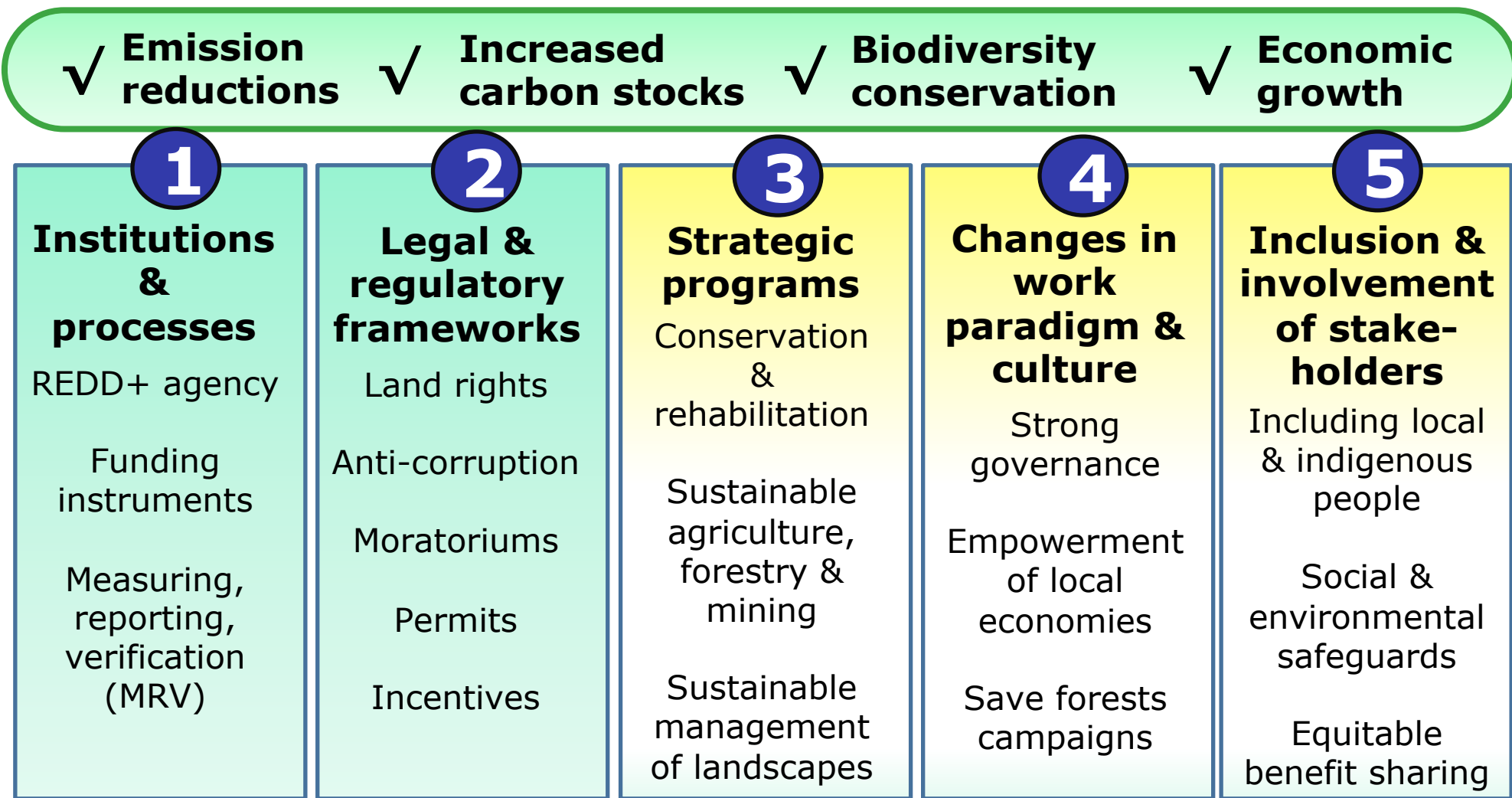
Intent: Indonesia REDD+ National Strategy

1. **Prepare effective system** to implement REDD+;
2. **Provide basis and direction for integrated governance** and regulatory systems for implementation of the REDD+;
3. **Develop systematic and consolidated processes** and approaches to save Indonesia's natural forests and the flora and fauna within them; and
4. **Provide a reference for the expansion of investment** in the utilization of **forests and peatlands** for the production of forest and/or agricultural commodities, and the provision of **ecosystem services** that include the conservation and accumulation of carbon stocks.



REDD+ 5 pillars: National Strategy Framework

Figure 1.1. Five pillars of the Indonesia National REDD+ framework (*after REDD+ Taskforce, 2012*)



Vision & Mission: REDD+ National Strategy

Vision

Sustainable management of natural **forests and peatlands** as national natural resource assets to maximize prosperity of the people.

Mission

Sustainable management of natural **forests and peatlands** through an effective governance system by:

- 1. Enhancing functioning** of forest and peatland management institutions.
- 2. Improving laws and regulations** and strengthening law enforcement.
- 3. Improving capacity** to manage forest and peatland resources.



Scope: REDD+ National Strategy

In line with Forestry Law 41/2009 sections 1(b) and 1(c), the REDD+ scheme will be implemented in **forested lands (including mangroves and peatlands)** designated as forest areas or land designated as “other use” areas. The scope of activities is:

- 1. Decreasing emissions** from **deforestation**
- 2. Decreasing emissions** from forest and/or peatland **degradation**
- 3. Preserving and accumulating carbon stocks** through:
 - a) **Forest** conservation
 - b) **Sustainable** forest management
 - c) **Rehabilitation** and restoration of damaged areas
- 4. Creation of additional benefits** along with reduced emissions:
 - a) **Improvement** of local people's welfare
 - b) **Improved preservation** of biodiversity
 - c) **Improved protection** for other ecosystem services.



Some programs & concepts complementary to GJVC in REDD+ contexts

- ❑ **IPSI** (International Partnership for the Satoyama Initiative) – partnership for preservation & development of socio-economic production landscapes
- ❑ **FAO** - Climate-Smart Agriculture in Central Kalimantan
- ❑ **UNESCO** - Pusat Informarsi Lestari (PIL)
- ❑ **AUSaid** partnering with Government of Indonesia - Kalimantan Forest and Climate Partnership (KFCP).
- ❑ **Infinite Earth** - Rimba Raya Biodiversity Reserve Project
- ❑ **WWF** - Rewetting Tropical Peat Swamp Forests in Sebangau National Park
- ❑ **Rimba Makmur Utama, Clinton Climate Initiative & Starling Resources** - Katingan Conservation Area Global Peatland Capstone Proj.
- ❑ **Borneo Orangutan Survival Foundation / Shell Canada** - Mawas Peatlands Conservation Area Project.

Programs & concepts to promote decency of work among MSME in satoyama landscapes

- ❑ **Fostering community based** activities and cooperatives;
- ❑ Providing MSME **Business Development Services** (BDS) including:
 - **Financial management** training;
 - Links to **fair finance** and **certification** procedures;
 - **Entrepreneurship** training and linkages;
 - **Technical training** (e.g. agronomy, value adding);
 - Links to **fair-trade markets**.
 - Links to **strategic business alliances**
- ❑ Promoting **safe working conditions**.
- ❑ Fostering **gender parity and educational** opportunities.



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SECTION 1.C.

BRIEF OVERVIEW OF CARBON CREDITS



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Significance: carbon credits from REDD+

- ❑ **Scale of the present GLACIER project is too small to generate certified carbon credits** but carbon credits are an important driver of REDD+.
- ❑ **REDD+ carbon credits will be generated by landscapes that significantly increase tonnages of carbon sequestered** by vegetation – compared to baseline management options.
- ❑ It is an important policy of REDD+ that **indigenous village landscapes and ways of life should not be severely damaged or eliminated** as a result of carbon sequestration projects.
- ❑ **Adaptation and development of indigenous village landscapes within REDD+** is a key focus of GLACIER.



Basis: carbon credits from REDD+

Logic of the proposed **Clean Development Mechanism (CDM)** in Article 12 of the 'Kyoto Protocol' to the **UN Framework Convention on Climate Change (UNFCCC)**:



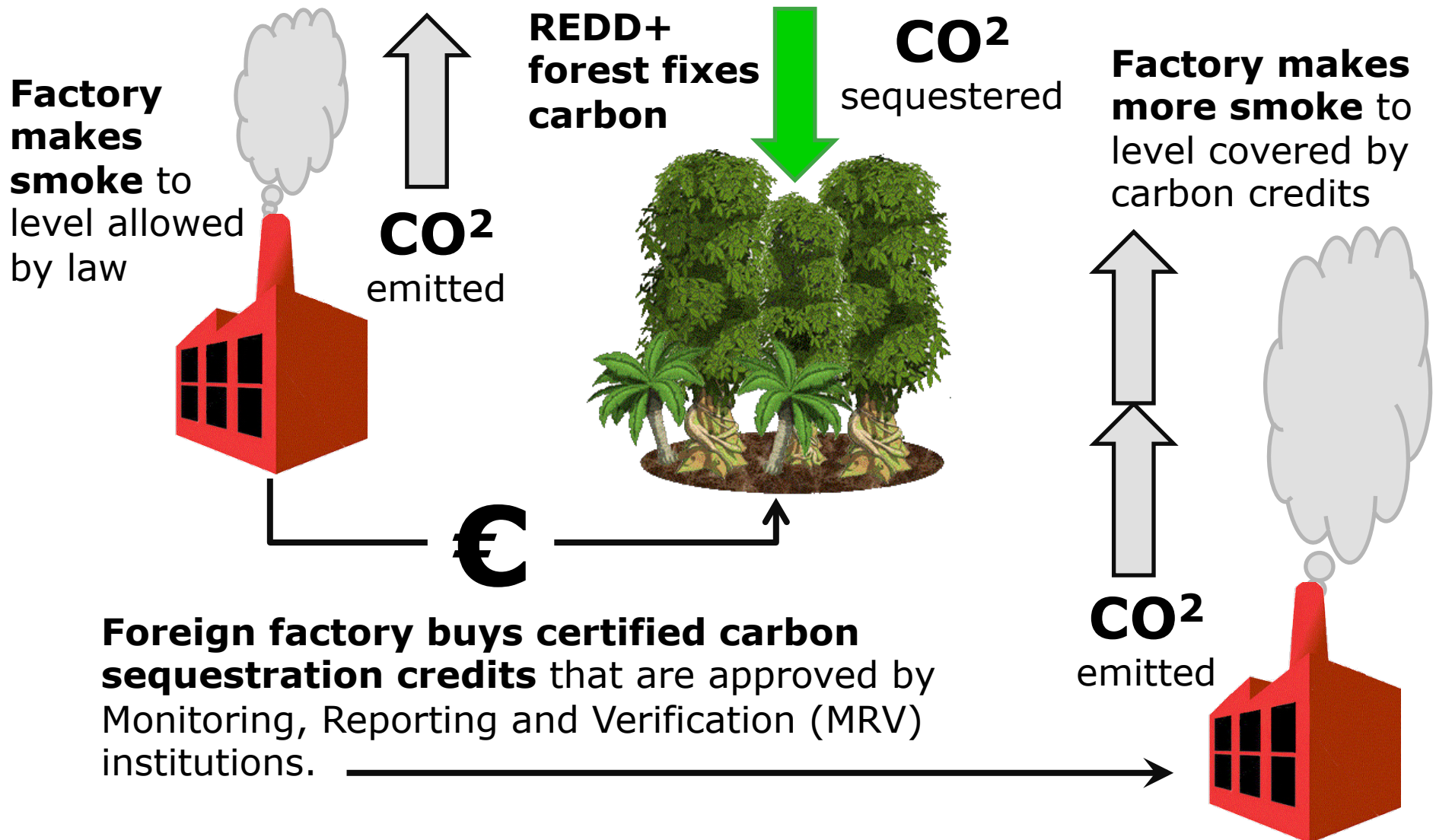
- ❑ Rests on notion that **cost of reducing C emissions is lower** in developing countries;
- ❑ In principle this creates opportunities for mutually beneficial carbon trading.
- ❑ Beyond trading of emissions in energy/industrial sectors there is general possibility of offsetting carbon emissions with carbon 'sinks' **in land use, land-use change and forestry (LULUCF)**.
- ❑ **Not yet resolved** whether or how LULUCF activities are included in the CDM.

Rationale: carbon credits from REDD+

- ❑ **About two thirds** of global emissions come from **energy** uses or **industrial** emissions and are easily monitored;
- ❑ **About one third** comes from **forestry and agriculture** sectors;
- ❑ **Modifying land use** can lead to **lower carbon emissions and higher carbon sequestration** in soils – through no tillage in agriculture or afforestation in forestry and agroforestry;
- ❑ **Inversely**, free huge amounts of sequestered carbon are released through deforestation – including by burning.



Example: carbon credits from REDD+



Issues: carbon credits from REDD+

- ❑ Although GLACIER projects are currently too small to qualify for carbon credits, they are important to REDD+ and **could apply to large-scale, long-term projects for which GLACIER is a precursor.**
- ❑ Compared to energy and industry it is **difficult to assess carbon fluxes** between soils, forests and the atmosphere and also difficult to directly include agriculture and forestry in carbon markets.
- ❑ **Project-based and “baseline + credit” approaches** are most promising for agriculture and forestry. To deliver carbon credits to governments involved in a REDD+ mechanism, they must be able to:
 - **reliably monitor and measure** emissions from deforestation; and
 - **consistently enforce** environmental legislation (e.g. protected areas).
- ❑ To make this system reliable, **context-appropriate ways to monitor and control** the emission reductions have to be found as mechanisms to avoid wasted spending or corruption.

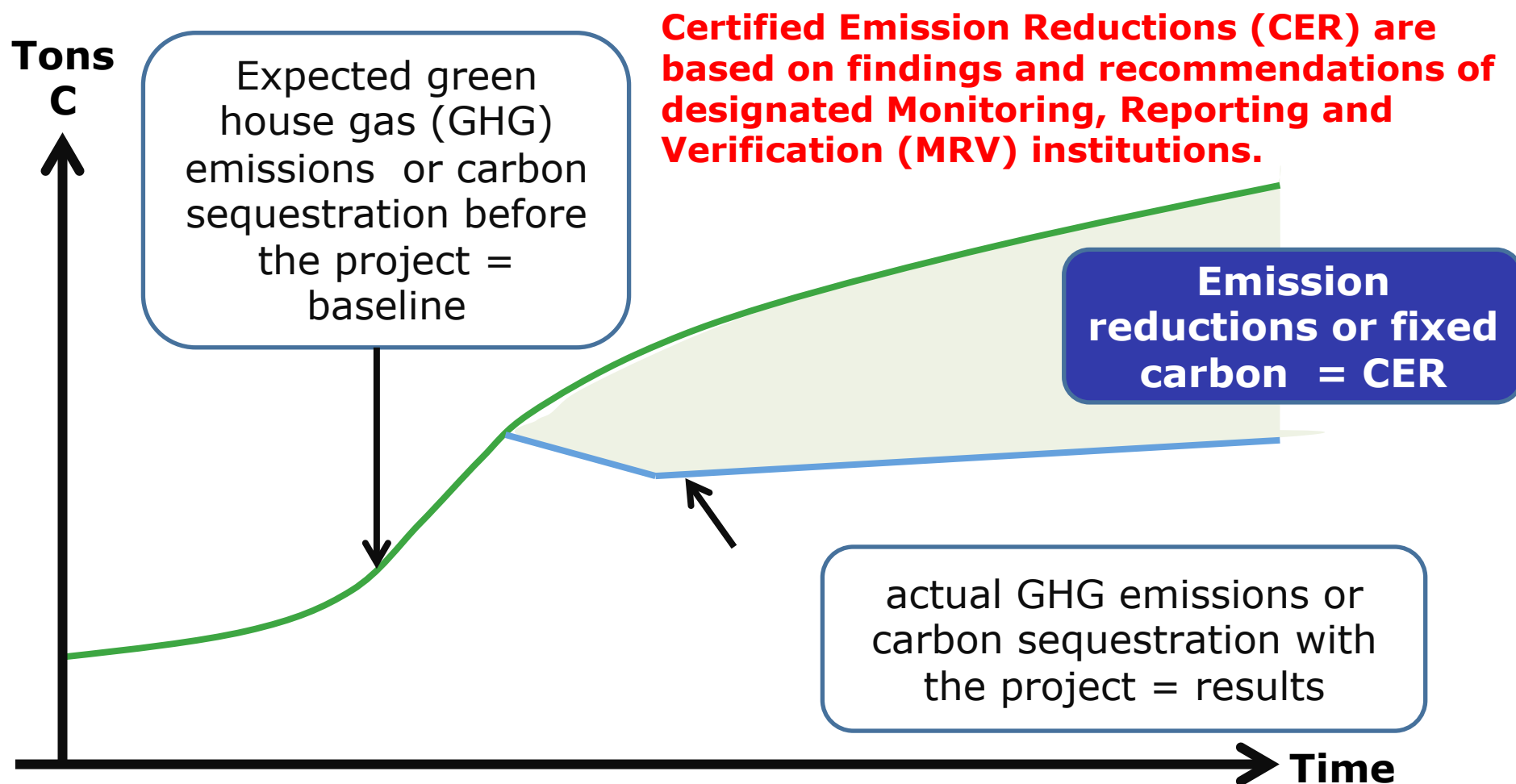
From: **Delbosc A and de Perthuis C (2009)**. *Carbon markets: the simple facts*. Caring for climate series. United Nations Global Compact.

Features: baseline-and-credit

- ❑ **The main offset credits today** are provided by two project mechanisms established by the **Kyoto Protocol**:
 - Joint Implementation (**JI**); and
 - Clean Development Mechanism (**CDM**).
- ❑ **CDM is the most important** in terms of the number of credits generated.
- ❑ **Certified Emission Reductions (CER)** can result in carbon credits to be traded for money.
- ❑ CER are issued based on findings and recommendations of designated **Monitoring, Reporting and Verification (MRV) institutions**.
- ❑ **CER depend on determinations** of how much carbon is sequestered per unit of time for specific landscapes.
- ❑ **The amount of CER are calculated** as the difference between expected Greenhouse Gas (GHG) emissions before the project (baseline) and actual GHG emissions with the project.

Mechanism: baseline-and-credit

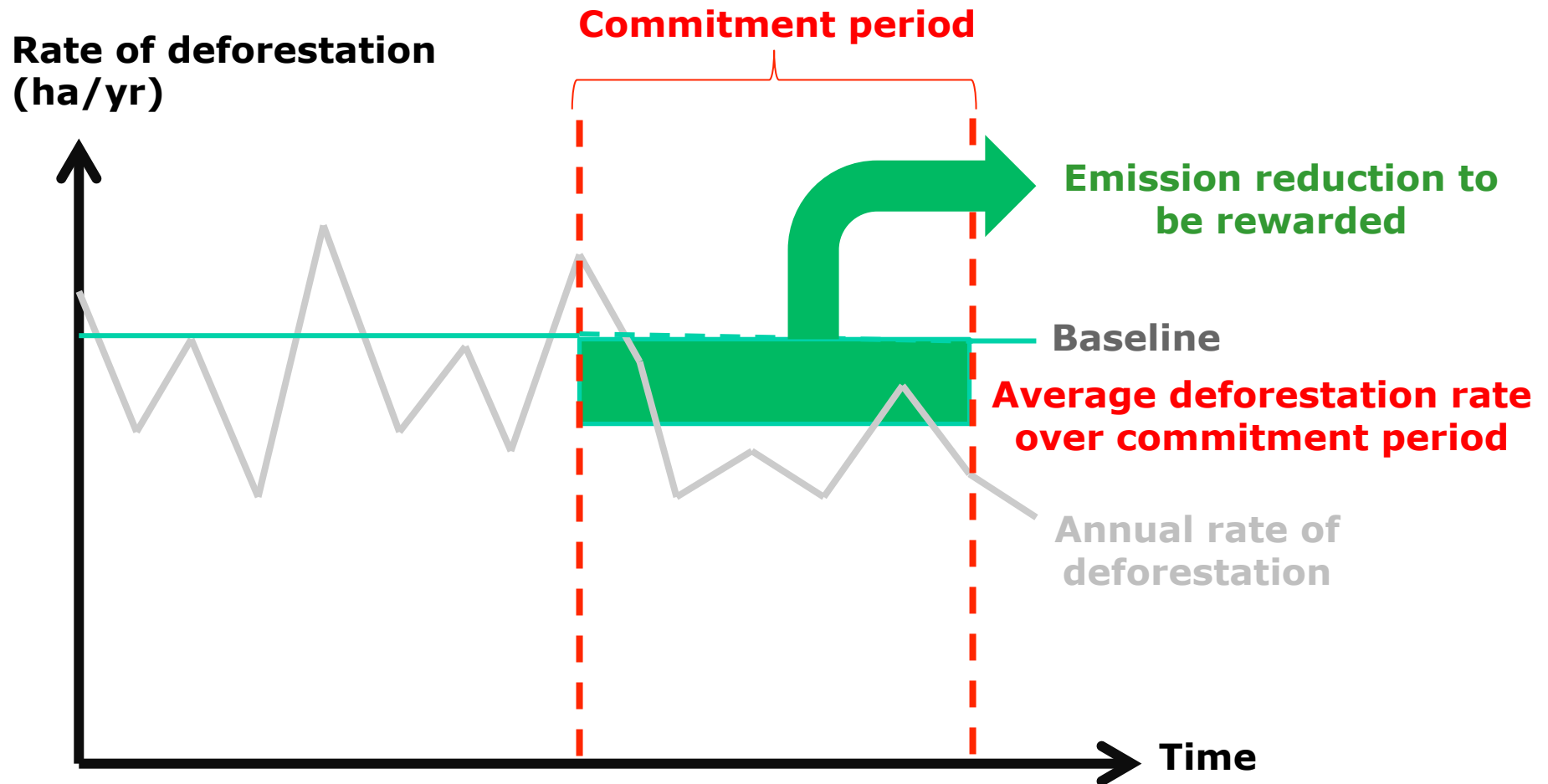
Figure 1.2. Project-based mechanisms: baseline-and-credit principle.



After: **Delbosc A and de Perthuis C (2009)**. *Carbon markets: the simple facts*. Caring for climate series. United Nations Global Compact.

Example: REDD+ carbon credits

Figure 1.3. Example of how REDD initiatives may receive carbon permits



After: **Delbosc A and de Perthuis C (2009)**. *Carbon markets: the simple facts*. Caring for climate series. United Nations Global Compact.

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SECTION 2. SOCIO-ECOLOGICAL PRODUCTION LANDSCAPES (SEPL)



**Satoyama landscapes where green value chains
can thrive in REDD+ regions**



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Section 2 objectives

Section 2 strives to explain to GLACIER GJVC market system participants how GJVC in a REDD+ context fit into the framework of Socio-Economic Production Landscapes (SEPL) known as “satoyama landscapes”. The concept of “ecosystem services” from crops in landscapes is introduced as a framework that links green value chains into traditional systems of SEPL management.

1.A Engagement of local intellectual & relational capital

Workshop participants will understand the need and the means for engaging with local intellectual and relational capital during green value chain development (GVCD). Special emphasis is placed on the importance of traditional “adat” governance mechanisms such as kedamangan.

1.B The concept of satoyama

Participants will learn how the concept of satoyama can be used as an overarching framework for developing green jobs value chains (GJVC) within socio-economic production landscapes (SEPL) in a REDD+/GLACIER context.

1.C Ecosystem services in satoyama landscapes

Participants will learn how ecosystem services in satoyama landscapes can serve as a basis for green value chains. This concept must be understood with respect to ILO Criteria central to GJVC development and items required for green value chain development success.

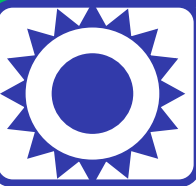


Section 2 intended outcomes

Intended outcomes from attendance at Section 2 sessions include:

1. Workshop participants' understanding of the need and the means for **engaging with local intellectual and relational capital** during green value chain development. This understanding embraces the importance of traditional "adat" governance mechanisms such as kedamangan and awareness that **preservation of indigenous technologies** must be a component of GJVC development;
2. Participants' understanding of how the concept of **satoyama can be used as an overarching framework** for developing green jobs value chains (GJVC) within socio-economic production landscapes (SEPL) in a REDD+/GLACIER context;
3. Participants understanding of how **ecosystem services** in satoyama landscapes can serve as **a basis for green value chains**;
4. Understanding of **ecosystem services** with respect to ILO Criteria **central to GJVC development** and items required for green value chain development success.

5. MOST IMPORTANT: SUPPORT PROVIDERS WILL BECOME ENTHUSED ABOUT COLLABORATING WITH VILLAGE MSME.



Section 2 validations and actions

Validation of workshop participants' comprehension of Section 2 materials may include:

- 1. Feedback from participants** concerning traditional “adat” governance mechanisms such as kedamangan and other mechanisms that are relevant to GJVC development;
- 2. Ideas from participants** concerning how preservation of indigenous technologies can be accomplished within GJVC projects;
- 3. Ideas from participants** how concepts of SEPL and satoyama landscapes fit in to village-based GJVC development in Central Kalimantan;
- 4. Summaries from participants** explaining how they or their organisation may play a role in traditional knowledge and SEPL aspects of GLACIER GJVC development including support they need for capacity development (also fill in Support Provider and Governance Institution Profile Forms - ILO GLACIER project);
- 5. Suggestions from participants** as to how this section of the GLACIER GJVC manual – as a “living document” – may be improved.

Training Manual

Value Chain Development for Green Jobs

SECTION 2.A.

ENGAGEMENT OF LOCAL INTELLECTUAL & RELATIONAL CAPITAL



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Engaging local intellectual and relational capital during green value chain development (GVCD)

- ❑ Through GLACIER, **GVCD draws on traditional knowledge and practices** to promote peat land regeneration activities, green value chains, and local economic development.
- ❑ **ILO conventions and focus on social justice** will provide the framework for consultation with and participation of communities in the design and implementation of activities.
- ❑ In particular, **Convention 169 on the Rights of Indigenous and Tribal Peoples**, as well as the Free and Informed Prior Consent (FPIC) framework provides the guiding principles for working with communities.
- ❑ To ensure sustainability of the GVCD approach **GLACIER focus is on community-driven participatory decision making**, involving local organizations and employers' and workers' organizations.



Source: GLACIER Terms of Reference

REDD+ and Kedamangan in Kalimantan Tengah

- ❑ Governor of Central Kalimantan **Decree 2010** for Creation of Regional Board on Climate Change.
- ❑ Policy is **relevant to customary lands and indigenous peoples** as impacted by international negotiations on **climate change and REDD+**.
- ❑ The **Governor and the provincial government** have issued several other regulations relevant to REDD+:
 - Governor's Decree on status, position and function of **Kedamangan Institutions** (Kedamangan are traditional inter-village institutions involved in natural resource governance);
 - Provincial law on determination of **Kedamangan Territory** and obligations of the Damang Head;
 - Provincial law (2008) on **customary institutions of Dayak communities**; and
 - Governor's Decree on **Customary Land** and Customary Rights to Land.



Source: FPP, 2011

Kedamangan structure

- ❑ Each kedamangan should have a **damang as its leader**.
- ❑ There is no necessary link between administrative boundaries, but a kedamangan usually covers an **area equivalent to a kecamatan**.
- ❑ Damang and assistants (mantir or let adat) comprise together an **Adat Council**.
- ❑ Above the damang at district level is the **District Adat Coordinator**, selected from the ranks of the damang themselves.
- ❑ The damang is considered the **partner of the Camat** in each sub-district, with particular responsibility for adat issues.
- ❑ Damang are selected by a **committee of community elite**, though some continue to hold the position on a hereditary basis. There are no restrictions on women becoming adat leaders.

Source: World Bank Indonesia 2008

Damang tasks – Kedamangan factors

❑ Key tasks of the Damang include:

- **Oversight** of adat law and adat institutions
- **Resolving** disputes and breaches of adat law
- **Advising** the local government on adat law
- **Preserving and developing** art and values of Dayak culture

❑ Common factors in the regulations on the role and function of adat are:

- Adat should be the **first port of call** for peaceful resolution
- Damang have **authority to resolve** both civil and criminal cases
- Adat resolutions are **considered “binding”** on the parties, yet they are just one item for “consideration” by the legal apparatus if a dispute reaches the formal system.
- Adat resolution **does not preclude formal legal action** and the courts are free to ignore the outcomes of adat resolution.

Source: World Bank Indonesia 2008

Kedamangan & green jobs value chain development

- ❑ **Green jobs value chains (GJVC)** must be developed and operated with due awareness of both:
 - **Indonesian government** legal governance systems; and
 - **Kedamangan adat** governance systems.
- ❑ **Kedamangan practices are especially significant** with respect to land tenure issues including:
- ❑ GJVC development must also be developed and operated with **knowledge and respect for indigenous technology** that has traditionally operated within adat systems such as kedamangan.

NEED FOR PRESERVATION OF INDIGENOUS TECHNOLOGIES

Indigenous technologies are being lost as traditional landscapes and cultures absorb impacts from external forces. Preservation of indigenous technologies can be a benefit from green jobs value chain development.



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SECTION 2.B.

THE CONCEPT OF SATOYAMA



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Kedamangan in socio-ecological production landscapes (SEPL)

- ❑ Concepts such as “**kedamangan**” are important foundations for building **socio-ecological production landscapes (SEPL)**.
- ❑ **The Japanese term “satoyama”** is now globally accepted as a term that embraces SEPL concepts and frameworks. The term “**satoumi**” is similarly applied to seascapes.
- ❑ **Satoyama provides a useful over-arching framework** that accommodates traditional concepts such as kedamangan and can integrate them with modern concepts such as green value chains, decent work and REDD+ initiatives.
- ❑ **The International Partnership for the Satoyama Initiative (IPSI)** has been created with United Nations involvement to advance the development of satoyama landscapes.

SAToyama
INITIATIVE



Satoyama landscapes

Figure 2.1. General view showing satoyama landscapes in relation to other landscapes. (*Satoyama landscape Kumano, Winifred Bird*)

INSIDE satoyama landscapes

Integrated
agroforestry
and managed
forests

Villages in
harmony with
nature

Integrated
agriculture and
aquaculture

BORDERING satoyama landscapes

Conserved forests



Intensive monocrop
farms & plantations



OUTSIDE satoyama landscapes

Urban and
industrial
landscapes



International Partnership for the Satoyama Initiative (IPSI)

- ❑ **Vision:** Realizing societies in harmony with nature
- ❑ **Mission:** To advance **socio-ecological production landscapes (SEPL)** through understanding, restoring, and conserving human-nature interactions.
- ❑ **Sato** (village) + **Yama** (mountains, woodlands and grasslands)
- ❑ **International efforts** to promote various practices consistent with ecosystem approach.
- ❑ **126 member organisations** as of November, 2012

CONTACT
satoyama-initiative.org

SATOYAMA
INITIATIVE



IPSI members – UN organisations

- ☐ United Nations Centre for Regional Development (**UNCRD**)
- ☐ United Nations Development Programme (**UNDP**)
- ☐ United Nations Educational Scientific and Cultural Organisation (**UNESCO**)
- ☐ United Nations Environment Programme (**UNEP**)
- ☐ United Nations Environment Programme – World Conservation Monitoring Centre (**UNEP-WCMC**)
- ☐ The United Nations University (**UNU**)



UNITED NATIONS
UNIVERSITY

UNU-IAS

Institute of Advanced Studies

Satoyama conceptual framework

**An overarching framework
for integrating human enterprises
into managed landscapes worldwide.**

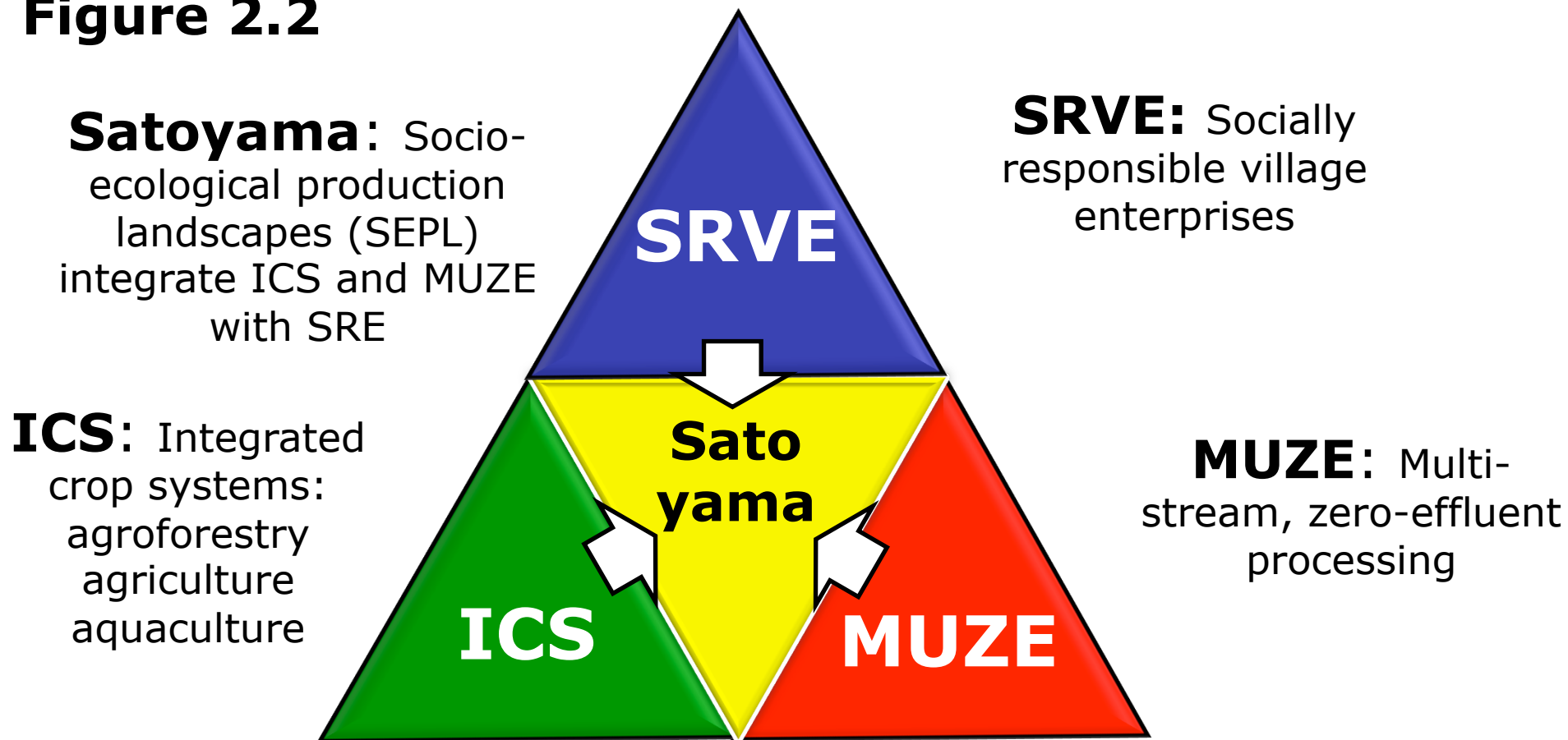
- ❑ Realization that the **commons of global landscapes** must be managed for **harmony** of socioeconomic activities with biodiverse, managed ecosystems.
- ❑ Useful heuristic devices for modeling **environmental stewardship and resource management**
- ❑ Framework for analyzing relationships between **ecosystem services** and **human well-being**

SATOYAMA
INITIATIVE



Satoyama landscapes embrace agroforestry, agriculture & value-adding activities by socially responsible village enterprises

Figure 2.2



Satoyama landscapes in Central Kalimantan

First stage (before 1996)

- **Mainly traditional** satoyama landscapes as in Fig. 2.2
- **Mainly subsistence** value chains with few cash crops

Second stage (1996 – present)

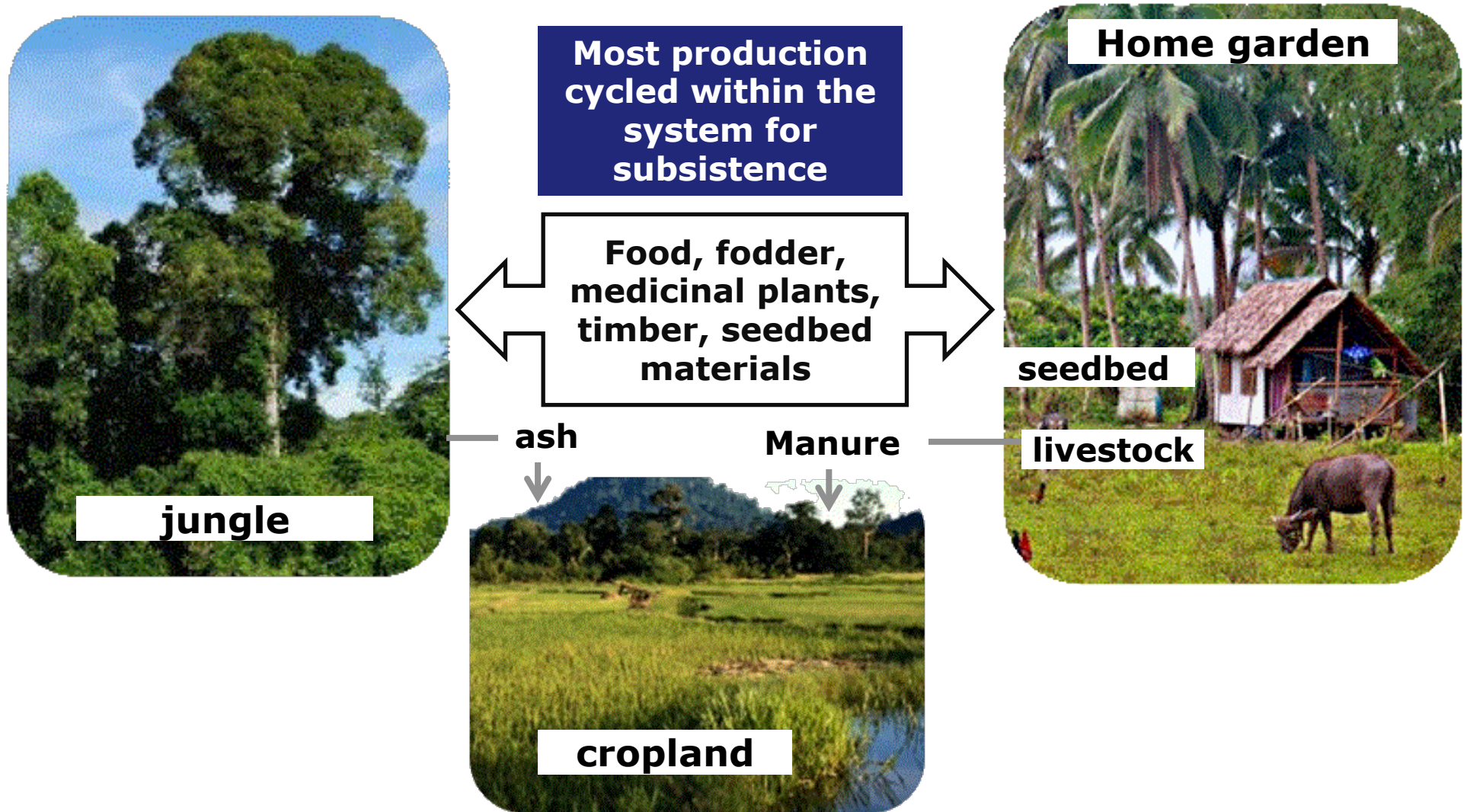
- **Ex-Mega Rice Project** (EMRP) caused major disruption
- **Massive fires** cause widespread destruction
- **Failure of rice** productivity – **increase in oil palm** estates
- **Substantial marginalization** of indigenous villagers

GJVC-driven third stage (present-future)

- Development of **green jobs value chains** in REDD+ context
- Development of **modern satoyama landscapes** as in Fig. 2.3
- **Cash crops** from green value chains
- **Path toward** prosperity of indigenous villagers as in Fig.2.4

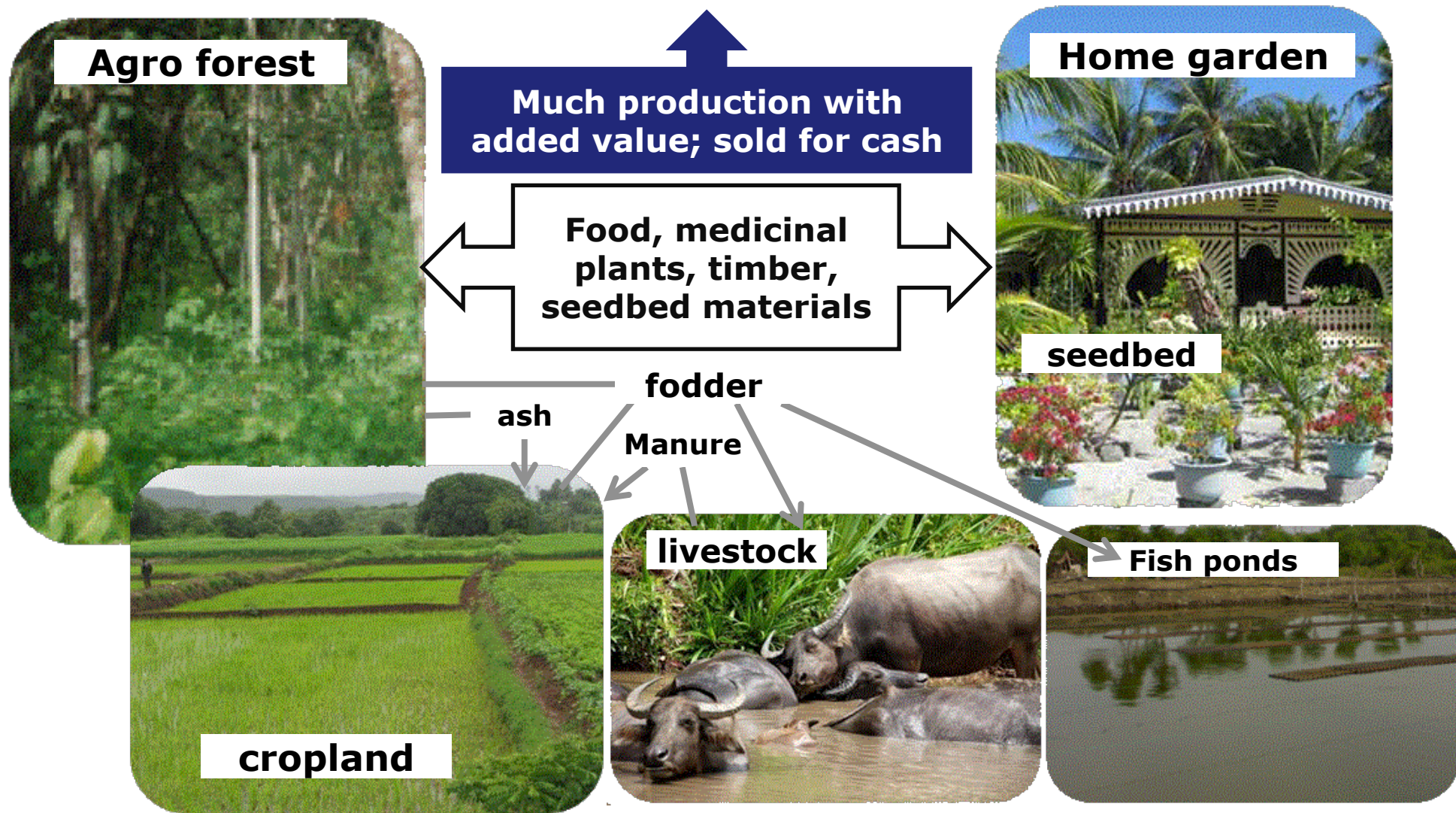
Traditional subsistence use of materials in satoyama

Figure 2.3. Traditional satoyama landscape.



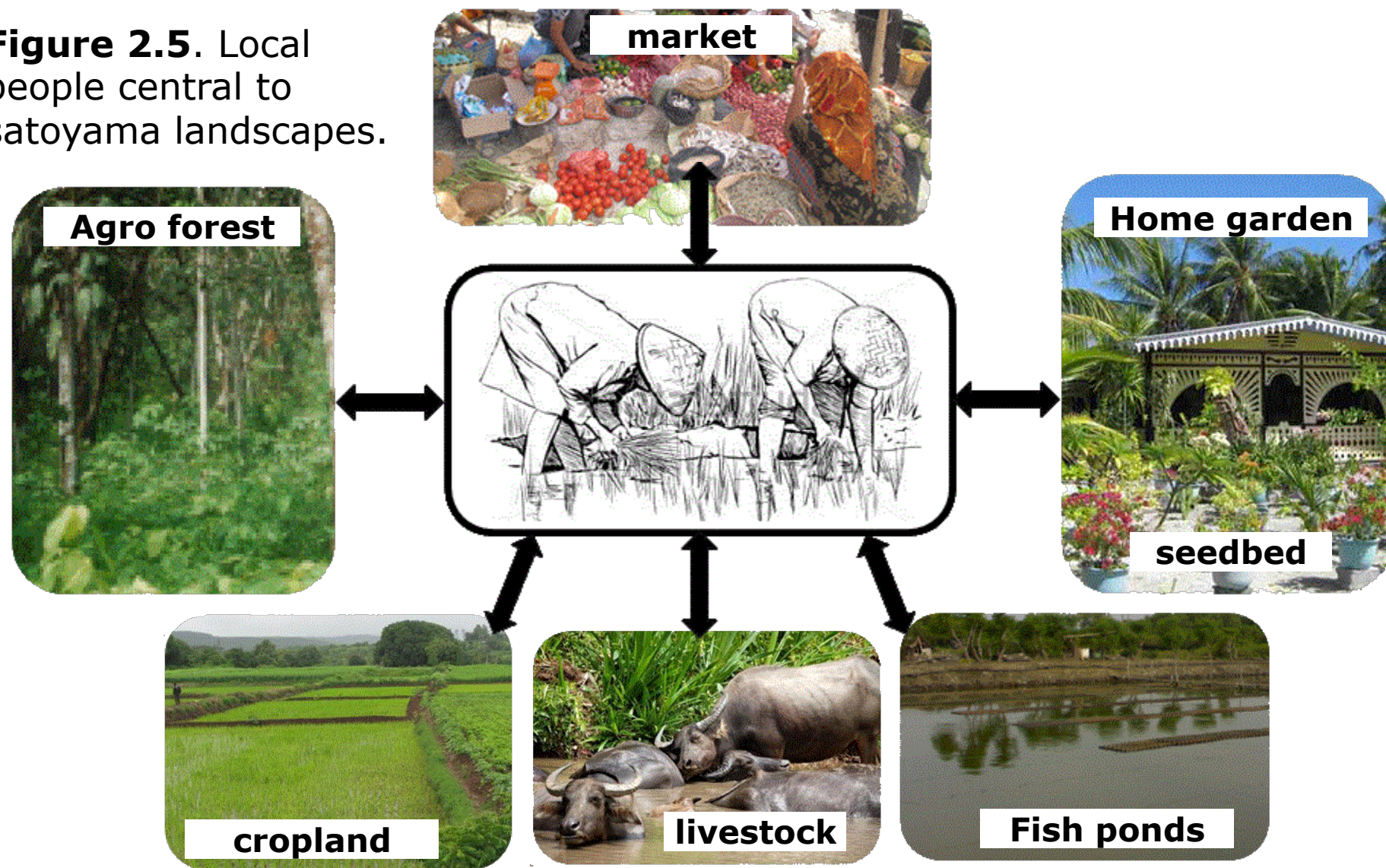
Modern value chain use of materials in satoyama

Figure 2.4. Modern satoyama landscape.



Farm families integral to satoyama landscapes ... linked to many value chains in the system

Figure 2.5. Local people central to satoyama landscapes.



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SECTION 2.C.

ECOSYSTEM SERVICES IN SATOYAMA

LANDSCAPES



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ILO GLACIER PROJECT



Example ecosystem services involving agroforests within satoyama landscapes

Table 2.1 Ecosystem services from agroforests.

PROVISIONING SERVICES	REGULATING SERVICES	CULTURAL SERVICES
Food & fodder	CO ² / O ² balance	Educational
Fresh water	Climate Regulation	Spiritual
Wood & oil as fuel	Flood Regulation	Aesthetic
Timber & leaves	Disease Regulation	Recreational
Fiber, oils & resins	Water Purification	Social Relations
Seedbed materials	Nutrient balances	
Genetic resources		

Ecosystem services are a basis for green value chains

- ❑ **Ecosystem services** can have social, environmental and monetary value. They **are a basis for green value chains**.
- ❑ **GVC in harmony with nature** enable communities to undertake socio-economic activities, in alignment with natural processes.
- ❑ **The IPSI approach** toward this vision is three-fold:
 - **Consolidate wisdom** on securing diverse ecosystem services and values.
 - Integrate **traditional ecological knowledge and modern science** to promote innovations.
 - Explore **new forms of co-management** systems or evolving frameworks of “commons” while respecting traditional communal land tenure.
- ❑ **This approach is compatible with ILO green value chains for Decent Work in a REDD+ context.**

Items required for GVCD success

- 1. Transparency with villages** concerning project objectives and REDD+ plans;
- 2. Information on the supposed benefits** of the project for villages members' daily lives, especially for women;
- 3. Prompt responses to verbal and written requests** from villagers seeking support to participate in value chains;
- 4. Awareness of traditional knowledge** of villagers as to which species will grow well in the different soils and conditions of the rehabilitation sites;
- 5. Project commitment to recognise and respect the customary land rights** of villages affected by the project;
- 6. Spell out concrete or clear benefits** from the project to communities.

After FPP, (2011)



ILO Criteria central to GJVC development

Six criteria central to Green Jobs value chain (GJVC) development include:

- 1. Environmental impact (global)**
- 2. Environmental impact (local)**
- 3. Decent Work promotion potential**
- 4. Livelihood & economic growth**
- 5. Technological feasibility**
- 6. Organisational feasibility**

6



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Value Chain Development for Green Jobs

SECTION 3. LOCATION AND SECTOR SELECTION



**Rubber gardens, fish ponds/cages
and associated value-adding activities**



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Section 3 objectives

Section 3 is intended to familiarize GJVC market system participants with the villages and economic sectors selected for the GLACIER pilot project. The importance of iterative interactions with GJVC stakeholders must be conveyed to participants, especially with respect to villagers who live and work in and near the Ex-Mega Rice Project (EMRP) region of Central Kalimantan.

3.A Selected Central Kalimantan villages

Workshop participants will become familiar with some basic facts about the five Central Kalimantan villages targeted by the GLACIER pilot project. Three are in the Ex-Mega Rice Project (EMRP) area and two are near to it. The EMRP setting and the Central Kalimantan climate are reviewed.

3.B Village jobs situation

Participants will be familiarized with the village jobs situation. In that context the rubber sector and the fish ponds/cages sector will be reviewed and evaluated with respect to ecosystem services and ILO green jobs value chain criteria.

3.C Satoyama mosaics – a basis for sector and value chain selection

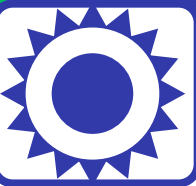
Participants will be introduced to landscape maps prepared by GLACIER villagers. They will understand the use of landscape mosaic maps and related demographic, geographic and economic information as tools for GJVC development. They will learn steps for mosaic map utilisation and will learn about related survey materials attached to this manual. They will also be exposed to value chains for future consideration.



Section 3 intended outcomes

Intended outcomes from attendance at Section 3 sessions include:

1. Workshop participants will become familiar with the five targeted GLACIER villages through **course materials and village visits**;
2. Participants will be familiarized with the **village jobs situation** especially in the context of the rubber and fish ponds/cages sectors.
3. Participants will learn about **ecosystem services provided by rubber and fish** production systems and will become familiar with ILO GJVC criteria.
4. Participants will learn about landscape maps prepared by GLACIER villagers and will **gain experience by developing landscape mosaic maps** and related demographic, geographic and economic information as tools for GJVC development.
5. Participants will learn steps for mosaic map utilisation and **will utilise related survey materials** attached to this manual. They will also be exposed to value chains for future consideration.
- 6. MOST IMPORTANT: SUPPORT PROVIDERS WILL BE RECRUITED TO COLLABORATE WITH VILLAGE MSME.**



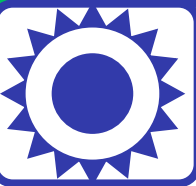
Section 3 validations and actions

Validation of workshop participants' comprehension of Section 3 materials may include:

- 1. Field trips** to the five GLACIER villages and participation in **mapping of their satoyama mosaics** (present and future);
- 2. Preparation of maps and/or of demographic, geographic and economic data** integrated with maps already prepared;
- 3. Feedback from participants** concerning the targeted GLACIER value chains and additional chains worthy of future consideration;
- 4. Summaries from participants** explaining how they or their organisation may play a role in fundamental field work for GLACIER GJVC development including support they need for capacity development (also fill in Support Provider and Governance Institution Profile Forms - ILO GLACIER project);
- 5. Suggestions from participants** as to how this section of the GLACIER GJVC manual – as a “living document” – may be improved.

VILLAGE MOSAIC SURVEY FORM – ILO GLACIER PROJECT

Has been provided for use in recording demographic, geographic and economic data pertinent to GLACIER village landscapes



The village mosaic form provided with this manual is based Rural skills training: a generic manual on training for rural economic empowerment (TREE) (ILO 2009). The categories of information include:

PART 1 – VILLAGE LANDSCAPE GENERAL DESCRIPTION

- A. Population of the programme site
- B. Geographical features
- C. Climate
- D. Educational facilities
- E. Credit sources for small/informal activities
- F. Available services
- G. Economic and social organizations supporting small-scale activities

PART II GENDER ANALYSIS

PART III RAW MATERIALS AND OTHER INPUTS

Agriculture, non-farm activities, factory activities

PART IV. PRESENT SOURCES OF INCOME

Agriculture, non-farm activities, factory activities

PART IV POTENTIAL FOR EMPLOYMENT CREATION

- A. Possible uses of unused/abundant local raw materials
- B. Development projects in/near the community
- C. Factories looking for workers

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Value Chain Development for Green Jobs

SECTION 3.A.

SELECTED CENTRAL KALIMANTAN

VILLAGES



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Overview: selected locations and sector

- A. GLACIER Terms of Reference specified** that this Training Manual should focus on five specified villages in the region of the Ex-Mega Rice Project (EMRP) of Central Kalimantan. **Geographic, climatic and demographic background** relevant to GJVC development in the EMRP is provided.
- B. Based on consultation** with Central Kalimantan villagers, NGO, government organisations and other resource people the decision was made for the present training manual to **focus on two value chain sectors**, namely:
 - A. rubber gardens**; and
 - B. freshwater fish** ponds and fish cages.
- C. Background and rationales** for these two selections are presented in Section three of this Training Manual for Value Chain Development for Green Jobs.
- D. Both sectors meet ILO Green Jobs Value Chain Criteria** and both **provide ecosystem goods and services** that have cash markets as well as providing valuable non-monetized goods and services.

GLACIER target villages

Table 3.1. The implementation of the GLACIER project will cover 3 districts and five villages in Central Kalimantan. Details of the targeted area are presented below:

DISTRICT	SUB-DISTRICT	VILLAGE
Kota Palangkaraya	Sebangau (lowland)	❖ Bereng Bengkel
Pulang Pisau	Jabiren (lowland)	❖ Tumbang Nusa ❖ Pilang
Kapuas	Timpah (upland area)	❖ Aruk ❖ Lawang Kajang

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RESPONSE TO CLIMATE CHANGE

ILO GLACIER PROJECT



Locator map of GLACIER villages

Figure 3.1. Locator map of the GLACIER villages in Central Kalimantan.



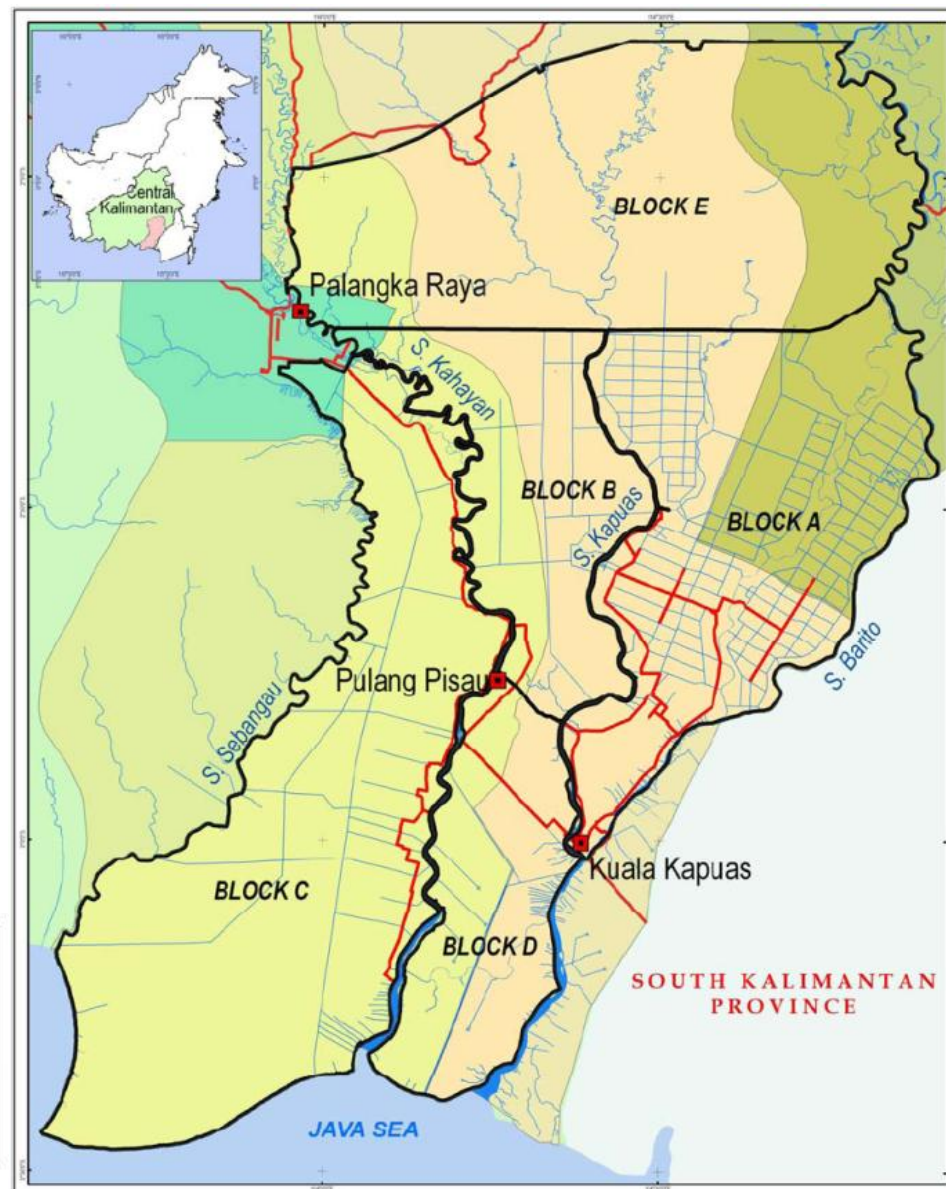
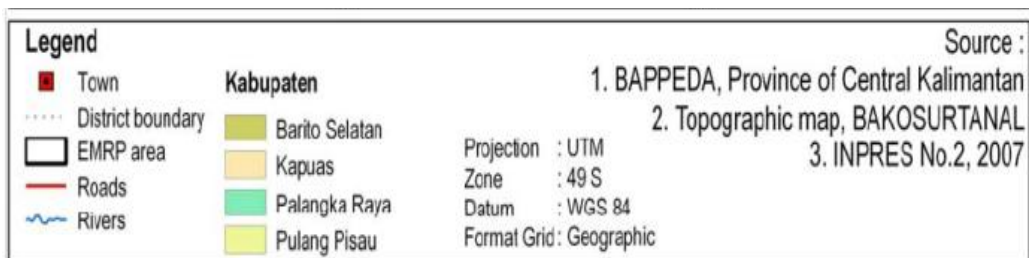
Mega Rice Project (MRP) of 1996

- ❑ **In 1996 the Indonesian government initiated the Mega Rice Project (MRP)**, which aimed to convert one million hectares of unproductive and sparsely populated peat swamp forest into rice paddies capable of producing about two million tons of rice per annum.
- ❑ Between 1996 and 1998, more than **4,000 km of drainage and irrigation channels** were dug and **deforestation occurred through forestry and intentional burning**.
- ❑ Peat forest drainage plus impacts of an El Nino southern oscillation (ENSO) led to drying of peat and hence to **massive uncontrolled fires during 1997**.
- ❑ It turned out that **rice did not grow well** in the acidic peat soils present in much of the MRP region.
- ❑ The MRP project therefore **failed and was abandoned** after causing considerable damage to the environment and disruption of socioeconomic patterns.

The EMRP setting

Figure 3.2. EMRP areas.

- ❑ In Central Kalimantan **floods and fires occur every year** during the rainy season and the dry season, respectively.
- ❑ Fires are especially frequent and severe during **El Nino Southern Oscillations (ENSO)**.
- ❑ **Fire breaks and other precautions** are essential to protect investments in rubber gardens and other agroforestry projects. **Fire breaks can double as fish ponds.**



Legacy of the Ex-Mega Rice Project (EMRP)

- ❑ Prior to the MRP peat forests of Central Kalimantan were utilised for swidden (slash-and-burn) cyclic agriculture by indigenous peoples but **most original ground cover remained**.
- ❑ Peat forests in Central Kalimantan are **home to rare species** (e.g. orangutan) **and slow-growing, valuable trees** (e.g. ironwood).
- ❑ Peat forest ecosystems include **diverse trees on peat layers up to 12 meters deep** or more.
- ❑ Peat is a **major reservoir of sequestered carbon** that generates major CO2 emissions when burned,
- ❑ Once destroyed, peat forests may take **several centuries to regenerate**.
- ❑ Canals, roads and railways built for legal forestry, opened the EMRP region **to illegal forestry that contributed to major losses** of forest cover such that almost all marketable trees have now been removed.
- ❑ Where the forests had often flooded up to 2m deep in the rainy season, now their **surface is dry at all times of the year**. Drying peat is **vulnerable to fires** which continue to break out on a massive scale.

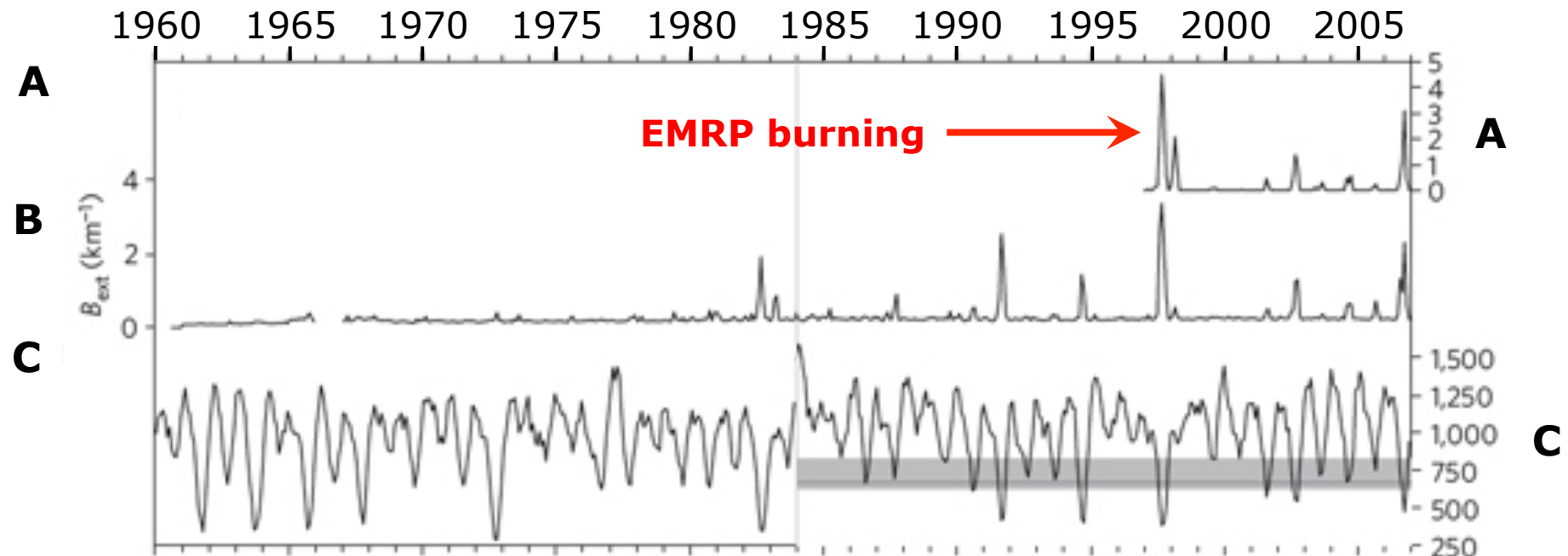
The flooding season and the burning season



- ❑ In Central Kalimantan **floods and fires occur every year** during the rainy season and the dry season, respectively.
- ❑ Fires are especially frequent and severe during **El Nino Southern Oscillations (ENSO)**. Fires associated with the 1997-1998 el Niño released more than 2 billion tons of CO₂ into the atmosphere and cost billions of dollars to the regional economy.
- ❑ **Fire breaks and other precautions** are essential to protect investments in rubber gardens and other agroforestry projects. **Fire breaks can double as fish ponds.**

Kalimantan burning over the years

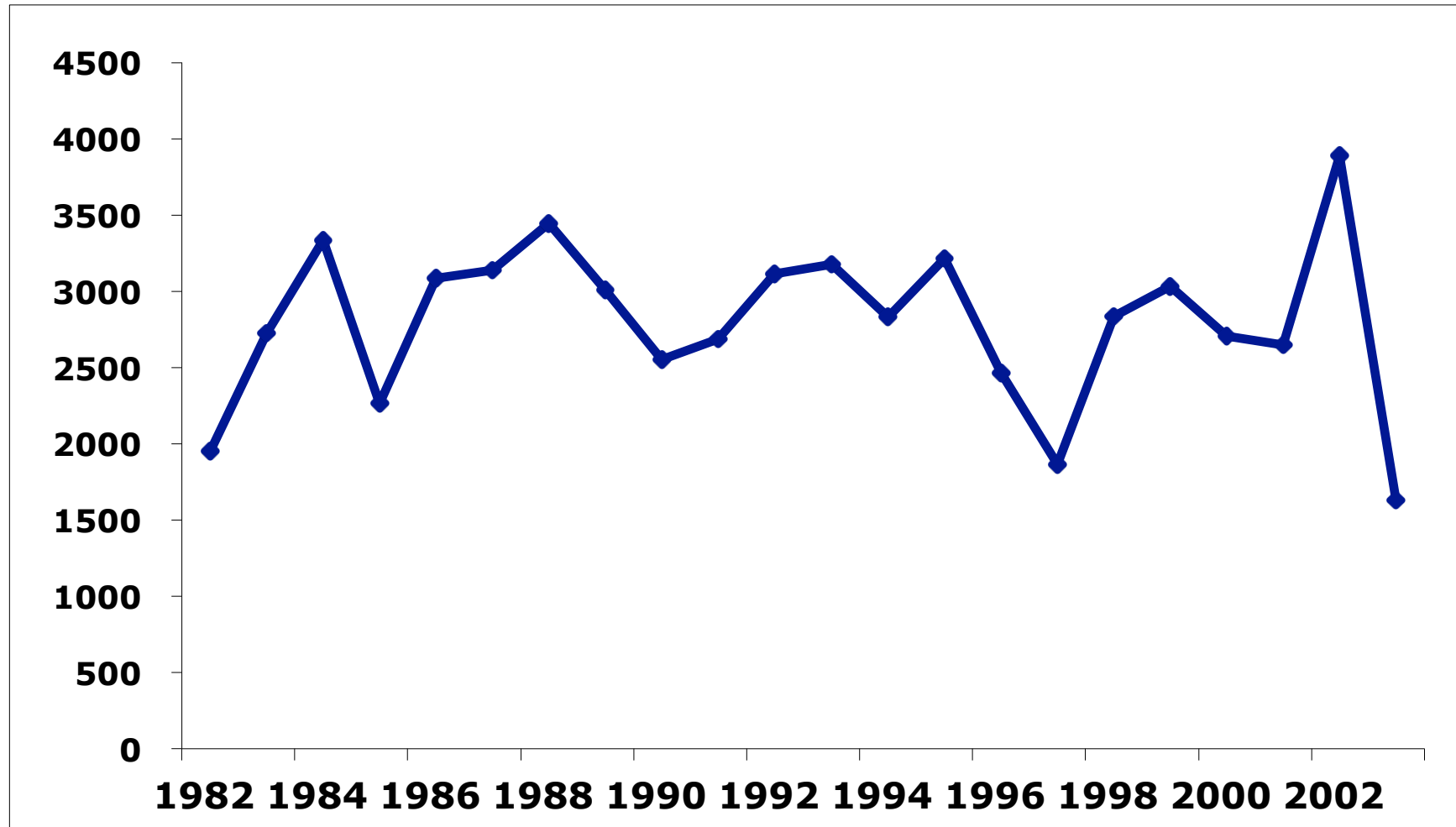
Figure 3.3. Kalimantan burning years are indicated in these graphs. A. GFED TPM = global fire data total particulate matter emission in teragrams carbon. B. $B_{\text{ext}} (\text{km}^{-1})$ is the attenuation coefficient of light per km. C. 4-month precipitation (mm).



After: Robert D. Field, Guido R. van der Werf and Samuel S. P. Shen (2009) *Human amplification of drought-induced biomass burning in Indonesia since 1960*. Nature Geoscience DOI: 10.1038/NGEO443.

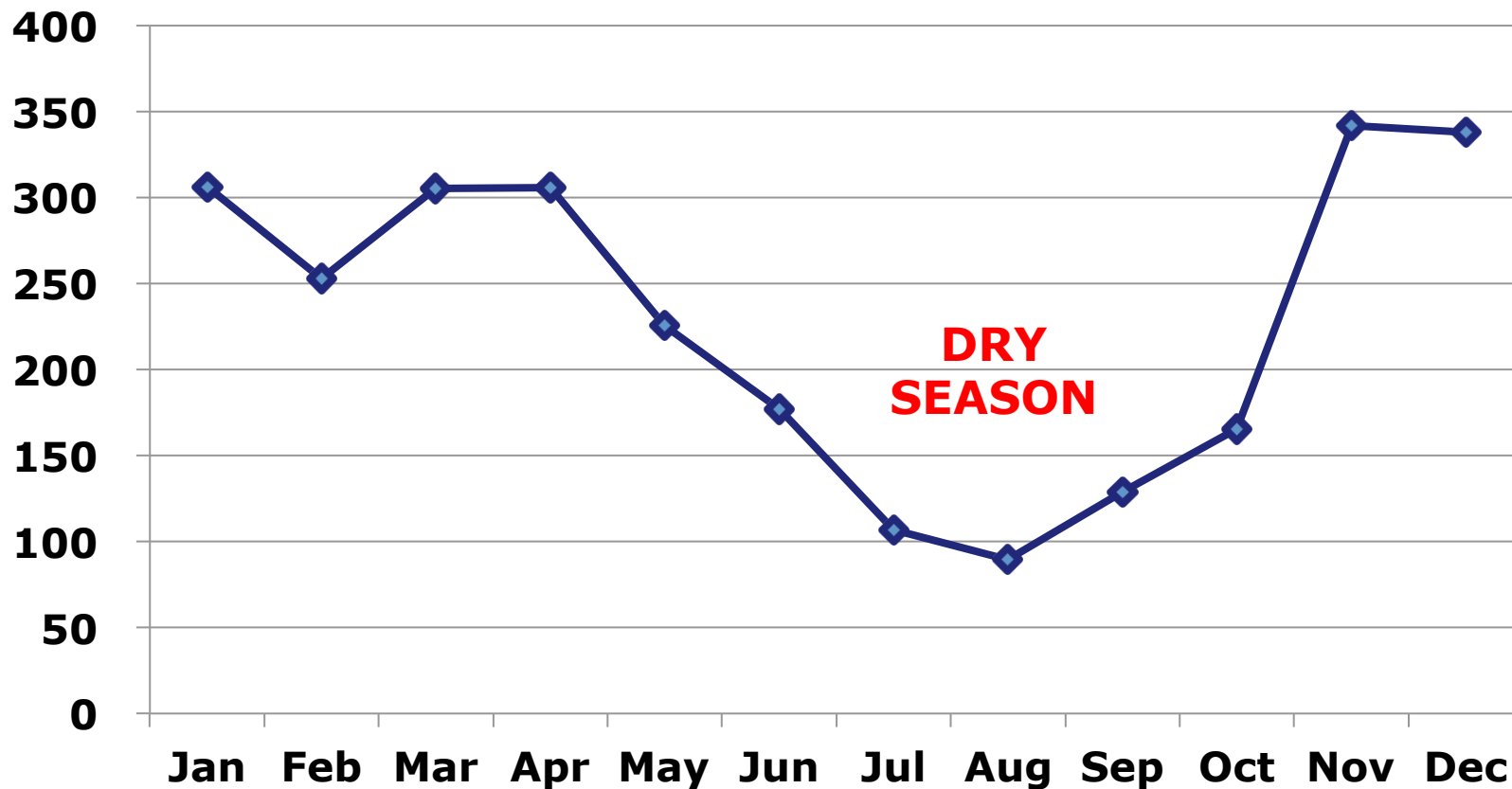
Average annual rainfall (Palangkaraya 1982-2006)

Figure 3.4. Annul Rainfall in Palangkaraya from 1982 to 2006
(precipitation in mm from Airport Meteorology Department).



Average monthly rainfall (Palangkaraya, 1982-2006)

Figure 3.5. Average monthly rainfall in Palangkaraya from 1982 to 2006 (precipitation in mm from Meteorology Department).



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SECTION 3.B.

VILLAGE JOBS SITUATION



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Overview of jobs in 5 GLACIER villages

- ❑ **Almost all villagers were self-employed** and/or were entrepreneurs and business managers **operating their own micro-small enterprises**.
- ❑ Villagers and village enterprises **live and work within satoyama landscapes** surrounding their villages.
- ❑ **Awareness of environmental degradation exists**, and is increasing.
- ❑ **GVC activities** include fishing, planting rubber and propagating rubber seedlings (Table 3.2).
- ❑ **Some villagers are still engaged in environmentally destructive activities** in order to earn a living.
- ❑ **Marketing of crops is still heavily dependent** on local buyers (e.g. latex and rattan).

Jobs in GLACIER target villages

Table 3.2. Present major occupations in the five GLACIER target villages (information from Lembaga Dayak Panarung (LDP) survey, December, 2012).

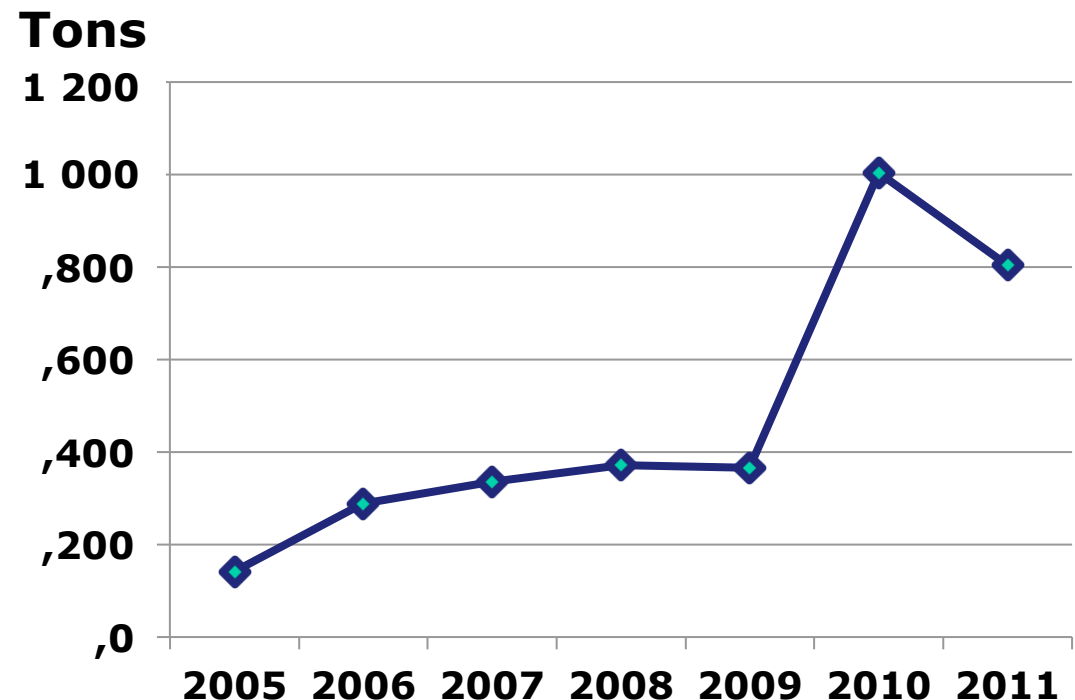
ARUK	TUMBANG NUSA	BERENG BENGHEL	PILANG	LAWANG KAJANG
Rubber farming	Rubber tapping	Rubber tapping	Rubber tapping	Rubber farming
Fishing	Fishing	Fishing	Fishing	Fishing
Gold Mining (traditional)	Nursery (rubber & other)	Trading	Government office work	Gold Mining (traditional)
Rattan gathering	Rattan Gathering	Rattan weaving	Rattan gathering	Rattan weaving
Gemur tree bark gathering	Purun gathering	Rice farming	Rice farming	Rice farming
Motorcycle Taxi (irregular)	Poultry raising	Poultry raising	Rattan weaving	Traditional bakery
Welding, construction	Trading	Purun gathering	Rumbia roof making	
Make moldings	Carpentry	Baking	Office work	

Rubber production summary

REGENCY	HECTARES	TONS
Kapuas	30 262	16 270
Palangkaraya	4 391	803
Pulang Pisau	29 234	15 506
Total	63 887	32 579

Table 3.3. 2011 hectares reported as planted and tons of production from the three regencies where the GLACIER villages are located. **Average production about 0.51 tons of rubber per hectare.**

Figure 3.6. Rubber production trend from Palangkaraya showing heightened activity in recent years. Trend data from Kapuas were unavailable. Pulang Pisau was steady at an average of about 15 589 T from 2008-2011.



Source: Indonesia Central Statistics office (BPS)

Rubber forest in the GLACIER project region

- ❑ **Rubber forests are the basis for active cash-crop value chains** in all five villages of the GLACIER project.
- ❑ In Indonesia **smallholders dominate production** (85% market share).
- ❑ **Rubber can be intercropped** on short rotation during the years before tapping as well as being within longer-term agroforestry systems.
- ❑ Rubber cultivation integrated with associated crops can **increase household income and provide resilience** in the face of volatile markets.
- ❑ Rubber grown in an agroforestry system **provides smallholders with independence** from external economic and political influences.
- ❑ **This independence has been a key to their historical success.**

After Fox et al, 2011

Ecosystem services from rubber gardens

Table 3.4 Ecosystem services from rubber gardens

PROVISIONING	REGULATING	CULTURAL
Goods and services with probable cash markets:		
Latex (rubber)	CO ² sequestered	Jobs
Rubber wood		
Rubber tree oil		
AC* food, fodder		
AC* wood, extracts		
Goods and services not yet monetised:		
Fresh water	O ² released	Educational
Wood & oil as fuel	Climate Regulation	Spiritual
Seedbed materials	Flood Regulation	Aesthetic
Genetic resources	Disease Regulation	Recreational
	Water Purification	
* "AC" stands for "associated crops"		

Rubber gardens and ILO GJVC Criteria

1. **Environmental impact (global):** “green” rubber timber offsets forest logging; carbon sequestered.
2. **Environmental impact (local):** Many local ecosystem services with positive impacts (Table 3.1).
3. **Decent Work promotion potential:** Established source of jobs with many options for development and improvement.
4. **Livelihood & economic growth:** Established core value chain with many options for development and improvement.
5. **Technological feasibility:** Well established technological development and support capacity within Indonesia.
6. **Organisational feasibility:** Several organisations already in place to support development.



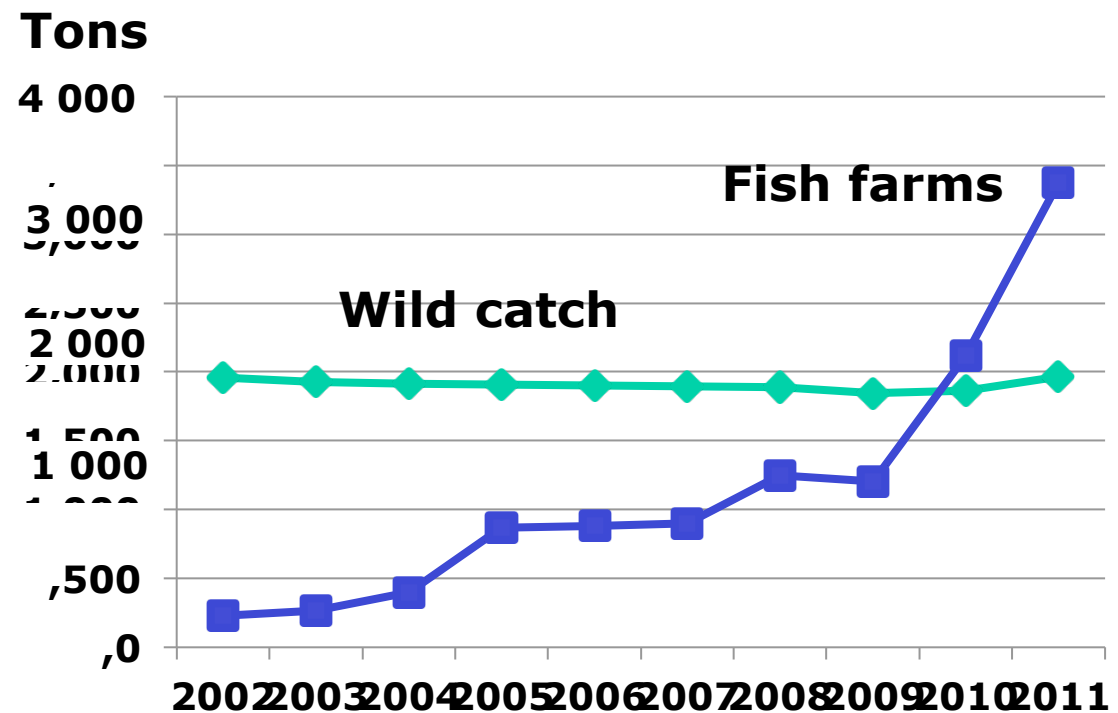
Fisheries production summary

REGENCY	TONS	M IDR
Kapuas	10 563	255 031
Palangkaraya	5 338	N/A
Pulang Pisau	6 487	56 548
Total	22 388	N/A

Table 3.5. 2011 tons of freshwater fish production from the three regencies where the GLACIER villages are located. Price data were inconsistent. Average value appeared to be about 48 000 IDR/kg.

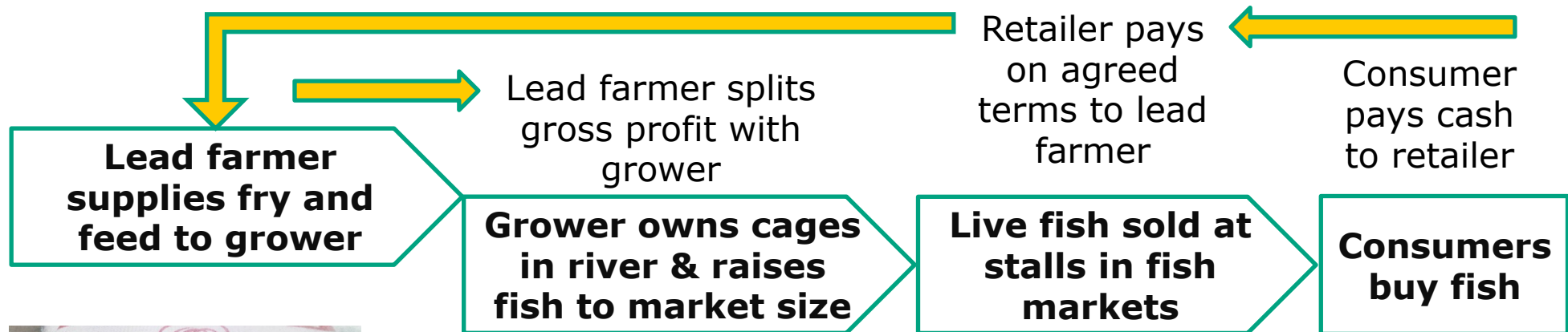
Figure 3.7. Fisheries production trend from Palangkaraya showing stable wild harvest and increased farm production in recent years. Trend data from Kapuas and Pulang Pisau were unavailable.

Source: Indonesia Central Statistics office (BPS)



Fish cage model in Palangkaraya

Figure 3.8. Example of a widespread model for fish cages (karamba) operation in the region of Palangkaraya city.



Fish species reported as caught

Table 3.6. Types of freshwater fish reported as produced from Pulang Pisau Regency during 2011. Several of these species may be candidates for pond and/or cage culture.

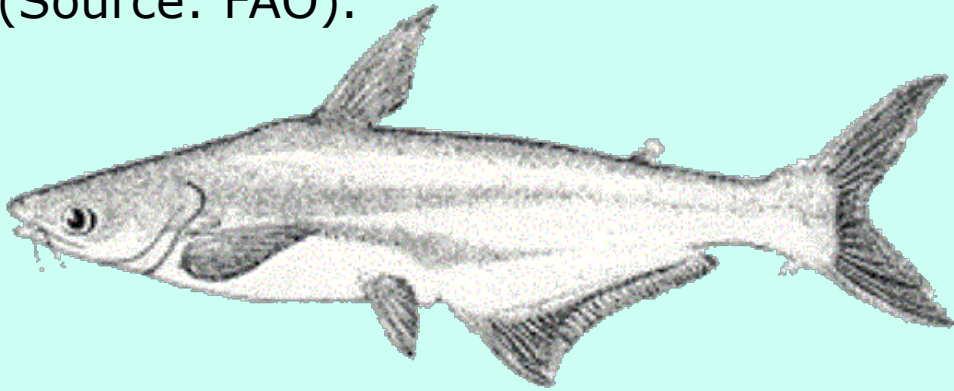
Local name	Tons	Genus	Species	English name
Lais	1 275	<i>Belodonichthys</i>	<i>dinema</i>	sheatfish
Gabus	651	<i>Channa</i>	<i>striata</i>	striped snakehead
Jelawat	645	<i>Leptobarbus</i>	<i>hoevenii</i>	Sultan fish, Mad Barb
Udang Galah	629	<i>Macrobrachium</i>	<i>rosenbergii</i>	Makaysian prawn
Seluang	605	<i>Rasbora</i>	<i>spp.</i>	rasbora
Patin	493	<i>Pangasius</i>	<i>hypophthalmus</i>	shark catfish
Tambakan	489	<i>Helostoma</i>	<i>temminckii</i>	Kissing gourami
Sepat Rawa	472	<i>Trichogaster</i>	<i>trichopterus</i>	labyrinth fish
Baung	427	<i>Hemibagrus</i>	<i>spp.</i>	bagrid catfish
Toman	340	<i>Channa</i>	<i>micropeltes</i>	giant snakehead
Sepat Siam	311	<i>Trichogaster</i>	<i>pectoralis</i>	labyrinth fish
Betok	213	<i>Anabas</i>	<i>testudineus</i>	climbing perch
Lele	116	<i>Clarias</i>	<i>scopoli</i>	catfish
Total	6 666			

Source: Indonesia Central Statistics office (BPS)

Some fish with known aquaculture technology

(all common in local fish markets)

Figure 3.9. Images of commonly farmed tropical freshwater fish species
(Source: FAO).



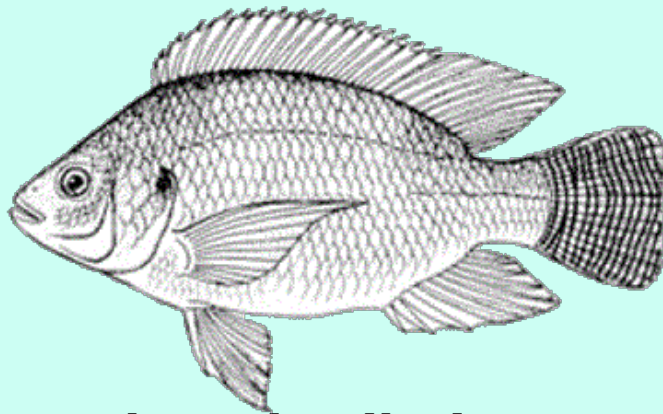
Pangasius hypophthalmus

Patin [BI]; shark catfish [EN]



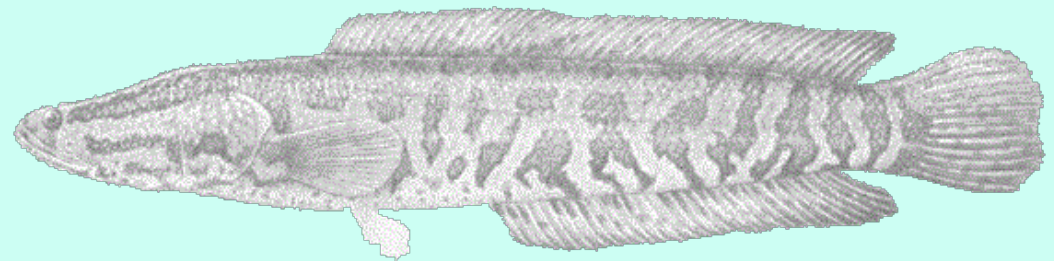
Cyprinus carpio

Ikan mas [BI]; carp [EN]



Oreochromis niloticus

Ikan nila [BI]; Nile tilapia [EN]



Channa striata

Gabus [BI]; striped snakehead [EN]

Some more exotic fish to grow

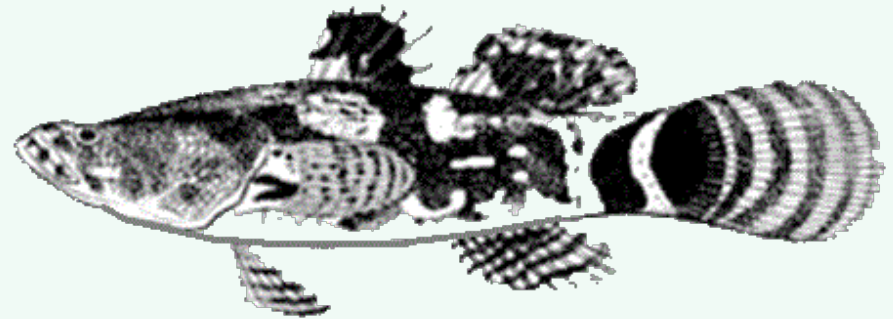
(all found in local fish markets)

Figure 3.10. Images of exotic farmed tropical freshwater fish species.



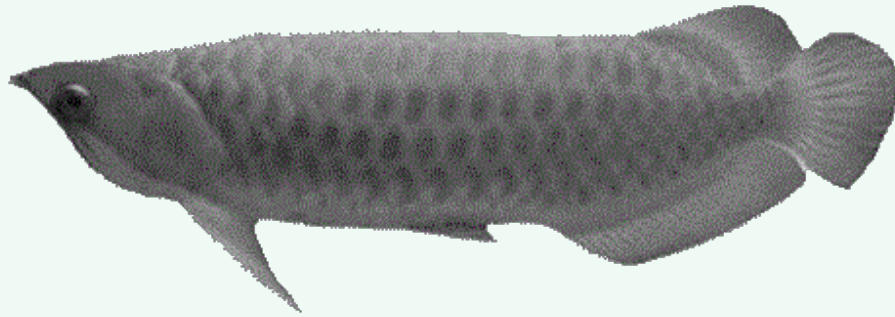
Leptobarbus hoevenii

Jelawat [BI]; Hoeve's carp [EN]



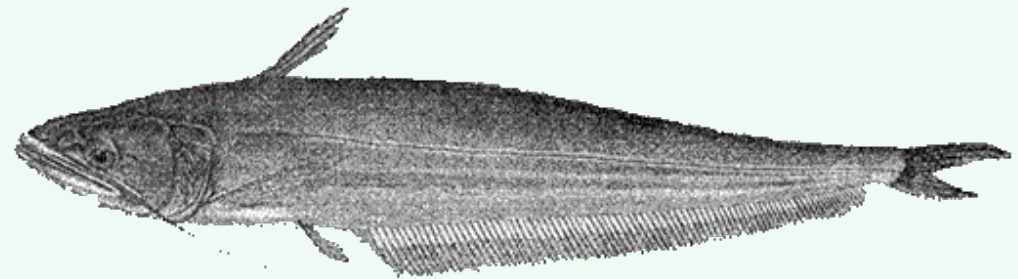
Oxyeleotris marmorata

Betutu, bakut [BI]; marble goby [EN]



Osteoglossum bicirrhosum

Arwana, nirwan, hias [BI]; arowana [EN]



Wallago attu

Tampah, tapah [BI]; wallago [EN]

Fish production in the GLACIER project region

- ❑ **Capture fisheries are active in cash-crop value chains** in all five villages of the GLACIER project.
- ❑ **Aquaculture of fish was not occurring** at any of the five GLACIER villages although at least one fish pond was seen under construction (at Aruk).
- ❑ **Capture fisheries appeared to be flat or declining** in the project areas according to government statistics but **production from fish ponds has grown rapidly** in Palangkaraya since 2008.
- ❑ **Fish markets in Palangkaraya must import fish** from Banjarmasin because local production cannot meet demand (from interviews with fish sellers).
- ❑ **Blocked canals can be used as fish ponds** and fish ponds can have an essential role as **fire breaks** to protect rubber plantings.

Ecosystem services from fish ponds and cages

Table 3.7 Ecosystem services from fish ponds and fish cages

PROVISIONING	REGULATING	CULTURAL
Goods and services with probable cash markets:		
Live fish		Jobs
Processed fish		
Goods and services not yet monetised:		
Fresh water	Fire protection	Educational
Fertilizer (e.g. manure)	Climate Regulation	Spiritual
Fodder (e.g. duckweed)	Flood Regulation	Aesthetic
	Disease Regulation	Recreational
	Water Purification	

Fish ponds/cages and ILO GJVC Criteria

1. **Environmental impact (global):** Serve as fire breaks to protect terrestrial habitats where carbon is sequestered.
2. **Environmental impact (local):** Local ecosystem services with positive impacts (Table 3.7).
3. **Decent Work promotion potential:** Established source of jobs with many options for development and improvement.
4. **Livelihood & economic growth:** Established core value chain with options for development and improvement.
5. **Technological feasibility:** Well established technological development and support capacity within Indonesia.
6. **Organisational feasibility:** Several organisations already in place to support development.



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SECTION 3.C.

VILLAGE SATOYAMA MOSAICS – A BASIS FOR SECTOR AND VALUE CHAIN SELECTION



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Rubber gardens and fish ponds in satoyama landscapes

Figure 3.11. Major elements of GLACIER region satoyama landscape.



The rubber garden

Includes rubber trees as the main cash crop source plus annual and perennial integrated inter-crops.



Fish ponds

Provide fish for cash and subsistence and **serve a critical role as fire breaks**



The home garden

Includes nursery and processing activities as well as providing the home base for farmers.



Associated crops

Provide additional cash crops plus valuable goods and services.



Livestock

Provide additional cash plus valuable goods and services.

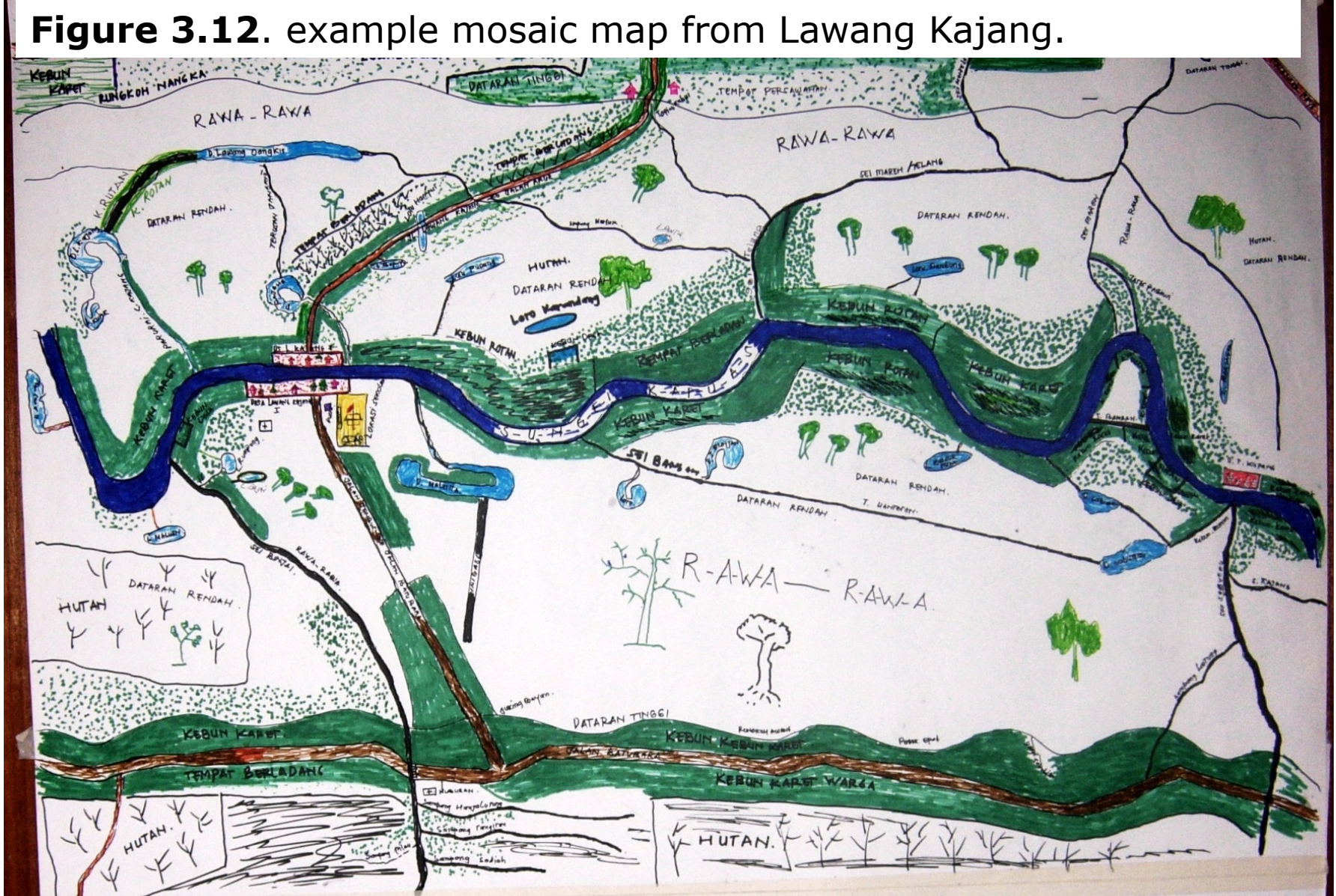
Using satoyama landscape mosaic maps

- ❑ **All five GLACIER villages have prepared land-use mosaics** such as this example from Lawang Kajang (Fig 3.12).
- ❑ These indicate villagers' accounts of **present land use**.
- ❑ Mosaic maps can also be prepared to indicate intended **future land use**.
- ❑ **Community landscape mapping with village participation** can be a very useful means for developing village consensus for green value chain development .



Example satoyama landscape mosaic map

Figure 3.12. example mosaic map from Lawang Kajang.



Example information from GLACIER villages

Preliminary survey work with GLACIER villages obtained general information as illustrated below. Execution of GJVC development requires expansion and quantification of such information.

VILLAGE	OVERVIEW
Bereng Bengkel	Rubber ~125 ha (100 ha over-mature trees; 25 ha productive). Typical farm ~ 1-2 ha. Produce ~20 kg/ha. Two collectors. Prices low and unstable. Fish capture includes baung, lais, tampah, prawns & bakut. Catches declining. Destructive fishing methods reported.
Tumbang Nusa	Rubber production not great but seedlings produced. Capture fishing includes use of fish traps. Well known as a fish source including species such as prawns and arowana with export markets..
Pilang	About 60% of population (350 people) farm on 600 ha (productive) and hope to plant 2 000 ha more. Local seedlings; low productivity. Capture fishing in surrounding lakes & rivers.
Aruk	About 132 ha planted & ~ 264 ha planned with ~ 132 people involved. Capture fishing in surrounding lakes & rivers. Fish pond activity starting.
Lawang Kajang	About 280 people engaged in rubber. Area and condition to be determined. Some land certification issues. Low productivity from local seedlings. Capture fishing in surrounding lakes & rivers.

Gender issues in GLACIER villages

Issues of gender parity are of significance to ILO Decent Work and green value chain development. The **VILLAGE MOSAIC SURVEY FORM** attached to this manual require that levels of constraints to women's full participation in training and economic activities should address the following issues:

Low literacy and basic education
Low gender sensitivity in training institutions
Lack of technical and vocational skills
Child bearing/rearing responsibilities
Lack of child care facilities at training sites
Household chores leave little time for training and economic activities
Work burden at home not shared by spouses
Assisting husband in family's main source of income
Traditional economic activities for women not profitable
Women are discriminated against in wage employment
Lower pay for work of equal value
Lack of child care facilities in the workplace
Women do not own land
Lack confidence to become entrepreneurs
Families, spouses and in-laws unwilling to see women leave their traditional role as homemakers

Other sectors for future consideration

The terms of reference for this manual explicitly required that one (or at most two) value chains be targeted early in the project. There was no time for the deliberate, staged procedures advocated, for example, in Herr (2007), Herr and Muzira (2009) and ILO (2009, 2011, 2012a, 2012b). During GLACIER project survey work, however, additional VC candidates for consideration of future programs will be identified. Some likely contenders (based on initial surveys) may include the following:

- **Rattan gardens** management and cultivation.
- **Smallholder oil palm** plantations.
- **Ducks, poultry cattle and other livestock** that fit into integrated satoyama landscapes.
- **Agroforestry** for fruit, timber, spices and bioactive substances (e.g. from gemur tree bark).
- **Various fruit and vegetables** that can be inter-cropped in rubber and agroforestry projects.
- **Light manufacturing** of value added products from local crops including purun reeds and rattan.
- **Hospitality services** such as restaurant and sport fishing in connection with fish ponds.

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Value Chain Development for Green Jobs

SECTION 4. VALUE CHAIN RESEARCH



**Understanding relationships of green value chains
to the REDD+ framework within satoyama
landscapes**



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Section 4 objectives

Section 4 will familiarise GJVC market system participants with GJVC diagnostics and information that will be utilised during iterative VC processes involving villagers who live and work within Central Kalimantan satoyama landscapes and other market players (e.g. collectors, traders, buyers, end users). Subsection objectives include:

4.A Value chains in market systems

Workshop participants will learn of how green value chains fit within market systems that include various stakeholders who are involved in support, governance and value chain functions.

4.B. Some Value chain research tools

They will understand and use value chain knowledge, information, tools and solutions (KITS) in researching how value chains work.

4.C Rubber Value chain research

Participants will engage in development of value chain diagrams and charts applicable to present and possible future situations for rubber production in GLACIER villages.

4.D Fish Value chain research

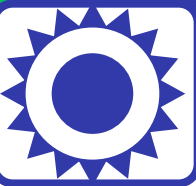
Participants will engage in development of value chain diagrams and charts applicable to present and possible future situations for fish production in GLACIER villages.



Section 4 intended outcomes

Intended outcomes from attendance at Section 4 sessions include:

1. Workshop participants will learn of **how green value chains fit within market systems** that include various stakeholders who are involved in support, governance and value chain functions.
2. Participants will understand of the **importance of knowledge, information, tools and solutions (KITS)** in actions and functions that make value chains work.
3. Participants will participate in **development of value chain diagrams and charts applicable to the present situation for rubber and fish production** in GLACIER villages. They will also develop GJVC scenarios that may develop with successful execution of feasible interventions.
4. **Participants will develop possible future GJVC scenarios** that may develop with successful execution of feasible interventions.
5. **MOST IMPORTANT: LINKS WILL FORM BETWEEN VILLAGE MSME AND SUPPORT PROVIDERS AND SUSTAINED COLLABORATION WILL RESULT.**



Section 4 validations and actions

Validation of workshop participants' comprehension of Section 4 materials may include:

- 1. Field trips** to the five GLACIER villages and conduct of interviews and focus groups will result in participants' **development of value chain diagrams and charts** applicable to specific MSME engaged rubber and fish production (present and future);
- 2. Feedback from participants** concerning interventions for the targeted GLACIER value chains and additional chains worthy of future consideration;
- 3. Suggestions from participants** as to how this section of the GLACIER GJVC manual – as a “living document” – may be improved.

Attached forms useful for value chain research and analysis:

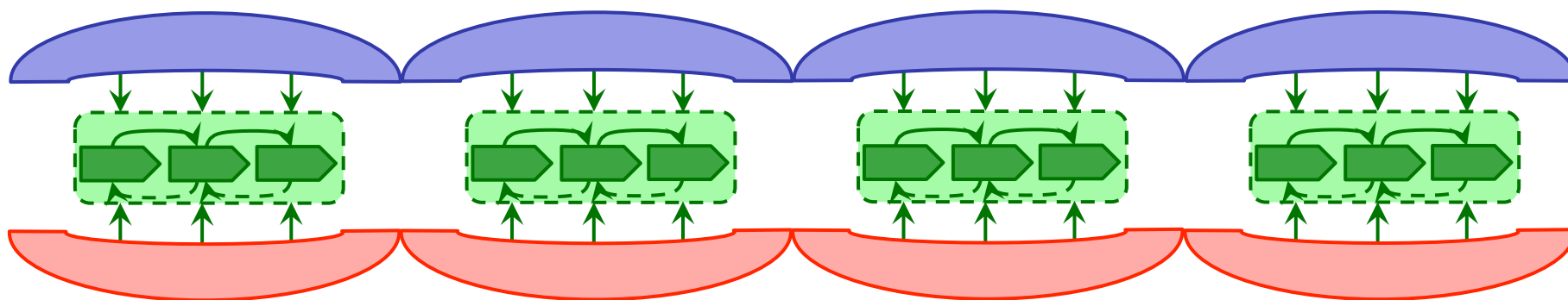
BDS_PROVIDERS, COLLECTOR_INTERVIEW, GOVERNANCE_INSTITUTIONS
PROCESSOR_MARKET, PRODUCER_FOCUS_GROUP,
PRODUCER_INTERVIEW, PRODUCER_MARKET, SUPPORT_PROVIDERS,
TRADER_MARKET, TRAINING_NEEDS and VC_RESEARCH_FORMS

Training Manual

Value Chain Development for Green Jobs

SECTION 4.A.

VALUE CHAINS IN MARKET SYSTEMS



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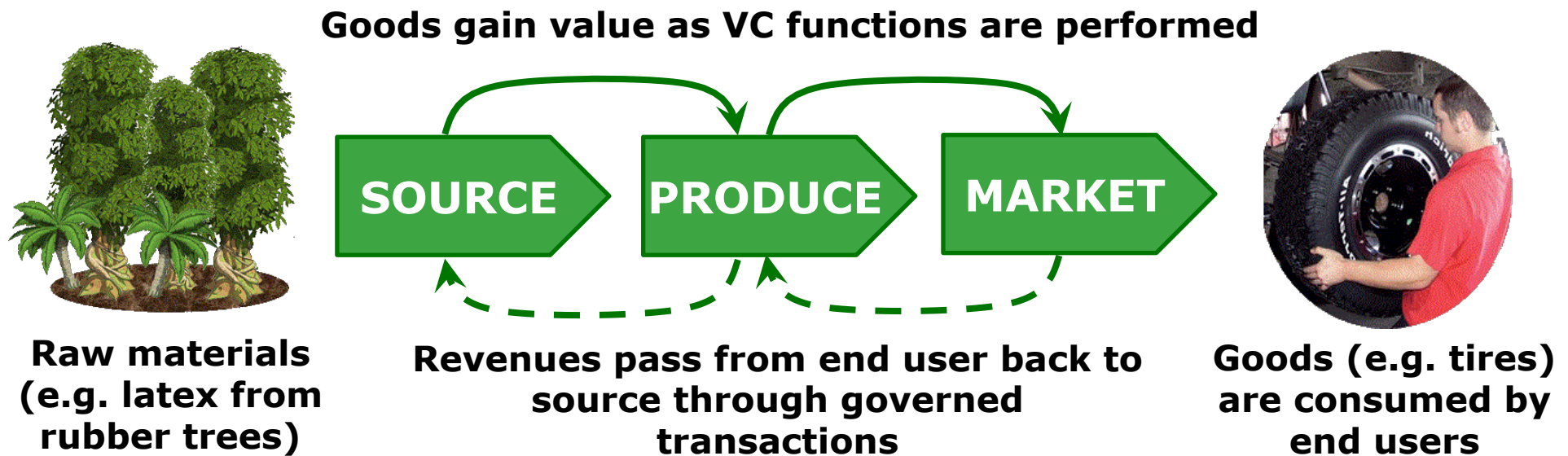


'Green value chain' defined

The term 'Value Chain' refers to series of processes that add value to products in a series of functions and transactions. VC functions combine the target product with other resources (e.g. tools, manpower, knowledge, skills and other raw materials). As the product passes through several VC stages the value of products increases until they are sold to end users (consumers) who pay for value received (Fig 4.1).

A value chain is 'green' when it **reduces the environmental impact** of existing value chains, promotes **sustainable economic activities** and **facilitates a 'just transition'** to an economy that delivers (1) viable livelihood opportunities; (2) improved environments; and (3) Decent Work outcomes.

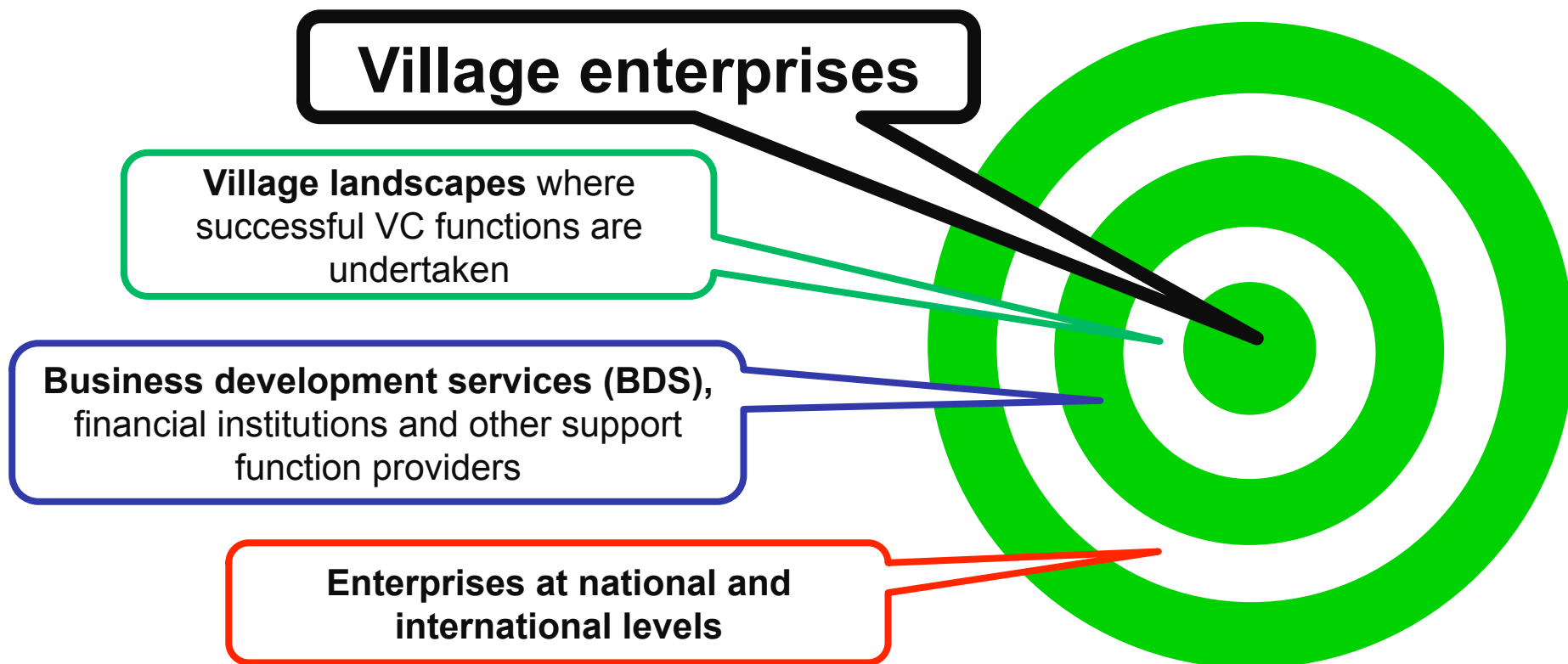
Figure 4.1. Example of a basic value chain structure.



Green value chain development targets

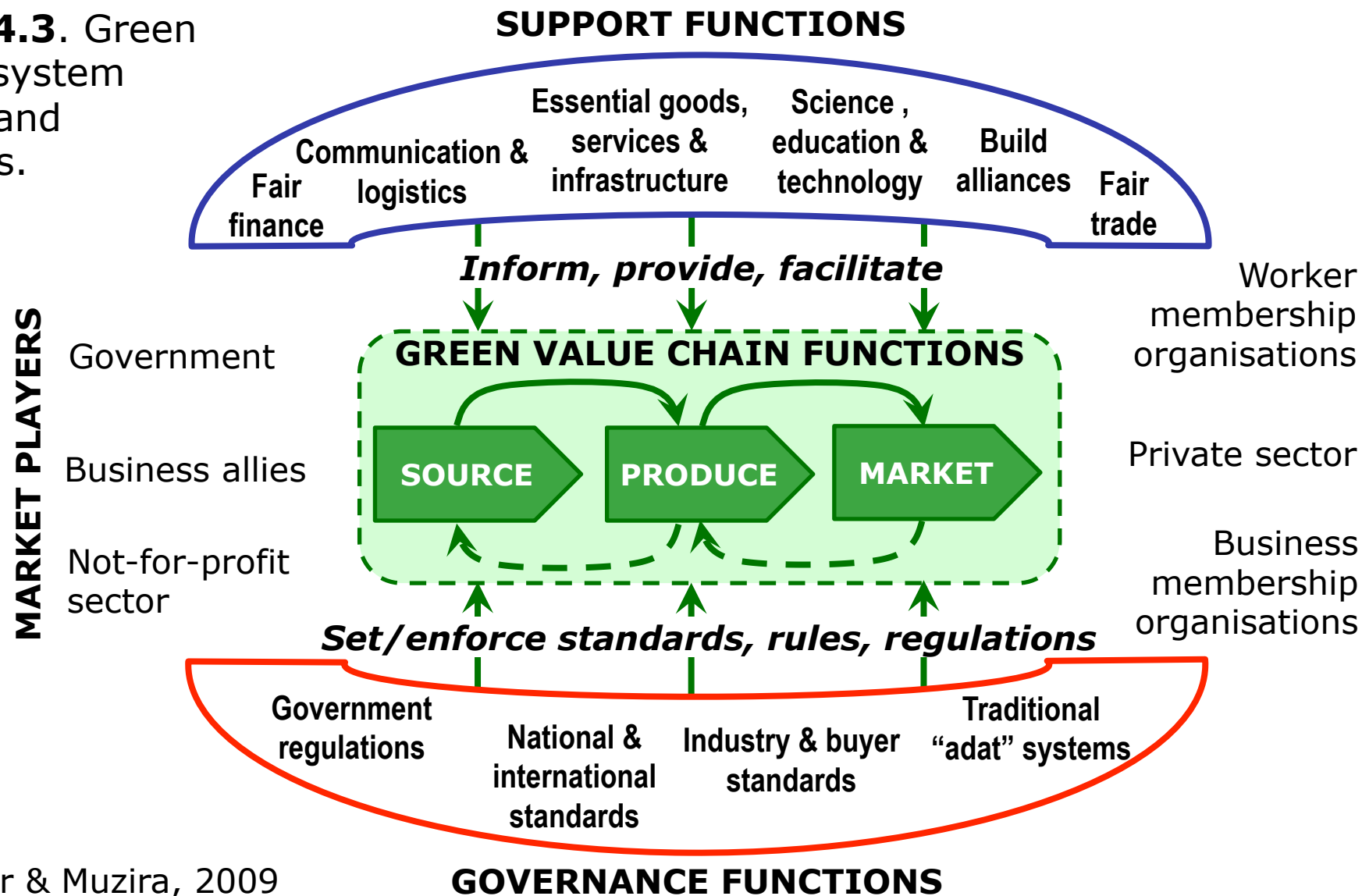
The primary target of GLACIER GJVC development is to improve the integration and position of GLACIER village enterprises into particular value chains (e.g. based on rubber and fish). **Impacts on secondary targets** will result from the GLACIER project's **green market system approach**. Linking village enterprises to national and global economies benefits other market system participants (see Fig. 4.2).

Figure 4.2. Green value chain primary and secondary target objectives.



Green value chains within market systems

Figure 4.3. Green market system players and functions.

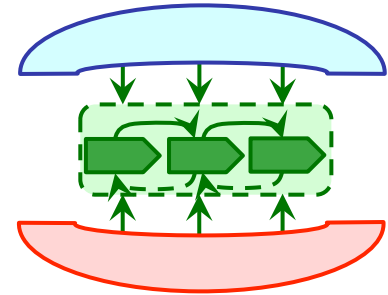


After Herr & Muzira, 2009

Elements of green market systems

Market system

- Multi-player, multi-function arrangements
- Involve diverse stakeholders
- Heuristic model for value chains within market and services frameworks.



Core function (green value chain)

- The central set of exchanges between providers (supply side) and consumers (demand side) of goods and services at the heart of a market system.
- The medium of exchange can be financial or non-financial (e.g. through accountability mechanisms).

Support functions

- Inform, provide and facilitate in support of essential value chain functions.

Governance functions

- Formal laws, regulations and standards
- Traditional or informal values, relationships and norms
- Provide frameworks for orderly market functions.

After Herr & Muzira, 2009

Support functions for GJVC



Providing access to effective, affordable **communication & logistics**



Provision of affordable **fair finance**



Access to affordable, high quality **education, science & technology**



Access to **fair trade** in local & global markets



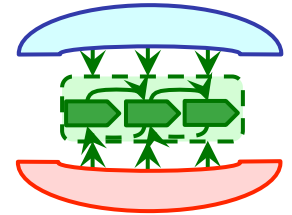
Provision of **essential** goods, services & infrastructure



Building strategic and tactical **business alliances**

Putting services into the core of market systems

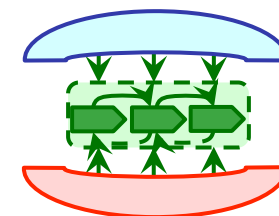
- ❑ **Herr & Muzira (2009)** pointed out that the **key determinants** of MSME improved productivity and competitiveness lie in **improved knowledge, information and skills**.
- ❑ **Services are a critical means** through which industry-specific information and knowledge is generated and transferred. However, the mechanisms by which these services are delivered and the market players who deliver them vary.
- ❑ **One reason for poor performance of MSME** at the lower end of value chains is the lack of access to information on available business development services (BDS). Since MSMEs do not make use of such services, their **performance is poor**.
- ❑ **GJVC development therefore requires compilation and publication** of information on relevant BDS providers and input suppliers, their services and contact details.
- ❑ **Some such information is provided in Section 5 of this training manual**.



“Transactional” and “Embedded” services

Transactional services:

- ❑ **Provided on a “stand-alone” basis** by specialized service providers.
- ❑ **Often bundled with other services or products** – for example when assistance in adopting new technologies is combined with design and training services.
- ❑ **Service is the product** being traded from provider to user usually on a fee-for-service or “tolling” basis.



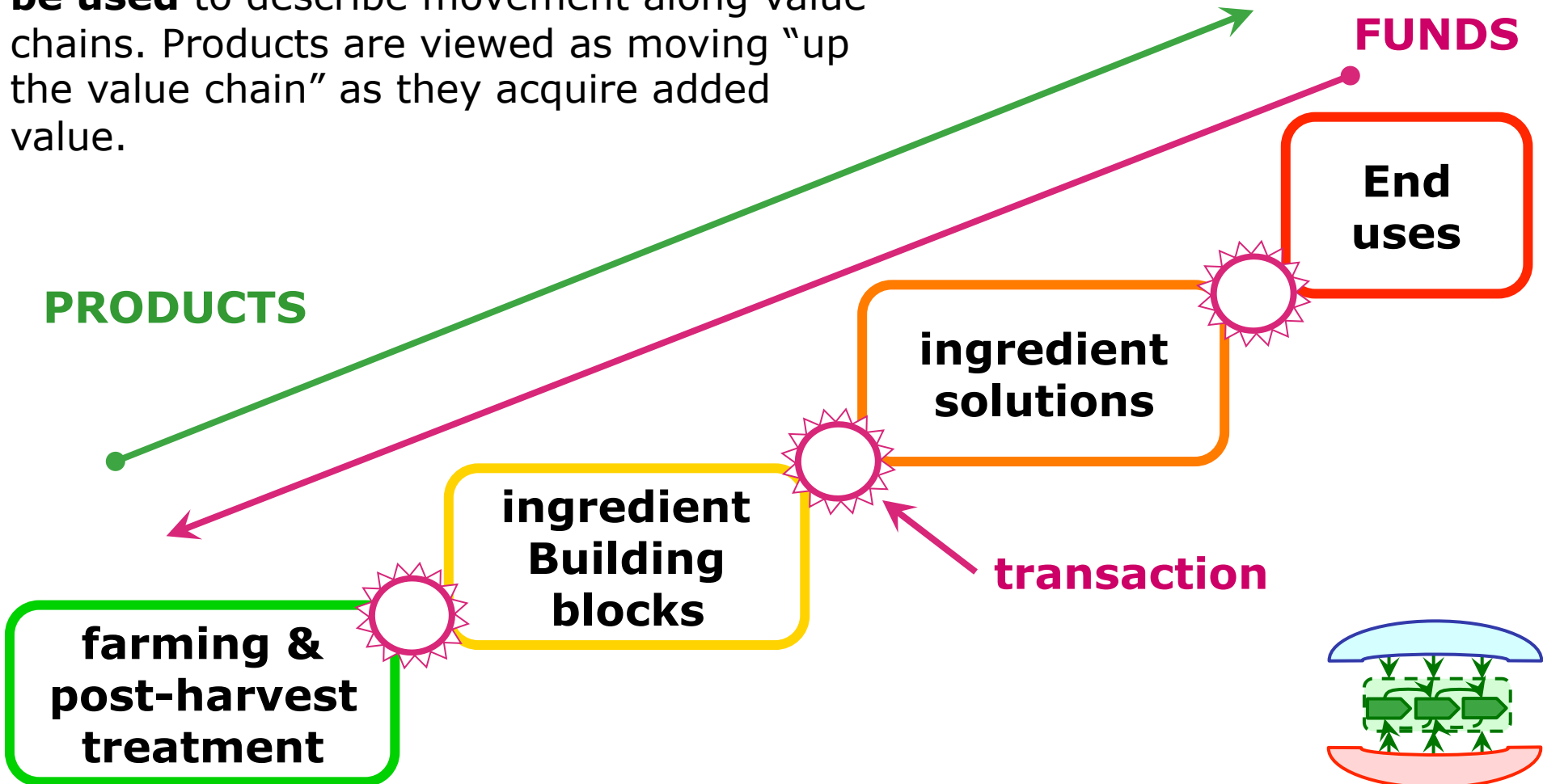
Embedded services:

- ❑ **Bundled with commercial transactions** between a buyer and seller - part of core transactions within value chains.
- ❑ **Lead firms often drivers** behind embedded services, thereby ensuring that VC operations are cost-efficient and effective and competitiveness of VC guaranteed.
- ❑ Especially characteristic for business models such as **franchising, sub-contracting, contract farming and licensing**.

Fromr Herr & Muzira, 2009

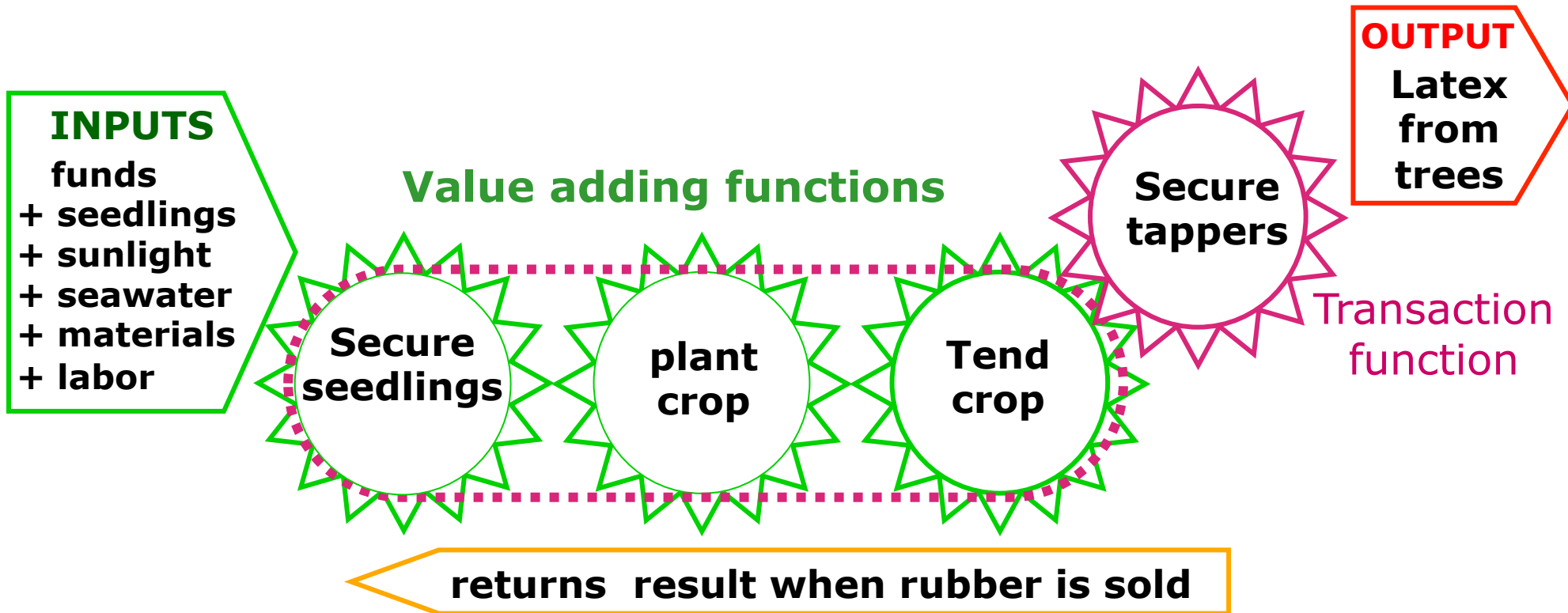
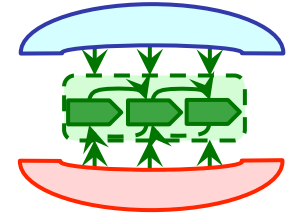
Static value chain model

Figure 4.4. A “staircase” analogy can be used to describe movement along value chains. Products are viewed as moving “up the value chain” as they acquire added value.



Dynamic value chain model

Figure 4.5. A more dynamic analogy is to view value chains as “gear chains” that connect value-adding processes through a drive chain (like the sprockets and chain on a bicycle). Value is added as outputs from lower-value links become inputs for the next links up the chain. The example below is the first link in a rubber value chain.

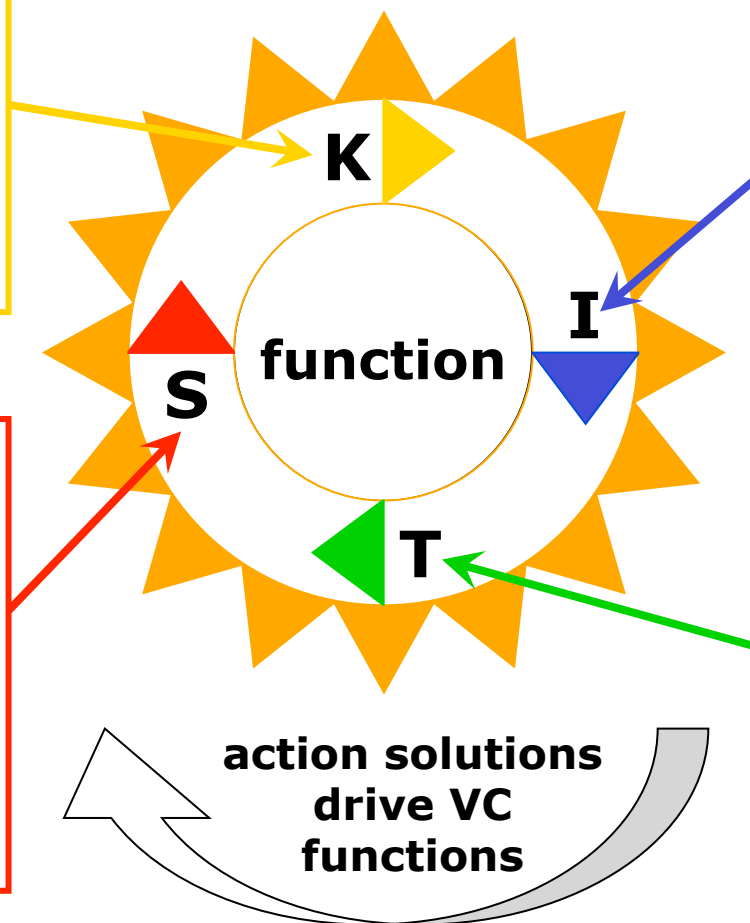


"KITS" as drivers of value chain functions

"Knowledge" is a product of education and intellect. Knowledge enables facts to be utilized, tools to be used and solutions to be implemented.

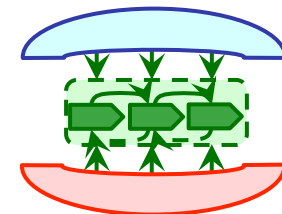
"Solutions" are the integrated combinations of knowledge, information and tools that result in **"actions"**.

Figure 4.6. Knowledge, information, tools & solutions (KITS)



"Information" facts that enable effective use of knowledge in developing or obtaining tools and formulating solutions.

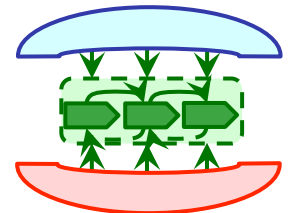
"Tools" implements or "effectors" used to implement solutions... including money.



Farmer “KITS” in green value chains

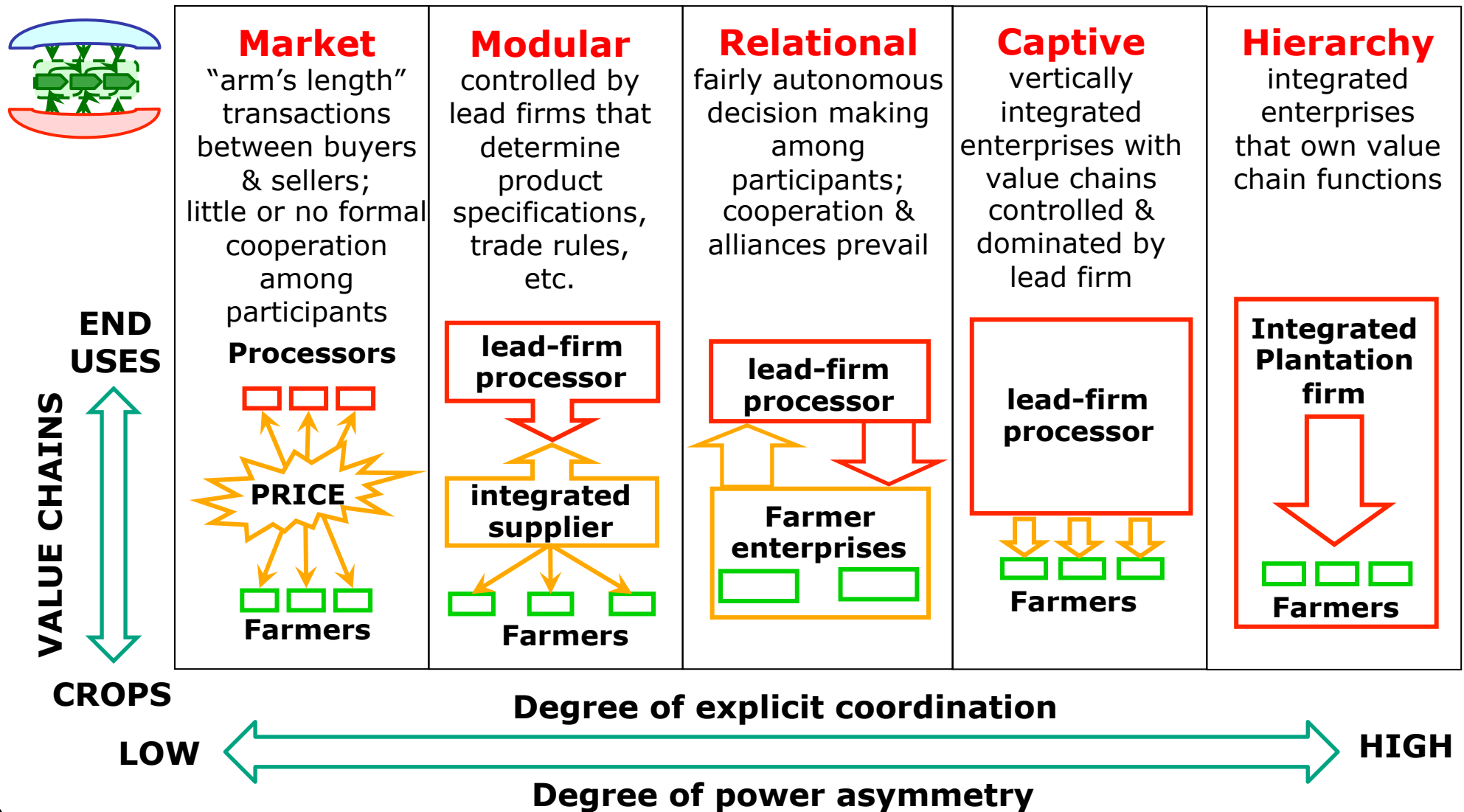
knowledge + information + tools + solutions (KITS) = actions
several coordinated actions = a function

- ❑ **Farmer Knowledge** includes items such as agronomy methods, accumulated experience in dealing with weather, experience with different planting sites and relationships with other value chain stakeholders.
- ❑ **Farmer information** includes current crop and product prices, market preferences, weather forecasts and shipping schedules.
- ❑ **Farmer tools** include boats and vehicles; implements; enclosures; land and ponds; working capital and other items necessary for farm operation
- ❑ **Farmer solutions** use knowledge, information and tools to grow crops, process crops and add value.



Governance models for value chains

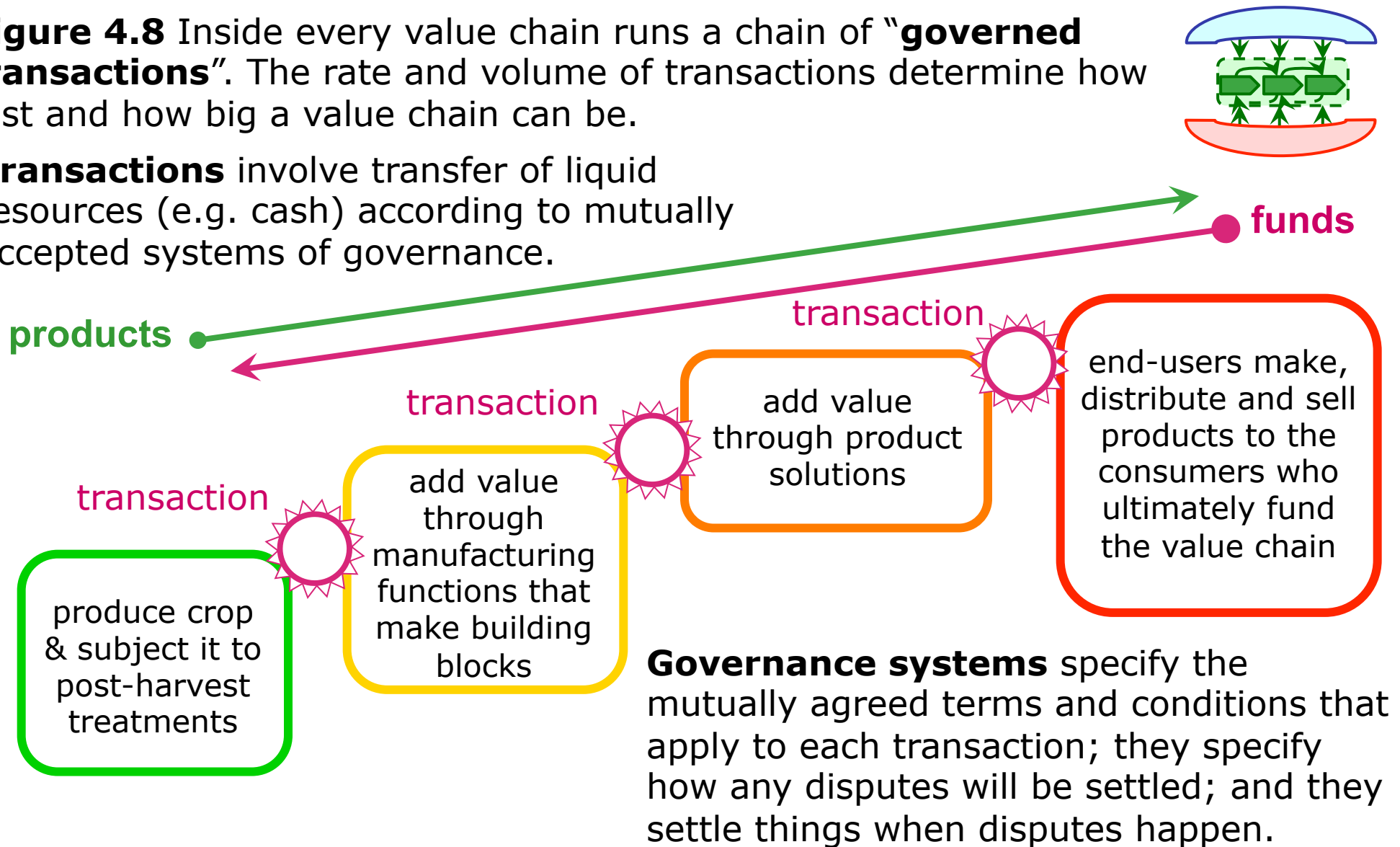
Figure 4.7. Governance models after Gereffi, Humphrey & Sturgeon, 2005 .



Transaction governance functions in VC

Figure 4.8 Inside every value chain runs a chain of “**governed transactions**”. The rate and volume of transactions determine how fast and how big a value chain can be.

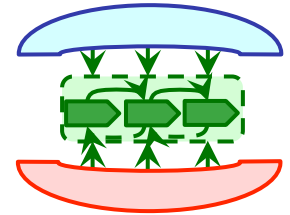
Transactions involve transfer of liquid resources (e.g. cash) according to mutually accepted systems of governance.



MSME in VC governance systems (1)

Market Governance:

- ❑ **There are transactions** but little exchange of information and no embedded services.
- ❑ **Governance is market-based.** Little dependence on trust or commitment between buyers and sellers.
- ❑ **Conditions** of exchanging goods and services **negotiated daily** on the basis of market prices.
- ❑ **Seems typical of rubber and fish VC** at the farmer-to-collector level in GLACIER villages. **Weak basis MSME for green jobs value chains.**



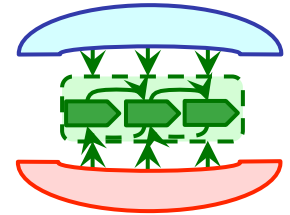
Relational Governance:

- ❑ **Cooperation & alliances prevail** in trust-commitment relationships between buyers and sellers with mutual dependence and asset specificity
- ❑ **Embedded services are commonly involved** in transactions.
- ❑ **Fairly autonomous decision making** among participants.
- ❑ **Not yet observed among rubber and fish VC** at the farmer-to-collector level in GLACIER villages.
- ❑ **Strong basis for MSME green jobs value chains.**

MSME in VC governance systems (2)

Modular Governance:

- ❑ **There are transactions** but little exchange of information and no embedded services.
- ❑ **Integrated suppliers (“middlemen”)** make products or provide services to customer specifications and provide “turn-key” or “full-package” services – often embedded.



Captive Governance:

- ❑ **Vertically integrated** value chains controlled & dominated by lead firm.
- ❑ **Small suppliers transaction-dependent** on much larger buyers. Suppliers face significant switching costs and are therefore “captive”.

Hierarchy Governance:

- ❑ **Integrated enterprises own, dominate and control** VC functions.

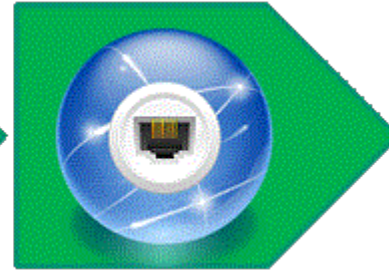
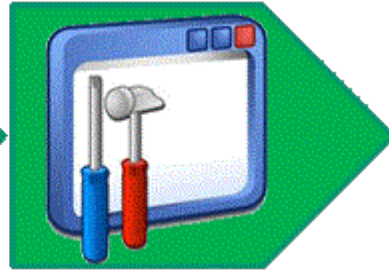
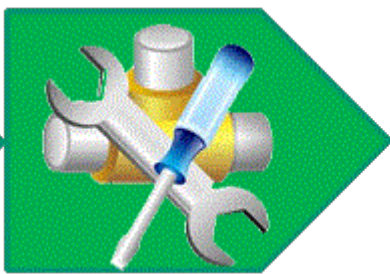
Intensive interactions where lead firms may foster green jobs value chains. Relationships between lead firms and MSME are uneven. MSME lose flexibility and independence.

Training Manual

Value Chain Development for Green Jobs

SECTION 4.B.

SOME VALUE CHAIN RESEARCH TOOLS



JANUARY, 2013
GREEN LIVELIHOOD ACCESS FOR CENTRAL KALIMANTAN'S INCLUSIVE
ENVIRONMENTAL RESPONSE TO CLIMATE CHANGE

ILO GLACIER PROJECT



Collecting, recording and storing data

Collecting, recording and storing of data are all essential functions of market system and value chain research and development (R&D).

In order to facilitate these functions ILO has provided survey forms and instructions attached to this training manual. We hope they will assist market system participants in green jobs value chain development.

Please note that the value chain KITS that come with the present training manual are only like the 'tip of the iceberg'

See the 'references' section for some of the many valuable ILO source materials

6 steps toward GJVC development

Six Suggested GJVC development steps are shown in Fig. 4.9. This manual is accompanied by field forms for use by value chain stakeholders as GJVC are selected, developed and operated.

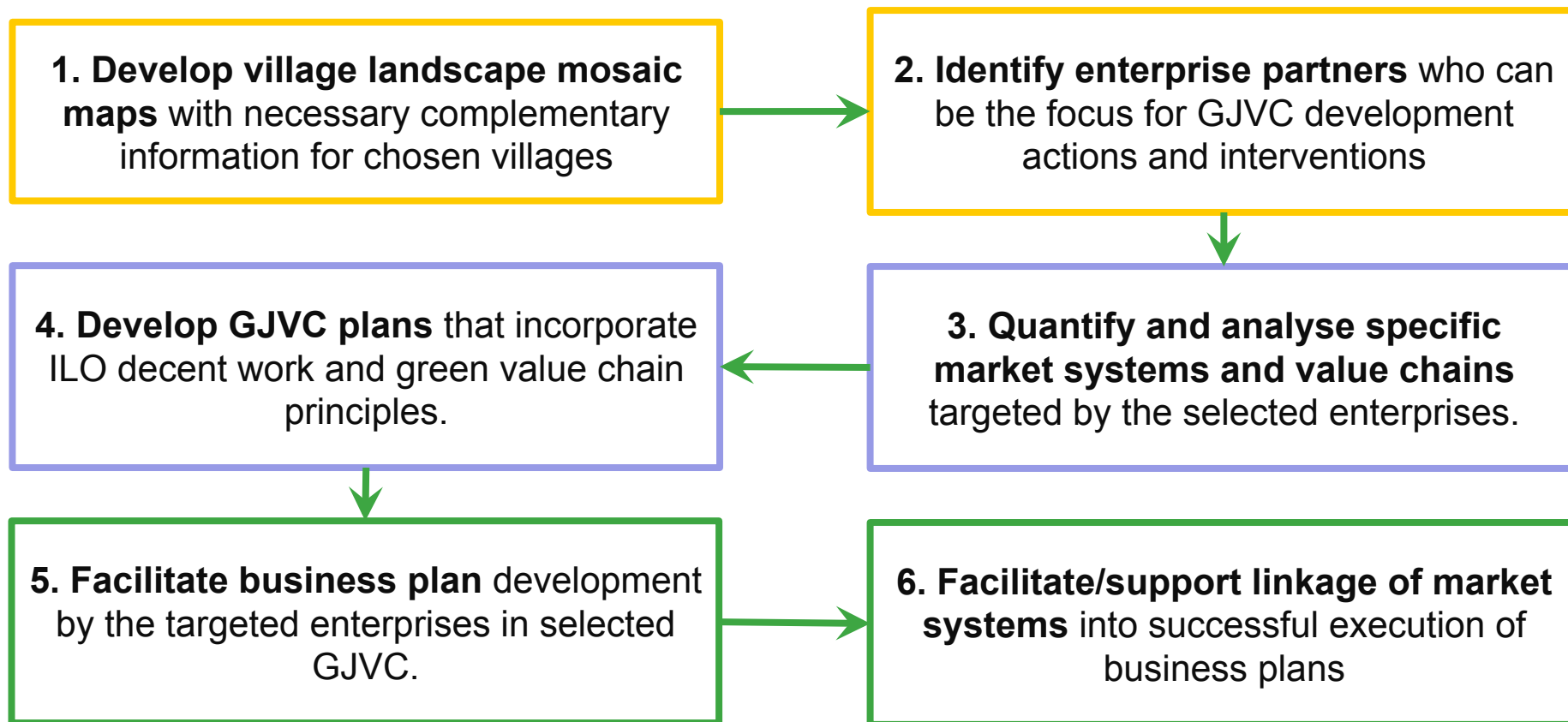


Figure 4.9. Suggested development steps for value chain stakeholders (especially market players and support providers).

Field forms for GJVC development

Table 4.1. The following forms are attached to this manual for use during research, analysis, monitoring and evaluation of value chains and interventions pertaining to GLACIER green jobs value chains

NO.	NAME (S)	SECTION (APPLICATION)
1	BDS_PROVIDERS	4-5 (linking BDS to village enterprises)
2	COLLECTOR_INTERVIEW	4 (getting the collectors' point of view)
3	GOVERNANCE_INSTITUTIONS	4-5 (linking village enterprises to authorities)
4	LANDSCAPE_MOSAIC	3-4 (mapping satoyama & VC landscapes)
5	PROCESSOR_MARKET	4-5 (getting the processors' points of view)
6	PRODUCER_FOCUS_GROUP	4-5 (these forms should supply the bulk of the information needed to construct, quantify and analyse VC from the standpoint of village MSME).
7	PRODUCER_INTERVIEW	
8	PRODUCER_MARKET	
9	SUPPORT_PROVIDERS	1-4 (information for screening providers)
10	TRADER_MARKET	4-5 (getting the traders' points of view)
11	TRAINING_NEEDS	4-5 (determining MSME BDS training needs)
12	VC_RESEARCH_FORMS	4-6 (VC research, analyses and monitoring)

See next page for list of value chain research forms

Value chain research, analysis & M&E forms

Table 4.2. The following forms are included in the VC RESEARCH FORMS file. Their use is explained in Sections 4-6 of this manual.

NO.	NAME (S)	APPLICATION
1	VALUE CHAIN DATA CHECKLIST	For planning of VC data collection
2	FIVE TRIGGERS / SWOT ANALYSIS	Recording conclusions from interviews
3	VC FIRST STEPS FORM TABLE 1	Scoping value networks
4	VC FIRST STEPS TABLE 2	Scoping value networks
5	VC FUNCTION MAP OVERVIEW	Starting point of VC R&D
6-7	ENTERPRISE MAP VC OPERATING INPUTS	Based on data provided by producers, collectors, traders and processors plus information from support providers. Applied to VC before and after interventions. Used in monitoring, evaluation & business planning.
8-9	ENTERPRISE MAP VC OUTPUTS	
10-11	ENTERPRISE MAP VC CAPITAL	
12	ENTERPRISE PRICE FLOWS	
13	MARKET SYSTEM PARTICIPANTS	Linking support to enterprises
14	INTERVENTIONS	Summary of suggested interventions
15	MONITORING & EVALUATION	Monitoring, evaluation and follow-up

Card exercises: a useful involvement tool

'ZOPP-cards' or 'Meso-cards' are tools for active involvement of workshop participants and in focusing on key messages. Required equipment and materials are:

- ✓ o 1-2 large pin boards and lots of pins
- ✓ o plenty of cards in different colours (size about 12 x 22 cm)
- ✓ o brown wallpaper (used as background on to which to pin the cards)
- ✓ o masking tape
- ✓ o markers for every participant

Procedure:

Give every participant some cards and a marker. Ask them to write down their answers/thoughts to a particular question (e.g. what are the strengths and weaknesses of rubber farmers in Pilang?). A brief answer must be given on a card. Several cards may be used for several answers/thoughts (e.g. one strength per green card and one weakness per red card). The moderator then collects completed cards, reads them out loud and pins them to the board where title/question has been pinned previously).

Clustering

Many filled cards will repeat themselves once they have been pinned to the board. The moderator (or alternatively two participants) then summarises the cards into categories by grouping cards with similar messages.

Market system stakeholders to interview

- ❑ **Value Chain Stakeholders** **Buyers:** Retail companies, exporters, local collectors, traders, lead firms/foreign buyers
- ❑ **Suppliers:** Supply companies, (local) supply retailers
- ❑ **Local enterprises:** SMEs & Large-scale enterprises
- ❑ **Other enterprises:** (not-local producers)
- ❑ **Business support services (BDS providers):** Consultants, training & skills, technical support services, banks & insurances
- ❑ **Business associations:** Small business associations, chamber of commerce, national/regional industry bodies/ associations
- ❑ **Other support services:** Accreditation agencies, etc.
- ❑ **Government officials & authorities**
- ❑ **Local administrations:** Responsible departments, extension services, head of local/ district administration
- ❑ **National/regional administrations:** Responsible ministries, the ministers themselves, parliamentarians
- ❑ **Public sector Institutions:** Training & education, research & development
- ❑ **NGOs & donor organisations**

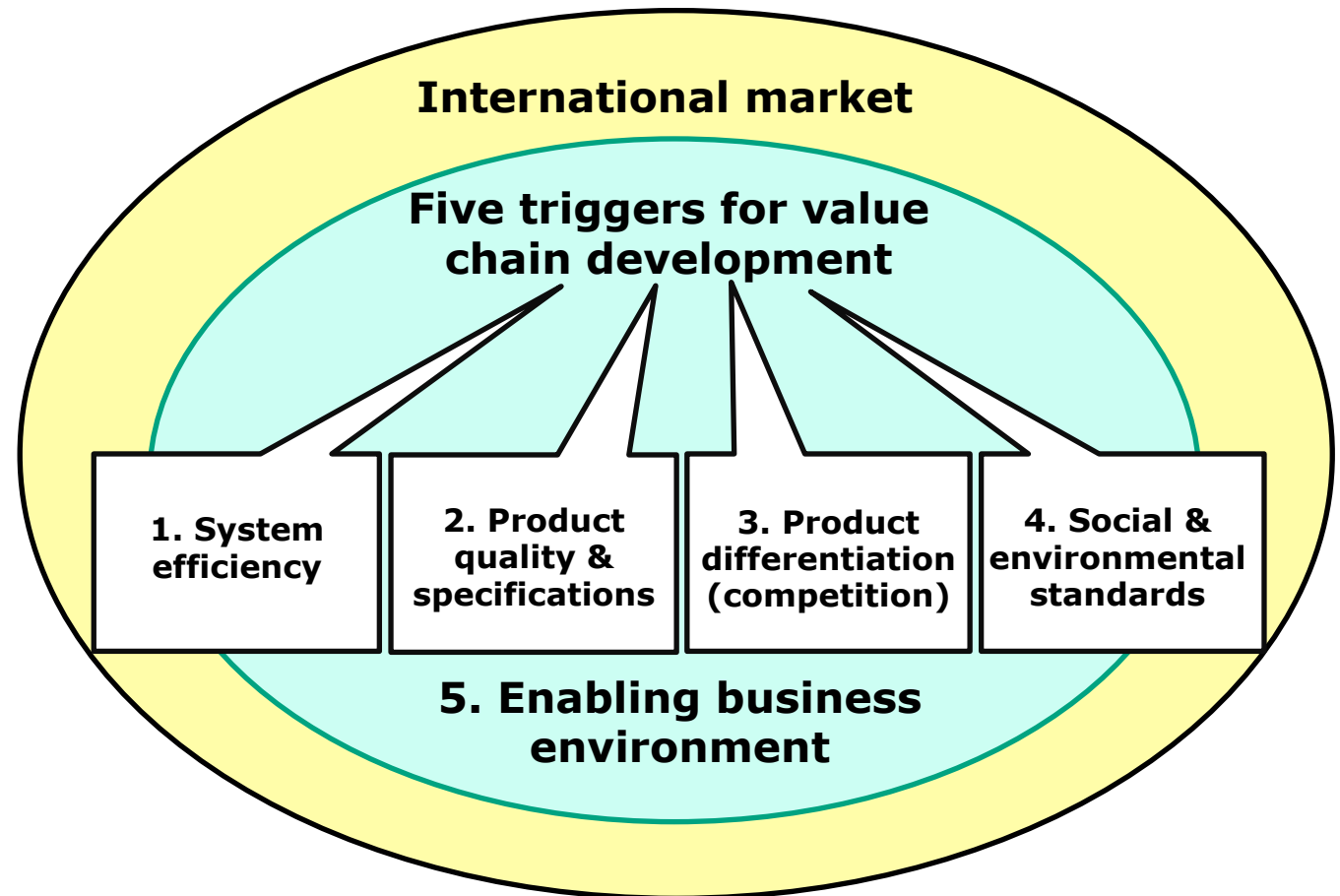
Checklist: Preparing for interviews

- ❑ **Objectives:** Which value chain stakeholders are relevant to selected GLACIER value chains? (List stakeholders you need to interview).
- ❑ **Information:** What kind of specific information do you require from the different stakeholders? Write the objectives for every interview behind the names in your list and select appropriate questionnaire form (s).
- ❑ **Method:** kind of interview do you want to conduct? An open or a closed interview, or a mix of both? (Select appropriate questionnaire form (s)).
- ❑ **Contact:** Once you are certain about your objectives and method, contact interviewee to arrange appointments. Briefly explain your project and objectives to them in advance if possible.
- ❑ **Documentation:** Answers during the interview need to be documented for your analysis. In case of a closed interview where you use a questionnaire, answers are filled into a form. In the case of an open interview, you will have to take proper notes. It is best if you do not go alone – take someone with you so that you can concentrate on asking questions, while the other takes notes.
- ❑ **Do not rely on your memory – take notes!**

Five triggers for competitive advantage

Definition: Value Chain Development is an improvement of cooperation between stakeholders of a particular sector and the coordination of their activities along different levels of a value chain with regard to the “five triggers” shown in Fig. 4.10.

Figure 4.10. Five triggers for value chain development. The ultimate goal is to increase the competitiveness of a sector in the international market.



Five triggers for value chain development

To reach the end consumer MSME must go through other market system stakeholders. Using the five triggers as a framework helps to identify opportunities and constraints to making the local target sector more competitive and integrate it more effectively into value chains and markets. The five triggers (see Fig. 4.10) are:

- 1.System efficiency** Access to information and knowledge, delivery time and reliability, flexibility, communication between value chain stakeholders and embedded business and customer services.
- 2.Product quality & specifications** Product design and quality, price and costs (value addition), market and buyer requirements, consumer trends, product presentation (packaging & advertisement).
- 3.Product differentiation (competition)** Main competitors, price and cost comparison, local competitive advantage/disadvantage, research & development, buyers' appraisal of different (competing) suppliers.
- 4.Social and environmental standards including labour practices** Labour standards and wages (and other labour costs), gender equality, workplace security, motivation of workers, training and skills, organisation, self-employment.
- 5.Enabling Business environment** Business support services, availability and capacity of SME organisations, legal and regulatory framework.

Five triggers SWOT analysis

Table 4.3. Five triggers/SWOT analysis form. Workshops participants can **fill out the form after undertaking focus group discussions (provided with manual).**

1. SWOT Analysis Write down strengths, weaknesses, opportunities and threats that you have observed in your producer interviews/focus group discussions.		2. Value Chain Triggers Note main observations for every trigger. Take into consideration the aspects of every triggers as mentioned in previous page
1.1 Strengths	1.2 Weaknesses	2.1 System:
		2.2 Product quality/specification:
1.3 Opportunities	1.4 Threats	2.3 Product differentiation (competition):
		2.4 Social and environmental standards:
3. Market requirements		2.5 Business environment:
4. Other observations (e.g. surprises) – or main findings:		

Example SWOT analysis – GLACIER rubber

Table 4.4. An example SWOT analysis of the GLACIER villages rubber situation based on initial preliminary surveys. **Actual SWOT analyses should be based on interviews and focus group findings (forms attached to this manual)**

1.1 Strengths ➤ Rubber appears to grow well when properly tended. ➤ Rubber gardens are found throughout the GLACIER project area. ➤ Rubber farming fits well into satoyama landscapes	1.2 Weaknesses ➤ GLACIER village rubber forests are stocked with poor cultivars planted at low density, poorly tapped, with poor agronomy methods and low latex yields ➤ Raw rubber quality is poor and good quality is not rewarded
1.3 Opportunities ➤ There seems to be plenty of land available for restoration and new plantings of rubber gardens ➤ Global markets for natural rubber are very larger relative to GLACIER village production potential ➤ markets for natural rubber are strong and growing	1.4 Threats ➤ Destruction of rubber gardens by fire is an annual threat ➤ Interventions may fail if not undertaken in an orderly manner and on a long-term basis ➤ Necessary BDS and other support may not develop as needed

Example 5 triggers analysis – GLACIER rubber

Table 4.5. An example 5 triggers analysis of the GLACIER villages rubber situation based on initial preliminary surveys.

Actual 5 triggers analyses should be based on interviews and focus group findings (forms attached to this manual)

2.1 System: Very poor system efficiency with poor communication and logistic services. Irregular supply.

2.2 Product quality/specification: Generally low quality of rubber slab produced. No price reward for good quality.

2.3 Product differentiation (competition): Producers make undifferentiated, low quality raw rubber.

2.4 Social and environmental standards: Individuals and village MSME operate according to local norms & mores.

3. Market requirements: On-specification Standard Indonesia Rubber (SIR 20) is not produced by village MSME but is the main required end product.

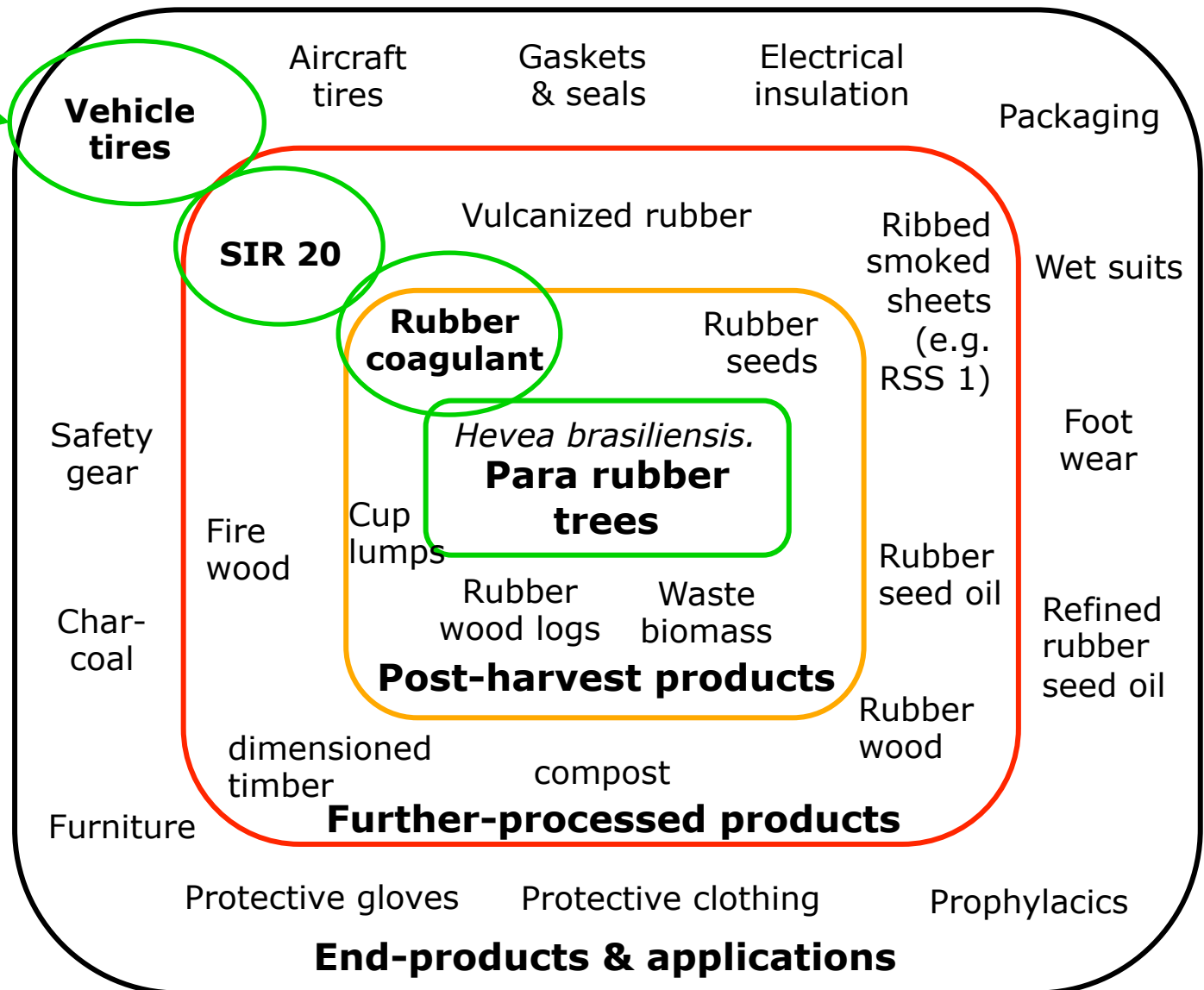
2.5 Business environment: Most producers are not aggregated into effective business units.

4. Other observations (e.g. surprises) – or main findings: The rubber sector has great potential for MSME in the GLACIER region but it appears to be almost totally lacking necessary market system functions such as support services and effective governance.

Example value network

Example value chain

Figure 4.11. One type of value network is a cluster of value chains based on a common foundation link. This figure depicts the range of products that can pass through rubber tree based value chains. The example VC involves SIR 20 (Standard Indonesian Rubber for the tire market).



5 step overview of VC networks

(Steps 1-3 starting from farmers' perspective)

Step 1

Start by identifying a product that GLACIER village farmers can produce and work forward from there. Write down the name of the product in the box at the top of the value chain diagram in Table 1 of the VC FIRST STEPS FORM that accompanies this manual. (Example in Table 4.6)

Step 2

Once you have identified the starting product, ask “What happens to the product (or service) next?” Write this answer in the blue process box in Table 1 of the VC FIRST STEPS FORM. Ask that question again and fill in the other ovals. Do this until all the processes have been captured. Some examples of processes are: distribution, marketing and packaging, transporting, processing, collecting, planting, raw material supply. (Example in Table 4.6)

Step 3

Identify what enterprises are involved in each process. Identify other members of the VC and their roles. Write their names in the open space beside the process ovals on the value chain diagram in table 1 of the VC FIRST STEPS FORM. (Example in Table 4.6)

5 step overview of VC networks

(Steps 4-5 starting from farmers' perspective)

Step 4

Dealing with “collective value chains” (as opposed to individual enterprise value chains), makes it necessary to identify the different markets where the added value products are sold and the different channels through which they reach markets. Therefore, ask yourself where the products made from your target product can be bought. (E.g. between end product types or between local, regional, national and international markets. Write down the names of the products in the fields at the top of the diagram in Table 2 of the VC FIRST STEPS FORM. (Example in Table 4.7)

Step 5

Indicate which companies undertake what processes and sell them to what markets. Write down the names of the processes and companies in the appropriate fields in the diagram in Table 2 of the VC FIRST STEPS FORM. (Example in Table 4.7)

NOTE: This is essentially another way of presenting a value network similar in concept to the one in the schematic of Fig. 4.11.

Table 4.6. Rubber VC first steps (example)

Target product: Raw rubber slabs from GLACIER villages

PROCESS	ENTERPRISES	PROCESS	ENTERPRISES
A. Secure land for use as rubber gardens	Landlords and/or farmers	F. Make rubber slabs into SIR or RSS	Processors
B. Plant and nurture rubber tress in agronomy systems	Farmers	G Transport and sell rubber to end users	Traders
C. Tap latex from mature rubber trees	Farmers and/or tappers	H.. Make end-use products for sale to consumers	Companies that make tires, gloves, gaskets & seals, electrical wire, etc.
D. Coagulate the latex and make slabs	Farmers and/or tappers	I. Consume end products	Consumers
E. Buy/collect rubber, store then deliver to processor.	Collectors		

Table 4.7. Rubber VC first steps (example)

Target product: Raw rubber slabs from GLACIER villages

PROCESS	MARKET 1	MARKET 2	MARKET 3	MARKET 4	MARKET 5
	Rubber product manufacturers	Tires for aircraft and vehicles	Rubber gloves and prophylactics	Gaskets and seals	Electrical wire & equipment
Make SIR or RSS	Various processors				
Make tires		E.g. Bridgestone, Goodyear			
Make rubber gloves			Various companies		
Make gaskets & seals				Various companies	
Make electrical insulation					E.g. Toshiba, Sony

Building value chain 'links'

From a value chain network it is necessary to pick specific value chains for analysis and development. **A function (or a set of integrated functions) undertaken by an enterprise to add value to a product can be considered to be a value chain "link"**

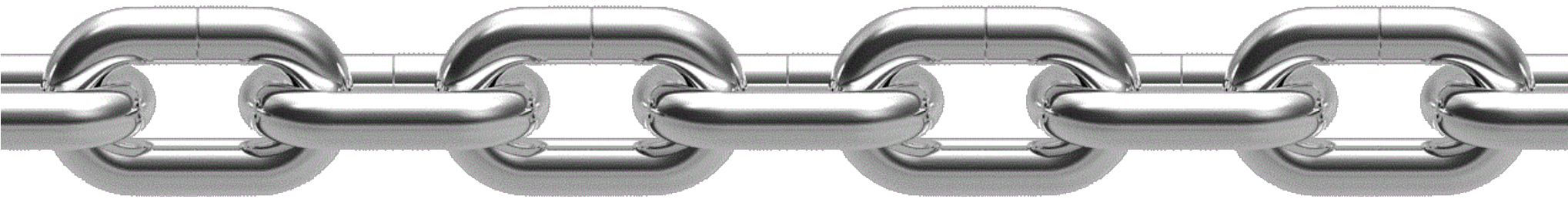


Figure 4.9 shows a function (or set of integrated functions) undertaken by an enterprise to add value to a product can be considered to be a value chain "link". This figure summarizes market system components that are relevant to each link. The following pages take workshop participants step-by-step through the processes necessary to:

- **Research** value chain functions
- **Map** VC functions that occur in market systems
- **Cluster** functions within enterprises
- **Connect** links to make green jobs value chains

Researching value chain functions (links)

Figure 4.12. A function (or a set of integrated functions) undertaken by an enterprise to add value to a product can be considered to be a value chain “link”. This figure summarizes market system components that are relevant to each link.

SUPPORT FUNCTIONS

- What support functions are needed?
- Who can provide the required support functions?
- On what terms can the support functions be provided?

INPUTS

- assets
- operations

VC function

OUTPUTS

- Products
- Energy
- Services
- Wastes
- revenues

FUNDS FLOW

MARKET PLAYERS

- Who are the market players executing this function?

GOVERNANCE FUNCTIONS

- What government rules & regulations; enforced by who?
- What adat (traditional) and industry governance applies?

VC function: market system map

Table 4.8. Example VC function market system diagram. The VC FUNCTION MAP OVERVIEW FORM attached to this manual can be used in actual R&D.

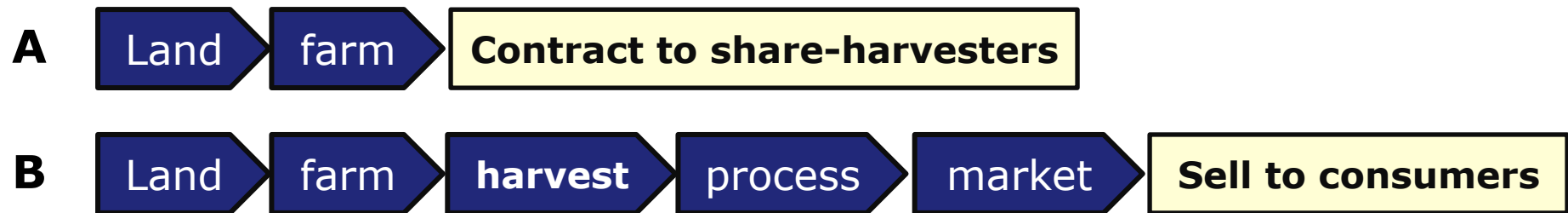
VC function

VC ELEMENT		EXAMPLES
1	Inputs	Goods & services used in value addition including raw materials, labour, consumables, expertise, energy
2	Outputs	Goods and services sold or wasted
3	Capital	Investment in assets: e.g. land, buildings, equipment Working capital: e.g. to finance inputs
4	Funds	Costs and revenues (tangible and intangible)
4 5	Support	Business development (BDS), scientific, technical, financial, marketing, communication, logistics, infrastructure, training
6	Players	Management, labour, industry associations, business allies
7	Governance	Permits required, industry standards, corporate compliance, financial/tax records compliance

Clustering functions within enterprises

Any given enterprise may perform one or more functions within a value chain. The 'sum of their business' is the cumulative result of all functions performed within their enterprise. Two extreme examples are illustrated in Fig. 4.13.

Figure 4.13 A. Farm enterprise takes share of crop income from share harvesters who then pass on the goods for further value addition by other enterprises. **B.** Vertically Integrated enterprise performs all VC functions 'in-house'.



Enterprise market system maps can be developed after interviews and other research tools have been used to quantify and characterise:

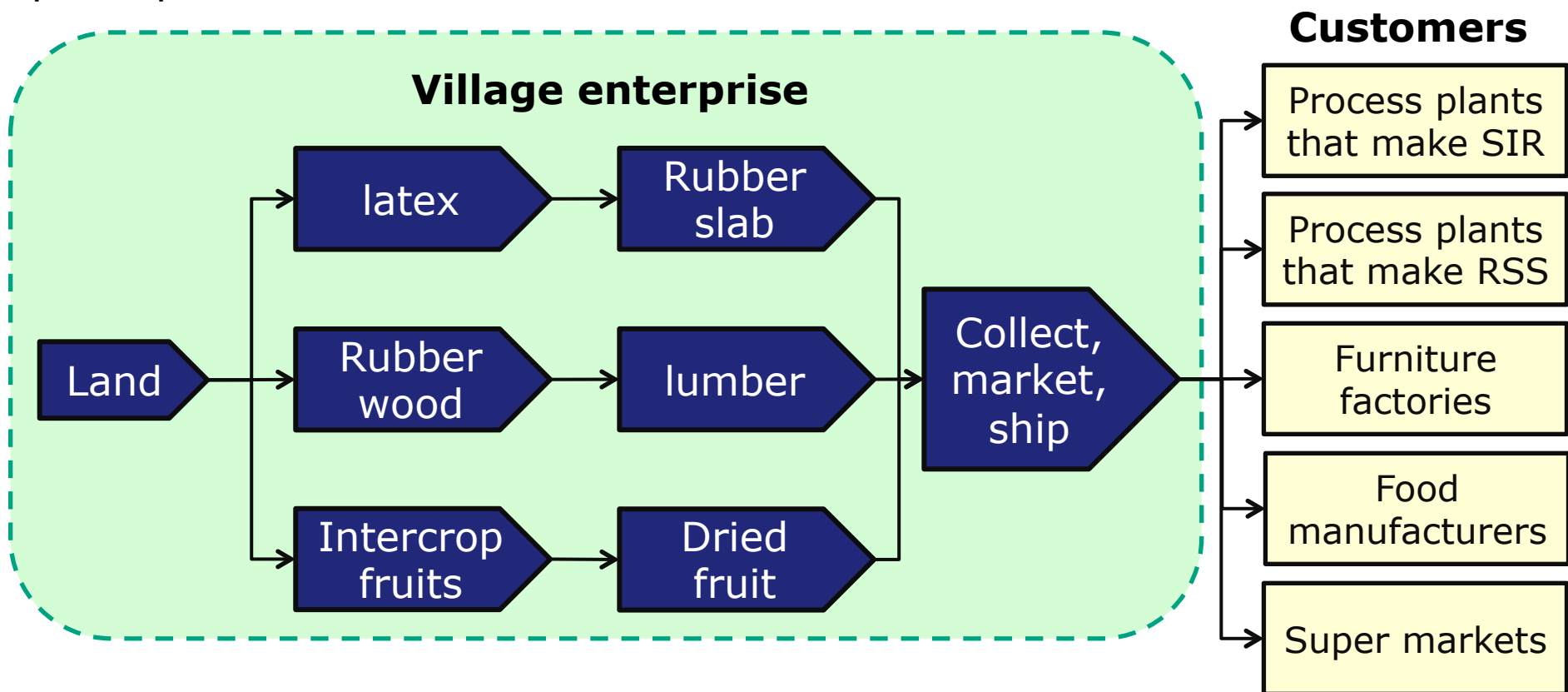
- ✓ VC function market system maps for all VC 'links'
- ✓ VC function clusters found within the target enterprise (s)

The next step is to develop market system maps for target enterprises using the forms attached to this manual as described in the following pages.

One enterprise – many chains

Typically, individual GLACIER enterprises will be involved in several value chains. The enterprise participates in “value networks” within one or more market system (Fig 4.11 and 4.14).

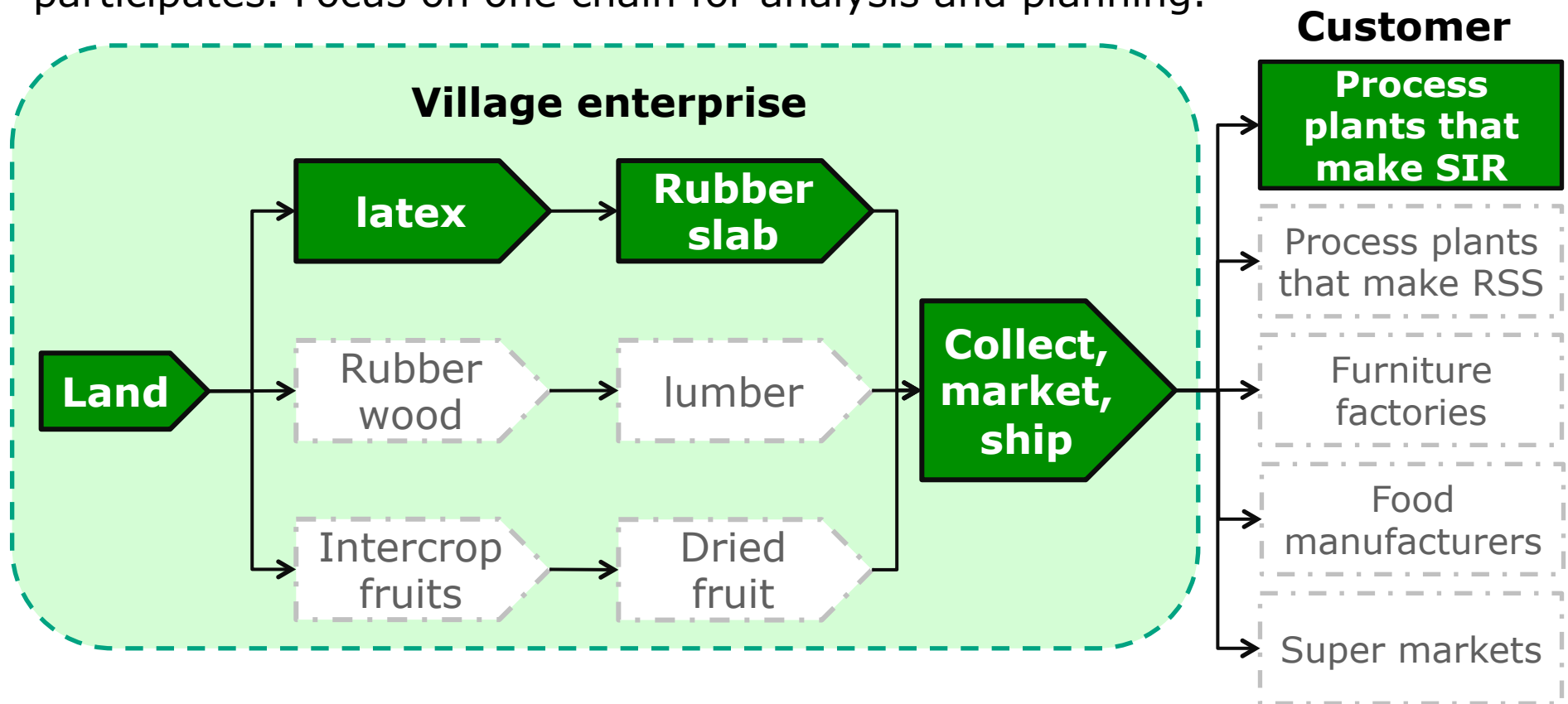
Figure 4.14. One village enterprise and some value chains in which it participates.



One enterprise – one chain at a time

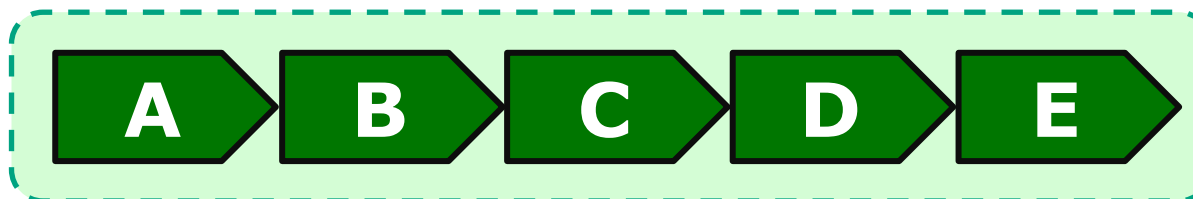
For purposes of clarity it is best to focus on individual chains during analysis and enterprise business planning (Fig 4.11 and 4.15). The chain highlighted below is one target of the GLACIER GJVC pilot project.

Figure 4.15. One village enterprise and some value chains in which it participates. Focus on one chain for analysis and planning.



Enterprise market system map - overview

Table 4.9. Example of a rubber producing enterprise (e.g. a farmer cooperative) that owns land, grows the rubber trees, taps the latex, makes raw rubber slabs, collects the slabs then sells directly to processors.



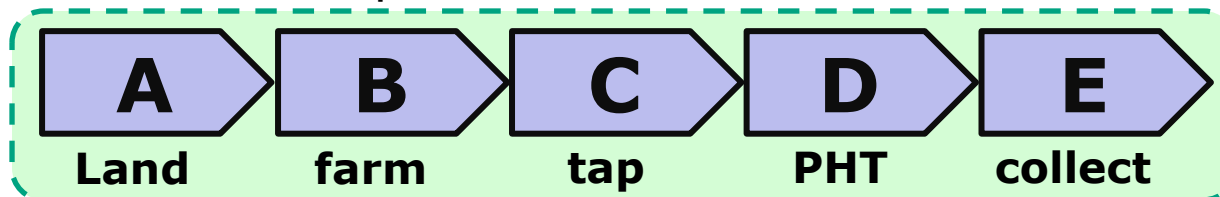
FUNCTION		ACTIONS
A	Land	Owned by farmers with secure tenure
B	Agronomy	Farmers grow cloned bud-wood using good RAS ** (e.g. RAS1 or RAS3) with planned intercropping
C	Tap	Farmer tapping; good techniques
D	PHT *	Proper coagulation; clean conditions; no contaminants; good drying
E	Collect	Farmers own collector function and sell to processors

* PHT is post-harvest treatment

**RAS is rubber agronomy system

Enterprise market system map - inputs

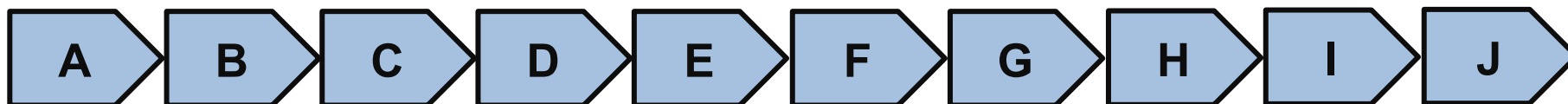
Table 4.10. Categories of operating inputs for the rubber enterprise outlined in Table 4.9. These should be quantified on the **ENTERPRISE MAP VC INPUTS FORM**.



OPERATING INPUTS		A,B	C	D	E
1	Fixed & variable labour	+	+	+	+
2	Electricity	-	-	+	-
3	Fuel (vehicles, vessels, machinery)	+	-	+	+
4	Water	+	-	+	-
5	Agro chemicals (e.g. fertilizer, pesticides)	+	-	-	-
6	Process chemicals (e.g. acid, alkali, other)	-	-	+	-
7	Packaging materials (e.g. poly bags, crates)	-	-	+	-
8	Communication costs (e.g. phone, internet)	+	+	+	+
9	Consumables – safety & worker amenities	+	-	+	-
10	Consumables – plant & process	-	-	-	-

Inputs/Outputs – specifics

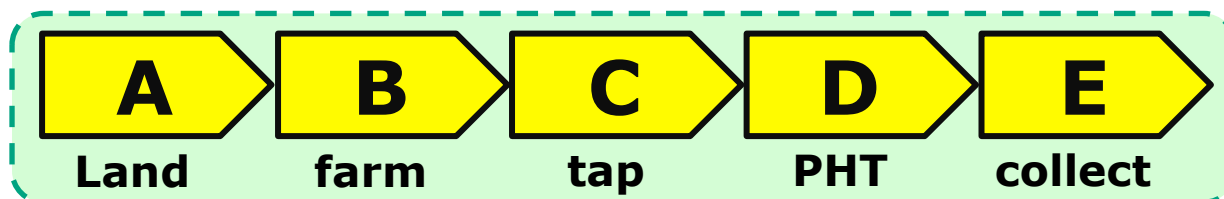
Table 4.11. Record specific descriptions on the enterprise map forms supplied. The example below shows some examples from the 'operating inputs' form.



ROW (1 to n)	COLUMN (A to J)	SPECIFIC ITEMS AND COSTS PER INFORMATION GATHERED (USE MORE THAN ONE FORM PGE IF NECESSARY)
1	A, B	Tappers are paid 66% of farm gate price
1	C to E	Typical unskilled labour rate is 12 USD/day
2	D	Electricity cost 6 cents/KWH
3	A,B,D,E	Diesel oil price 0,5 USD/liter. Average 10 liters/day.
		... etc.

Enterprise market system map - outputs

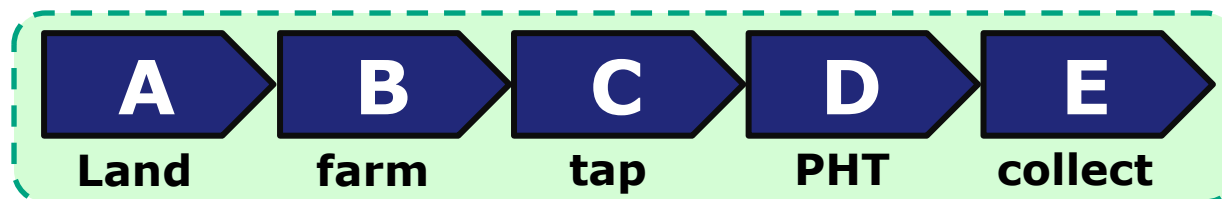
Table 4.12. Categories of operating outputs for the rubber enterprise outlined in Table 4.9. These should be quantified on the **ENTERPRISE MAP VC outputs FORM**.



OPERATING OUTPUTS		A,B	C	D	E
1	Wood, nuts (for oil), intercrop products	+	-	-	-
2	Liquid latex	-	+	-	-
3	Cup lumps, coagulated latex (loose & slabs)	-	-	+	+
4	Standard Indonesia Rubber (e.g. SIR20)	-	-	-	-
5	Rubber smoked sheets (e.g. RSS1)	-	-	-	-
6	Tires & related rubber goods	-	-	-	-
7	Waste water	-	-	+	-
8	Waste solids (e.g. biomass, debris)	+	-	-	-
9	Waste gases (including burning brush)	+	-	-	-

Enterprise market system map - capital

Table 4.13. Categories of capital inputs for the rubber enterprise outlined in Table 4.9. These should be quantified on the **ENTERPRISE MAP VC CAPITAL FORM**.



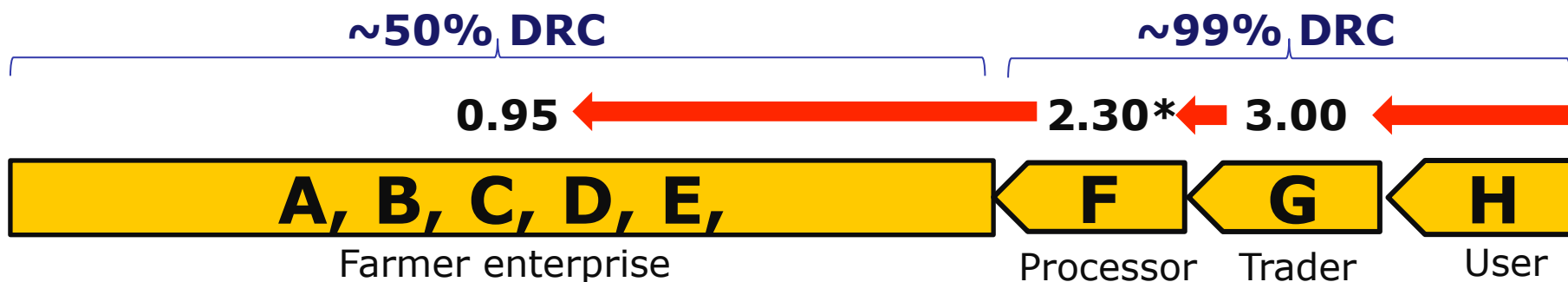
CAPITAL INPUTS		A,B	C	D	E
1	Land (rent or buy)	+	-	+	+
2	Nursery facilities	+	-	-	-
3	Crop systems (trees, intercrops)	+	-	-	-
4	Buildings (office, factory, accommodation)	-	-	+	+
5	Vehicles and/or vessels	+	+	-	+
6	Utilities (e.g. electric, water, fuel, waste)	+	-	+	-
7	Processing equipment/machinery	-	+	+	-
8	Laboratory facilities (QA, QC, R&D)	-	-	-	-
9	Safety & worker amenities	+	+	+	+
10	Working capital	+	-	-	+

Enterprise market system map – price flow

The flow of funds along value chains can be measured from the source end or the end user end. The example below takes the latter approach. The example case is for rubber and the target enterprise is the one outlined in Table 4.9. Some fundamental facts of rubber chain funds flows are:

- **Farm-gate prices depend** on supply/demand conditions distance from processing factories, number of collectors/traders in the chain and transportation.
- **Thick slab with 50 % dry-rubber-content (DRC)** is the most type of rubber output produced by farmers. In the example farm-gate price would be equivalent to about 1.70 USD/kg on a DRC basis.
- **Processed rubber (e.g. SIR 20) has about 99% DRC** and the Singapore trader price for Standard Indonesian Rubber (SIR20) was about 3.00 USD/kg at time of writing

Figure 4.16. Estimated price flows (USD/kg) for the rubber enterprise outlined in Table 4.7. These should be quantified on the ENTERPRISE MAPS FORM.



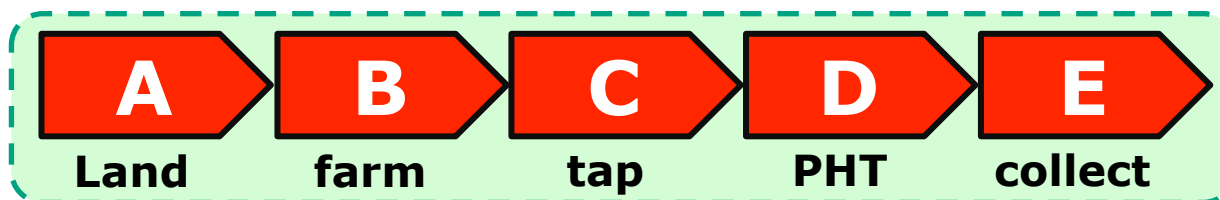
Market system support, players & governance

Table 4.14. Examples of market system (MS) participants relevant to the rubber enterprise outlined in Table 4.9. Record these in the ENTERPRISE MAPS FORM.

MS ELEMENT		EXAMPLES
1	Support	ICRAF - International Centre for Research on Agroforestry IAARD IRI - Indonesian Agency for Agricultural Research and Development – Indonesian Rubber Institute DEPTAN & DEPHUT- Departments of Agriculture & Forestry ILO REDD+ program and other UN initiatives UNPAR – Universitas Palangka Raya BDS and NGO – various DEPKOP - Department of Cooperatives and Small-Medium Enterprises MCFF – Microfinance credit for farmers and fishermen available from banks with government subsidies and guarantees.
2	Players	Rubber industry suppliers, strategic business allies, competitors, buyers, industry organisations, trade unions
3	Governance	DEPKOP - Department of Cooperatives and Small-Medium Enterprises Government business registry offices – as identified for each region SNI – Standar Nasional Indonesia specifications for rubber products. Buyer specifications – for specific transactions between buyers & sellers. DEPKES – Ministry of Health. DEPPERIN – Ministry of industry. Occupational safety & health regulations – various government agencies.

Enterprise market system map – interventions

Table 4.15. Examples of some value chain interventions that may strengthen the rubber enterprise outlined in Table 4.9. Record in ENTERPRISE MAPS FORM.



FUNCTION		POSSIBLE INTERVENTION OUTCOMES
A	Land	Secure farmer land tenure with proper certification
B	Agronomy	Make cloned bud-wood available; implement good RAS ** (e.g. RAS1 or RAS3); develop intercropping; improve tree health; replace over-mature trees
C	Tap	Introduce maintain and good tapping techniques
D E	PHT*, collect	Aggregate farmer enterprises and develop them as vertically integrated businesses that can sell high quality rubber products (e.g. SIR 20 & RSS1) to end users on fair trade and fair finance terms.

* PHT is post-harvest treatment

**RAS is rubber agronomy system

Connecting links to make GJVC

A 'real-world' value chain forms when enterprises link in a way that adds value to goods and services as they move from source to consumer. By using the tools presented in this manual and in other ILO support materials the GLACIER project team will be able to:

- 1. Understand the characteristics and needs** of target village landscapes;
- 2. Identify and engage with village enterprises and/or assist in aggregating villagers** into formal MSME (e.g. cooperatives, partnerships, sole proprietorships, limited liability companies);
- 3. Link village MSME to other market system participants** they need in order to develop and prosper;
- 4. Propose and undertake short-term interventions** that put market participants in GLACIER target GJVC in the path of longer-term development and prosperity.
- 5. Foster village satoyama landscapes** where Decent Work and green value chains become the norm for future village life.



Present GLACIER rubber & fish value chains

- ❑ **In the following pages GLACIER village value chain links are examined individually** for rubber and fish chains as they currently exist.
- ❑ **The results are overviews that apply generally** to all five villages but some specific details may differ between villages and/or between enterprises operating within villages.
- ❑ **In order to make plans for specific value chains** within individual village landscapes it is necessary to define the “real world” numbers and information for each case. This enables a **definition of the “status quo”**.
- ❑ **A similar exercise can define the planned future value chain characteristics** that has been decided upon as a result of village strategic planning activities.
- ❑ **By comparing the *status quo* with the planned future state** it is possible to identify and plan actions (e.g. interventions) that can be executed to implement development functions.

MAPPING THE FUTURE

Training Manual

Value Chain Development for Green Jobs

SECTION 4.C.

RUBBER VALUE CHAIN RESEARCH



JANUARY, 2013
GREEN LIVELIHOOD ACCESS FOR CENTRAL KALIMANTAN'S INCLUSIVE
ENVIRONMENTAL RESPONSE TO CLIMATE CHANGE

ILO GLACIER PROJECT



Rubber supply and demand

- ❑ **Indonesian rubber production was over 3 M tons/yr.** in 2011-2012. The three regencies (kabupaten) where GLACIER villages are located accounted for about 32 000 tons (about 0.01% of Indonesian production).
- ❑ **About 97% of Indonesian production** was as standard Indonesia crumb rubber (mostly SIR20) used to make tires.
- ❑ **Major export markets** were in Asia (45%), North America (33%) and Europe (20%) with total export **value reaching almost 12 B USD.**
- ❑ **Natural rubber markets are strong, with a long-term growing trend** as natural rubber continues to compare favorably with synthetic rubber both with respect to price and to quality.
- ❑ **Rubber farming in Indonesia is overwhelmingly a smallholder business** (about 81% of hectarage and 81% of production).
- ❑ **Rubber gardens have promise as a basis for green jobs value chains** that have favorable impacts on global carbon balances.

Indonesian rubber production (2007-2012)

Table 4.16. A. Natural rubber production in Indonesia production in thousands of tons (2007-2012). **B.** Thousands of hectares planted. **C.** Tons of rubber produced per ha.

A. '000 TONS							
PRODUCER	2007	2008	2009	2010*	2011**	2012**	Percent
SMALLHOLDER	2 177	2 174	1 942	2 179	2 486	2 660	81.3
GOVERNMENT ESTATE	277	277	239	266	289	293	9.0
PRIVATE ESTATE	301	301	259	289	314	319	9.7
TOTAL PRODUCTION	2 755	2 751	2 440	2 735	3 088	3 272	100.0
B. '000 HECTARES							
PRODUCER	2007	2008	2009	2010*	2011**	2012**	Percent
SMALLHOLDER	2 899	2 910	2 912	2 922	2 932	2 937	84.8
GOVERNMENT ESTATE	239	238	239	239	240	242	7.0
PRIVATE ESTATE	276	276	284	284	284	283	8.2
TOTAL AREA	3 414	3 424	3 435	3 445	3 456	3 462	100.0
C. TONS/HECTARE							
PRODUCER	2007	2008	2009	2010*	2011**	2012**	Average
SMALLHOLDER	0.751	0.747	0.667	0.746	0.848	0.906	0.777
GOVERNMENT ESTATE	1.159	1.164	1.000	1.113	1.204	1.211	1.142
PRIVATE ESTATE	1.091	1.091	0.912	1.018	1.106	1.127	1.057
AVG T/HA	1.000	1.001	0.860	0.959	1.053	1.081	0.992
Directorate General of EstateCorp. , Indonesia 2012			*) Preliminary		**) Estimation		

Indonesian rubber markets (2007-2012)

Table 4.17. Indonesia rubber export by country of destination in thousands of tons (2006-2011). Almost all for making tires.

DESTINATION	2006	2007	2008	2009	2010	2011	Percent
ASIA	1 041	1 105	1 059	1 122	1 110	1 157	45.3
AFRICA	37	40	36	32	37	36	1.4
AUSTRALIA	19	19	16	10	6	5	0.2
NORTH AMERICA	809	845	830	555	792	848	33.2
EUROPE	380	398	355	272	407	511	20.0
GRAND TOTAL	2 286	2 407	2 295	1 991	2 352	2 556	100

Source : BPS, Statistics Indonesia, compiled by Gapkindo 2012



Indonesian exports ~97% SIR

Table 4.18. Indonesia rubber **exports in thousands of tons** (2005-2011) by product types. Values in M USD.

TYPE AND GRADE	2006	2007	2008	2009	2010	2011	Percent
Latex Concentrate	8.3	7.6	8.5	9.1	12.9	9.5	0.4
Ribbed smoked Sheet *)	325.4	275.5	137.8	77.0	60.2	67.3	2.6
Standard Indonesian Rubber	1 952.3	2 121.9	2 148.4	1 905.0	2 278.8	2 478.9	97.0
Other Types of Natural Rubber*)	0.0	1.8	0.7	0.1	0.0	0.0	0.0
GRAND TOTAL	2 286	2 407	2 295	1 991	2 352	2 556	100.0
Value (M USD)	4 321	4 869	6 057	3 241	7 327	11 762	

Source : BPS, Statistics Indonesia, compiled by Gapkindo, 2011

*) Pale Crepe, Brown Crepe, Air Dried Sheet and Skim Rubber are included in Other Types of NR

Figure 4.17. A. Standard Indonesian Rubber (SIR 20) crumb rubber wrapped in polythene bags.
B. Ribbed smoked sheets (RSS)



Description of SIR 20 crumb rubber

- ❑ **About 97% of Indonesian rubber exports** are in the form of standard Indonesian rubber (SIR) and most of that is as grade 20 (SIR20).
- ❑ **It is generally sold as** milled, blended particles known as “**crumb rubber**”.
- ❑ SIR-20 crude is the shorthand reference to **Standard Indonesian Rubber-20**. In its natural state, this crude rubber is milky in color and resembles white cheese.
- ❑ **When it is dried**, it turns dark brown in color.
- ❑ SIR-20 is dried until its **moisture content is below 0.8% by weight**.
- ❑ **SNI 06-1903-2000 specifications for SIR** are shown in Table 4.3.
- ❑ It is then pressed into **blocks of about 34 kg**.
- ❑ **Blocks are covered** individually in thin polythene bags, then wrapped in heavier polythene and sealed in a crate.
- ❑ **The major market for SIR-20 is for manufacture of tires**.

Specification for International Grade TSR (Technically Specified Rubber)

CHEMICAL NAME : SIR-20 (Natural Rubber)
CHARACTERISTIC : Light Brown Pieces Of 35 Kgs
COMPOSITIONS : Natural Polyisoprene
EQUIVALENT : SMR-20 / STR-20 / SVR-20 / SLR-20 / ISNR-20

Table 4.19. SNI
 06-1903-2000 specifications
 for Standard Indonesia
 Rubber.

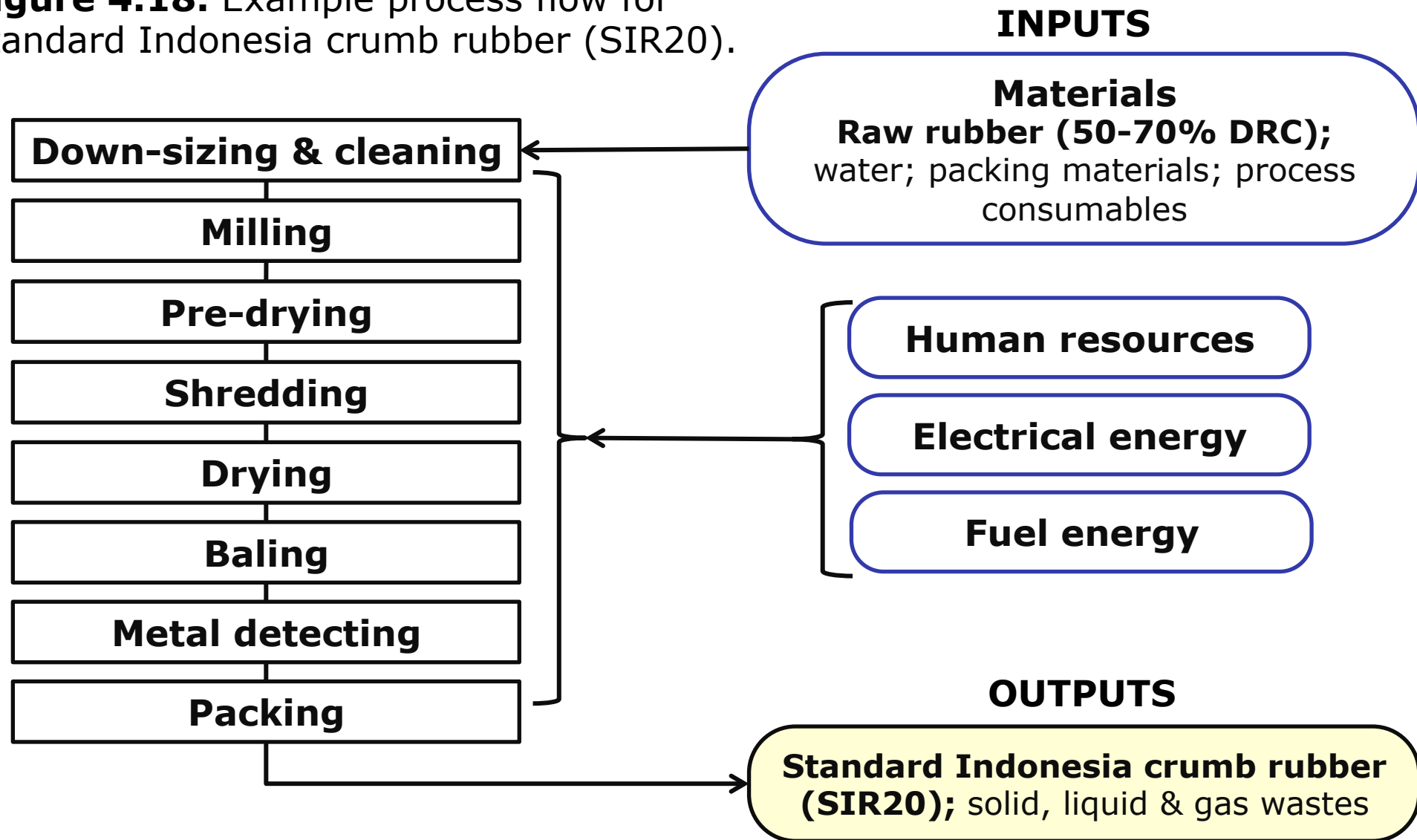
PARAMETER CHARACTERISTIC	TSR = Technically Specified Rubber Scheme From International Grade Acceptable					
	SIR CV	SIR L	SIR 5	SIR 10	SIR 20	SIR 50
Dirt (max) % wt	0.050	0.050	0.050	0.100	0.200	0.500
Ash (max) % wt	0.60	0.60	0.50	0.75	1.00	1.50
Nitrogen (max) % wt	0.60	0.60	0.50	0.60	0.60	0.60
Volatile matter (max) % wt	0.80	0.80	0.80	0.80	0.80	0.80
Initial wallace plasticity Po (Min)		30	30	30	30	30
Plasticity Retention Index PRI (Min)	60	60	60	50	40	30
Colour, Lovibond Scale (individual value, max)						
Mooney viscosity (ML, 1+4, 100°C)						

Source: ISO-2000 (TSR = Standard International Grade Acceptable)

Source: SNI 06-1903-2000 (SIR = Standard Indonesia Rubber Grade)

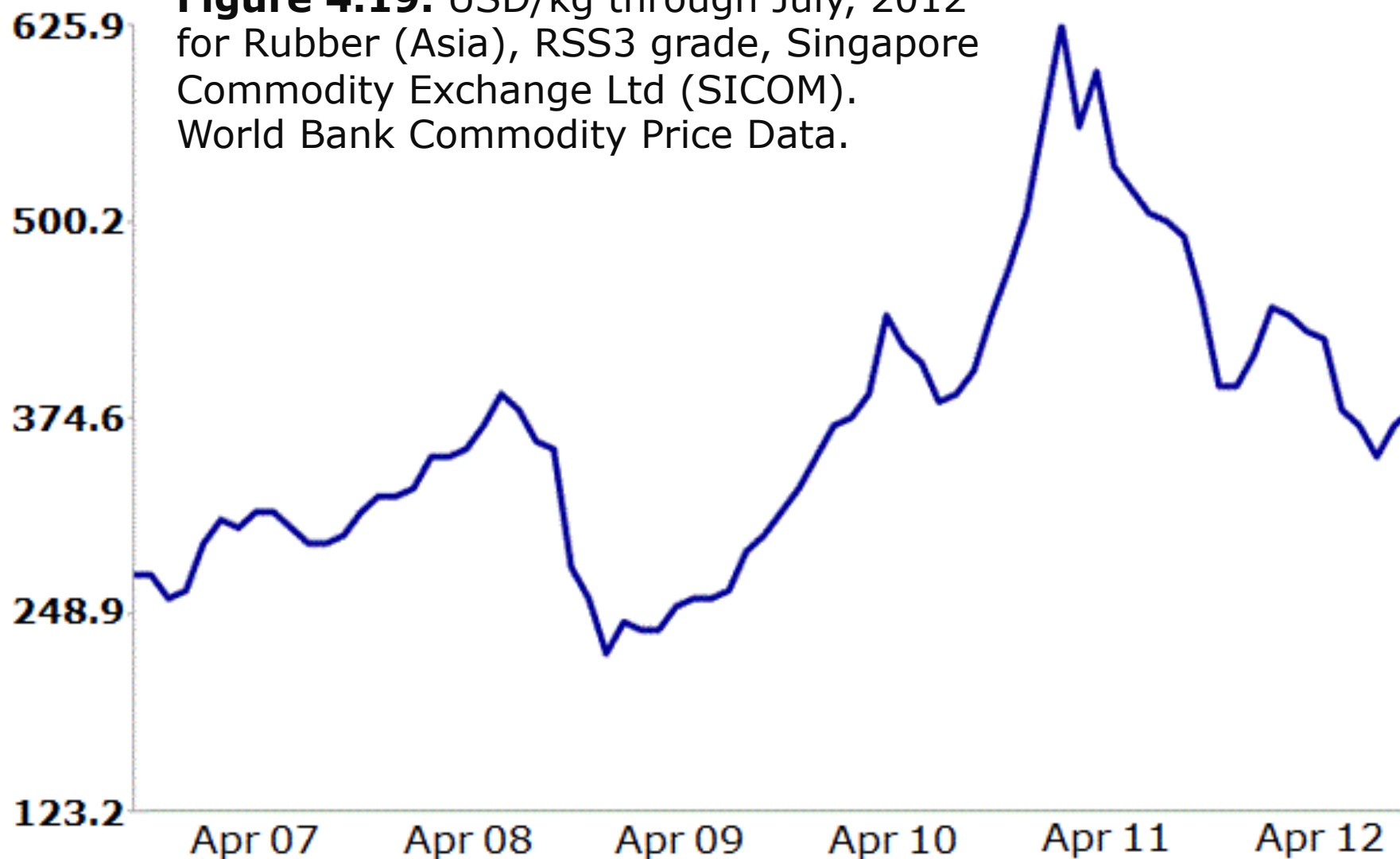
Schematic of example SIR 20 process

Figure 4.18. Example process flow for standard Indonesia crumb rubber (SIR20).



Price trends (Singapore rubber)

Figure 4.19. USD/kg through July, 2012 for Rubber (Asia), RSS3 grade, Singapore Commodity Exchange Ltd (SICOM). World Bank Commodity Price Data.



Enterprise units in rubber value chains

- ❑ **Value chain functions are performed by enterprise units** that are capable of undertaking business transactions with other market players, support providers and governance institutions.
- ❑ **One or several value chain functions may be performed by a single enterprise unit.** In developing GJVC it is necessary to engage with enterprise units based on the scope of the functions that they perform. Some examples of enterprise structures are shown in Fig. 4.20 as follows:
 - A. Multi-enterprise, market governance VC** where individual enterprises undertake each functional step in the value chain;
 - B. Partially integrated, modular governance VC** where aggregated farmer enterprises sell raw rubber directly to processors who, in turn, sell directly to allied end users;
 - C. Integrated, relational governance VC** where aggregated farmer enterprises sell SIR and/or RSS rubber to allied end users;
 - D. Fully integrated, hierarchy governance VC** where a single company (e.g. Bridgestone) undertakes all VC functions within one enterprise.

Value chain clusters - rubber enterprises

Figure 4.20. Examples of how value chain functions may be clustered within individual enterprises.

A. Multi-enterprise, market governance VC



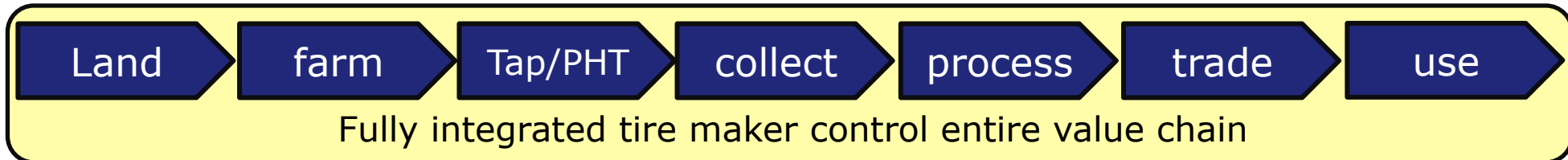
B. Partially integrated, modular governance VC



C. Integrated, relational governance VC



D. Fully integrated, hierarchy governance VC



Examples of rubber value chains

The two following pages depict an example of a rubber value chain **that portrays the present situation in GLACIER villages** and also an **improved value chain** that could be developed for the future.

The example chains are:

- ❑ **“Jungle rubber” value chain** (Table. 4.20). **Typical in GLACER villages**; market governance; few or no embedded services; poor support functions; opaque value chain; unsafe work conditions. **Opportunities for improvement.**
- ❑ **“Rubber Garden” value chain** (Table. 4.21). **Not seen in GLACER villages**; relational governance; extensive embedded services; good support functions; transparent value chain; decent work conditions. **A goal for the future.**

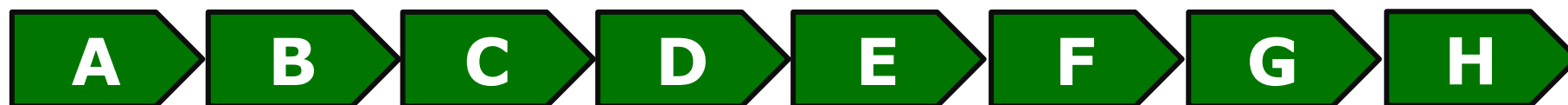
SPECIFIC VALUE CHAINS MUST BE DEVELOPED FOR PARTICULAR SITUATIONS

Every enterprise will have a unique position in specific value chains. The field tools that accompany this manual can help support providers to develop value chain approaches suitable for development of particular village enterprise units.

"Jungle rubber" value chain

Table 4.20. Example of a jungle rubber value chain similar to the type presently seen in GLACIER villages.

PRESENT



FUNCTION		ACTIONS (RESULTS)
A	Land	Owned by landlord or no clear title (insecure tenure)
B	Agronomy	Wild seedlings; poor agronomy; irregular, haphazard intercropping (low latex productivity)
C	Tap	Share tapping; poor techniques (low latex yield)
D	Post harvest	Improper coagulation; dirty conditions; addition of contaminants; poor drying (wet, weak, dirty coagulum)
E	Collect	Collector funded by processor (market-based transactions)
F	Process	Processor remote from village (no benefit to farmers)
G	Trade	Trader facilitates market (no benefit to farmers)
H	End use	End user makes tires or other products (no connection to farmers)

"Rubber garden" value chain

Table 4.21. Example of a rubber garden value chain of a type that could be developed in GLACIER villages.

FUTURE?



FUNCTION		ACTIONS (RESULTS)
A	Land	Owned by farmers clear title (secure tenure)
B	Agronomy	Cloned bud-wood; good RAS ** (e.g. RAS1 or RAS3); planned intercropping (high latex productivity)
C	Tap	Farmer tapping; good techniques (high latex yield)
D	PHT *	Proper coagulation; clean conditions; no contaminants; good drying (dry, strong, clean coagulum)
E	Collect	Farmers own collector function (relational transactions)
F	Process	Processor near village (farmers benefit from added value)
G	End use	End user makes tires or other products (raw materials traceable to farmers through transparent, fair trade VC)

* PHT is post-harvest treatment

**RAS is rubber agronomy system

Rubber value chain inputs & outputs

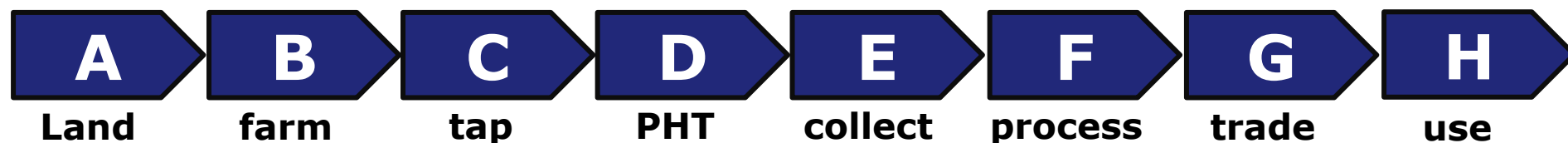
- ❑ **The potential presence of various inputs and outputs** are summarized in tables 4.22 – 4.24 and Fig.21 .
- ❑ **Capital input needs** (Table 4.22) include working capital and funds invested in long-term physical assets including land, buildings, processing equipment, utilities, vehicles and vessels. These assets are normally accounted for as **amortized assets** and contribute to “**fixed costs**”.
- ❑ **Operating input needs** (Table 4.23) include **consumable energy and materials** and mostly contribute to “**variable costs**”. Examples include process chemicals, water, fuel, electricity and packing materials.
- ❑ **Outputs** (Table 4.24) include **products for sale** (e.g. rubber at various levels of processing) and **waste products** (liquid, solid and gas).
- ❑ **Cash flow is reflected in price flows** (Fig. 4.21). Total cash flow for an individual enterprise would include price-per-unit sold multiplied by number of units sold per unit of time. **Note that DRC (dry rubber content) increases as rubber flows from farmer to end user.**

Inputs and outputs are enterprise-specific

Actual numbers must be determined as part of the budgeting, business planning and accounting functions of each enterprise unit.

Capital inputs - rubber value chain

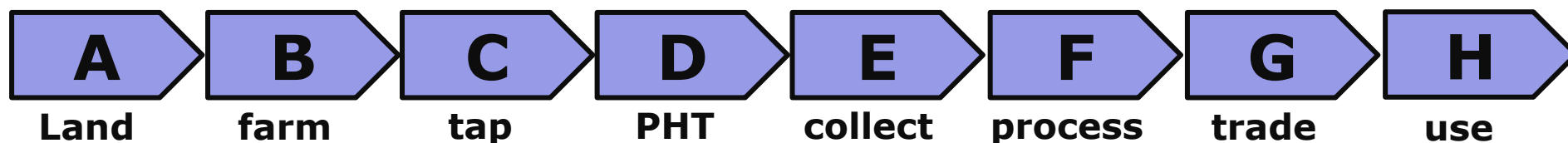
Table 4.22. Categories of capital inputs for rubber value chains producing crumb SIR or sheet RSS rubber. (“+” means item probably required)



CAPITAL INPUTS		A,B	C	D	E	F	G	H
1	Land (rent or buy)	+	-	+	+	+	-	+
2	Nursery facilities	+	-	-	-	-	-	-
3	Crop systems (trees, intercroops)	+	-	-	-	-	-	-
4	Buildings (office, factory, accommodation)	-	-	+	+	+	-	+
5	Vehicles and/or vessels	+	+	-	+	+	-	-
6	Utilities (e.g. electric, water, fuel, waste)	+	-	+	-	+	-	+
7	Processing equipment/machinery	-	+	+	-	+	-	+
8	Laboratory facilities (QA, QC, R&D)	-	-	-	-	+	-	+
9	Safety & worker amenities	+	+	+	+	+	+	+
10	Working capital	+	-	-	+	+	+	+

Operating inputs - rubber value chain

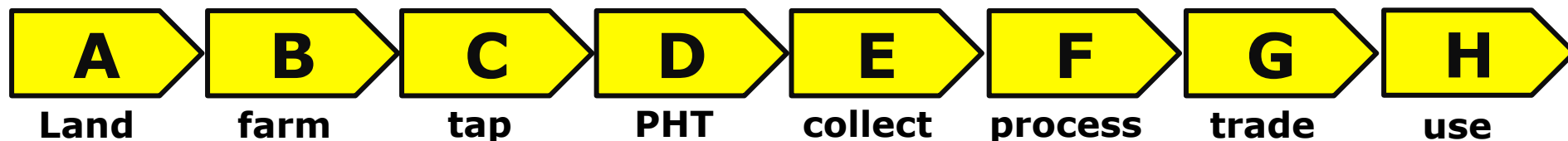
Table 4.23. Categories of operating inputs for rubber value chains producing crumb SIR or sheet RSS rubber. ("+" means item probably required)



OPERATING INPUTS		A,B	C	D	E	F	G	H
1	Fixed & variable labour	+	+	+	+	+	+	+
2	Electricity	-	-	+	-	+	-	+
3	Fuel (vehicles, vessels, machinery)	+	-	+	+	+	-	+
4	Water	+	-	+	-	+	-	+
5	Agro chemicals (e.g. fertilizer, pesticides)	+	-	-	-	-	-	-
6	Process chemicals (e.g. acid, alkali, other)	-	-	+	-	+	-	+
7	Packaging materials (e.g. poly bags, crates)	-	-	+	-	+	-	+
8	Communication costs (e.g. phone, internet)	+	+	+	+	+	+	+
9	Consumables – safety & worker amenities	+	-	+	-	+	-	+
10	Consumables – plant & process	-	-	-	-	+	-	+

Outputs - rubber value chain

Table 4.24. Categories of operating outputs for rubber value chains producing crumb SIR or sheets RSS rubber. ("+" means item gains cost/value)



OPERATING OUTPUTS		A,B	C	D	E	F	G	H
1	Wood, nuts (for oil), intercrop products	+	-	-	-	-	-	-
2	Liquid latex	-	+	-	-	-	-	-
3	Cup lumps, coagulated latex (loose & slabs)	-	-	+	+	-	-	-
4	Standard Indonesia Rubber (e.g. SIR20)	-	-	-	-	+	+	-
5	Rubber smoked sheets (e.g. RSS1)	-	-	-	-	+	+	-
6	Tires & related rubber goods	-	-	-	-	-	-	+
7	Waste water	-	-	+	-	+	-	+
8	Waste solids (e.g. biomass, debris)	+	-	-	-	+	-	+
9	Waste gases (including burning brush)	+	-	-	-	+	-	+

Pricing flow - rubber value chain

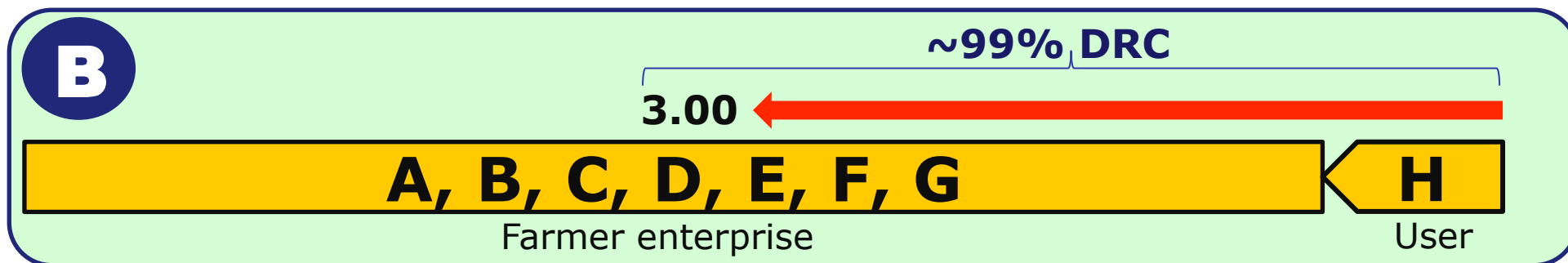
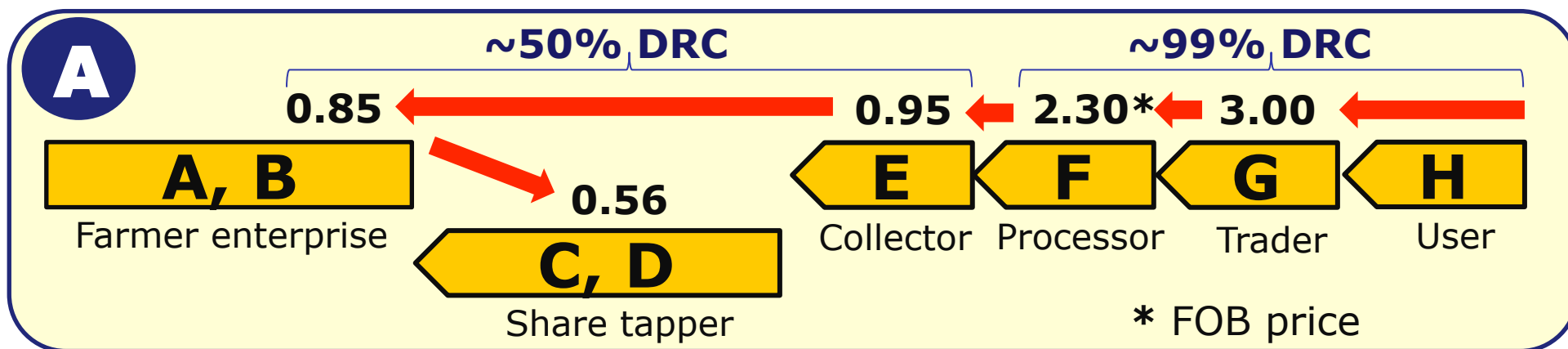
- ❑ **Farm-gate prices depend** on supply/demand conditions distance from processing factories, number of collectors/traders in the chain and transportation.
- ❑ **Thick slab with 50 % dry-rubber-content (DRC)** is the most type of rubber output produced by farmers. Reported farm-gate price at GLACIER villages at time of writing was about 0.85 USD/kg (8,000 IDR/kg). Share tappers may receive 50%-70% of this (2/3 is common*).
- ❑ **Farm-gate cost** would be equivalent to about 1.70 USD/kg on a DRC basis.
- ❑ **If targeted farm gate price** is 70-80 percent of the FOB price for equivalent rubber quality**, the FOB price would be about 2.30 USD/kg.
- ❑ **If processors pay collectors** 80-85% of FOB*, collectors would receive about 0.95 USD/kg for 50% DRC.
- ❑ **The Singapore trader price** for Standard Indonesian Rubber (SIR20) was about 3.00 USD/kg at time of writing.
- ❑ **Estimated price flows for the GLACIER VC options** in tables 4.20 and 4.21 are shown in Fig. 4.21.

* After Peramune & Budiman, 2007).

** After Hadi & Setya Budhi, 2005

Estimated price flows - rubber VC examples

Figure 4.21. Estimated price flows (**USD/kg**) for the GLACIER rubber VC options in A. Table 4.20 and B. Table 4.21. (DRC = dry rubber content).



These VC structures and price flows need to be adapted
to specific value chain conditions

Some rubber VC support providers

Rubber agronomy & technology:

- **ICRAF** - International Centre for Research on Agroforestry
- **IAARD IRI** - Indonesian Agency for Agricultural Research and Development – Indonesian Rubber Institute
- **DEPTAN & DEPHUT**- Departments of Agriculture & Forestry

Rubber processing and end uses:

- **GAPKINDO** - Gabungan Perusahaan Karet Indonesia (Rubber Association of Indonesia)
- **IRGMA, APBI, AVUBINDO & APRISINDO** – manufacturers associations

MSME business development services (BDS):

- **ILO REDD+** program and other UN initiatives
- **UNPAR** – Universitas Palangka Raya
- **NGO** – various
- **DEPKOP** - Department of Cooperatives and Small-Medium Enterprises

Farmer micro-finance:

- **MCFF** – Microfinance credit for farmers and fishermen available from banks with government subsidies and guarantees.

Linking support providers with enterprises

undertaking VC functions is an important aspect of GJVC development. Examples above are from the support providers directory that accompanies this manual.

Some rubber governance institutions

Land tenure:

- **DAMANG** – Local kedamangan councils for each village
- **Government land registry offices** – as identified for each region.
- **DEPHUT**- Department of Forestry where trees & forest lands are involved.

Establishment of business units (e.g.: Koperasi, U.D., P.T.):

- **DEPKOP** - Department of Cooperatives and Small-Medium Enterprises
- **Government business registry offices** – as identified for each region.

Industry and product standards:

- **SNI** – Standar Nasional Indonesia specifications for rubber products.
- **Buyer specifications** – for specific transactions between buyers & sellers.

Worker health and safety:

- **DEPKES** – Ministry of Health.
- **DEPPERIN**– Ministry of industry.
- **Occupational safety & health regulations** – from various government agencies.

Linking governance institutions with enterprises

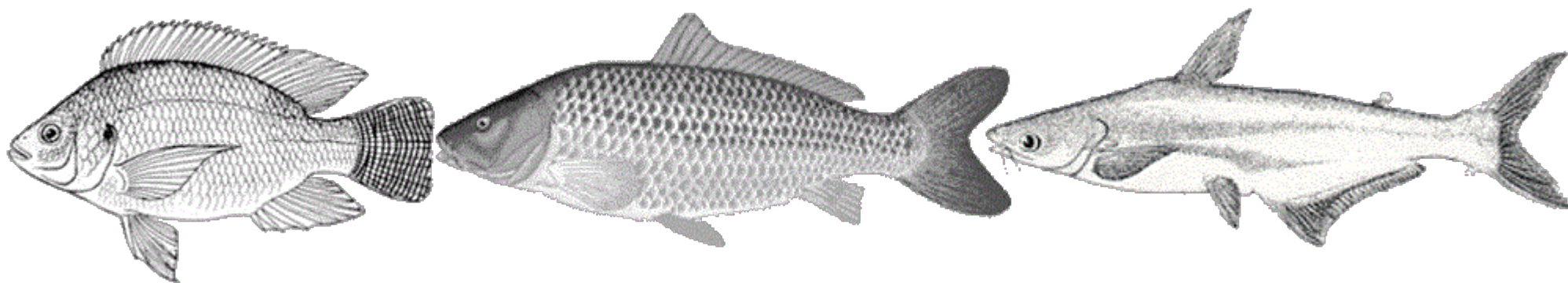
undertaking VC functions is an important aspect of GJVC development. Examples above are from the governance institutions directory that accompanies this manual.

Training Manual

Value Chain Development for Green Jobs

SECTION 4.D.

FISH VALUE CHAIN RESEARCH



JANUARY, 2013
GREEN LIVELIHOOD ACCESS FOR CENTRAL KALIMANTAN'S INCLUSIVE
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ILO GLACIER PROJECT



Enterprise units in fish value chains

- ❑ **Value chain functions are performed by enterprise units** that are capable of undertaking business transactions with other market players, support providers and governance institutions.
- ❑ **One or several value chain functions may be performed by a single enterprise unit.** In developing GJVC it is necessary to engage with enterprise units based on the scope of the functions that they perform. Some examples of enterprise structures are shown in Fig. 4.14 as follows:
 - A. Multi-enterprise wild catch, market governance VC**, individual enterprises undertake each functional step in the value chain;
 - B. Partially integrated aquaculture, modular governance VC** where aggregated farmer enterprises sell live fish directly to trader/retailers (e.g. from their restaurants or market stalls) who in turn, sell directly to consumers;
 - C. Integrated aquaculture, relational governance VC** where aggregated farmer enterprises sell live fish directly to consumers (e.g. from their restaurants or market stalls).

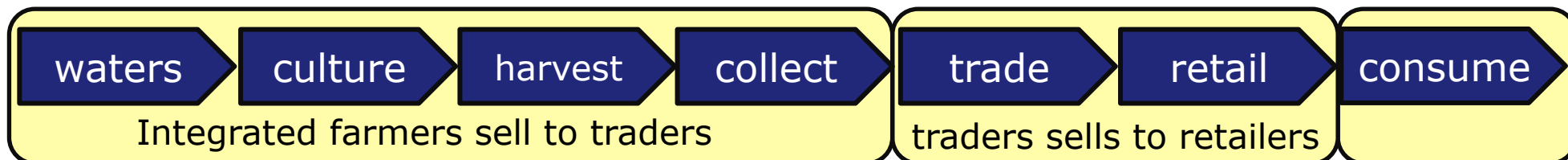
Value chains clusters in fish enterprise units

Figure 4.22. Examples of how value chain functions may be clustered within individual enterprises.

A. Multi-enterprise wild catch, market governance VC



B. Partially integrated aquaculture, modular governance VC



C. Integrated aquaculture, relational governance VC



Examples of fish value chains

The two following pages depict an example of a fish value chain **that portrays the present situation in GLACIER villages** and also an **improved value chain** that could be developed for the future.

The example chains are:

- ❑ **“Capture Fishing” value chain** (Table. 4.25). **Typical in GLACER villages**; market governance; few or no embedded services; poor support functions; opaque value chain; dubious sustainability; unsafe work conditions; poor gender parity. **Opportunities for improvement.**
- ❑ **“Aquaculture” value chain** (Table. 4.26). **Not seen in GLACER villages**; relational governance; extensive embedded services; good support functions; transparent value chain; sustainable; decent work conditions; good gender parity. **A goal for the future.**

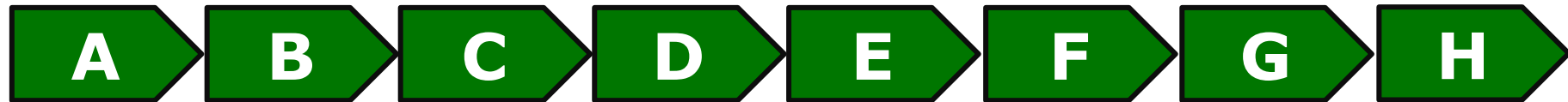
SPECIFIC VALUE CHAINS MUST BE DEVELOPED FOR PARTICULAR SITUATIONS

Every enterprise will have a unique position in specific value chains. The field tools that accompany this manual can help support providers to develop value chain approaches suitable for development of particular village enterprise units.

"Capture fishing" value chain

Table 4.25. Example of a capture fishing value chain similar to the type presently seen in GLACIER villages.

PRESENT



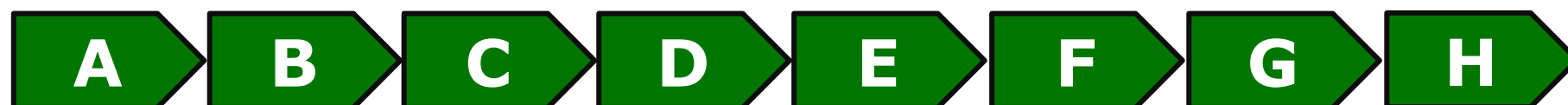
FUNCTION		ACTIONS (RESULTS)
A	Waters	Public domain (no tenure)
B	Capture	Methods often inefficient or destructive (not sustainable)
C	Harvest	Mixed catch; by-catch (mixed fish value; waste by-catch)
D	Hold	High live-catch mortality (poor quality; losses)
E	Collect	Collector funded by trader (market-based transactions)
F	Trade	Trader facilitates market (no benefit to farmers)
G	Retailer	Restaurants or fishmongers in markets (no benefit to farmers)
H	End use	Consumers (no connection to farmers)

* PHT is post-harvest treatment

"Aquaculture" value chain

Table 4.26. Example of an aquaculture value chain of a type that could be developed in GLACIER villages.

FUTURE?



FUNCTION		ACTIONS (RESULTS)
A	Enclosure	Ponds or cages owned by farmers (secured tenure)
B	Culture	Proven aquaculture methods with technical and scientific support (sustainable)
C	Harvest	Known species; uniform high quality (high value; no waste)
D	Hold	Low live-harvest mortality; good drying (good quality)
E	Collect	Farmers own collector function (relational transactions)
F	Trade	Farmer enterprises sell directly market (benefit to farmers)
G	Retailer	Farmers may own restaurants or fish stalls in markets (benefit to farmers)
H	End use	Consumers (transparent connection to farmers)

Fish value chain inputs & outputs

- ❑ **The potential presence of various inputs and outputs** are summarized in tables 4.27 – 4.28 and Fig. 4.23.
- ❑ **Capital input needs** (Table 4.27) include working capital and funds invested in long-term physical assets including fish cages/ponds, buildings, processing equipment, utilities, vehicles and vessels. These assets are normally accounted for as **amortized assets** and contribute to “**fixed costs**”.
- ❑ **Operating input needs** (Table 4.28) include **consumable energy and materials** and mostly contribute to “**variable costs**”. Examples include feed, medicines, water, fuel and electricity.
- ❑ **Outputs** (Table 4.29) include **products for sale** (e.g. live fish) and **waste products** (liquid and solid).
- ❑ **Cash flow is reflected in price flows** (Fig. 4.23). Total cash flow for an individual enterprise would include price-per-unit sold multiplied by number of units sold per unit of time.

Inputs and outputs are enterprise-specific

Actual numbers must be determined as part of the budgeting, business planning and accounting functions of each enterprise unit.

Capital inputs – fish aquaculture value chain

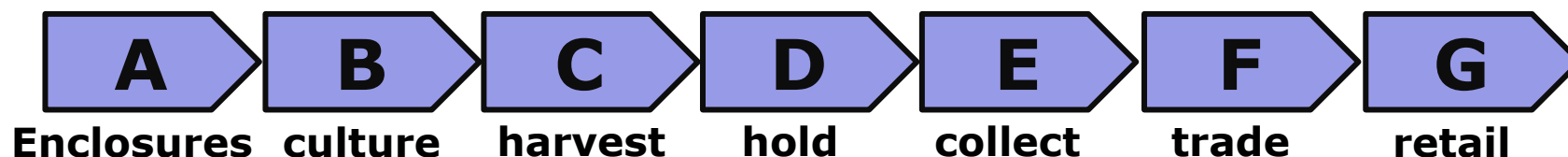
Table 4.27. Categories of capital inputs for value chains producing live fish for human consumption. (“+” means item probably required)



CAPITAL INPUTS		A,B	C	D	E	F	G
1	Land/water (rent or buy)	+	-	-	-	-	-
2	Hatchery facilities	+	-	-	-	-	-
3	Cages/ponds and fish stocks	+	-	-	-	-	-
4	Buildings	+	-	+	+	+	+
5	Vehicles and/or vessels	+	+	-	+	+	-
6	Utilities (e.g. electric, water, fuel, waste)	+	-	+	+	+	-
7	Processing & holding equipment	+	-	+	+	+	+
8	Laboratory facilities (QA, QC, R&D)	+	-	-	-	-	-
9	Safety & worker amenities	+	+	+	+	+	+
10	Working capital	+	-	-	+	+	+

Operating inputs - fish aquaculture VC

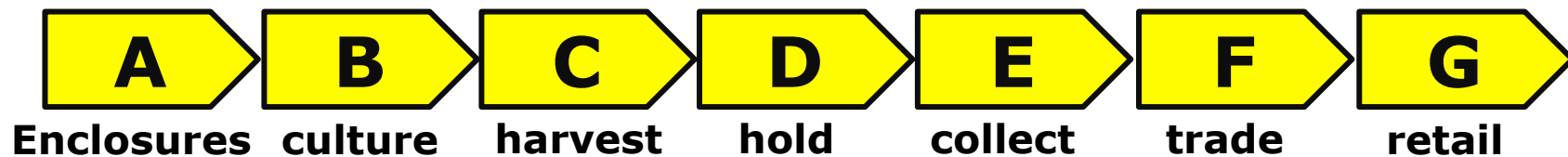
Table 4.28. Categories of operating inputs for value chains producing live fish for human consumption. (“+” means item probably required)



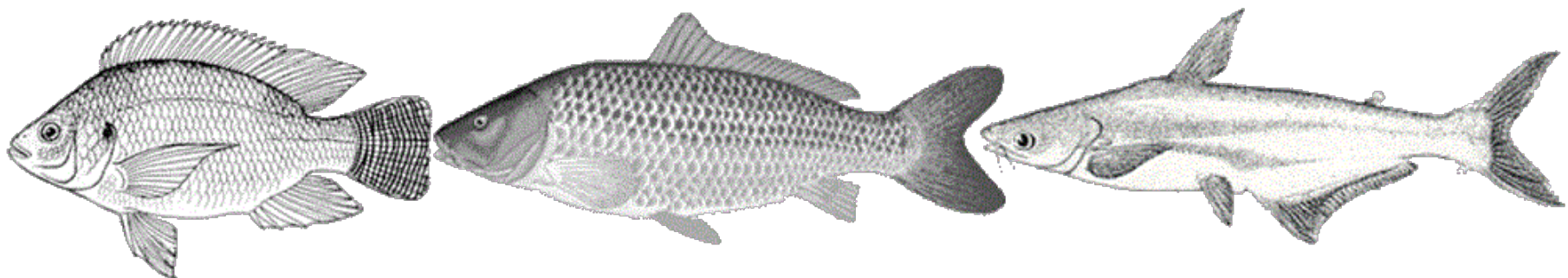
OPERATING INPUTS		A,B	C	D	E	F	G
1	Fixed & variable labour	+	+	+	+	+	+
2	Electricity	+	-	+	+	+	+
3	Fuel (vehicles, vessels, machinery)	+	+	+	+	+	-
4	Water	+	+	+	+	+	+
5	Feed	+	-	-	-	-	+
6	Medicines & chemicals (e.g. alkali)	+	-	-	-	-	-
7	Packaging materials (e.g. poly bags, crates)	-	-	-	-	-	+
8	Communication costs (e.g. phone, internet)	+	+	+	+	+	+
9	Consumables – safety & worker amenities	+	-	-	-	-	+
10	Consumables – plant & process	+	-	-	-	-	+

Outputs - fish aquaculture value chain

Table 4.29. Categories of operating inputs for value chains producing live fish for human consumption. ("+" means item gains cost/value through link)



OPERATING OUTPUTS		A,B	C	D	E	F	G
1	Live fish	+	+	+	+	+	+
2	Processed/cooked fish	-	-	-	-	-	+
7	Waste water	+	+	+	+	+	+
8	Waste solids (e.g. biomass, debris)	+	+	+	+	+	+



Pricing flow – fish aquaculture value chain

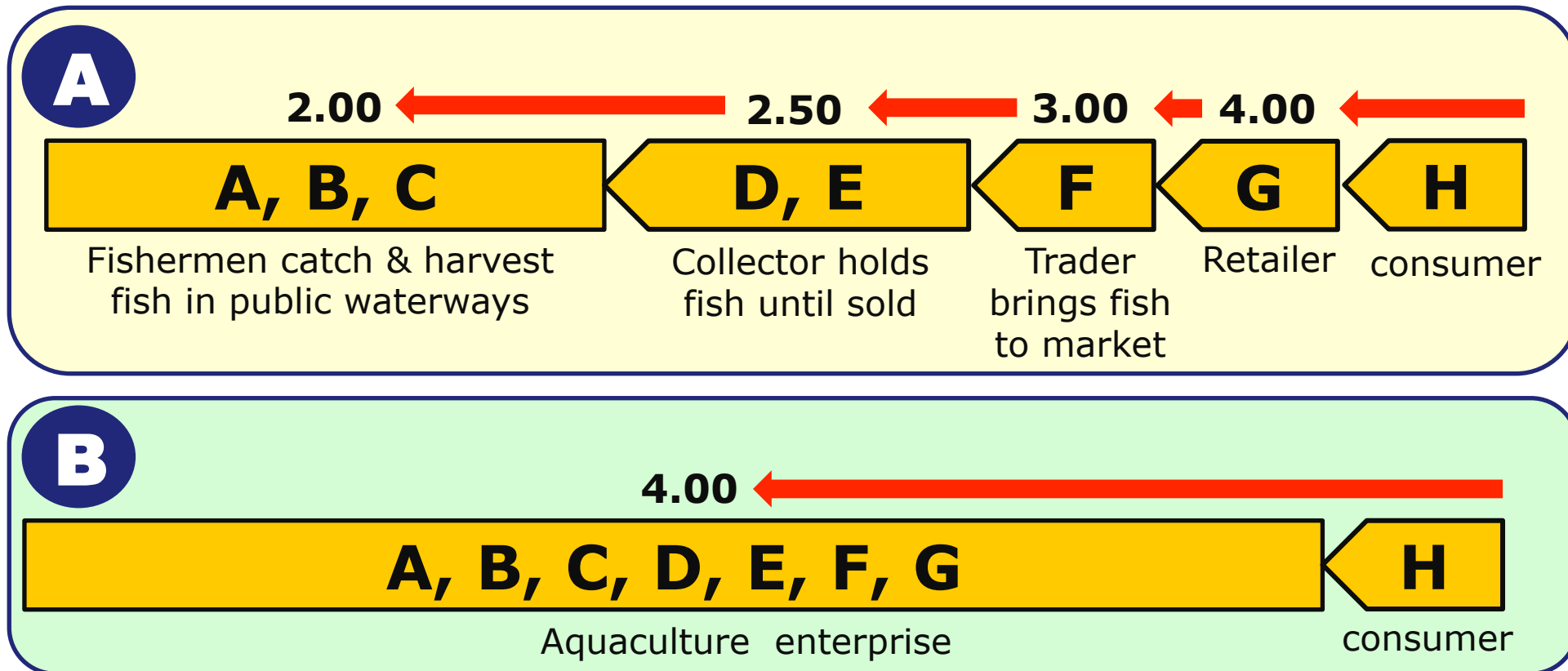
- ❑ **Farm-gate prices depend** on supply/demand conditions, distance from markets, number of collectors/traders in the chain and transportation.
- ❑ **Live fish** are the main type of product sold into regional fish markets. Retail prices vary widely depending on species. During the present project fish vendors in Palangkaraya quoted prices ranging from 20 – 150 K IDR/kg depending on fish type.
- ❑ **Farm-gate cost** was assumed to be 50% of retail price for the present illustration.
- ❑ **Trader price** was assumed to be 75% of retail price for the present illustration.
- ❑ **Tolling costs by collectors** were estimated at 05 USD/kg. This could vary widely depending on collector leverage in financing the value chain.
- ❑ **Estimated price flows for the GLACIER VC options** in tables 4.25 and 4.26 are shown in Fig. 4.23.

NOTE: These numbers are for illustration only

They reflect typical fish market flows but vary widely between fish types, logistics and value chain structure

Estimated price flows for fish VC examples

Figure 4.23. Estimated, generalised price flows (**USD/kg**) for the GLACIER live fish VC options in A. Table 4.25 and B. Table 4.26.



NOTE: These numbers are for illustration only

They reflect typical fish market flows but vary widely between fish types, logistics and value chain structure

Some aquaculture VC support providers

Aquaculture technology:

- **KKP** – Indonesian Ministry of Fisheries and Oceans
- **BPPT** - Indonesian Agency for the Assessment and Application of Technology
- **UNPAR**- Universitas Palangka Raya
- **FAO** – United Nations Food and Agriculture Organization
- **WorldFish** - member of the CGIAR Consortium
- **SEAFDEC** - Southeast Asia
- **NACA** – Network of Aquaculture Centres in Asia

MSME business development services (BDS):

- **ILO REDD+** program and other UN initiatives
- **UNPAR** – Universitas Palangka Raya
- **NGO** – various
- **DEPKOP** - Department of Cooperatives and Small-Medium Enterprises

Farmer micro-finance:

- **MCFF** – Microfinance credit for farmers and fishermen available from banks with government subsidies and guarantees.
- **KKP** – Indonesian Ministry of Fisheries and Oceans

Linking support providers with enterprises

undertaking VC functions is an important aspect of GJVC development. Examples above are from the support providers directory that accompanies this manual.

Some aquaculture governance institutions

Land and waterways tenure:

- **DAMANG** – Local kedamangan councils for each village
- **Government land registry offices** – as identified for each region.
- **KKP** – Indonesian Ministry of Fisheries and Oceans

Establishment of business units (e.g.: Koperasi, U.D., P.T.):

- **DEPKOP** - Department of Cooperatives and Small-Medium Enterprises
- **Government business registry offices** – as identified for each region.

Industry and product standards:

- **KKP** – Indonesian Ministry of Fisheries and Oceans
- **Buyer specifications** – for specific transactions between buyers & sellers.

Worker health and safety:

- **DEPKES** – Ministry of Health.
- **DEPPERIN** – Ministry of industry.
- **Occupational safety & health regulations** – from various government agencies.

Linking governance institutions with enterprises

undertaking VC functions is an important aspect of GJVC development. Examples above are from the governance institutions directory that accompanies this manual.

Training Manual

Value Chain Development for Green Jobs

SECTION 5. VALUE CHAIN ANALYSIS



Designing interventions that foster GJVC in REDD+ frameworks within satoyama landscapes



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Section 5 objectives

GJVC market system participants will understand how to use tools for developing interventions that could lead to development and expansion of GJVC in REDD+ regional landscapes within the GLACIER project area. Subsection objectives include:

5.A Rubber value chain analysis

Workshop participants will engage in analysis of GLACIER rubber value chains with identification of both short-term and middle-term interventions that can assist enterprises in village landscapes to develop as market players in robust, profitable, sustainable green jobs value chains.

5.B Fish value chain analysis

Participants will engage in analysis of GLACIER fish value chains with identification of both short-term and middle-term interventions that can assist enterprises in village landscapes to develop as market players in robust, profitable, sustainable green jobs value chains.

5.C Market system needs analysis

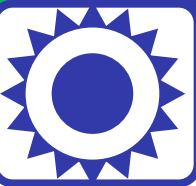
Participants will engage in analysis of the state of market system functions in the GLACIER region with a view toward strengthening village landscape economies in a REDD+ context with economies based on green jobs value chains. They will propose issues and actions based on examples presented.



Section 5 intended outcomes

Intended outcomes from attendance at Section 5 sessions include:

- 1. Workshop participants will engage in analysis of GLACIER rubber value chains** with identification of both short-term and middle-term interventions that can assist enterprises in village landscapes to develop as market players in robust, profitable, sustainable green jobs value chains.
- 2. Participants will engage in analysis of GLACIER fish value chains** with identification of both short-term and middle-term interventions that can assist enterprises in village landscapes to develop as market players in robust, profitable, sustainable green jobs value chains.
- 3. Participants will engage in analysis of the state of market system functions** in the GLACIER region with a view toward strengthening village landscape economies in a REDD+ context with economies based on green jobs value chains. They will propose issues and actions based on examples presented.
- 4. MOST IMPORTANT: LINKS WILL STRENGTHEN BETWEEN VILLAGE MSME AND SUPPORT PROVIDERS.**



Section 5 validations and actions

Validation of workshop participants' comprehension of Section 5 materials may include:

- 1. Field trips** to the five GLACIER villages and conduct of interviews and focus groups will result in participants' **development of GJVC intervention action plans** applicable to specific MSME engaged rubber and fish production (present and future);
- 2. Feedback from participants** concerning interventions for the targeted GLACIER value chains and additional chains worthy of future consideration;
- 3. Suggestions from participants** as to how this section of the GLACIER GJVC manual – as a “living document” – may be improved.

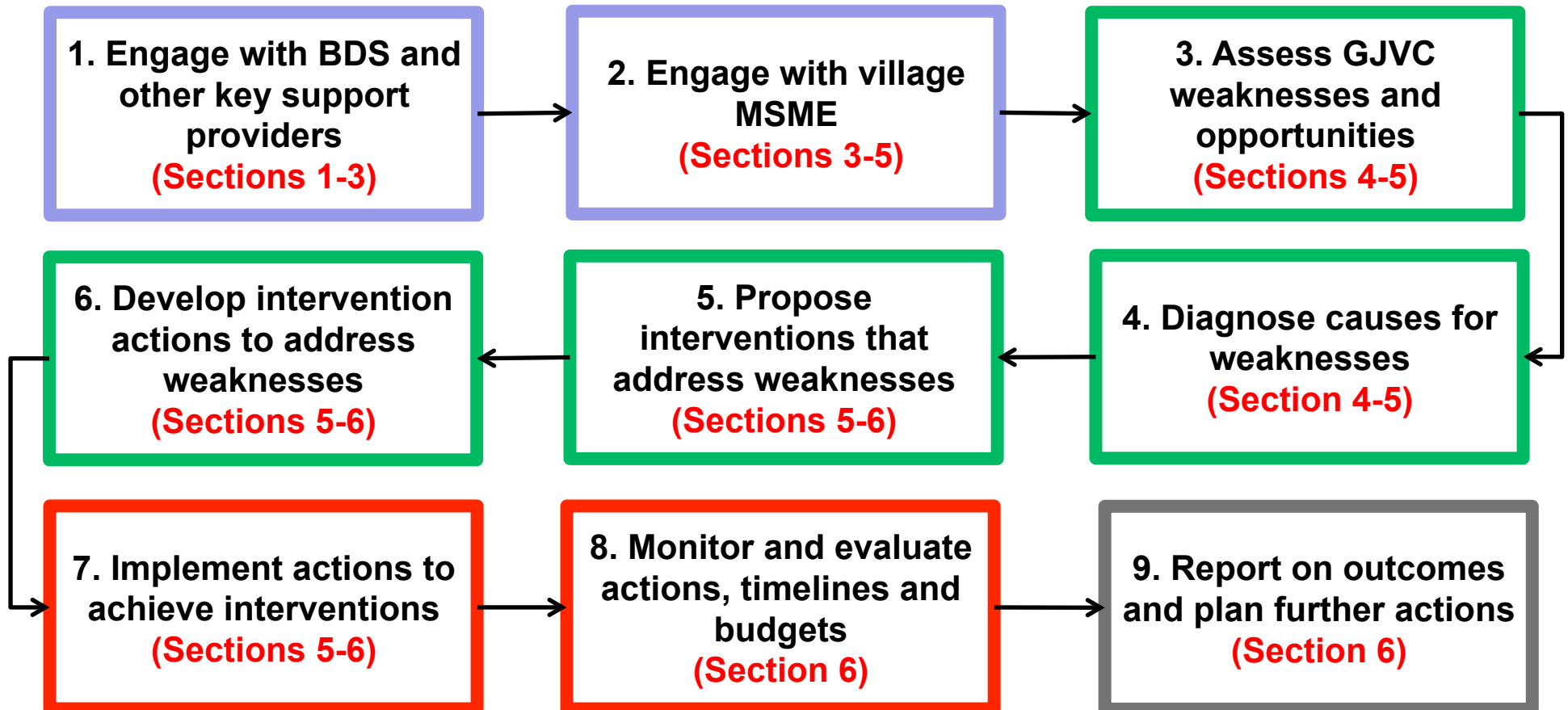
Attached forms useful for value chain research and analysis:

BDS_PROVIDERS, COLLECTOR_INTERVIEW, GOVERNANCE_INSTITUTIONS
PROCESSOR_MARKET, PRODUCER_FOCUS_GROUP,
PRODUCER_INTERVIEW, PRODUCER_MARKET, SUPPORT_PROVIDERS,
TRADER_MARKET, TRAINING_NEEDS and VC_RESEARCH_FORMS

Intervention action plans

The present training manual and attached forms can be used as tools during planning and execution of intervention actions. Six action planning steps are summarised in Fig. 5.1.

Figure 5.1. A six step approach to action planning for GJVC.



Preamble to analyses that follow

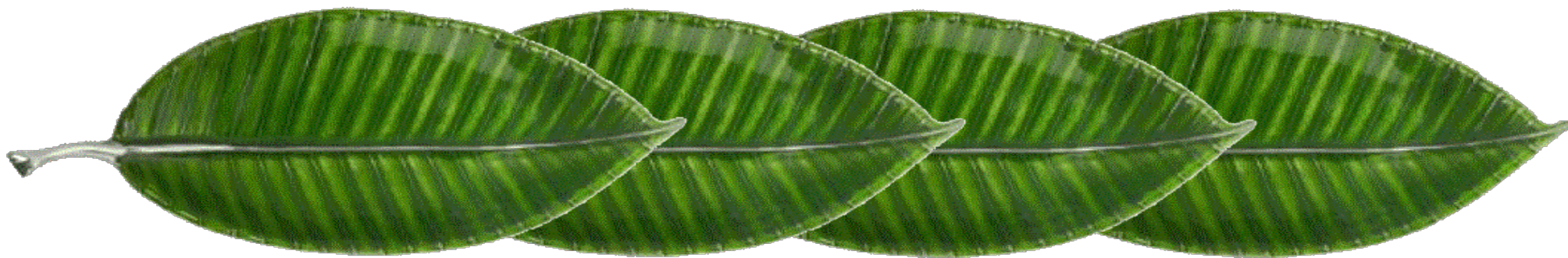
- ❑ **The value chain analyses in Section 5 of this manual** were made with reference to the value chain research reported in Section 4.
- ❑ **Analyses were made in light of the examples** of rubber and fish value chains that portrayed the present situation in GLACIER villages and also portrayed improved value chains that could be developed for the future.
- ❑ **Analyses were made in the holistic context** of village satoyama landscapes.
- ❑ **It was intended that the present manual should serve not only** as a tool for developing rubber and fish value chains in five villages **but also** as a tool that can be expanded and developed to apply to many villages engaged in a wide range of value chains.
- ❑ **In the long run the success of village-based MSME in green jobs value chains must be measured in terms of successful and profitable** operation and growth of those MSME in a context of decent work and sustainability.

Training Manual

Value Chain Development for Green Jobs

SECTION 5.A.

RUBBER VALUE CHAIN ANALYSIS



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VC analysis overview - rubber

- ❑ **In the GLACIER villages 100% of rubber cultivation** was in village landscape small holdings. Overall, Indonesia is 84% smallholdings.
- ❑ **In 2011 the average rubber yield from GLACIER villages** was estimated at about 500 kg/ha as compared to reported 2005 yields of 862 kg/ha (Indonesia average); 1,875 kg/ha (Thailand); 1,727 kg/ha (India); 1,483kg/ha (Vietnam); and 1,330 kg/ha (Malaysia).*
- ❑ **Rubber is also grown by smallholders** in Thailand (90%); and India (89%) where careful management and institutional support helps smallholders.*
- ❑ **Smallholder support in India and Thailand** focus on:
 - assistance in securing high quality planting material*;
 - Training and monitoring directed toward good agronomy and tapping practices*;
 - support for marketing activities. *
- ❑ **Low rubber yields from GLACIER villages appeared to be related to a lack of similar support.**

* After Peramune & Budiman (2007)

Impacts of poor support functions - rubber

The present value chain assessment indicated that in Central Kalimantan weak support functions have resulted in:

- ❑ **little or no planting** of high-yield clonal material;
- ❑ **failure to halt spread** of low-yielding local seedlings and unselected clonal seedlings;
- ❑ **poor agronomy practices** and prevalence of “jungle rubber” smallholdings;
- ❑ **proliferation of poor tapping practices** (which result in poor latex yields and can reduce tapping lifespan by around 10 years*);
- ❑ **Disease problems** (e.g. damage to root systems);
- ❑ **limited recognition of the environmental benefits** of rubber agro forestry in designing replanting programs.
- ❑ **All of these problems can be solved using technology and expertise available in Indonesia.**

* After Peramune & Budiman (2007)

Consequences of poor support - rubber

According to findings by Peramune & Budiman (2007):

- ❑ **Poor productivity caused costs in Indonesia to be up to 30% more** than competitors as producers augment poor production economics by introducing contaminants.
- ❑ **Experiences from smallholder development programs** have shown that profitable and well informed farmers were likely to supply better-quality raw rubber and to invest in timely replanting to ensure a regular supply.
- ❑ **Absence of fair village and district level financing** for smallholders has resulted in smallholders' inability to obtain fair prices. On average although processors pay around 80 to 85% of FOB for raw material less than 50%, often as little as 30% goes down to the actual producer.
- ❑ **The present manual provides suggestions for interventions** that can result in much stronger support functions for GLACIER village rubber farmers.

Tools integral to this training manual were designed to assist support service providers.

They are intended to facilitate collaboration with village enterprises as green jobs value chains are developed and operated.

Mapping of intervention areas - rubber

Table 5.1. Examples of some value chain interventions that may strengthen GLACIER rubber value chain functions.



FUNCTION		POSSIBLE INTERVENTION OUTCOMES
A	Land	Secure farmer land tenure with proper certification
B	Agronomy	Make cloned bud-wood available; implement good RAS ** (e.g. RAS1 or RAS3); develop intercropping; improve tree health; replace over-mature trees
C	Tap	Introduce maintain and good tapping techniques
D E F	PHT*, collect, process	Aggregate farmer enterprises and develop them as vertically integrated businesses that can sell high quality rubber products (e.g. SIR 20 & RSS1) to end users on fair trade and fair finance terms.
G	End use	Transparently link socially responsible users to farmers

* PHT is post-harvest treatment

**RAS is rubber agronomy system

Short-term interventions (STI) - rubber

The following short-term intervention prospects were identified during workshops associated with development of this manual. “Short-term” is defined as being within one year of intervention initiation, during GLACIER pilot project actions. Interventions focus on problems with short term solutions and on enabling village MSME to undertake longer term development that can follow the GLACIER pilot project.

- 1. Good tapping practices.** Train farmers and share tappers in tapping techniques that minimise tree damage and increase latex yields.
- 2. Disease control.** Eradicate pests that are destroying rubber tree root systems or otherwise damaging the trees.
- 3. Quality control/assurance.** Link famers/tappers through to processors in such a way that good quality rubber is produced and quality is rewarded.
- 4. Assist with land certification** so farmer enterprises have secure land tenure.
- 5. Aggregate farmers into viable enterprise units** including formal cooperatives or SME (UKM) that can become vertically integrated rubber producers. Link to fair markets and fair finance to ensure that MSME have a path toward financial viability. Foster ongoing BDS capacity for ongoing MSME operations.

Rubber STI-1 Good tapping practices

Training & linking actions

- **Field level training** program for producers and tappers.
- **Exposure of tappers** from outlying areas to progressive smallholders.
- **Provision of tapping tools** for best practice rubber tapping.
- **Build training/refresher capacity** (e.g. TOT/TOE for key farmers).

Potential allies

- **Integrated end users** with CSR programs such as Bridgestone
- **IAARD IRI** Indonesian Agency for Agricultural Research and Development – Indonesian Rubber Institute
- **ICRAF** - International Centre for Research on Agroforestry

Measurable input/output indicators

- **Number of tappers** trained
- **Tree bark conservation** – economic (increase in tapping life) and ecological (increase in tree life)
- **Increase in latex yields**

Rubber STI-2 Disease & pest control

Training & linking actions

- **Field level training** program for farmers.
- **Exposure of farmers** from outlying areas to progressive smallholders.
- **Provision of pest control agents** for best practice rubber agronomy.
- **Build training/refresher capacity** (e.g. TOT/TOE for key farmers).

Potential allies

- **Integrated end users** with CSR programs such as Bridgestone
- **IAARD IRI** Indonesian Agency for Agricultural Research and Development – Indonesian Rubber Institute
- **ICRAF** - International Centre for Research on Agroforestry

Measurable input/output indicators

- **Number of farmers** trained
- **Successful disease abatement** – restoration of tree health and productivity

Rubber STI-3 Quality control/assurance

Training & linking actions

- **Field level training** program for farmers about quality issues.
- **Exposure of farmers** to best practices.
- **Linking farmers to processors** to ensure that good product quality is rewarded.
- **Build training/refresher capacity** (e.g. TOT/TOE for key farmers).

Potential allies

- **Integrated end users** with CSR programs such as Bridgestone
- **GAPKINDO** - Gabungan Perusahaan Karet Indonesia (Rubber Association of Indonesia)
- **IRGMA, APBI, AVUBINDO & APRISINDO** – manufacturers associations

Measurable input/output indicators

- **Number of farmers** trained
- **Successful links formed** – where farmers make high quality products and buyers pay premium prices based on that quality
- **Increased profitability** for linked enterprises

Rubber STI-4 Assist with land certification

Training & linking actions

- **Identify instances** where land certification is not secure.
- **Facilitate engagement** between farmers and land certification authorities (both government and kedamangan).

Potential allies

- **ILO REDD+** GLACIER project interventions
- **UNPAR and local NGO/BDS** providers

Measurable input/output indicators

- **Hectares of land certified** and useable for rubber production.
- **Number of farm families/MSME** who gain official tenure of land useful for rubber production.

Rubber STI-5 Aggregate farmer enterprises

Training & linking actions

- **Enterprise training** to familiarize farmers with benefits of aggregation.
- **Link to BDS advice & support** to assist farmers in evaluating, choosing and establishing appropriate business entities (e.g. Koperasi, U.D., C.V., P.T.).
- **Link to fair markets and fair finance** to ensure that MSME have a path toward financial viability.
- **Foster ongoing BDS capacity** for ongoing MSME operations.

Potential allies

- **DEPKOP** - Department of Cooperatives and Small-Medium Enterprises
- **ILO REDD+** GLACIER project interventions
- **UNPAR and local NGO/BDS** providers
- **Regional and national banks** (e.g. for MCFF involvement)

Measurable input/output indicators

- **Number of MSME formed** and operating successfully.
- **Number of green jobs** secured and created.
- **Green VC criteria compliance** scores for MSME.

Medium-term interventions (MTI) - rubber

The following medium-term intervention prospects were identified during workshops associated with development of this manual. The term “medium-term” is defined as being within five years of intervention initiation.

These interventions may follow GLACIER pilot project actions. By *“Putting services into the core of market systems”* in the manner of Herr & Muzira (2009) the GLACIER pilot project may facilitate formation and linkages of village MSME that can lead to medium- and long-term GJVC success.

- 1. Rehabilitate/replant over-mature plantings.** Cut down old trees and use/sell the wood.
- 2. Set up certified nurseries** at local levels to ensure that rubber gardens are planted with high-yielding trees.
- 3. Introduce/support appropriate rubber agronomy systems (RAS)** that optimise rubber production efficiency and productivity while making best economic use of inter-crops.
- 4. Vertically integrate farmer enterprises** to the point where they can sell finished product (e.g. SIR 20 and RSS 1) directly to end-users.

Rubber MTI-1 Rehabilitate/replant

Training & linking actions

- **Field level training** program for farmers concerning rehabilitation options.
- **Link farmer MSME to seedling supplies** so best trees can be planted.
- **Link to best wood markets** for best value from cut over-mature trees.
- **Link to sources of finance** for rehabilitation and replanting investments.

Potential allies

- **Government forestry & development agencies**
- **Integrated end users** with CSR programs such as Bridgestone
- **IAARD IRI** Indonesian Agency for Agricultural Research and Development – Indonesian Rubber Institute
- **ICRAF** - International Centre for Research on Agroforestry
- **Banks** (e.g. for possible MCFF financing)

Measurable input/output indicators

- **Number of hectares** rehabilitated and replanted
- **Number of farm families/MSME** who benefit from added land value and increased rubber production.
- **Green jobs value chain** impacts.

Rubber MTI-2 Set up certified nurseries

Training & linking actions

- **Field level training** program for farmers concerning nursery options.
- **Link farmer MSME to nursery technologies** so options can be assessed.
- **Link to existing nurseries** for immediate development needs.
- **Establish local nurseries** for ongoing rehabilitation and planting needs.

Potential allies

- **Government forestry & development agencies**
- **Integrated end users** with CSR programs such as Bridgestone
- **IAARD IRI** Indonesian Agency for Agricultural Research and Development – Indonesian Rubber Institute
- **ICRAF** - International Centre for Research on Agroforestry
- **Banks** (e.g. for possible MCFF financing)

Measurable input/output indicators

- **Certified nursery capacity established.**
- **Area of plantings served by nurseries.**
- **Number of farm families/MSME** who benefit from planting of good seedlings (e.g. in higher rubber yields).

Rubber MTI-3 agronomy systems (RAS)

Training & linking actions

- **Field level training** program for farmers concerning RAS options.
- **Link farmer MSME to RAS technologies** so options can be assessed.
- **Implement pilot scale testing** of the most likely RAS options.
- **Establish & support best RAS practices** based on solid technical and business solutions from support providers.

Potential allies

- **Government forestry & development agencies**
- **Integrated end users** with CSR programs such as Bridgestone.
- **IAARD IRI, ICRAF** and other technical support agencies.
- **Domestic and international NGO/BDS** providers
- **Banks** (e.g. for possible MCFF financing)

Measurable input/output indicators

- **Area of plantings using best RAS practices.**
- **Number of farm families/MSME** who benefit from use of best RAS practices (e.g. higher rubber yields, higher intercrop income, greater profitability).
- **Green jobs value chain** impacts.

Better rubber agronomy systems (RAS)

Rubber from GLACIER villages currently planted as “jungle rubber” with rubber trees having various degrees of maturity mixed with a variety of other vegetation. Many trees were reported as being at least fifty years old and in need of rehabilitation using modern rubber agronomy systems (RAS).

From this ...  **... to this.**



Figure 5.2. A. Rubber jungle at Pilang in Central Kalimantan. **B.** Rubber plantation in Sri Lanka (slrubberindustry.com)

Rubber MTI-4 Vertically integrate enterprises

Training & linking actions

- **Enterprise training** to familiarize farmers with benefits of vertical integration.
- **Link to BDS advice & support** to assist farmers in evaluating options for integration through to processing and selling SIR and/or RSS products.
- **Foster BDS support for business planning** and support functions for vertically integrated farmer MSME in green jobs value chains.
- **Facilitate fair finance** for funding, development and execution of vertically integrated MSME business plans.

Potential allies

- **DEPKOP** - Department of Cooperatives and Small-Medium Enterprises
- **ILO REDD+** GLACIER project interventions
- **UNPAR and local NGO/BDS** providers
- **Regional and national banks** (e.g. for MCFF involvement)

Measurable input/output indicators

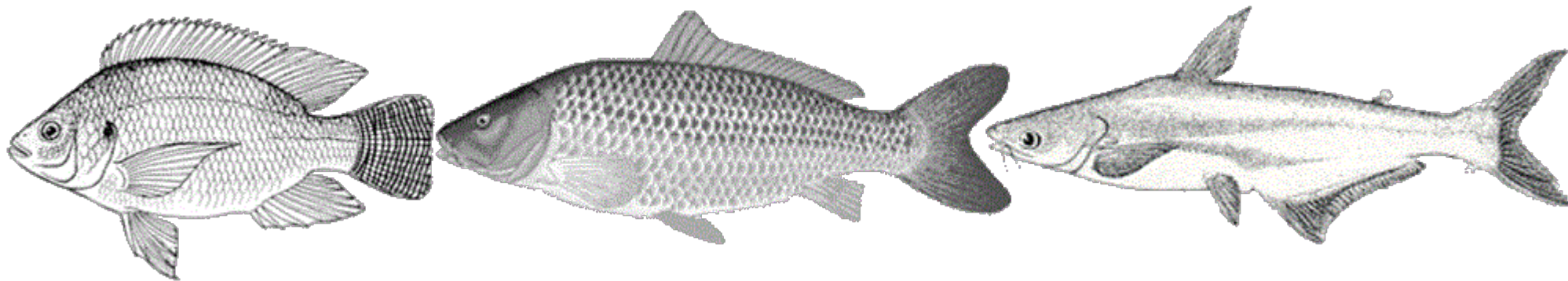
- **Number of MSME vertically integrated** and operating successfully.
- **Number of green jobs** secured and created.
- **Green VC criteria compliance** scores for vertically integrated MSME.

Training Manual

Value Chain Development for Green Jobs

SECTION 5.B.

FISH VALUE CHAIN ANALYSIS



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ILO GLACIER PROJECT



VC analysis overview - fish

- ❑ **In GLACIER villages capture fisheries were the source** of fish for sale or consumption in village landscapes.
- ❑ **Official government data indicated flat or declining catches** from capture fisheries.
- ❑ **It was reported that destructive or unsustainable fishing methods** were in use including fish bombing and use of monofilament gill nets but there was no confirmation of that during the present study.
- ❑ **Data showed marked increases in farmed fish** in Palangkaraya but no such development was observed at GLACIER villages.
- ❑ **Fish sellers in Palangkaraya stated that local market cannot be served** by fish production in the region of Palangkaraya. Fish are imported from Banjarmasin.
- ❑ **No programs to improve capture fisheries or to develop aquaculture** were discovered in GLACIER villages during research for this manual.
- ❑ **Low fish production from GLACIER villages persists in a climate where development support is weak or lacking.**

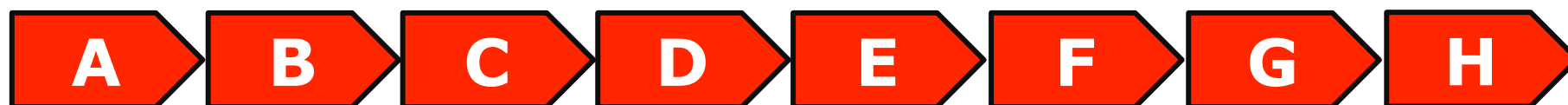
Impacts of poor support functions - fish

The present value chain assessment indicated that in Central Kalimantan weak support functions have resulted in:

- ❑ **No hatcheries** supplying high quality fish fry for aquaculture;
- ❑ **Failure to develop** sustainable freshwater fish aquaculture in the GLACIER project region;
- ❑ **Lack of aquaculture technology** necessary to develop fish farming in the GLACIER project region;
- ❑ **Proliferation of poor fishing practices** leading to declining capture fisheries;
- ❑ **Limited utilisation of canals and lakes** where fish farming activities could be utilised for fish production and as fire breaks;
- ❑ **All of these issues can be addressed and value chains can be built using technology and expertise available in Indonesia.**

Mapping of intervention areas - fish

Table 5.2. Examples of some value chain interventions that may strengthen GLACIER fish value chain functions.



FUNCTION		POSSIBLE INTERVENTION OUTCOMES
A	Waters	Ensure secure tenure for fish ponds and cages
B	Produce, harvest	Build from sustainable capture fishing to full aquaculture of freshwater fish in lake-cages and ponds
C		
D	PHT *	Develop logistics systems for delivery of healthy live fish
E	Collect Trade	Collection and trading functions performed by aggregated, integrated farmer enterprises – build brands
F		
G	Retailer	Some restaurants and fish stalls in markets owned by farmer enterprises
H	End use	Consumers transparently connected to farmer brands

* PHT is post-harvest treatment

Short-term interventions (STI) - fish

The following short-term intervention prospects were identified during workshops associated with development of this manual. “Short-term” is defined as being within one year of intervention initiation, during GLACIER pilot project actions. Interventions focus on problems with short term solutions and on enabling village MSME to undertake longer term development that can follow the GLACIER pilot project.

- 1. Introduce fishermen to appropriate fish farming technology** and commence pilot scale farming of preferred species for the GLACIER region.
- 2. Aggregate fishermen into viable aquaculture enterprise units** including form cooperatives or SME (UKM) that can become vertically integrated aquaculture operations.
- 3. Assist with tenure certification** so farmer enterprises have secure tenure for aquaculture ponds and cages. Link to fair markets and fair finance to ensure that MSME have a path toward financial viability. Foster ongoing BDS capacity for ongoing MSME operations.

Fish STI-1 Introduce fish aquaculture

Training & linking actions

- **Introduce fish aquaculture** to fishermen & farmers in GLACIER villages.
- **Conduct workshops** to develop village consensus as to how fish farming best fits development of local satoyama landscapes.

Potential allies

- **KKP** – Indonesian Ministry of Fisheries and Oceans
- **UNPAR**- Universitas Palangka Raya
- **WorldFish** - member of the CGIAR Consortium
- **SEAFDEC** - Southeast Asia
- **NACA** – Network of Aquaculture Centres in Asia
- **Local NGO**

Measurable input/output indicators

- **Number of fishermen and farmers** who take action to become fish aquaculturists

Fish STI-2 Aggregate aquaculturists

Training & linking actions

- **Enterprise training** to familiarize aquaculturists with benefits of aggregation.
- **Link to BDS advice & support** to assist aquaculturists in evaluating, choosing and establishing appropriate business entities (e.g. Koperasi, U.D., C.V., P.T.).
- **Link to fair markets and fair finance** to ensure that MSME have a path toward financial viability.
- **Foster ongoing BDS capacity** for ongoing MSME operations.

Potential allies

- **DEPKOP** - Department of Cooperatives and Small-Medium Enterprises
- **ILO REDD+** GLACIER project interventions
- **UNPAR and local NGO/BDS** providers
- **KKP** – Indonesian Ministry of Fisheries and Oceans
- **Regional and national banks** (e.g. for MCFF involvement)

Measurable input/output indicators

- **Number of MSME formed** and operating successfully.
- **Number of green jobs** secured and created.
- **Green VC criteria compliance** scores for MSME.

Fish STI-3 Assist with tenure certification

Training & linking actions

- **Identify instances** where land certification or water tenure is not secure.
- **Facilitate engagement** between farmers and land and water certification authorities (both government and kedamangan).

Potential allies

- **ILO REDD+** GLACIER project interventions
- **UNPAR and local NGO/BDS** providers

Measurable input/output indicators

- **Hectares of land and waterways certified** and useable for fish ponds and fish cages.
- **Number of farm families/MSME** who gain official tenure of land and waters useful for fish aquaculture.

Medium-term interventions (MTI) - fish

The following medium-term intervention prospects were identified during workshops associated with development of this manual. The term “medium-term” is defined as being within five years of intervention initiation.

These interventions may follow GLACIER pilot project actions. By “*Putting services into the core of market systems*” in the manner of Herr & Muzira (2009) the GLACIER pilot project may facilitate formation and linkages of village MSME that can lead to medium- and long-term GJVC success.

- 1. Set up certified nurseries** at local levels to ensure supplies of high quality fry at reasonable prices for locally preferred aquaculture species.
- 2. Introduce/support integrated aquaculture systems (IAS)** that optimise production efficiency and productivity while making best economic use of multiple crops. **Build and strengthen** technical support services and aquaculture extension services to support sustained use of the best IAS.
- 3. Vertically integrate farmer enterprises** to the point where they can sell finished product (e.g. live fish) directly to retailers or end-users (e.g. in specialty restaurants).

Fish MTI-1 Set up certified hatcheries

Training & linking actions

- **Field level training** program for aquaculturists concerning hatchery options.
- **Link aquaculture MSME to hatchery technologies** so options can be assessed.
- **Link to existing hatcheries** for immediate development needs.
- **Establish local hatcheries** for ongoing rehabilitation and planting needs.

Potential allies

- **KKP** – Indonesian Ministry of Fisheries and Oceans
- **UNPAR**- Universitas Palangka Raya
- **WorldFish** - member of the CGIAR Consortium
- **SEAFDEC** - Southeast Asia
- **NACA** – Network of Aquaculture Centres in Asia
- **Local NGO**
- **Banks** (e.g. for possible MCFF financing)

Measurable input/output indicators

- **Certified nursery capacity established.**
- **Area/capacity of ponds/cages** served by nurseries.
- **Number of farm families/MSME** who benefit from availability of good fry at fair prices.

Fish MTI-2 integrated aquaculture systems (IAS)

Training & linking actions

- **Field level training** program for farmers concerning IAS options.
- **Link farmer MSME to IAS technologies** so options can be assessed.
- **Implement pilot scale testing** of the most likely IAS options.
- **Establish & support best IAS practices** based on solid technical and business solutions from support providers.

Potential allies

- **KKP** – Indonesian Ministry of Fisheries and Oceans
- **UNPAR**- Universitas Palangka Raya
- **WorldFish** - member of the CGIAR Consortium
- **SEAFDEC** - Southeast Asia
- **NACA** – Network of Aquaculture Centres in Asia
- **Local NGO**
- **Banks** (e.g. for possible MCFF financing)

Measurable input/output indicators

- **Capacity of aquaculture operations** using best IAS practices.
- **Number of farm families/MSME** who benefit from use of best IAS practices (e.g. higher yields, better prices, greater profitability).
- **Green jobs value chain** impacts.

Fish MTI-3 Vertically integrate

Training & linking actions

- **Enterprise training** to familiarize aquaculturists with benefits of vertical integration.
- **Link to BDS advice & support** to assist aquaculturists in evaluating options for integration through to processing and selling live fish.
- **Foster BDS support for business planning** and support functions for vertically integrated aquaculture MSME in green jobs value chains.
- **Facilitate fair finance** for funding, development and execution of vertically integrated MSME business plans.

Potential allies

- **DEPKOP** - Department of Cooperatives and Small-Medium Enterprises
- **ILO REDD+** GLACIER project interventions
- **UNPAR and local NGO/BDS** providers
- **Regional and national banks** (e.g. for MCFF involvement)

Measurable input/output indicators

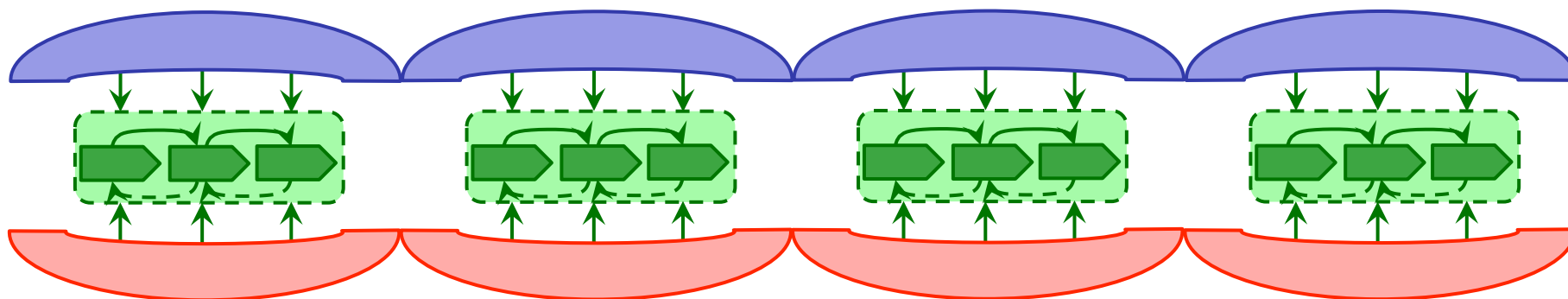
- **Number of MSME vertically integrated** and operating successfully.
- **Number of green jobs** secured and created.
- **Green VC criteria compliance** scores for vertically integrated MSME.

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SECTION 5.C.

MARKET SYSTEM NEEDS ANALYSIS



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Targeting aggregated village enterprises

Green jobs value chain (GJVC) development depends on successful operation of village-based micro, small and medium enterprises (MSME). Initial survey work for the GLACIER project revealed that there was little aggregation or organisation of farmers into MSME, either as cooperatives or as incorporated businesses (e.g. U.D., C.V. or P.T.) but when asked, farmers seemed to endorse the concept that they could fare better in VC if they operated from within MSME.

It therefore appeared to be an early priority of the GLACIER project that MSME aggregations be engaged or created as the focus of interventions. Some means for doing this include:

- **Dealing with rubber and fish farmers as “clusters”** of micro-enterprises from the same village landscapes with similar interests in being GJVC market players;
- **Assisting rubber and fish farmers in the formation of cooperatives** that can participate as market players in GJVC;
- **Assisting rubber and fish farmers in the formation of MSME (UKM)** such as sole proprietorships (C.V.), partnerships (U.D. or limited liability corporations (P.T.) that can participate as market players in GJVC.

Decent Work and gender parity

For MSME operating within village landscapes the workplace also tends to be the community where owners/operators live, labour is sourced and households reside.

- ❑ This situation means that issues of decent work and gender issues must be approached with delicacy and with **respect for traditional norms, mores and folkways**.
- ❑ During initial survey work for the present project it became obvious that indigenous people in the GLACIER area had been exposed to a **steady stream of “outsiders” offering advice** and assistance that has not led to material benefits in village landscapes.
- ❑ The indigenous groups inhabiting Kalimantan village landscapes have **long-standing traditions and social structures that they zealously protect** – as witness the violence that occurred against non-indigenous trans-migrants during the late 1990s.
- ❑ **It is therefore the delicate job of value chain support providers** to foster modern notions of Decent Work, gender parity and green value chain development in subtle, culture-sensitive and effective ways.

Building support capacity for MSME

- ❑ **Support services must be at the core of GJVC market systems**
- ❑ **The key determinants of MSME improved productivity and competitiveness in GJVC** lie in improved knowledge, information, tools and solutions (see Herr & Muzira, 2009 and Section 4.A).
- ❑ **Services are a critical means** through which industry-specific information and knowledge is generated and transferred. However, the mechanisms by which these services are delivered and the market players who deliver them vary.
- ❑ **One reason for weak development of MSME in GLACIER villages** is the lack of access to KITS from established business development services (BDS).
- ❑ **GJVC development therefore requires compilation and publication** of information on relevant BDS providers and input suppliers, their services and contact details.

This manual is accompanied by a draft directory of market system support providers.

This “living document” will be developed as GLACIER GJVC interventions gain traction.



Overview of GJVC MSME market system needs

- ❑ **Green jobs value chain development (GJVC)** requires specific interventions with respect to value chain functions by market players who are project beneficiaries (Sections 5A & 5B).
- ❑ **Key target beneficiaries for the GLACIER project** are owner/operators and workers of micro, small and medium enterprises (MSME) in village (satoyama) landscapes.
- ❑ **Besides undertaking identified interventions** it is an essential function of GJVC developers to facilitate strengthening of market system **support functions** and **governance functions** relevant to development of target value chains.
- ❑ **Examples of potential market system issues and actions** are given in the following pages based on preliminary research and analysis of GLACIER village rubber and fish value chains.

The examples in this manual are for guidance during training.

These are not comprehensive, village-specific analyses. Issues and actions must be specified and planned as village enterprises develop and operate specific functions in targeted green jobs value chains.

Access to communication & logistics

ISSUES



- **Telephone and internet connectivity** are poor or lacking in several GLACIER villages.
- **Road access is too poor** for regular commercial transport to some GLACIER villages.
- **River transport** is still a major logistic factor for several GLAVIER villages.

ACTIONS & PROVIDERS

- **Telephone and internet connectivity** is gradually being improved by providers such as Telkom, XL and Indosat.
- **Improvement in road access** to GLACIER villages is likely to improve prospects for economic development. Political action from the village, local and regional level is necessary to stimulate action.
- **Improved river transport** seems to be an option for several GLAVIER villages. There are decent work, safety and fossil fuel issues with current river transport systems. Needs and options for improvement need to be studied by private and public agencies in order to scope out prospects for improvement.

Access to education, science & technology

ISSUES



- **Access to science and technology knowledge, information, tools and solutions (KITS)** appeared to be minimal or lacking in GLACIER villages during the initial GJVC survey on January, 2013.
- **Access to market KITS** also appeared to be minimal or lacking in GLACIER villages.

ACTIONS & PROVIDERS

- **Access to science and technology knowledge, information, tools and solutions (KITS)** was an issue addressed in interventions proposed in Section 5.A and 5.B.
- **There was a clear need to develop business development services (BDS)** among the NGO and academic sectors for support of MSME development in Central Kalimantan. Informative websites can aid in disseminating KITS.
- **Government organisations** including KKP, DEPKOP, DEPTAN and DEPHUT must also be linked into GLACIER GJVC interventions in rubber and aquaculture.
- **Local BDS can gain considerable depth** if they are linked with technical institutions including IAARD IRI, ICRAF, WorldFish/CGIAR, SEAFDEC and NACA.
- **Especially for rubber, CSR programs** of major tire makers or other large corporations may be able to support GLACIER GJVC interventions.

Essential goods, services & infrastructure

ISSUES



- **Essential services & infrastructure** appeared to be weak or lacking in GLACIER villages. Weak areas included social services, health care, clean water supply, electricity and waste/sewage disposal.
- **Business support goods and services** were also lacking including availability of good rubber seedlings and fish fry; agricultural chemicals; fish feed and other essential inputs.

ACTIONS & PROVIDERS

- **Most essential services & infrastructure** are provided by government organisations so political action from the village, local and regional level is necessary to stimulate action.
- **Corporate social responsibility programs (CSR)** are a possible source of services and infrastructure support that can be sought during the GLACIER project.
- **Proposed interventions** (Section 5.A & 5.B) address business support issues including availability of good rubber seedlings and fish fry; agricultural chemicals; fish feed and other essential inputs.

Access to fair finance

ISSUES



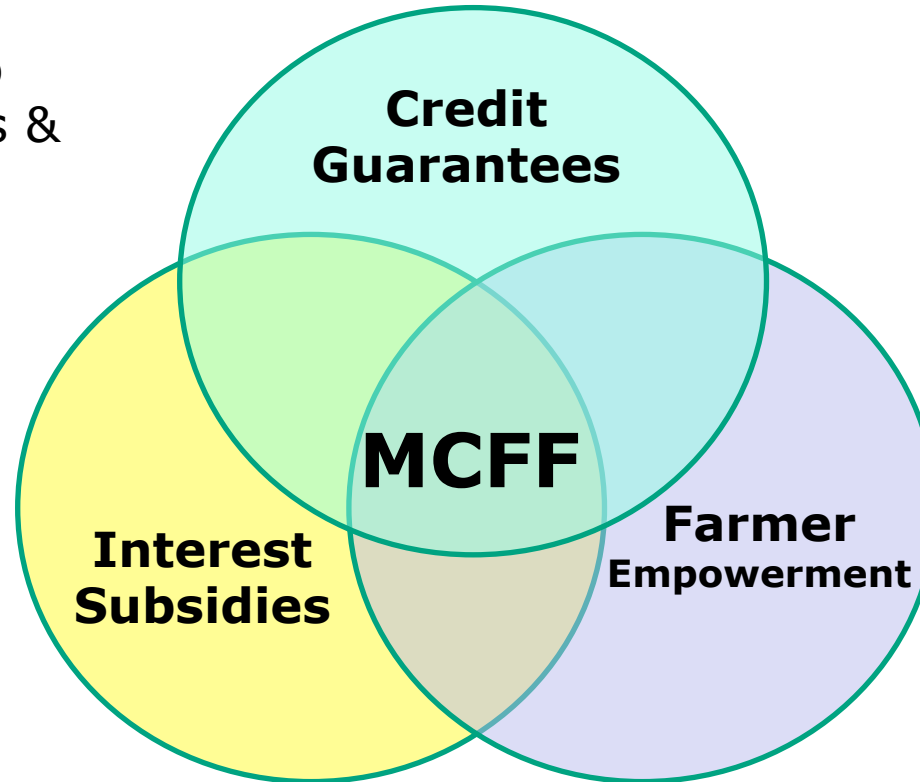
- **Financial services appeared to be lacking** in GLACIER villages but were available in nearby urban areas, especially in Palangkaraya.
- **Lack of access to capital** was repeatedly cited by villagers as a reason why village land is being sold off, why village enterprises cannot develop and why goods (e.g. rubber and fish) must be sold cheaply for quick cash returns.

ACTIONS & PROVIDERS

- **Micro Credit for Farmers & Fisherman (MCFF)** is being made available through banks with government support and assistance (as summarized in Figs. 5.3 and 5.4).
- **Other sources of credit may be available** so the GLACIER project should focus on identifying financial institutions, BDS and NGO that may be able to link to financial assistance.
- **Government Ministries** (e.g. KKP for aquaculture) have many programs for economic development of smallholders. The GLACIER project should also determine whether such support can be obtained for target village enterprises.

Credit Model for Farmers & Fisherman

Figure 5.3. Micro Credit for Farmers & Fisherman (MCFF)



**credit guarantees
& interest
subsidies from
government**

Some implementing organisations

MCFF : Micro-credit scheme for farmers and fishermen

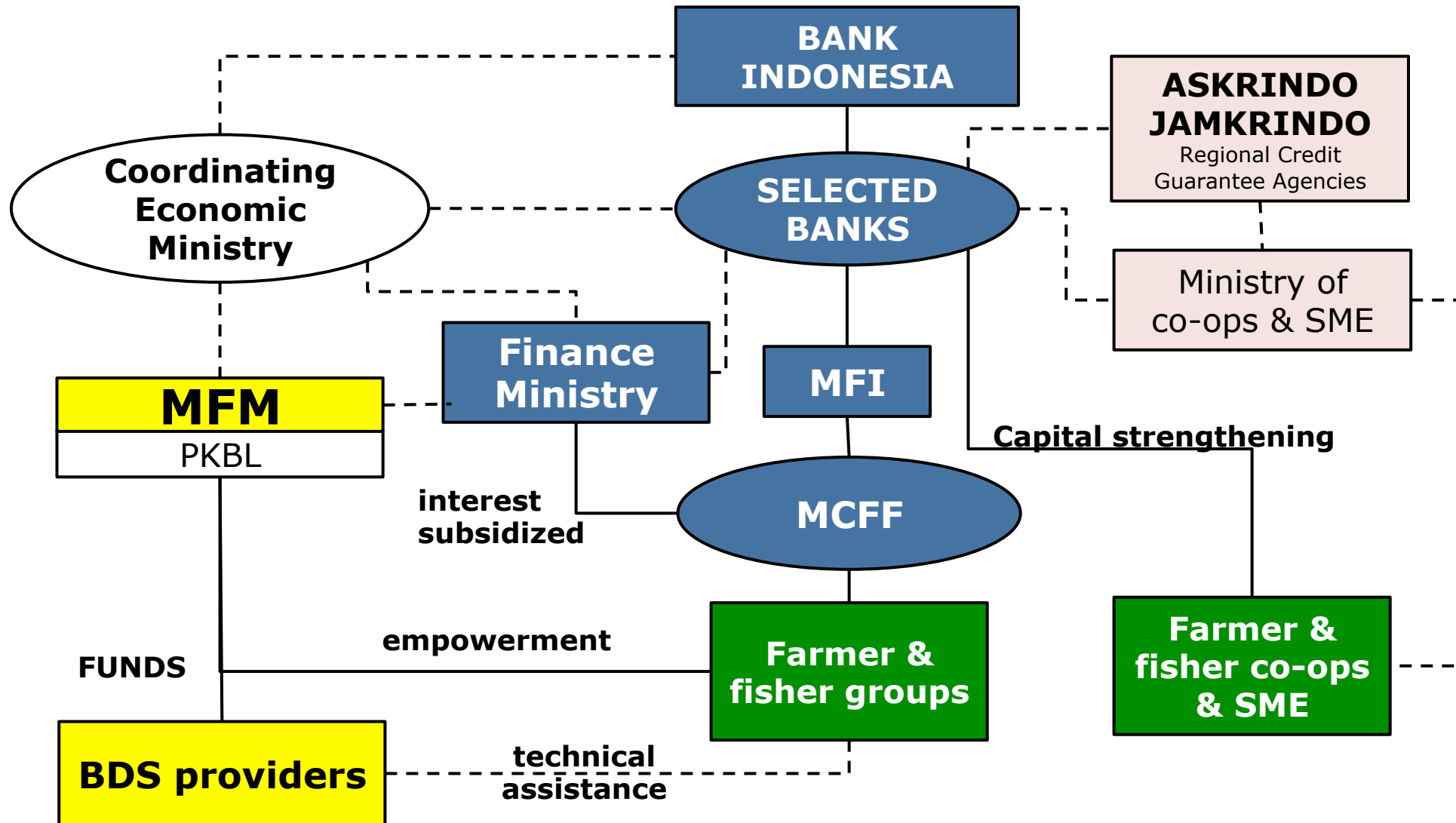
MFM : Ministry of Fisheries and Maritime Affairs (KKP)

MFI : Microfinance Institution

PKBL : Program Kemitraan & Bina Lingkungan (State-Owned Enterprise Assistance Program)

Micro-credit for farmers and fishermen (MCFF)

Figure 5.4. MCFF transaction flows.



Fair trade in local & global markets



ISSUES

- **Fair trade links appeared to be lacking** in GLACIER villages.
- **Village-based value chains appeared to be too unproductive and too poorly developed** to endow village enterprises with any significant market presence.. Farmers and fishermen were not aggregated into strong enterprise units.

ACTIONS & PROVIDERS

- **Fair trade links must be developed** in coordination with access to science and technology knowledge, information, tools and solutions (KITS) as addressed in interventions proposed in Section 5.A and 5.B.
- **Emphasis on quality** (as emphasized in suggested interventions) is one way to make GLACIER village products attractive to markets.
- **BDS websites** and mobile phone notifications with transparent value chain information can be an effective way of linking market players and other stakeholders into market information.
- **Business alliances** (see next page) can be an effective way of linking village MSME into fair trade markets on a long-term basis.

Connecting through strategic alliances

ISSUES



- **Trust-commitment based value chain alliances** appeared to be weak or lacking for enterprises in GLACIER villages. Value chain transactions seemed to be based mostly on market governance.
- **Strategic alliances** are trusting relationships that are often the only feasible option for MSME building long-term competitive advantage while retaining independence.

ACTIONS & PROVIDERS

- **Fair trade links must be developed** in coordination with access to science and technology knowledge, information, tools and solutions (KITS) as addressed in interventions proposed in Section 5.A and 5.B.
- **Links to lead firms** with effective CSR programs can be an effective form of strategic business alliance development.
- **BDS support fostered by ILO GLACIER** and ILO value chain tools can be useful in matching potential strategic allies and bringing the through processes of alliance formation.

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SECTION 6. INTERVENTION MONITORING AND EVALUATION (M&E)



Monitoring and evaluation of GJVC interventions in REDD+ frameworks within satoyama landscapes



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Section 6 objectives

GJVC market system participants will understand measures appropriate for monitoring and evaluating results of proposed interventions – and then following up with future actions.

6.A Developing GJVC project monitoring and evaluation

Workshop participants will understand principles and procedures based on Chapter 5: (Implementation, monitoring and evaluation) of *Value Chain Development for Green Jobs in Asia – an ILO Guide. Volumes 1 & 2* and Herr & Muzira (2009). Participants will use the monitoring and evaluation (M&E) approach proposed for ILO Green Jobs value chains including (1) an approach to GJVC M&E key performance indicators; and (2) overviews of steps in developing M&E indicators, baselines & targets

6.B Role of M&E during implementation, reporting and follow-up

Participants will apply monitoring and evaluation processes to (1) Roles of monitoring during implementation; (2) Retrospective assessment and reporting of interventions; and follow-up activities.

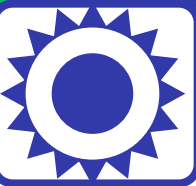




Section 5 intended outcomes

Intended outcomes from attendance at Section 6 sessions include:

- 1. Workshop participants will understand principles and procedures** based on Chapter 5: (Implementation, monitoring and evaluation) of Value Chain Development for Green Jobs in Asia – an ILO Guide. Volumes 1 & 2 and Herr & Muzira (2009). Participants will use the monitoring and evaluation (M&E) approach proposed for ILO Green Jobs value chains including (1) an approach to GJVC M&E key performance indicators; and (2) overviews of steps in developing M&E indicators, baselines & targets
- 2. Participants will apply monitoring and evaluation processes** to (1) Roles of monitoring during implementation; (2) Retrospective assessment and reporting of interventions; and follow-up activities.
- 3. MOST IMPORTANT: COLLABORATION BETWEEN VILLAGE MSME AND SUPPORT PROVIDERS WILL LEAD TO ITERATIVE INTERVENTION PROCESSES THAT LEAD TO LONG-TERM GJVC DEVELOPMENT.**



Section 6 validations and actions

Validation of workshop participants' comprehension of Section 6 materials may include:

- 1. Field trips** to the five GLACIER villages and participation in **preparation of M & E related forms** such as those attached to this manual (See box at bottom of page);
- 2. Alongside key performance indicators participants should also develop further methods of data collection** to verify monitoring results and put them in the GLACIER and REDD+ contexts. These may include qualitative assessment tools such as case studies, stakeholder interviews , forums, and feedback from project staff;
- 3. Suggestions from participants** as to how this section of the GLACIER GJVC manual – as a “living document” – may be improved.

Attached forms pertaining to M & E issues

Especially pertinent are 14. INTERVENTIONS FORM and 15. MONITORING & EVALUATION FORM in the file entitled VC_RESEARCH_FORMS.PDF or .PPT

GLACIER M&E overview

- ❑ **Measurable outcomes of suggested interventions** are indicated in the context of each intervention in Section 5. The pages that follow summarise input/output indicators.
- ❑ **Short term interventions** focus on problems with short term solutions and on enabling village MSME within the time frame of the current GLACIER project.
- ❑ **Medium-term interventions** focus on development of ongoing value chain functions by MSME based in village landscapes. These are interventions that could follow the GLACIER pilot project.
- ❑ **The ultimate M&E for longer-term interventions** is success of MSME in terms of:
 - **Enterprise growth** and profitability;
 - **Contribution to quality of life** in village satoyama landscapes;
 - **Volume and quality of decent work** in green value chains.

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Value Chain Development for Green Jobs

SECTION 6.A.

DEVELOPING GJVC PROJECT MONITORING AND EVALUATION (M&E)



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Overview - Developing project M&E

The monitoring and evaluation (M&E) approach proposed within the ILO Green Jobs value chain approach can be divided into three component stages:

- 1. Appraisal is** assessment of a project in the planning stage. This stage produces baseline information such as village landscape maps.
- 2. Monitoring is** routine collection and analysis of information to enable the assessment of a project's progress during the course of implementation.
- 3. Evaluation is** assessment of project performance conducted after a period of implementation.

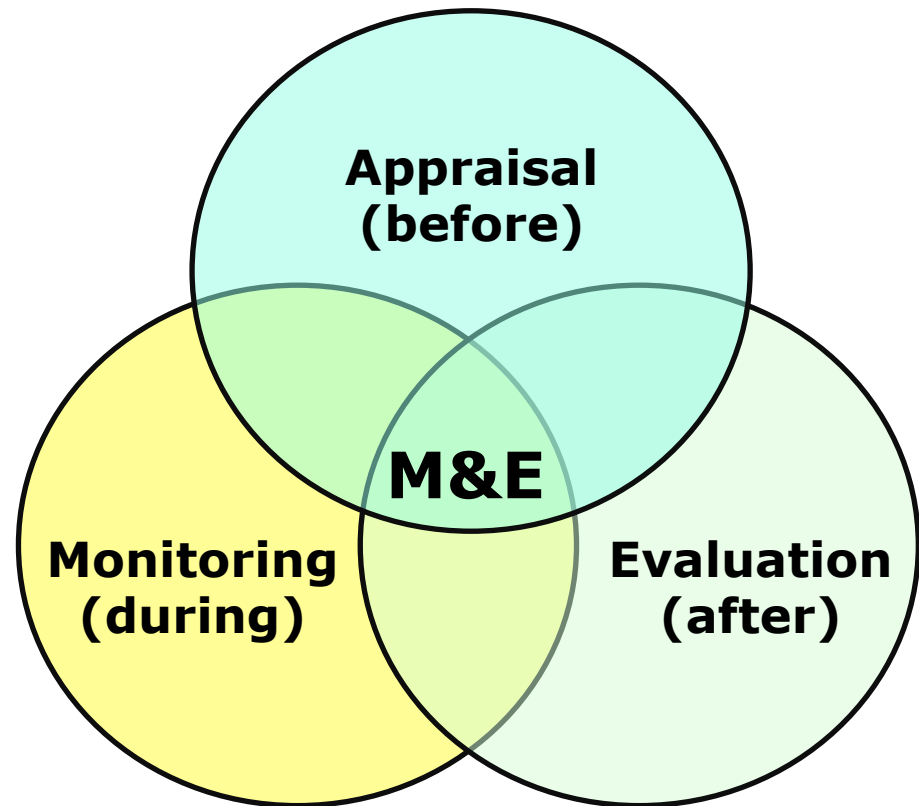


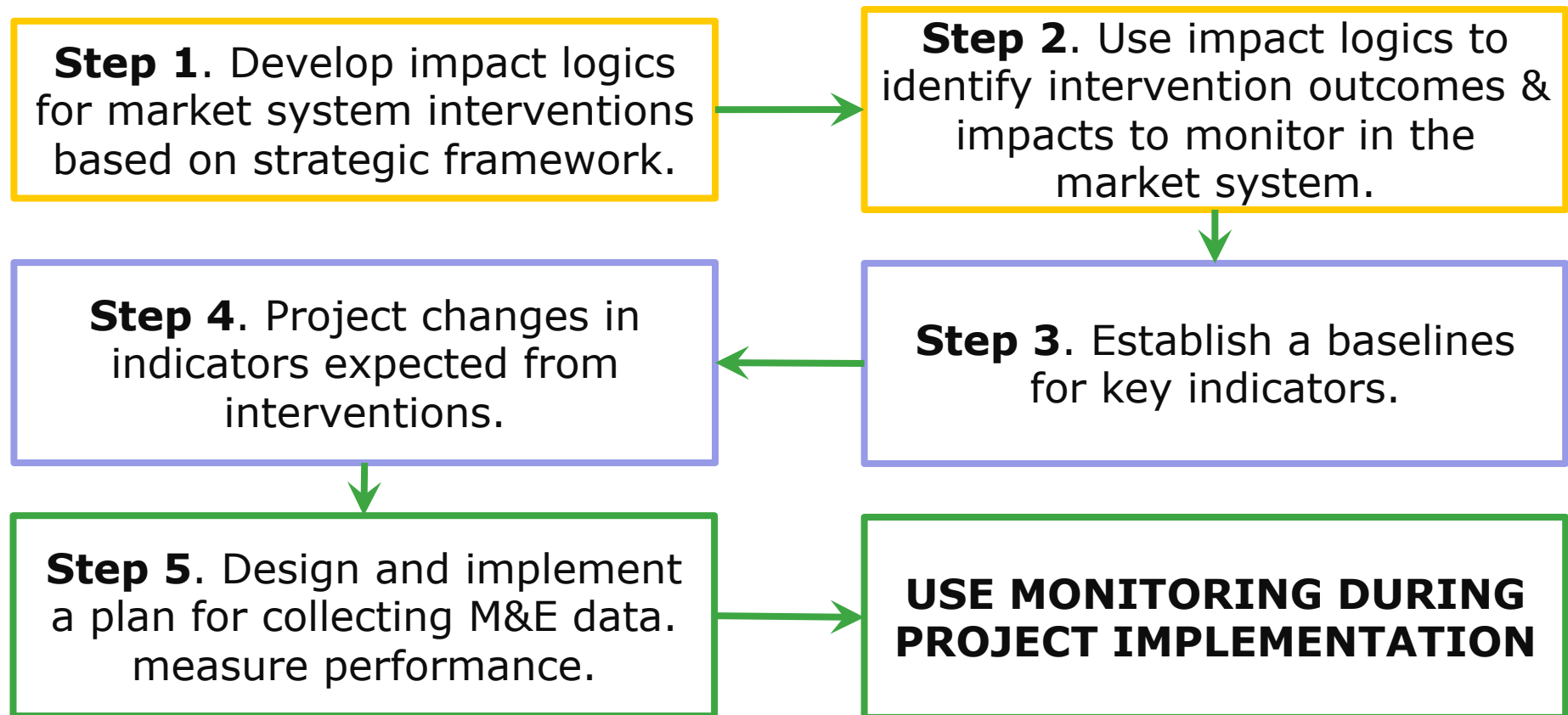
Figure 6.1. Three ILO Green Jobs value chain M&E components.

GJVC M&E key performance indicators

INPUTS	OUTPUTS
Financial, human and material resources used for GJVC interventions. Resources needed to achieve outputs.	Products, goods and services resulting from a GJVC intervention including manuals, publications, training, links and strengthening of MSME-related market system functions.
OUTCOMES	IMPACTS
Likely or achieved short and medium-term effects of an intervention's outputs including increased awareness/adoption of technologies; improved working conditions; banks increasingly providing fair finance to MSME; etc. Outcomes serve the achievement of long-term development objectives (impacts).	Impact assessment looks at the achievement of overall long-term and strategic development objectives, such as increased carbon sequestration; reduced fires, improved gender parity; better educational and job prospects for children and preservation of satoyama landscapes.

M&E indicators, baselines & targets

Figure 6.2. Steps in developing M&E indicators, baselines & targets .



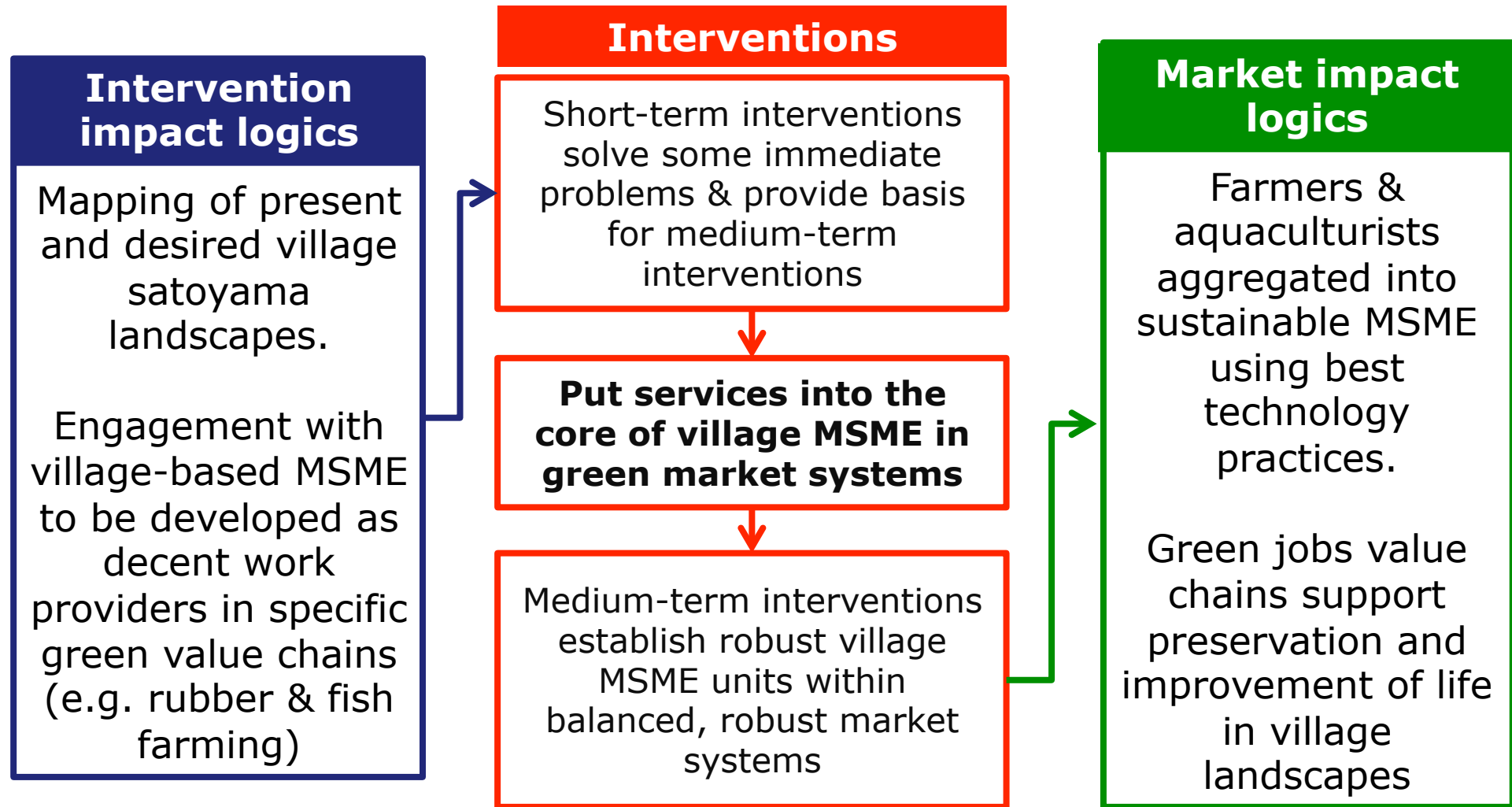
Step 1. M&E impact logics

Impact logics show how project activities lead to improved GJVC performance. Impact logics ask “What expected changes lead from intervention to impact on GJVC outcomes?” Impact logic formulation requires intervening organisations to:

- ❑ **Develop the logical cause and effect flow** for specific interventions . Breaking down overall market logic into specific operational steps that address specific system constraints through defined actions. Each intervention requires logic that links actions to outcomes in terms of systemic changes.
- ❑ **Ensure that impact logic contains realistic links** between specific activities and their effects on the GJVC market system.
- ❑ **Clarify how specific interventions link to systemic change.** For example, impact logics help facilitators to think through the roles and incentives of specific market players (who does what – and why) and the pathway to ensuring that other market players and functions are brought in to the market development process.

GLACIER M&E impact logic

Figure 6.2. Example of general causal links between GLACIER intervention and market impacts with indication of intervention scopes.



Step 2. Using M&E impact logics

Impact logics for individual interventions help to clarify linkages between cause and effect that form the basis for intervention design. Based on impact logics, project indicators should be developed as a basis for monitoring intervention performance, including:

- **Input indicators** that measure the project specific financial, human and material resources used within a given intervention.
- **Output indicators** that measure project-specific products, goods and services produced by the intervention.

Input and output indicators may be subject to the definitions and reporting requirements adopted by particular intervening agencies. Nevertheless, where possible they should be standardised across interventions and projects.

Alongside key performance indicators, the project should also develop further methods of data collection to verify monitoring results and put them in the GLACIER and REDD+ contexts. These may include qualitative assessment tools such as case studies, stakeholder interviews , forums, and feedback from project staff.

Step 3. Establishing M&E baselines

Having identified potential outcome and impact indicators, it is then necessary to identify baselines in order to facilitate subsequent assessment. For example:

- ❑ **Inputs and outputs as factors directly related** to the actions of the intervening agency.
- ❑ **Outcomes and impacts require baseline data** in order to facilitate monitoring and evaluation.
- ❑ **Also, in both cases baseline data should be available** (at least in part) as a result of the initial value chain analysis and mapping undertaken in Section 4 and the further analysis in Section 5.
- ❑ **Where intervention design necessitates the use of indicators that do not match the information** gathered in the research and analysis phase, further baseline data should be collected (or estimated) prior to intervention inception.

Step 4. Projecting changes from interventions

The next stage in the development of the M&E system is to predict change and produce related targets using the impact logic, indicators and baseline data produced in steps 1-3, . Note that:

- ❑ **For each impact logic thread, values should be added** corresponding to the inputs available and predicted corresponding outputs, outcomes and impacts.
- ❑ **A measureable objective for each individual intervention** is then generated, consisting of the performance baseline, a performance target, and time frame.
- ❑ **Although precise estimation is often difficult**, these targets are intended to provide an initial benchmark against which to measure performance.
- ❑ **These predicted outputs, outcomes, and impacts should then be assessed** against the project's objectives as part of the prospective assessment process, and where necessary the intervention should be reassessed or redesigned.

Step 5. Collect data - measure performance

The design of a plan to collect and evaluate performance data is the final step in the development of the M&E framework. Note that:

- ❑ **The scale and frequency of data collection** will be determined by the nature of the intervention in question;.
- ❑ **For small-scale and pilot projects, data collection may occur solely at project inception and completion**, whereas more developed multi-year interventions may require an ongoing programme of data collection and analysis.
- ❑ **For further information** on planning and implementing data collection activities see Value Chain Development for Green Jobs in Asia – an ILO Guide Volume II.

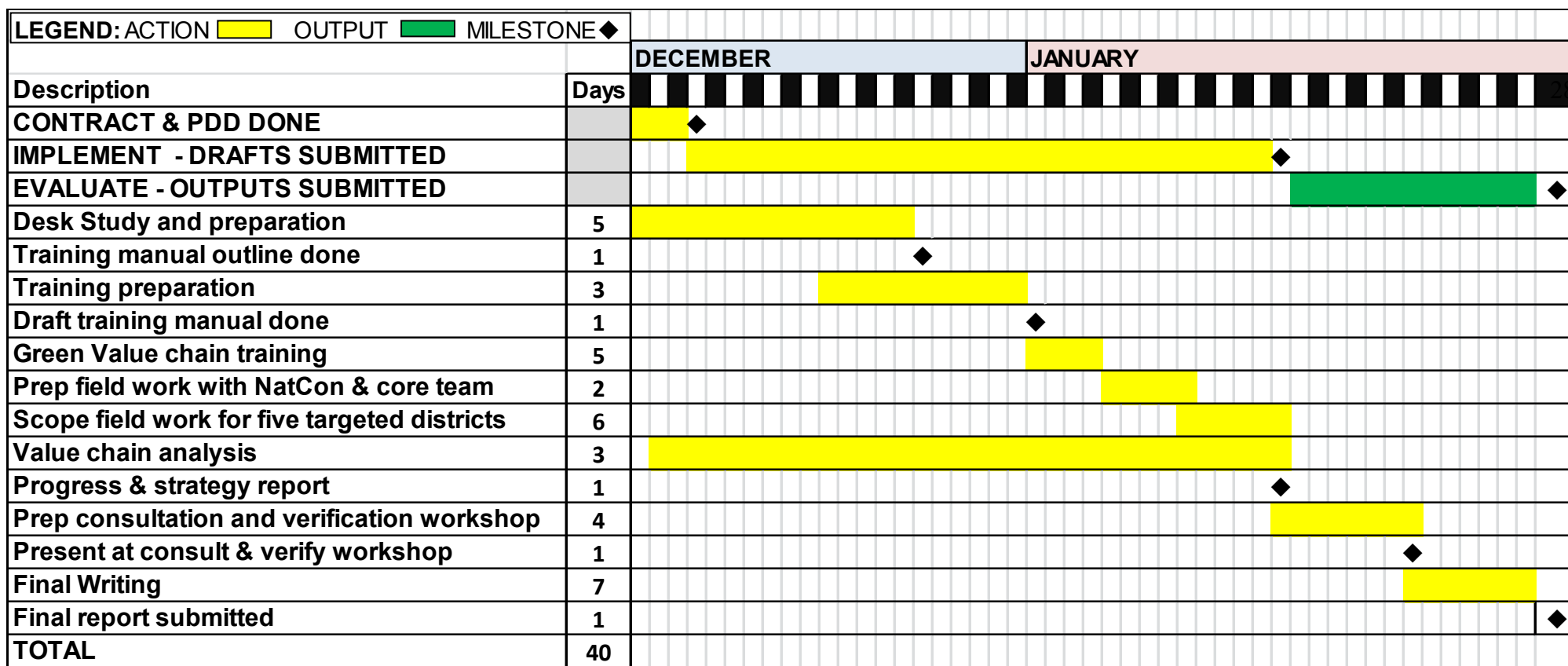
Interventions may be enterprise-specific

Individual programs for monitoring and development may have to be developed for each individual MSME or MSME cluster within a given village landscape.

Work plan, timeline and budgets

For each intervention it is useful to prepare a work plan, timeline and budget that can be used during monitoring and evaluation. An example work plan and timeline is shown in Fig. 6.3.

Fig 6.3 Example: work plan and timeline for preparation of this manual.



Possible GJVC pilot project interventions

Several short-term intervention prospects were identified for GLACIER village rubber and fish value chains during workshops associated with development of this manual (see Section 5). These were characterised as follows:

- **“Short-term” was defined as being within one year** of intervention initiation, during GLACIER pilot project actions.
- **These interventions would focus on problems with short term solutions** and on enabling village MSME to undertake longer term development that can follow the GLACIER pilot project (see Fig. 6.2).
- **The interventions would strive to “[Put] services into the core of market systems”** (in the manner of Herr & Muzira, 2009) by focusing on linkages between village enterprises and support providers.

The following pages summarise some performance indicators that may be applied to the suggested GLACIER village short-term intervention prospects.

Actual indicators will depend on specific village and enterprise situations.

Rubber STI-1 Good tapping practices

INPUT/OUTPUT INDICATORS (BASELINE VS END RESULTS)

- Number of tappers trained
- Tree bark conservation – economic (increase in tapping life) and ecological (increase in tree life)
- Latex yields

INPUTS

Field training and workshops conducted by tapping experts from Integrated end users with CSR programs, IAARD IRI , ICRAF and others

OUTPUTS

Tapping expertise available from trained local practitioners. Good tapping practices in use in most or all rubber plantings .

OUTCOMES

Good tapping practices result in increased latex yields and improved tree health.

IMPACTS

Better tree health and latex yields make rubber MSME more profitable and able to expand.

Rubber STI-2 Disease & pest control

INPUT/OUTPUT INDICATORS (BASELINE VS END RESULTS)

- Number of farmers using effective disease & pest control
- Successful disease abatement – restoration of tree health and productivity

INPUTS

Field training and workshops conducted by rubber agronomy experts from integrated end users with CSR programs, IAARD IRI , ICRAF and others

OUTPUTS

Pest & disease control expertise and materials available from trained local practitioners. Good practices in use in most or all rubber plantings .

OUTCOMES

Good disease & pest control practices result in increased latex yields and improved tree health.

IMPACTS

Better tree health and latex yields make rubber MSME more profitable and able to expand.

Rubber STI-3 Quality control/assurance

INPUT/OUTPUT INDICATORS (BASELINE VS END RESULTS)

- Number of farmers selling high quality rubber
- Successful links formed – where farmers make high quality products and buyers pay premium prices based on that quality
- Increased profitability for linked enterprises

INPUTS

Field training and workshops conducted by rubber processing experts from integrated end users and agricultural extension agencies

OUTPUTS

Clean, dry, high quality rubber slabs.

OUTCOMES

Premium quality slabs bring premium prices to farmers

IMPACTS

Increased competitiveness and profitability for rubber value chains

Rubber STI-4 Assist with land certification

INPUT/OUTPUT INDICATORS (BASELINE VS END RESULTS)

- Hectares of land certified and useable for rubber production
- Number of farm families/MSME who gain official tenure of land useful for rubber production

INPUTS

ILO REDD+ GLACIER project providers, UNPAR and local NGO/BDS providers provide needed legal assistance

OUTPUTS

Clear rights of land tenure to farmers.

OUTCOMES

Farmers own land for use in cultivation or as collateral

IMPACTS

Increased security and financial depth for rubber garden MSME

Rubber STI-5 and fish STI-2

Aggregate farmer enterprises

INPUT/OUTPUT INDICATORS (BASELINE VS END RESULTS)

- Number of MSME formed and operating successfully
- Number of green jobs secured and created
- Green VC criteria compliance scores for MSME

INPUTS

ILO REDD+ GLACIER project providers (e.g. UNPAR and local NGO/BDS) coordinate with DEPKOP, KKP & Regional and national banks (e.g. for MCFF involvement)

OUTPUTS

Farmers and aquaculturists are aggregated into MSME units capable of developing and executing business plans

OUTCOMES

Village-based MSME can grow, make profits and invest in GJVC. Decent work in home village landscapes

IMPACTS

Successful indigenous MSME enable village satoyama landscapes to survive and prosper

Fish STI-1 Introduce fish aquaculture

INPUT/OUTPUT INDICATORS (BASELINE VS END RESULTS)

- Number of fishermen and farmers who take action to become fish aquaculturists

INPUTS

ILO REDD+ GLACIER project providers (e.g. UNPAR and local NGO/BDS) coordinate with KKP, WorldFish, SEAFDEC, NACA and others

OUTPUTS

Current farmers and capture fishermen learn how to set up fish aquaculture MSME. BDS support for such development in place

OUTCOMES

Current farmers and capture fishermen commence action to set up fish aquaculture MSME

IMPACTS

Village based aquaculture MSME commence installation of facilities in satoyama landscapes

Fish STI-3 Assist with tenure certification

INPUT/OUTPUT INDICATORS (BASELINE VS END RESULTS)

- Hectares of land and waterways certified and useable for fish ponds and fish cages
- Number of farm families/MSME who gain official tenure of land and waters useful for fish aquaculture

INPUTS

ILO REDD+ GLACIER project providers (e.g. UNPAR and local NGO/BDS) facilitate required legal action

OUTPUTS

Clear rights of land and waterway tenure to aquaculturists

OUTCOMES

Aquaculture MSME have tenure rights that enable them to set up commercial operations

IMPACTS

Village based aquaculture MSME commence installation of facilities in satoyama landscapes

Training Manual

Value Chain Development for Green Jobs

SECTION 6.B.

ROLE OF M&E DURING IMPLEMENTATION, REPORTING AND FOLLOW-UP



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Role of monitoring during implementation

Monitoring during implementation is intended to serve two principal purposes:

1. **Ensure that the project is delivering** the expected outputs and outcomes (and impacts, where visible).
2. **Assist in redesign** of existing and planned interventions and development of subsequent interventions.

Strategic, long-term results of the GLACIER project Green Jobs Value Chain approach will probably involve a staged intervention strategy. Interventions subsequent to the pilot project will be subject to redefinition and redesign based on 3-step evaluation of lessons learned:

Figure 6.3. Three- step assessment & design during intervention.

Step 1: Assess and identify the key achievements from initial interventions - what is there to build on?

Step 2: Define the size and nature of the market system in the future, given initial intervention experience

Step 3: Design and implement supplementary interventions to stimulate wider market development

Step 1: Assessment during intervention

Assess and identify the key achievements from initial interventions in order to determine “what is there to build on?” There are two main criteria for assessing an initial intervention’s results:

- 1. Are initial outcomes substantial and new?**
- 2. Are initial outcomes consistent with incentives** and the capacity of market players to change behaviour, practices, investment or relationships?

The extent to which these criteria are fulfilled determines the validity of initial interventions and therefore the potential for crowding-in and the nature of further interventions required. **If the quality or relevance of initial interventions is weak, crowding-in measures will not be successful.**

Crowding-in

An economic principle in which private investment increases as market system support spending increases. This is caused largely by public sector spending boosting the demand for goods, which in turn increases private demand for new output sources, such as plantations or factories.

Steps 2 & 3: Redefinition and redesign

Step 2:

Redefinition occurs when the size and nature of the market system in the future is adjusted based on initial intervention experience.

This is driven by the ambition of a facilitator with respect to different features of market change including:

- **Breadth:** will more transactions take place in the core of the market?
- **Depth:** will supporting functions develop around an initial change?
- **Reach:** will an initial change in one area, sector or target group spread to others?

Step 3:

Redesign may occur when a market system needs to be encouraged to move toward future scenarios developed in Step 2. Considerations include processes through which natural crowding-in could happen if required incentives, capacities and relationships can make this happen. Constraints that might prevent crowding-in include information about potential benefits from change, 'how to' knowledge and perception of risk.

From pilot project to further interventions

During the GLACIER pilot project short-term intervention results will be assessed, then previously formulated longer-term interventions (see below) can be redefined and redesigned.

Several medium-term intervention prospects were identified during workshops associated with development of this manual. The term “medium-term” was defined as being within five years of intervention initiation. These interventions may follow GLACIER pilot project actions. By “Putting services into the core of market systems” in the manner of Herr & Muzira (2009) the GLACIER pilot project may facilitate formation and linkages of village MSME that can lead to medium- and long-term GJVC success.

The following pages summarise some performance indicators that may be applied to the suggested GLACIER village medium-term intervention prospects.

Actual indicators will depend on specific village and enterprise situations.

Rubber MTI-1 Rehabilitate/replant

INPUT/OUTPUT INDICATORS (BASELINE VS END RESULTS)

- Number of hectares needing (then receiving) rehabilitation & replanting
- Number of farm families/MSME who benefit from added land value and increased rubber production
- Green jobs value chain metrics

INPUTS

ILO REDD+ GLACIER project providers (e.g. UNPAR and local NGO/BDS) coordinate with government forestry & development agencies, integrated end users, IAARD IRI, ICRAF and Banks (e.g. for possible MCFF financing)

OUTPUTS

Executed plans for financing and undertaking rubber garden rehabilitation and replanting projects of village MSME

OUTCOMES

Increased hectarage of productive rubber gardens providing high latex yields for MSME profits and decent work outcomes in green value chains

IMPACTS

Successful indigenous MSME enable village satoyama landscapes to survive and prosper

Rubber MTI-2 Set up certified nurseries

INPUT/OUTPUT INDICATORS (BASELINE VS END RESULTS)

- Certified nursery capacity established
- Area of plantings served by nurseries
- Number of farm families/MSME who benefit from planting of good seedlings (e.g. in higher rubber yields)

INPUTS

ILO REDD+ GLACIER project providers (e.g. UNPAR and local NGO/BDS) coordinate with government forestry & development agencies, integrated end users, IAARD IRI, ICRAF and Banks (e.g. for possible MCFF financing)

OUTPUTS

Certified nurseries capable of providing sufficient quantity of high quality rubber bud-wood to GLACIER farmers at attractive prices

OUTCOMES

Increased hectarage of productive rubber gardens providing high latex yields for MSME profits and decent work outcomes in green value chains

IMPACTS

Successful indigenous MSME enable village satoyama landscapes to survive and prosper

Rubber MTI-3 agronomy systems (RAS)

INPUT/OUTPUT INDICATORS (BASELINE VS END RESULTS)

- Area of plantings using best RAS practices
- Number of farm families/MSME who benefit from use of best RAS practices (e.g. higher rubber yields, higher intercrop income, greater profitability)
- Green jobs value chain impacts

INPUTS

ILO REDD+ GLACIER project providers (e.g. UNPAR and local NGO/BDS) coordinate with government forestry & development agencies, integrated end users, IAARD IRI, ICRAF and Banks (e.g. for possible MCFF financing)

OUTPUTS

Appropriate RAS technology transferred to key MSME. Effective extension support services in place locally. Mechanism for spreading good RAS practices to all farmers

OUTCOMES

Increased hectarage of productive rubber gardens providing high latex & intercrop yields for MSME profits and decent work outcomes GJVC

IMPACTS

Successful indigenous MSME enable village satoyama landscapes to survive and prosper

Rubber MTI-4 & fish MTI-3

Vertically integrate enterprises

INPUT/OUTPUT INDICATORS (BASELINE VS END RESULTS)

- Number of MSME vertically integrated and operating successfully
- Number of green jobs secured and created
- Green VC criteria compliance scores for vertically integrated MSME

INPUTS

ILO REDD+ GLACIER project providers (e.g. UNPAR and local NGO/BDS) coordinate with DEPKOP & Regional and national banks (e.g. for MCFF involvement)

OUTPUTS

Vertically integrated MSME capable of adding value from crop production , through processing to sale to end users in fair trade markets - solid BDS support in place

OUTCOMES

Village-based MSME can add value, grow, make profits and invest in GJVC - decent work in home village landscapes

IMPACTS

Successful indigenous MSME enable village satoyama landscapes to survive and prosper

Fish MTI-1 Set up certified hatcheries

INPUT/OUTPUT INDICATORS (BASELINE VS END RESULTS)

- Certified nursery capacity established
- Area/capacity of ponds/cages served by nurseries
- Number of farm families/MSME who benefit from availability of good fry at fair prices

INPUTS

ILO REDD+ GLACIER project providers (e.g. UNPAR and local NGO/BDS) coordinate with KKP, WorldFish, SEAFDEC, NACA and banks (e.g. for MCFF financing)

OUTPUTS

Certified hatcheries capable of providing sufficient quantity of high quality fish fry to GLACIER aquaculturists at attractive prices

OUTCOMES

Aquaculture MSME have good quality fry with which to grow fish in commercial cage and pond operations.

IMPACTS

Successful indigenous MSME enable village satoyama landscapes to survive and prosper

Fish MTI-2

integrated aquaculture systems (IAS)

INPUT/OUTPUT INDICATORS (BASELINE VS END RESULTS)

- Capacity of aquaculture operations using best IAS practices
- Number of farm families/MSME who benefit from use of best IAS practices (e.g. higher yields, better prices, greater profitability)
- Green jobs value chain impacts

INPUTS

ILO REDD+ GLACIER project providers (e.g. UNPAR and local NGO/BDS) coordinate with KKP, WorldFish, SEAFDEC, NACA and banks (e.g. for MCFF financing)

OUTPUTS

Efficient and cost effective commercial aquaculture operations - solid extension service and BDS support

OUTCOMES

Village-based MSME can add value, grow, make profits and invest in GJVC - decent work in home village landscapes

IMPACTS

Successful indigenous MSME enable village satoyama landscapes to survive and prosper

Retrospective assessment of interventions

Retroactive intervention assessment can be recorded in reports with the following general structure:

- 1. Background:** Provides basic information and data about the value chain (e.g. size, scale, market system context). Summarises main environmental and Decent Work issues. Describes briefly why the sector was selected.
- 2. Research and intervention strategy:** Describes project intervention strategy, strategy rationale, and summary of proposals and selected interventions.
- 3. Project interventions:** Describes intervention implementation activities. Focus on project activities and also on actions of local stakeholders and partners resulting from interventions.
- 4. Outcomes & impacts:** Interventions may not yet have demonstrated sustained improvement in impact indicators but record observations of outcomes resulting from the intervention.
- 5. Learning, conclusions and next steps:** Describe successes, problems, challenges and failures within the project, thereby helping to improve future interventions. What has the project learnt from this intervention? What will it do different next time? What can it recommend to other development partners? What will happen next?

Business planning for village MSME

Fundable, executable business plans for village MSME should complement retroactive intervention assessments recorded in project reports. This contention is based on the following premises:

- ❑ **MSME based in village satoyama landscapes** will be the business enterprises that undertake green jobs value chain functions.
- ❑ **Funded and executed business plans are essential** to any successful MSME.
- ❑ **GLACIER project MSME plans must be written.** It is true that some business plans may be recorded only in the memory of some MSME owner-operators but this is not sufficient for the GLACIER project.
- ❑ **A key ILO GLACIER project focus** is on “*Putting services into the core of market systems*” in the manner of Herr & Muzira (2009).
- ❑ **Successful accomplishment of this action** will link village MSME to support function providers such as business development services (BDS) that can assist MSME with building, funding and executing business plans.

This manual is a living document ...

The present manual was written according to a very aggressive schedule such that writing and research occurred simultaneously. Also, the manual was written in English, therefore:

- ☐ **All or parts of this manual and training materials must be translated** into Bahasa Indonesia and local Dayak dialects in order to be effectively used with GLACIER target groups.
- ☐ **The manual and accompanying training materials will be progressively modified** in light of experience during execution of the GLACIER pilot project.
- ☐ **The manual and training materials can be adapted and modified** to apply to several value chains and many village satoyama landscapes in Central Kalimantan.



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References and attachments

- ❑ **The following pages cite references cited** during writing of the present manual. PDF of these references are available.
- ❑ **This manual is accompanied by the following attachments:**
 - **Value chain training guide**, forms and questionnaires.
 - **Strategy paper** containing value chain maps and initial findings/recommendations.
 - **A glossary** that covers a wide range of acronyms that are used in bibliographic references pertinent to this training manual.
 - **An annotated list of market system players and function providers.** This is intended for further development during the execution of GLACIER project interventions.
 - **Final report** including program and results of the validation workshop.

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