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# Profitability and Sustainability in Palm Oil Production

Analysis of Incremental Financial Costs and Benefits  
of RSPO Compliance

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## ON THE COVER

*Palm oil fruit, ripe with oil,  
waiting for transportation  
to the mill (Sumatra,  
Indonesia)*

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# FOREWORD

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It is my pleasure to introduce *Profitability and Sustainability in Palm Oil Production*, a first-of-its-kind study for both the oil palm industry and for agricultural commodities in general. This research systematically and quantitatively assesses the cross-industry impacts of an environmental and social management system on the business bottom line. In so doing, it confirms the insights of my most experienced colleagues, providing valuable lessons for an industry that is pivotal for many emerging economies. I therefore greatly welcome this research, as well as the many new conversations it will surely spawn.

I have worked in the tropical plantations and in palm oil business in Southeast Asia for over five decades, and I have seen dramatic growth, challenges and changes. Without question, the issue of “sustainability” is the greatest challenge of the coming decades. More than 3 billion people will be joining the human species by 2050, at which time 70% to 80% of the population will be living in cities and consuming more edible oils and fats. Simultaneously, fuel prices and weather patterns are becoming increasingly volatile. Standing at the nexus of these changes, the agricultural sector is facing unprecedented scrutiny from governments, regulators, NGOs, investors, and consumers regarding how its business practices impact the environment and the wider world. Palm oil in particular has been at the forefront of these environmental and reputational challenges.

The traditional stance positioned the oil palm industry, and the millions of Indonesians and Malaysians it employs and has lifted out of poverty, against conservationists. We take great pride in a sector that has significantly reduced absolute poverty in our countries; therefore, some of these criticisms have been misguided. Yet to compete and succeed in the long-term, it is essential to operate our key national industries with vision—i.e., long-term thinking. For example, as a professional tropical plantations consultant and investor, I no longer advise clients to execute new developments unless realizable yields are at least 5 metric tonnes per hectare CPO (the global average is only 3.5 metric tonnes per hectare; Roundtable on Sustainable Palm Oil [RSPO] producers average 5.1 metric tonnes/hectare). With rising fuel costs and competition from highly mechanised oil seed producers, anything less will be unprofitable by completion of the first planting cycle. Meanwhile, greenfield development costs, which used to average US\$6,000 to \$8,000 per hectare, are now at least \$10,000 per hectare in nearly all cases.

Furthermore, I have repeatedly witnessed the transformative effect that RSPO can have on plantations and mills. Improved staff morale and reduced turnover, better yields, more consistency, improved community and government relations—these are all the norm. And in the not-so-long term, investors, buyers, traders, and ultimately China and India will all converge around concepts of sustainability and traceability.

What will this mean for Malaysia and Indonesia? Indeed, we stand at a crossroads. We know the potential of oil palm: the incredibly high yields, the carbon sequestration, and the mass employment of the rural poor. The choice

*Harvesting oil palm,  
which is still done entirely  
by hand (Sumatra,  
Indonesia)*

for our industry now is between realizing this sustained economic benefit or pursuing a short-sighted position that may put our national resources and industries at risk. It is therefore essential that we pursue the proper course at this time and operate our key sectors with true vision.

In conclusion, I hope this study provides clarity on a critical issue many of us in the industry have known for years: that responsible and transparent production according to credible international standards does not generate a net cost for companies and our economic development. In fact, it is quite the opposite. RSPO-compliant operations are simply more profitable. In parallel, these standards generate broader social benefits to our people and preserve the key natural resources that underpin the wealth of our nations. This is why the palm oil industry took the lead in the formation of RSPO.

I am thankful for this extraordinary opportunity to have focused my energy and pursuit in a singular field of interest over these 50 years. I can only express how significantly gratifying it is to be part of a phenomena that has played a role in the demonstration of human potential—in exhibiting humanity in a highly commoditized sector such as palm oil. It takes moral courage to have achieved, and to continue to aspire to, the amalgamation of profitability and sustainability. The report demonstrates that this is indeed highly possible.

And this is why I proudly welcome *Profitability and Sustainability in Palm Oil Production*.

**M.R. Chandran**

*Advisor, Roundtable on Sustainable Palm Oil (RSPO)*

*Former Chief Executive, Malaysian Palm Oil Association (MPOA)*

*Harvesting oil palm  
(Lampung, Sumatra,  
Indonesia)*











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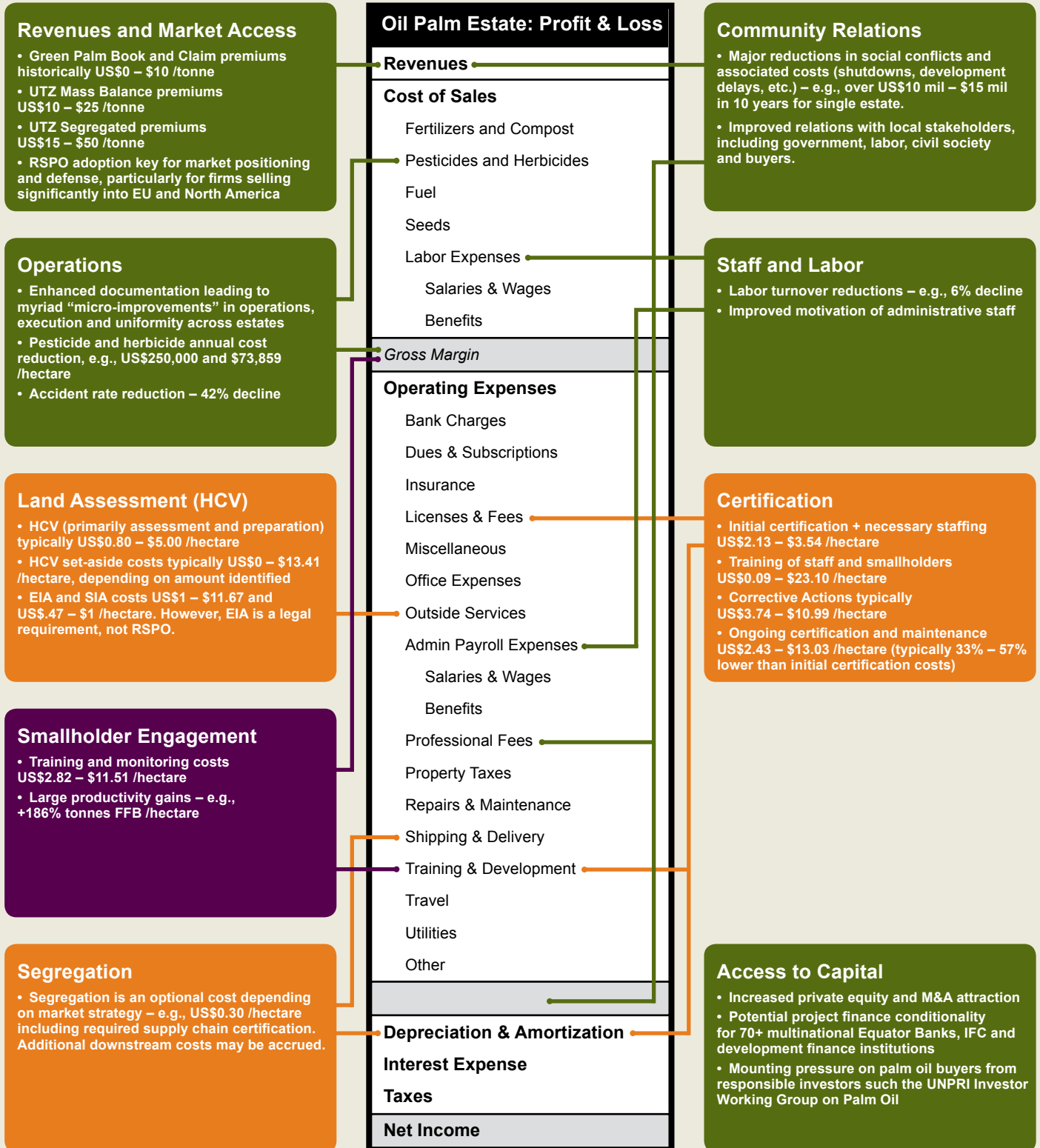
**WORLD WILDLIFE FUND** is the world's leading environmental organization, with more than 1,300 projects operating in over 100 countries. WWF's vision is to build a future in which people live in harmony with nature. The WWF Markets Transformation Initiative seeks to shift markets of high impact food, fiber, and biofuels commodities toward sustainable production through its more than 50 commodity experts working around the globe, extensive engagement with industry, and involvement with multiple industry roundtables. WWF's International Finance Program supports this strategy by leveraging our global intelligence to engage directly with investment banks, asset managers, and other financial institutions. The team helps strengthen lending and investment criteria for key industry sectors, provides insights and data on environmental and social risk, fills critical research gaps, and helps unlock innovation breakthroughs in sustainable financial products. *Website:* [worldwildlife.org](http://worldwildlife.org)

**CDC** is the UK government-owned development finance institution that uses its own balance sheet to invest in low-income countries in South Asia and sub-Saharan Africa. It has net assets of £2.8bn. CDC's objective is to foster growth in sustainable businesses, thereby helping to raise living standards in developing countries. From 2004 to 2010, CDC operated primarily as a fund-of-funds investor, investing in companies through intermediary fund managers. In 2011, CDC announced a high-level new business plan, with a geographic remit focused on low-income and lower-middle-income countries in sub-Saharan Africa and South Asia. In addition to acting as a fund-of-funds investor, CDC now provides debt and direct investment to businesses in these regions. *Website:* [cdcgroupp.com](http://cdcgroupp.com)

**FMO** (the Netherlands Development Finance Company) is the Dutch development bank. FMO supports sustainable private sector growth in developing and emerging markets by investing in ambitious companies. FMO believes a strong private sector leads to economic and social development, empowering people to employ their skills and improve their quality of life. FMO focuses on four sectors that have high development impact: financial institutions, energy, housing, and agribusiness. With an investment portfolio of EUR 5 billion, FMO is one of the largest European bilateral private sector development banks. *Website:* [fmo.nl](http://fmo.nl)

**Figure 1. RSPO Certification Impacts on the Bottom Line**

- Benefits of RSPO Implementation
- Costs of RSPO Implementation
- Costs/Benefits for Smallholders





# EXECUTIVE SUMMARY

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*Profitability and Sustainability in Palm Oil Production* is a research study examining the incremental financial costs and benefits incurred by palm oil production companies as a result of implementing the Principles and Criteria of the Roundtable on Sustainable Palm Oil (RSPO). The objective of this report is to produce a clear guide that aids companies and financiers in decision making and planning vis-à-vis RSPO certification.

The research data were collected primarily through in-person interviews with representatives from eight palm oil production companies operating in Indonesia and Malaysia, as well as West Africa. The firms represent a range of large, mid-sized, and small operators whose certified palm oil and palm kernel oil outputs total 54% of all RSPO certified production.

**KEY RESEARCH FINDINGS** (see Fig. 1)

The identification of **primary costs** as

- identification and management of High Conservation Value areas
- the audit and certification process
- engaging smallholders
- segregation costs

The identification of **primary benefits** as

- the reduction of social conflicts
- operational improvements through documentation and better management practices
- improved staff morale and reduced labor turnover
- revenues and market access
- access to capital

The research found that although potential market premiums served as the initial attraction to certification, each major category of benefits was, in and of itself, potentially capable of outweighing RSPO implementation costs. In summary, business benefits gained from adopting the RSPO Principles and Criteria typically outweigh the costs of implementation—in many cases significantly—yet often through unexpected and indirect channels.







# 1. INTRODUCTION

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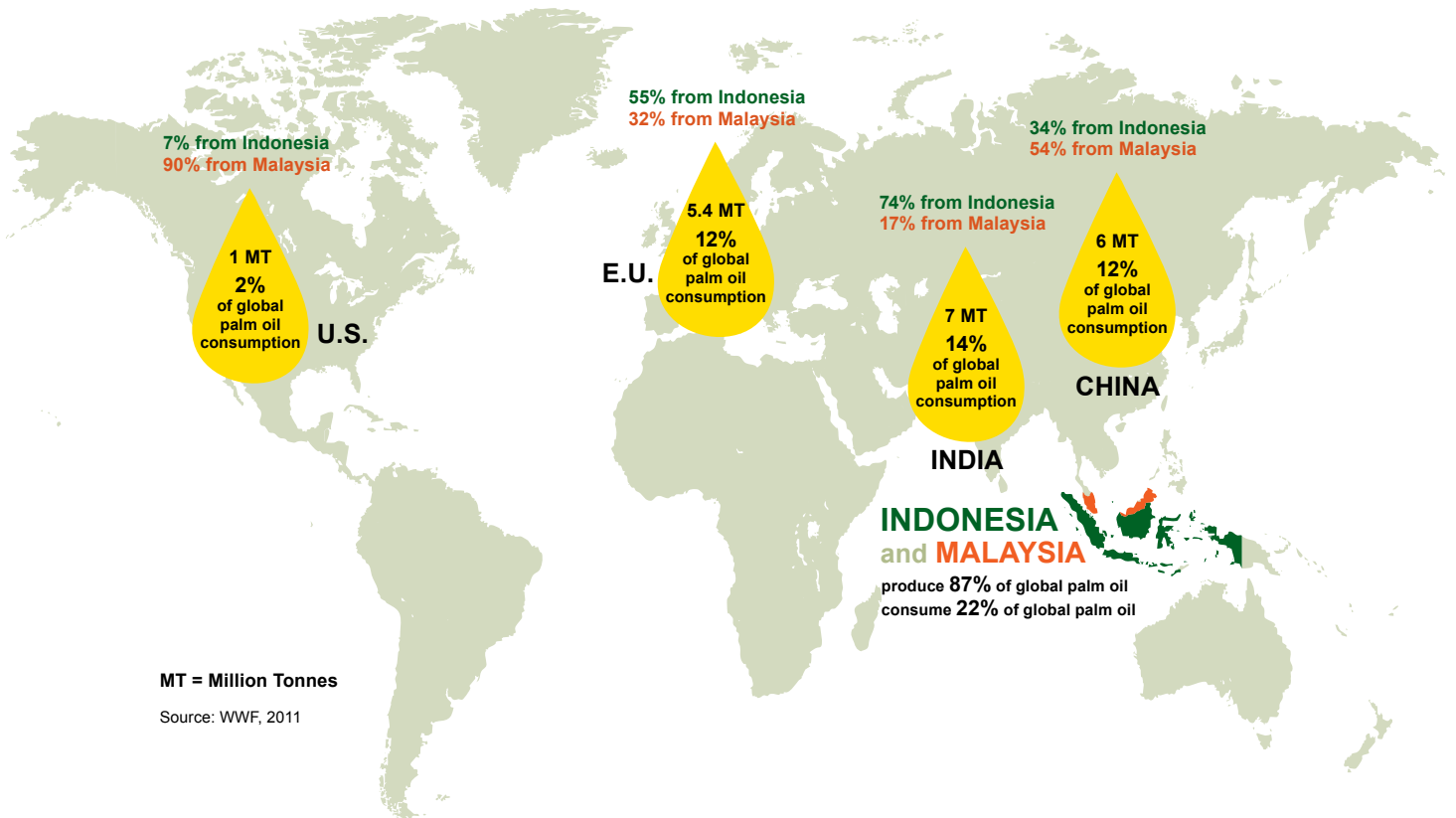
Palm oil is the world's highest yielding oil crop, with an output 5–10 times greater per hectare than other leading vegetable oils. Combined with historically low prices, relative shelf stability, and reported nutritional benefits (Bethe, 2010), palm oil leverages natural advantages that position it as a likely long-term staple of the global diet. Rapidly expanding populations and changing consumption patterns, as well as increasing demand from the bioenergy and oleochemicals industries, have resulted in sustained high prices for crude palm oil. These market forces have driven enormous growth of the palm oil industry in recent decades. Analysts predict further palm oil demand acceleration in the near term—potentially a 36% increase by 2012 over 2010 baselines, and more than 65% growth by 2020 (Mielke, 2011).

Success, however, is not guaranteed. Palm oil yields vary considerably across operations, based on management practices, genetics and geography. Yields can range from less than one to more than 7 metric tonnes crude palm oil per hectare. Furthermore, a dynamic set of external challenges face the industry, including land and labor shortages, environmental degradation, social conflicts, erratic weather patterns, rising fuel and fertilizer costs, regulatory threats in producer and consumer markets, and consumer and corporate buyer pressure for transparency and sustainability. The world is changing quickly, with seismic market and political shifts occurring in increasingly short time frames. These sea changes combine with the inherent nature of commodity sectors to drive down profits, leaving little room for error. Effective management requires keen decision making and long-term vision.

The Roundtable on Sustainable Palm Oil emerged through producer, buyer, government and civil society cooperation to help manage these challenges. As a comprehensive production standard and certification system, RSPO includes better management and agricultural practices, environmental and social risk management tools, and a system for verifying and credibly presenting that information to end users. However, while anecdotal claims abound regarding the costs and benefits of RSPO implementation, no systematic, quantitative study had been performed to date. This research aims to fill that gap by identifying and measuring, where possible, the upfront and ongoing costs associated with certification as well as the financial and strategic benefits to businesses. *Profitability and Sustainability in Palm Oil Production* thus aims to serve as a guide for management decision-making and planning for palm oil producers and investors as they confront the dynamic challenges and opportunities of the sector moving forward.

*Harvested palm fruit  
is piled up to be weighed  
(Sumatra, Indonesia)*

Figure 2. Major Trade Flows of Palm Oil



### Economic Impacts of Palm Oil

Figure 2 demonstrates the trade flows of palm oil between the primary production regions for palm oil (Malaysia and Indonesia), and their respective flows into the world's primary palm oil consumer markets (India, Indonesia, China, EU, and the U.S.). Palm oil production is economically vital for Malaysia and Indonesia and their rural communities. Oil palm represents 3.2% of the Malaysian GDP and 6% to 7% of the Indonesian GDP (RSPO, 2011a). The industry is inherently labor-intensive, requiring a global average of five workers per hectare. Competing oil crops often require approximately one worker for every 200 hectares. In Malaysia, the palm oil sector employs 590,000 direct workers (including many laborers imported from Indonesia), and 35% of production derives from smallholders (NEAC, 2009). In Indonesia, 3.7 million people are engaged in the palm oil industry and downstream industries, with 45% of production from smallholders (RSPO, 2011a). Booming commodity prices in recent years have trickled up through this labor-intensive system, helping to lift millions out of poverty in Indonesia and Malaysia and contributing to a more than doubling of the Indonesian middle class in the decade leading up to 2009 (Bellman, 2011).



## 2. INTRODUCTION TO RSPO

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As the palm oil industry has expanded, so has its public profile, resulting in intense scrutiny from society. Palm oil has been the subject of consumer, activist, and media campaigns in buyer markets, as well as frequent demonstrations and campaigns from local communities in production regions. Environmentalists have focused on the impact on biodiversity and climate change due to the loss or burning of tropical forests and the draining of peatlands. Social NGOs have highlighted the industry's impacts on indigenous people, land rights, labor rights and local communities.

The RSPO ([rspo.org](http://rspo.org)) was founded in 2004 as a response to these pressures. It is a multistakeholder organization, including producers, civil society, governments and buyers. RSPO's vision is to "transform markets to make sustainable palm oil the norm." The RSPO seeks to achieve this by developing, implementing, verifying, monitoring and reviewing credible global standards for the entire supply chain of sustainable palm oil, and to engage all supply chain stakeholders in this process, including civil society and governments. Strong progress has been made in developing standards and increasing the RSPO constituency, which now includes 558 members. Over one-third of the members are processors and traders, one-third are consumer goods manufacturers, and just over 17% are producers (RSPO, 2011b).

Certified Sustainable Palm Oil (CSPO) now represents over 10% of the global palm oil market. Approximately 1.12 million hectares of oil palm plantations are certified (RSPO, 2011b). Europe, followed by North America, has taken the lead in committing to and purchasing CSPO, arguably in response to public pressure and activism. Large brands and retailers such as Walmart, Marks & Spencer, Unilever, Nestle, and many others, have made commitments to source only CSPO (WWF, 2011). One of the world's largest traders of palm oil has committed to sell only CSPO to North America and Europe by 2015, and globally by 2020.

Meanwhile, the International Finance Corporation (IFC) and a growing number of Equator Banks (see Section 5.5, Access to Capital) have incorporated RSPO into their lending and investing policies. This changing landscape has presented an enabling environment for a rate of penetration that is rare among sustainability certifications.

Certification typically involves undertaking a review of existing production operations, identifying areas of noncompliance with the standards, implementing an action plan to address those areas, and finally undergoing audits by an approved certification body. As part of the CSPO certification process, growers must also commit to a time-bound plan to certify the remainder of their operations.

The standards against which growers are certified consist of eight Principles, with more detailed Criteria within each one. The eight Principles are

1. Commitment to transparency
2. Compliance with applicable laws and regulations
3. Commitment to long-term economic and financial viability
4. Use of appropriate best practices by growers and millers
5. Environmental responsibility and conservation of natural resources and biodiversity
6. Responsible consideration of employees and of individuals and communities affected by growers and mills
7. Responsible development of new plantings
8. Commitment to continuous improvement in key areas of activity

The Principles and Criteria have been interpreted to account for local conditions, resulting in national standards that reflect local laws, regulations and best practices. These local interpretations are aligned with the global RSPO standard and are certified as such.

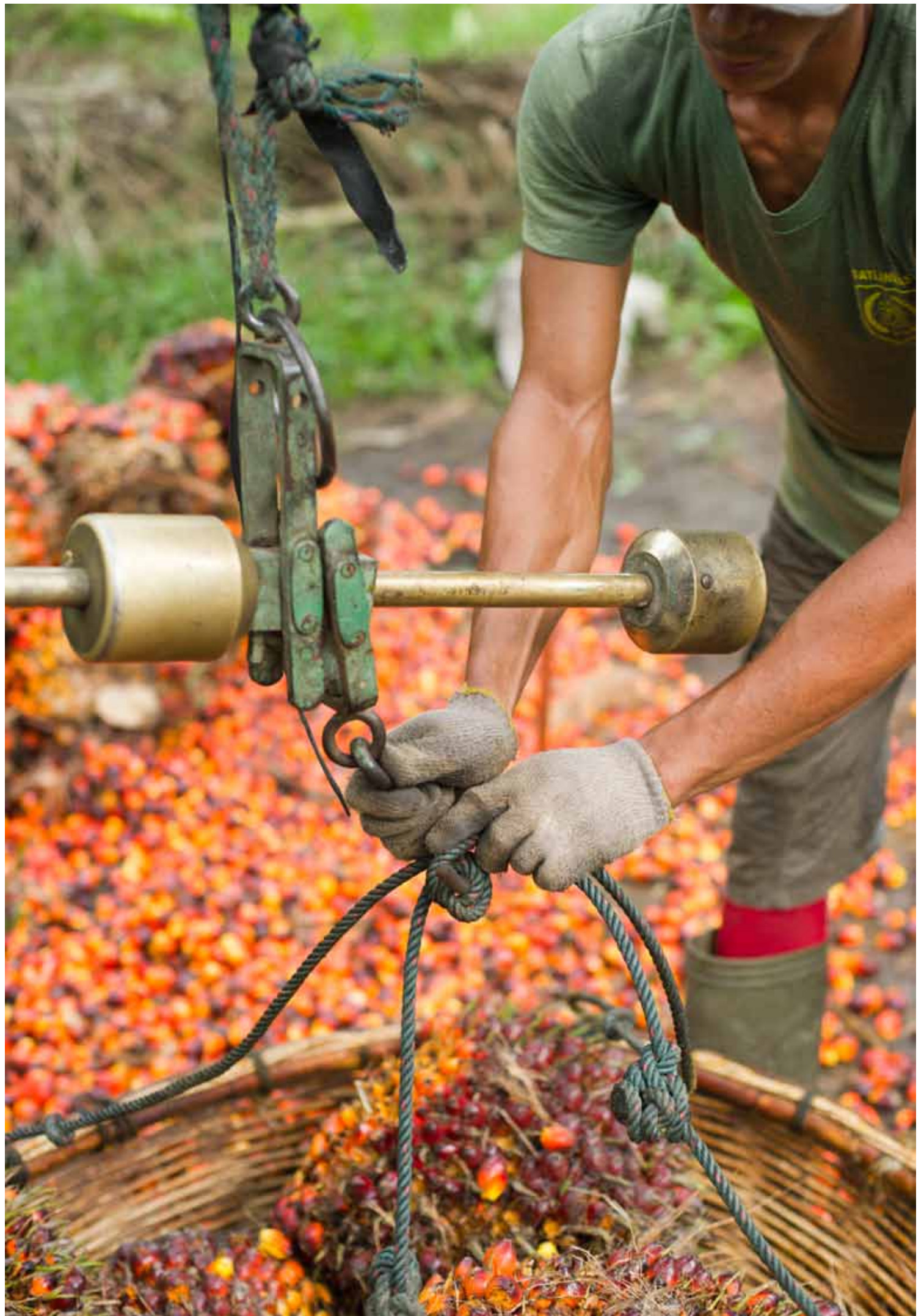
In order to facilitate the sale of CSPO, multiple systems for selling certified palm oil have been developed: Segregated (fully traceable to end user), Mass Balance (mixing with conventional palm permitted), and Book and Claim (sale of CSPO certificates is separate from sale of palm oil). (For a detailed description of these systems, see p. 20.)

*Worker inspecting collected palm fruit en route to the central mill for processing (Sumatra, Indonesia)*











### 3. METHODOLOGY

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This report was researched and composed by WWF-US, FMO and CDC. The authoring organizations initiated the study through the development of more than 70 economic, social, and environmental Key Performance Indicators (KPIs) related to oil palm plantation and mill operation and management. The metrics were designed to distill those incremental costs and benefits primarily attributable to RSPO and distinct from performance changes attributable to legal compliance, company strategy, or “going beyond” the basic RSPO Principles and Criteria.

Data was collected primarily through in-person and phone interviews held in Malaysia, Indonesia and Singapore with company managers from plantations and mills. These were complemented by on-site discussions with several smallholder groups, both independent smallholders and scheme smallholders (see definitions, p. 40). The study represents significant production bases in Malaysia and Indonesia, as well as one participant whose operations are based in West Africa.

Contributors included Cargill Incorporated., Keresia Plantations, PT PP London Sumatra Indonesia, New Britain Palm Oil Ltd., Olam International Ltd., Sime Darby Plantation Sdn. Bhd., PT Perkebunan Nusantara III, and Wilmar International Ltd. Combined with their smallholders, these companies represent a range of business practices and geographies and more than 54% of global RSPO certified palm oil and palm kernel oil production.

The indicators were segmented as follows: Plantation Basic Statistics, Certification Costs and Up-Front Investments, Change in Operating Costs (production yield and quality, best management practices, social and labor, etc.), Revenues and Top Line Benefits, and Long-Term Revenues and Intangibles. Currencies were converted based on December 2011 rates of 9,035 IDR and 3.15 MYR to the US dollar.

Where possible, the team sought data based on the “change in projected plantation lifecycle” costs or yields for the given indicator. Large palm oil producers often forecast the entire projected costs for a plantation from tree planting to replacement, in order to control for yearly fluctuations based on tree ages and weather. Where data were not available, and where before-after scenarios served as the counterfactual, the team discussed each data point with participants to ensure outcomes were attributable solely or primarily to RSPO. Data were then cross-analyzed to ensure consistency and analytic integrity.

The aggregated analysis is combined with narratives from the field interviews and external citations to provide the content of this study. These outputs are organized into two major themes: costs and benefits. Both chapters contain a series of subsections which then provide further detail on the primary business impacts documented through the research. These chapters are punctuated by two case studies providing unique insights into the themes of social conflict/community engagement and of improved documentation. In addition, a special chapter is dedicated to the theme of costs and benefits of smallholder certification.

The authors of this report recognize some important limitations of the methodology:

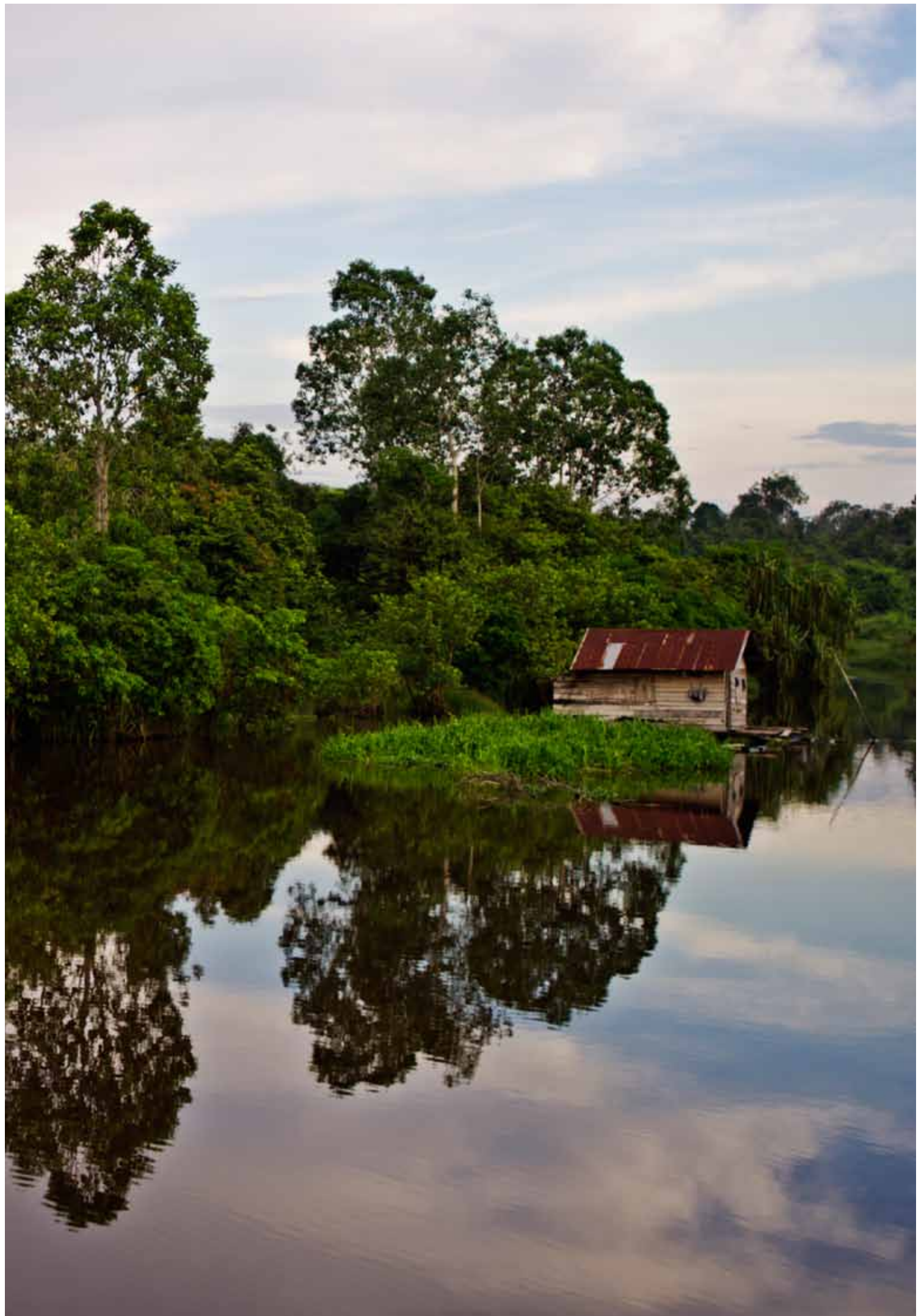
1. The eight participating firms represent a range of sizes, geographies, and practices among palm oil producers. High variance was observed in relation to these characteristics. Therefore, to aggregate all data across firms into a single Net Present Value (NPV), Internal Rate of Return (IRR), or Return on Investment (ROI) calculation would be highly misleading for assessing individual firms or projects. The high discount rate at which the industry operates would further exacerbate such misappropriations. The authoring team thus chose to present in the form of key data ranges, together with supporting quantitative and qualitative evidence, as well as case studies.
2. The study utilized currently available data provided by participating companies and was therefore limited by what metrics these firms were tracking and able to share. Not all indicators were provided by all companies, and thus these inputs had to be completed qualitatively or omitted. These challenges support the decision to present findings as ranges of data in some cases, and as qualitative description or support in others.

*Aerial of NBPOL plantation, a facility owned and operated by New Britain Palm Oil Ltd.—one of the first companies to be independently certified by the Roundtable on Sustainable Palm Oil (RSPO) as being a leader in the production of sustainable and ethical palm oil (Kimbe Bay, West New Britain, Papua New Guinea)*











## 4. COSTS OF IMPLEMENTING RSPO PRINCIPLES AND CRITERIA

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Growers identified three key areas where time and expenditure were required to achieve certification. Segregation represents an additional, optional cost-center only if a company intends to sell Segregated CSPO (see p. 21 for an explanation of the different CSPO supply chain models). Smallholder cost factors are identified throughout, and then addressed specifically in the final chapter of this study.

Primary costs include

- **Land Assessment and Management.** Identification, preparation, setting-aside, and active management of High Conservation Value (HCV) areas within plantations, as well as Environmental Impact Assessment (EIA) and Social Impact Assessment (SIA) costs
- **Certification Process.** Internal and external audits to verify and help communicate the estate's improved production standards, as well as corrective actions (capital expenditures)
- **Segregation (optional).** Additional transport and storage costs for Segregated CSPO

### 4.1 Land Assessment and Management

Key costs in the area of land assessment and management

- **HCV costs**, primarily due to assessment and preparation, were typically US\$0.80 to \$5.00 per hectare
- **HCV set-aside costs** ranged from US\$0 to \$13.41 per hectare, depending on the amount of HCV identified
- **EIA and SIA costs** were US\$1.00 to \$11.67 and \$0.47 to \$1.00 per hectare respectively; however, EIA is a legal requirement and is not considered an incremental cost of producing CSPO

Several key RSPO Criteria relate to land use and require or proscribe particular practices. For example, in order to achieve certification, companies must demonstrate that they have legitimate rights to use the land on which they are operating (RSPO Principle 2). They must show that any rare, threatened or endangered species or areas of High Conservation Value (see HCV, p. 16) are identified and their conservation is managed (RSPO Principle 5). There are also restrictions on the use of fire to clear land and on planting on steep terrain or fragile soils, including peatlands. New plantings since November 2005 must not have replaced primary forest or any area required to maintain or enhance one or more HCV elements, and firms must negotiate with local people regarding the use of their land through Free, Prior and Informed Consent (FPIC), before establishing or expanding plantations or operations (RSPO Principle 7).

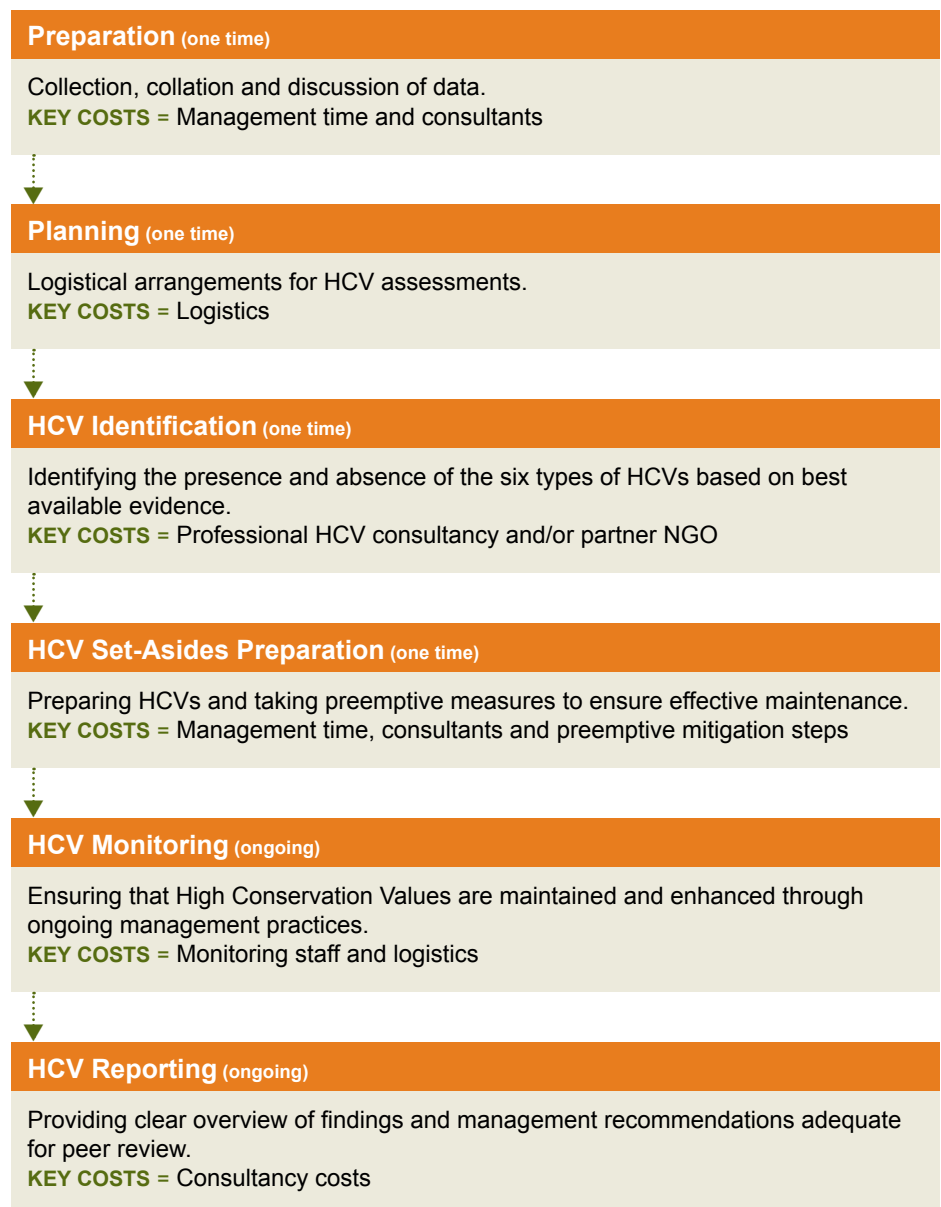
*High Conservation Value  
area (Sumatra, Indonesia)*

In order to verify these practices, companies are required to undertake an independent HCV assessment, Social Impact Assessment, and Environmental Impact Assessment, the last of which is mandated by law in Indonesia and Malaysia.

### 4.1.1 HCV Assessments

Total costs of HCV assessments were typically reported as in the range of US\$0.80 to \$5.00 per hectare. These costs are highly dependent upon the size, scope and complexity of the assessment. Higher costs (US\$16.67 to \$22.00) were reported in certain cases where major remediation or further detailed assessments were required. The actual opportunity cost generated by HCV

**Figure 3. The HCV Process**



Adapted from Stewart, C. et al. 2008.



set-asides varies widely based on the existence and amount of HCV at a plantation, and thus cannot be described as a fixed cost of RSPO certification. Reported HCV set-aside costs ranged from US\$0.00 to \$13.41 per hectare. Staff time for ongoing management of HCVs is quantified in the Certification section (4.2), as these personnel are often permanently associated with the overall certification process and the ongoing documentation and maintenance of the RSPO system.

#### 4.1.2 Environmental Impact Assessments (EIA)

Environmental Impact Assessments are typically required by law, though exact practices vary according to country and company ambitions. The results of an EIA are incorporated into HCV assessments for existing plantings. (This may reduce the subsequent HCV costs, depending upon the quality and depth of the original EIA.) Often, the EIA and HCV assessment are conducted concurrently for new plantings.

Many firms reported that RSPO land-use requirements (HCV) were not significantly more stringent than either these legal requirements or their pre-certification practices. One large producer stated that the only major change resulting from RSPO HCV requirements was the addition of riparian buffers, which marginally reduces yields due to loss of land under production (yet may also provide benefits such as conservation of soil integrity, which had not yet been measured); however, riparian buffers are in fact already mandated by Indonesian and Malaysian law. Firms reported EIA costs ranging from US\$1.00 to \$11.67 per hectare, depending on geography, selected consultants, and complexity. These costs are not considered incremental RSPO costs, as EIAs are required by law.

In Malaysia, EIAs are required for land clearing for agricultural production of more than 500 hectares. In Indonesia, the EIA is referred to as the “AMDAL” and is required for conversion of areas of more than 3,000 hectares, while a less stringent “UKL/UPL” is required for areas of less than 3,000 hectares. However, there are limitations to using EIAs in terms of scope and depth. Many parties do not consider the AMDAL or EIA to be rigorous processes, as they do not incorporate larger impacts at the landscape level or the zoning of affected communities. Overall, EIAs apply to new plantings, but not to existing plantations and their management. HCV assessments apply to both; furthermore, unlike EIAs, HCV assessments also require stakeholder engagement with FPIC to determine areas of high social and environmental value to local communities. Multiple study participants agreed that the HCV assessment process provided a higher level of detail and a cost center that distinguishes the process from EIAs.

Countries that have only more recently commenced development of modern palm oil industries have benefited from the experience of Malaysia and Indonesia. For example, Gabon has developed its EIA requirements for palm oil plantations to follow processes similar to RSPO HCV assessments. This greatly assists companies in managing HCV areas without threat of government reappropriation and without placing themselves at a competitive disadvantage as compared to other local firms.

Firms operating in Indonesia in particular have reported government threats to impose fines or reappropriate lands set aside as HCV. The Indonesian government



### **HCV Areas**

HCV designation is based on the presence of High Conservation Values within a landscape. These values matter for both people and nature, and are agreed upon by a wide range of stakeholders, including significant economic actors. The HCV concept serves as a generic, globally applicable standard for identifying and safeguarding these values in responsible land use and management.

HCV areas contain one or more of these six High Conservation Value elements:

**HCV1.** Areas containing globally, regionally or nationally significant concentrations of biodiversity values (e.g. endemism, endangered species, refugia).

**HCV2.** Globally, regionally or nationally significant large landscape-level areas where viable populations of most if not all naturally occurring species exist in natural patterns of distribution and abundance.

**HCV3.** Areas that are in or contain rare, threatened or endangered ecosystems.

**HCV4.** Areas that provide basic ecosystem services in critical situations (e.g. watershed protection, erosion control).

**HCV5.** Areas fundamental to meeting basic needs of local communities (e.g. subsistence, health).

**HCV6.** Areas critical to local communities' traditional cultural identity (areas of cultural, ecological, economic or religious significance identified in cooperation with such local communities).

HCV assessments are required for oil palm plantations working toward RSPO certification, and the requirements are most rigorous for new plantings. HCV assessments are typically conducted with the use of GIS and satellite mapping as well as stakeholder consultations. The HCV assessment report identifies high conservation value areas and makes recommendations to management regarding how to ensure the maintenance and enhancement of these areas. Recommendations might include reforestation of buffer areas or clear designation and signage for forests functioning as biological corridors. A monitoring plan is also developed to help the company manage their progress and plan for continuous improvement.

Source: HCV Resource Network, 2011.

*Sumatran tiger*  
(Sumatra, Indonesia)

does not officially recognize the High Conservation Values process and has zoned the land for the official purpose of development. In other cases, several companies have faced the challenge of local communities encroaching into their HCV areas. The support of the government in recognizing set-asides would enable firms to conduct legitimized joint enforcement initiatives with government agencies.

### 4.1.3 Social Impact Assessments (SIA)

Social Impact Assessments are not required by law in producing nations. In some cases in Indonesia and Malaysia, cursory SIA are integrated into the EIA process. Detailed SIAs, when conducted, are an incremental cost and can be conducted concurrently with the HCV assessment. On existing plantations, the HCV assessment will utilize existing SIA (and EIA) documents and then build upon them. For new plantings and first time audits, the companies may realize a need to conduct a more in-depth SIA with the HCV assessment, utilizing existing data from the EIA. Participating companies reported SIA costs of US\$0.47 to \$1.00 per hectare. By incorporating the SIA into the HCV assessment, companies would benefit from the embedded Public Consultation process which requires the use of Free, Prior, and Informed Consent (FPIC) tools. (For a detailed flowchart outlining RSPO New Plantings Procedures, including the Public Consultation process, FPIC, and other steps, see RSPO, 2010.)

Public consultation and FPIC can be costly and time-consuming. “In Malaysia, this is not so costly. But in Indonesia, it’s a big affair,” says one manager. The process often requires flying the facilitators (consultants), and sometimes government officials, to remote areas. These participants typically also receive per diems as an allowance for their attendance. Similarly, local stakeholders who attend the consultation may be compensated for income lost while they are not working on their fields. Costs may also include those associated with efforts to establish good relationships with local communities, should a firm choose to go above and beyond in order to establish strong local ties (see Case Study B, p. 30).

Despite costs and complications, however, the RSPO social engagement tools ultimately unlocked some of the greatest value of RSPO in terms of cost savings due to reduced social conflicts and an enhanced operational environment (see Section 5.2, Community Relations, p. 27).

## 4.2 Certification

Certification Cost Summary:

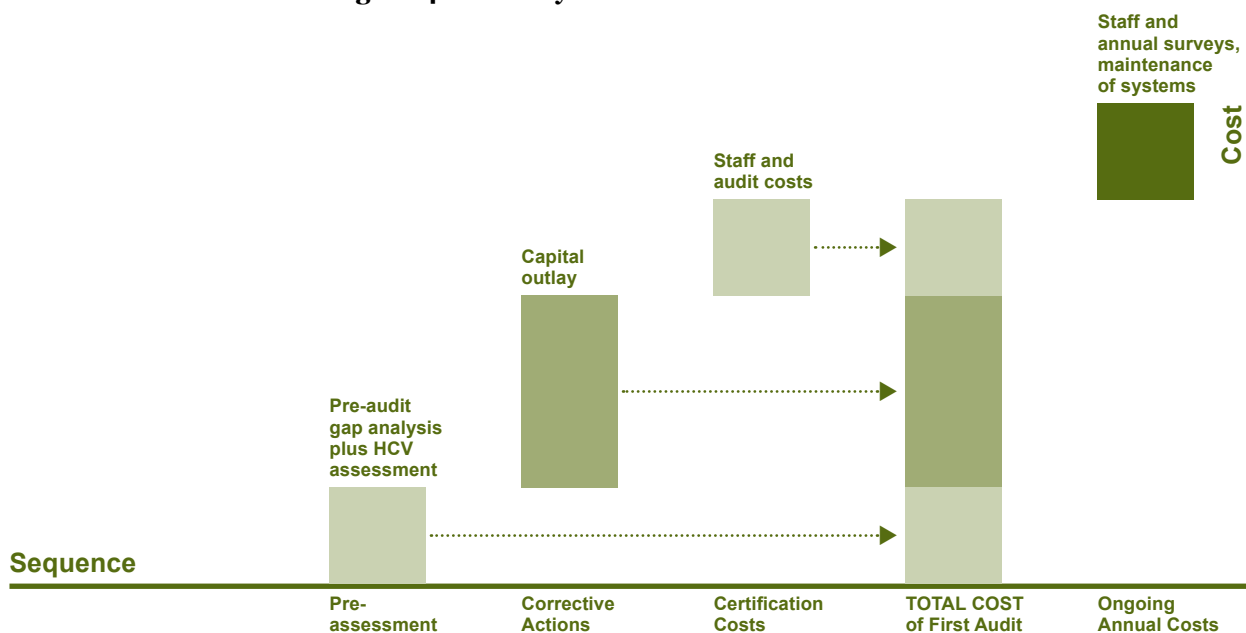
- Initial Certification with necessary staffing typically US\$2.13–\$3.54 per hectare
- Corrective Actions: typically US\$3.74–\$10.99 per hectare, with high-end number of \$38.32 per hectare
- Training of staff, implementors, and smallholders: US\$0.09–\$23.10 per hectare
- Ongoing Certification & Maintenance: US\$2.43–\$13.03 per hectare (typically 33–57% lower than initial certification costs)

A successful RSPO certification audit depends upon the existing performance level of the plantation. Plantations typically commence with a pre-audit to determine the performance gap. The subsequent full RSPO audit or “main assessment” is comprehensive as it includes both social and environmental quality criteria as well as corporate governance and mill/estate better management practices.



“Corrective actions”—i.e. necessary capital expenditures—are often identified either during the pre- or full assessment, and these investments must also be maintained over time. The main assessment lasts five years, but in the interim there are annual surveillance audits.

**Figure 4. Primary Certification Costs\***



Most respondents grouped staffing costs of management and field operators together with initial certification costs. Initial certification and staffing costs together were reported in a range of US\$2.13 to \$9.26 per hectare. Four of the larger companies surveyed reported figures that fell within a range of US\$2.13 to \$3.54 per hectare, reflecting their economies of scale. It is common for companies to either hire a dedicated staff person to manage RSPO systems and documentation going forward, or to allocate some duties and time from existing management. Unfortunately, current company data systems do not sufficiently separate these costs, with the exception of one firm which reported an annual spend of US\$110,000 on annual staff time for RSPO management on one mid-sized estate. This figure is likely well above the mean, given the strategic priority of RSPO and the “above and beyond” environmental and social stewardship approach of the reporting firm.

Corrective actions may be required in order for plantations to meet the RSPO criteria. This was measured separately from initial certification costs and reflects capital expenditures including construction of spray sheds, additional fire observation stations, bunding for tanks, housing improvements for workers, storage and workshop facilities, documentation processes, and land remediation. Corrective action costs varied widely depending upon the scope and type of investments required to become RSPO compliant. It is also worth noting that

\*This chart is for illustrative purposes only. Relative costs vary significantly on a company-by-company basis.

these capital expenditures should produce operational benefits for the business, though these could not be documented. Corrective action costs, as reported, ranged from US\$3.74 to \$38.72 per hectare and were typically inversely proportional to the size of the estate. Smaller estates may not only have fewer economies of scale, but in some cases a lower operational baseline prior to certification.

Companies must then train their general staff in order to properly execute RSPO implementation and improve practices. Training costs include training of the trainers as well as field operators and smallholders. These figures varied widely, ranging from US\$0.09 to \$23.10 per hectare. The differences are due in part to the degree to which the organization and field operations have progressed on their own accord along a path that parallels the RSPO Principles and Criteria, as well as the proportion of smallholders with respect to the size of the certification unit.

RSPO Certification confers approval for a 5-year period. However, annual surveillance audits by accredited third-party auditors are required. These costs were reported in the range of US\$2.43 to \$13.03 per hectare, typically 33% to 57% lower than initial certification costs.

### 4.3 Segregation

As RSPO's certification scheme is relatively new, with volumes of certified oil only reaching market in late 2008, the study participants' experience of handling and marketing Segregated palm oil, one of the most stringent forms of RSPO CSPO, was limited. Only one participant reported segregation costs, totaling US\$0.30 per hectare, including the required supply chain certification. However, commentary from the participants did yield interesting insights into the difficulties and future opportunities for a traceable supply chain.

Overall, the costs associated with segregation, especially in the early phases of implementation, can potentially be high. This oil must be kept physically separate from conventional palm oil throughout a very long and complicated supply chain. Physical separation begins in the growing areas and then extends to the mills, land tank facilities, shipping vessel compartments, market storage facilities, refineries, processors, and finally to the end-product processing facilities to generate a consumer good. This complexity is further magnified if the palm oil fractions (different types of refined palm oil) are converted to derivatives used in the health and beauty care industries.

Segregation costs can vary widely for producers, depending on supply chain, refinery, and end-product factory configurations. Additionally, as a company processes crude palm oil into first fractions, and then from these fractions into secondary fractions, the number and complexity of handling and storage increases exponentially. A balance of market demand for all fractions of Segregated CSPO is also important in order to maximize the benefit of the certified oil and minimize costs to end users. For example, if desired fractions are a small proportion of the final product mix of the CSPO palm base oil, the producer then faces possible "downgrading" of the component inventory to alternative blends, or the possible sale of Segregated CSPO simply as Mass Balance or Book and Claim (which are of lower value).



### Three CSPO Supply Chain Systems

**SEGREGATED & IDENTITY PRESERVED** Segregated palm oil is traced throughout the supply chain, but allows mixing from multiple certified plantations. CSPO is collected from certified plantations in dedicated tanks and kept separate from noncertified oil all the way to the end user. The end user therefore receives 100% certified palm oil. Fully traceable palm oil (Identity Preserved) is an even stricter variation on this system whereby the palm oil is segregated but is also traceable back to an individual plantation. It is not mixed with palm oil from other certified plantations. The Segregated CSPO system is managed by UTZ-CERTIFIED.

**MASS BALANCE** In the Mass Balance system, certified palm oil is mixed with noncertified, but a record is kept of the amount of certified palm oil in the tank. When the palm oil is sold to the end user, the same volume that was certified at the start can be sold as certified; the rest is sold as noncertified. This allows for the mixing that takes place in the supply chain without affecting the total volume of palm oil that is ultimately sold as certified. It is cheaper to implement than segregated because certified oil does not have to be kept separate. The Mass Balance system is also managed by UTZ-CERTIFIED.

**BOOK AND CLAIM** In the Book and Claim system, the sale of CSPO Certificates is separate from the sale of the physical palm oil. For example, a certified plantation may face a situation where its buyers are not interested in purchasing CSPO. In this case, the plantation sells its product as normal, uncertified palm oil. By recording the volumes, however, the plantation can then sell Book and Claim certificates to other downstream entities in the supply chain (e.g., consumer goods brands or retailers) who wish to “offset” unsustainable palm oil purchases with these certificates. Book and Claim was designed to help generate rapid uptake of the RSPO certification system. Book and Claim is very cheap to monitor as it is purely a paper-based process. It simply requires that auditors check the volume of certified palm oil that the plantation has produced and that the oil was not already sold as certified. The Book and Claim certificates trading platform is managed by Green Palm.

*Palm fruit that has been numbered so any problems with the harvest can be traced (Sumatra, Indonesia)*



All of these factors are intensified in the early stages of introducing CSPO when volume demands are uncertain and end product requirements for Segregated palm and palm kernel oils are still under consideration by end product market players.

Despite the many obstacles, it should be noted that nearly one-third of all CSPO shipped in 2011—over 5 million MT—was in the category of fully traceable (Identity Preserved/Segregated) or Mass Balance (which can have some level of traceability), demonstrating that demand for traceability exists in the marketplace.

**Figure 5. Relative Costs and Benefits of Supply Chain Mechanisms**

Supply Chain Mechanisms	Overview	Implementation Costs	Level of Traceability
Segregated	CSPO that has been separated and directly tracked throughout the supply chain. Involves coordination of all actors.	High	High
Mass Balance	Delivered palm oil not directly linked with the CSPO at source, but the % CSPO purchased is guaranteed. Involves coordination of entire supply chain.	Medium	Medium
Book and Claim	Final product is not CSPO. Instead, end-user offsets noncertified palm oil purchases with certificates, which are generated by CSPO producers who are not able to sell their product as such. Does not involve coordination of the supply chain.	Low	Low







## 5. BENEFITS OF IMPLEMENTING RSPO PRINCIPLES AND CRITERIA

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Participating growers reported a range of benefits, some expected and some unexpected, in the areas of

- Operations
- Community Relations
- Staff and Labor
- Revenues and Market Access
- Access to Capital

### 5.1 Operations

The key benefits of RSPO implementation in the realm of company operations were

- Enhanced documentation leading to myriad “micro-improvements” in quality, execution and uniformity across estates
- Total yearly pesticide cost reduction of \$250,000 and herbicide cost reduction of \$73,859 reported from two firms respectively
- Accident rate reduction of 42% reported

RSPO introduces or requires a set of tools, developed jointly by industry leaders and other experts, to facilitate better management practices and better agricultural practices. These range from Integrated Pest Management (IPM) to enhanced operational documentation to labor grievance mechanisms. The effectiveness of these tools, combined with the onus of auditing, and the motivation of driving for a global accreditation, result in a range of operational improvements in palm oil production.

Many larger firms reported that they were in fact already operating in line with best management practices. However, they felt that they were not fully documenting their approach until RSPO certification. The enhanced, audited documentation systems resulted in a swathe of “micro-improvements”: tiny yet widespread improvements in employee behaviors that were not noticeable purely on a company policy basis, and increased uniformity that added up to significant gains even for the largest estates (see Case Study A, p. 26). RSPO documentation also provided a means to confidently communicate that performance to the outside world.

As one firm described, “Documentation is the biggest problem in Indonesian oil palm operations. It’s really a telling culture.” Every morning, managers gather all the workers and tell them a message, using repetition. “They don’t know how to manage paper.” As a result, individual plantation managers often run their estates in accordance with their prior experience and personal beliefs, and there is a challenge of inertia in implementing new procedures. “People always know what

*Workers loading harvested palm fruit onto a truck headed to a central processing mill (Sumatra, Indonesia)*

**Commentary by Teoh Cheng Hai, Former Secretary-General, RSPO**

The success of voluntary certification schemes for commodities is determined to a large extent by a positive business case, from the perspectives of the key players along the supply chain. With regard to palm oil, for the producers the business case initially seems to be dominated by the financial benefits for undergoing certification. The key expectation has been a price premium for the additional efforts required to meet the stringent requirements of the RSPO. This issue has been discussed at every annual Roundtable meeting since the inaugural meeting in 2003.

The point of divergence comes from the fact that growers prefer a two-tier market whereby certified palm oil will be supplied at a price premium to those who need it, particularly in developed economies, while for the bulk markets it will be business as usual in the form of uncertified palm oil. On the other hand, consumers in Europe, especially multinational corporations, see sustainability performance as a market requirement, and therefore do not see the relevance of a two-tier market.

While price premium will remain an important element in the trade and use of CSPO, especially during the transitional phase of market transformation, the quantum will be market-driven. When sustainable palm oil becomes the market norm, as envisioned by RSPO, the issue over price premiums may become less contentious. Instead of focusing mainly on premiums, producers should build their business case based on other benefits that could be derived from implementation of the RSPO Principles and Criteria (P&C) and certification. *Profitability and Sustainability in Palm Oil Production* and other studies are now providing empirical evidence of significant direct and indirect benefits from implementing the RSPO P&C.

A survey that I conducted in May 2011 among nine plantation companies that collectively accounted for about 45% of total production of CSPO globally showed that implementation of the RSPO principles had resulted in considerable improvements in their triple-bottom line performance (economic, social and environmental). At the plantation level, effective implementation of best practices required by the RSPO standard had resulted in improvements in operational efficiencies and reductions in costs. At the corporate level, the respondents reported that certification had enhanced their corporate image and reputation and provided better access to international markets.

Implemented in a holistic manner, the RSPO P&C could serve as the basis for overall sustainability management. For instance, RSPO's Principle 8 on continuous improvement could be a key driver for long-term economic viability. A large plantation company in Indonesia, for example, has adopted continuous improvement as a corporate culture and is using a structured problem-solving approach to address key operational problems. Certification should not be the end in itself; instead, it should be the means to an end for companies to achieve sustainability performance that is verifiable and acceptable to their customers and stakeholders.



they should be doing,” states one sustainability manager. “The question is: When are you going to do it?”

RSPO, however, provides a time-bound plan and accountability, resulting in timely execution of best practices on all levels. These micro-improvements result in enhanced performance across a range of operations that generate gains where none were necessarily expected. They add up to complex yet tangible transformations, best captured by statements from palm oil company staff such as, **“You can just see the difference between a certified mill and an uncertified mill.”**

Firms also reported direct cost savings in several major operational line items. One company stated that they have saved \$250,000 annually across their estates due to reduced pesticide application. Another reported an annual savings of \$73,859 in herbicide usage on a single estate. A large producer also reported a 42% reduction in accident rates as a result of improved safety procedures and equipment. Several companies reported reductions in rates of worker turnover. Only one firm was able to quantify the change, reporting a 6% turnover reduction—a key benefit for a mid-sized estate operating in a remote, labor-short region.

Operational improvements were the largest for smallholders (see Section 6). However, due to the massive scale of large oil palm operations, even small gains due to improved documentation, reduced input use, etc., multiplied into larger savings across the bottom line.

### Case Study A: Documentation and “Invisible” Operations\*

Company A is one of the world’s largest palm oil producers. Its experience illuminates the transformative effect a robust documentation system can have on operations.

#### THE PROBLEM

Like many large companies, A was operating near best management practices before RSPO implementation. “We simply were not documenting it very well,” describes Sustainability Manager “Michael Rajaratnam.” Michael believes that the lack of documentation is the biggest challenge across A’s Indonesian estates. Many plantation managers were traditionally accustomed to operating their estates independently. In some cases, plantation managers simply did not make themselves fully cognizant of everything occurring on the ground and trusted operations to lower-level staff. When they received company directives, the response was typically, “Ay-ya, so difficult to do!” which was followed by lag-time.

This classic relationship created a lack of uniformity, lack of improvement, and delays in execution that subtly produced suboptimal business results. For example, worker housing, facilities and sanitation are required by law in Indonesia. Yet in the past, Michael describes:

*The toilet might become blocked. A worker informs his or her supervisor. The supervisor may then simply treat it as an extra hour for him and doesn’t necessarily inform the manager. Probably the biggest problem is that the manager often doesn’t know what’s going on in his plantations. Now there is an official, documented grievance mechanism on the plantation. If it is not respected, this issue is raised at the next regularly scheduled plantation meeting. This ultimately creates good harmony in terms of workers and management. It has reduced our labor turnover. You can have a house on a plantation. But before RSPO, you don’t really have a home.*

Examples of improvements abound across A operations, from chemical application and storage to replanting procedures to reporting systems. These operations are “invisible” because the executive orders are often best practice, but micro-delays and errors in implementation accumulate directly or indirectly across estates while rarely directly violating a policy.

#### THE SOLUTION

To counter these challenges, Michael now requires every certified estate to have a Document Room. “In that room, there must be a table. And the rule is that no documents can ever leave that room, otherwise they will disappear.” Accompanying this is an official document controller, whose job it is to collect the necessary documents from managers and ensure all files remain in the Document Room. “It’s a cost. But then you become more organized.”



The result is not only improved operations, but overall confidence. “You’re not afraid of anyone. NGOs, buyers, government, etc.,” says Michael. “To be honest, every time the government inspector used to come, we’d get on the phone screaming at people, ‘Get the chemical shed cleaned up!’ etc., etc. Now, our managers are inviting inspectors on the tour! We should be inspecting them!”

For Company A, RSPO’s documentation requirements forced change where no need for change was previously perceived. It drove improvement across thousands of staff, a million minutiae, and perhaps many more largely unnoticeable delays or missed opportunities. And finally, it provided awareness of and confidence in that change, which has been transformational for the business and its personnel.

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\*The names of companies, estates, and employees who are quoted have been changed to preserve the anonymity of commercially sensitive data.

## 5.2 Community Relations

The key benefits of RSPO implementation in the area of community relations were

- Significantly reduced social conflicts and associated costs
- Improved relations with local stakeholders, including government, labor, civil society, and buyers
- More efficient verification and deployment of social development funds (“community money”)

Social disruptions are often not fully anticipated or accounted for in palm oil production. Yet they can generate major company costs. Social disputes with local communities and workers typically disrupt operations through roadblocks, development delays, milling delays, demonstrations, or employee strikes. “It can ultimately mean the difference between an estate operating in the red or the black,” stated one company. **“Over a several year period, any plantation company easily has the potential for a disruption to cost them a million dollars.”** According to study participants, the social engagement and verification tools embedded in RSPO either mitigate or eliminate these costs, providing one of the greatest financial benefits of RSPO implementation.

For example, a typical 10,000-hectare plantation requires a 60 MT mill (processes up to 60 metric tonnes of fresh fruit bunches [FFB] per hour). At peak season, the mill may be running approximately 22 hours per day, 6 days per week. If the fresh fruit bunches sell for \$200 per metric tonne, it requires less than 4 days of disruption to reach US\$1,000,000 in costs to the company. This calculation assumes peak season and that the mill is unable to catch up—that is, that there are correlated crop losses occurring in the field of fresh fruit that cannot be processed. In addition, there are also negative impacts on labor productivity and in crop quality resulting in high free fatty acid (FFA) content in the CPO.

**Figure 6. Potential Loss Due to Social Disruption at Peak**

$$60 \text{ MT capacity mill} \times 22 \text{ hours per day} \times \$200 \text{ FFB value per MT} \\ \times 4 \text{ day disruption} = (\$1,056,000)$$

In politically challenging geographies or areas with uncertain land tenures, such events are common. However, “there are real tools in RSPO that prevent this kind of thing from happening,” states a plantation manager. **“If you prevent one shutdown during peak in the life of your plantation, right there it pays back for RSPO.”**

In the case study on p. 30, Company B estimates that the US\$30,000 they have spent on community engagement in the early stages of land acquisition will avert a range of costs associated with community disputes, which in their first plantation were estimated to have cost up to US\$15 million. This investment implies an ROI of 880%, with the added benefit of improved relations with local government, buyers and local banks.

Some firms also reported that the RSPO’s formal systems for managing interactions with local communities helped to make their existing social engagement costs more effective. For example, one company maintains a fixed annual “social spend.” However, as stated by the operations manager, “We used to hand it out blindly. Anyone who came to us with a project, we felt we had to contribute. But now, with clear verification and other processes, we are smart about how we give out money.” When tensions arise nonetheless, the company can now refer to a formalized third-party process.

“In Indonesia, verification is the key,” says an executive from a third company, referring to the process of identifying whether communities hold customary land rights. His company now requires immediate verification processes for all negotiations or acquisitions, which has greatly improved relations with both local and global stakeholders.

Palm oil production often takes place in rural areas and in emerging economies, where land rights and local politics can be unclear. The result is a high ongoing risk of either offense or opportunism from local communities, resulting in major unanticipated costs. The need to rely on these communities for labor supply and smooth operational functioning only magnifies this risk. As a result, the upfront social engagement and FPIC processes necessitated by RSPO, while requiring time and money, have provided one of the greatest financial benefits of the system to producers.

*Aerial of NBPOL plantation, a facility owned and operated by New Britain Palm Oil Ltd., an RSPO-certified company (Kimbe Bay, West New Britain, Papua New Guinea)*







### Case Study B: Community Engagement\*

“Estate 1” in Indonesia, a property of “Company B,” has been producing oil palm on 30,000 hectares of land for over a decade. Operations, yields and social relations are considered by many as best-in-class. However, some lessons were learned the hard way. In particular, the estate was plagued at its outset by severe land tenure disputes and social unrest. With an additional 15,000-hectare annex in the works, Company B is determined to avoid a repeat of these common and expensive pitfalls through preemptive community engagements.

#### THE PROBLEM

According to President Director “Pak Agus,” of Company B, “When we did the first development at Estate 1, the land issues were a pure living hell.” These challenges began with the entry of land brokers—a common phenomenon in Indonesian acquisitions. As soon as word went out that a company was interested in purchasing the site, these dealers arrived offering cash to local smallholders. After the contract was signed, in many cases the brokers failed to actually make payment. Well-heeled and well-connected, the brokers left the traditional landholders with little recourse but to occupy their own land, now without legal title. As a result, in order for B to complete the land acquisition, in many cases the company had to purchase the property up to three or four times due to the many parties claiming title.

Ultimately, between resulting development delays (creating an over-aged nursery stock), legal fees, staff time and periodic shutdowns, Company B estimates that the social disruptions on Estate 1 cost the company approximately US\$10-\$15 million over a decade in both direct losses and opportunity costs.

#### THE SOLUTION

Company B is now planning to acquire an adjacent 15,000-hectare property—Estate 2—with a higher population density than Estate 1. Given their expensive experience with Estate 1 and the potential risks with the annex, B is employing a proactive approach. “Indonesia has a reputation that land issues are endless,” says Pak Agus. “However, this time we want to prevent these problems from the start.”

The company has therefore established a Company B office directly within each of the local villages in and around the proposed Estate 2. The goal is to engage in deep and meaningful interaction with the villages over a period of time to understand their aspirations and the land issues in each community. B hopes to locate the “win-win” between the goals of the local community and the company. This process is taking place during the firm’s due diligence period for the acquisition and before the purchase has been signed. There is therefore a risk that this “socialization process” will occur without ultimate returns. However, the company hopes the engagement

will also identify or preempt potentially toxic land tenure issues that would ultimately render the project unprofitable. The engagements are also providing Company B with deep insights into the land ownership structures and social landscape as a form of pre-purchase due diligence.

The local B team is deployed for six months, at a cost of approximately US\$5,000 per month. This generates a total cost of US\$30,000. If this engagement prevents a single day of shutdown during peak period in the life of the mill, the investment provides an ROI of approximately 880%. If it pre-empts the types of social disruptions that occurred at Estate 1, the return on investment reaches two additional orders of magnitude.

### **Figure 7. Return on Investment for Community Engagement**

$$\begin{aligned} &60 \text{ MT capacity mill} \times 22 \text{ hours per day} \times \$200 \text{ FFB value per MT} \\ &\times 1 \text{ day disruption} \div \$30,000 \text{ RSPO community engagement} \\ &= 880\% \text{ ROI} \end{aligned}$$

The community engagement program at the potential annex has been highly successful so far. As a result, Pak Agus believes that “this time, we expect that there will be few to no social disruptions” in this population-dense acquisition. “In fact, the local community is now excited to work with the company.”

Furthermore, B is benefitting from strong cooperation from local Indonesian banks who have been encouraged by the company’s behavior. The banks have offered to extend credit lines for the local community committees to help them develop their smallholder plots. B is also seeing improved relations with government and regulators, buyers, and landholders at new sites.

Pak Agus says that RSPO “helps us, supports us, and gives us some good tools and a framework to work with.” For the new annex to B, the anticipated reduction in social disruption-related costs is expected to pay for the investment in best-practice community engagement many times over.

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\*As in Case Study A, the names of companies, estates, and employees who are quoted have been changed to preserve the anonymity of commercially sensitive data.



### 5.3 Staff and Labor

The key benefits of RSPO implementation in the area of staff and labor were

- Labor turnover reduction—e.g., a 6% decline
- Improved motivation of white collar staff

Palm oil is a labor-intensive industry, requiring a global average of five workers per hectare, as opposed to one worker per 200 hectares for competing oilseed crops. Companies must frequently import labor from overseas to meet their needs. Attracting and retaining staff is therefore a key concern.

The impact of RSPO on staff morale, labor relations, and hiring/turnover was notable. Several firms reported reductions in labor turnover, with one company able to specifically quantify a 6% decline following RSPO implementation, due to “better quality of life in terms of housing and other facilities; and due to increased transparency—grievance procedures, setup of joint consultation committee, etc.” Others qualitatively reported turnover reductions. In the best cases, companies referred to the impact on morale as “exceptional.”

For white collar staff, **“Impacts [of RSPO implementation] on staff motivation at the supervisory and clerical levels are amazing,”** reported one recently retired plantation manager. “You cannot underestimate how specialized and boring working on a palm oil plantation has become. You’ll have one guy, for example, whose only job is monitoring seedlings, year after year. Having something going on for an international third-party standard, rather than just another office policy, is really exciting.”

A diversified firm described the importance of internal branding through RSPO and its impact on the broader base of staff: “We have over 100,000 employees,” says the COO. “They learn about the oil palm business through the news media, etc. RSPO has definitely given us a framework, or a foundation, to present that positive story internally.”

Perhaps one statement best captured the shared sentiment: **“Skills that a company develops in getting good at RSPO are the same skills that are necessary to get good at productivity, and at people productivity. . . It’s all the same thing really: being a good, high-performing company. It’s a people business. So to make improvements it’s about moving lots and lots of people.”**

### 5.4 Revenues and Market Access

The key benefits of RSPO implementation in the area of revenues and market access were

- Green Palm Book and Claim premiums ranging US\$0 to \$10 (\$3.00 at time of writing)
- UTZ Mass Balance premiums of US\$10 to \$25
- UTZ Segregated premiums of US\$15 to \$50
- RSPO adoption seen as key for market positioning and defense, particularly for those firms selling significantly into the EU and North America

CSPO certification activities were launched in 2008. The RSPO estimates that, in total, certified growers have generated over US\$20 million in premiums from

selling CSPO since 2008. Premiums vary according to the trading model and are most significant for Mass Balance, B2B sales of Segregated CPO, and biofuel fractions. (For a detailed description of these systems and an analysis of their costs and benefits, see p. 20.) There has since emerged a growing number of commitments by global buyers of palm oil to sourcing 100% CSPO by 2015 or sooner. These buyers include Walmart, Marks & Spencer, Unilever, Nestle and many others (WWF, 2011). Few of them have commenced significant purchasing, however. This dynamic will necessarily change as 2015 arrives and these public commitments come due.

Overall, the trend toward commitment to CSPO is set to continue due to the rising prominence of palm oil as a key Corporate Social Responsibility issue, as well as escalating pressure from investors both on producers and on downstream buyers of palm oil. Several firms also cited slow but growing awareness in China and India. “Eventually, China will request sustainable oil as well. . . that will be the tipping point,” stated one company. In Indonesia, the world’s second-largest palm oil consumption market, a recent television documentary on the potential impact of oil palm plantations on local communities and orangutans has generated widespread concern and sparked changes in buying habits toward sustainable options.

Upon the launch of CSPO, however, sales results were disappointing. Purchasing subsequently improved following the release of the WWF Palm Oil Buyers’ Scorecard in 2009 (WWF, 2009) generating sales premiums. Producers who were early movers into RSPO naturally captured many of these premiums, providing significant benefits to their businesses and repaying RSPO implementation costs.

Thereafter, the progress made in certifying production under RSPO Principles and Criteria quickly outstripped the demand for certified palm in the marketplace. As of December 2011, more than 5 million MT of CSPO production capacity existed in the world market. Of this total only 51% has been purchased by the end user markets. The disparity between supply and demand has put downward pressure on premiums received for the production of CSPO by certified growers. Premiums for Book and Claim certified palm oil are highly variable, yet peaked at over US\$10 in 2008 and are trading at the time of writing at US\$3.00 per tonne. Mass Balance and Segregated CSPO, which totaled one-third of volumes purchased in 2011, have seen premium levels decline by 50%–75% depending upon the added value of the end product after refining.

The overstock of available CSPO in the market and the excess CSPO production capacity—with the resulting decline in premiums—have given growers cause for concern in their efforts to continue to certify under their RSPO time-bound plan commitments. The current state of the market is especially concerning for the smaller growers and smallholder groups who are incurring proportionally larger per-hectare costs as they pursue RSPO certification with the hope of compensatory market premiums.

Since inception, 2.7 million MT of CSPO have been sold via Green Palm Book and Claim certificates. At the time of writing, premiums for Green Palm-certified palm oil were US\$3.00 per MT—a relatively small figure for a product selling at approximately \$1,000 per MT, particularly since a fee of US\$1.00 of each MT of CSPO is paid by the purchaser to Green Palm UTZ and \$1.00 is paid to RSPO (primarily to support smallholder certification).

Since the RSPO launch, 1.3 million MT of CSPO have been sold through UTZ CERTIFIED via Mass Balance and Segregated systems. Premiums through the UTZ CERTIFIED mechanisms are more significant than Green Palm Book and Claim and are not publically reported. Companies in this study reported a range of US\$10 to \$25 for Mass Balance premiums and US\$15 to \$50 for Segregated premiums depending on the specific palm oil fraction purchased.

The premiums from selling biofuels into the EU market to help meet the Renewable Energy Directive (RED) have been significant, with buyers on occasion remitting business-to-business premiums reportedly as high as US\$200 per MT. In these cases, according to study participants, RSPO provided the necessary foundation of operations and documentation for companies to easily and rapidly acquire other certifications offering market premiums, such as the International Sustainability and Carbon Certification (ISCC), due to EU RED compliance. Currently, all ISCC certified palm oil companies are also RSPO certified. One company states: “We now expect a new cert to come out almost yearly. But we’ve gone so deep on RSPO, and have all the data, so it’s really easy for us to just tack on any new ones as they arrive.”

With some exceptions, most interviewed firms look beyond premiums and focus on expected earnings through strategic positioning. “[The buyers] are big enough, strong enough, and responsible enough to ensure they have a sustainable supply chain,” stated one executive. “If we don’t join RSPO, we’re not completing our package for customers we value greatly.” In particular, adopting RSPO is seen as critical to gaining access to the EU and U.S. markets. Indeed, producers-refiners who already operate in these markets and who have made significant on-the-ground investments have little choice. In addition, RSPO has allowed some of the interviewed firms to secure longer-term contracts with buyers, and in some cases to immediately secure buyers they had not previously accessed. One firm was able to transform its strategy and performance through investing early in RSPO, capturing 25% of the EU Segregated CSPO market as a result.

## 5.5 Access to Capital

The key benefits of RSPO implementation in the area of access to capital were

- Benefits to corporate financing via increased private equity and M&A attractiveness
- Potential Project Finance and credit conditionality for 70+ global Equator Banks, IFC, and Development Finance Institutions
- Pressure on buyers of palm oil from responsible investors including UNPRI signatories

Basic fundraising for new palm oil development projects has not been a challenge due to recent price appreciation in the sector. However, several interviewees noted a range of positive impacts on their financing due to RSPO P&C compliance. The cases hold implications for the industry should the investor trend continue or should companies require access to international finance.

RSPO compliance can be material for international capital-raising. For example, in the case of private equity, one palm oil producer recently sold a significant stake of its business to an Asian strategic investor with downstream/consumer exposure. Post-deal, the buyer cited the company’s RSPO commitment as “crucial



to making the investment attractive,” as it represented best practices and public relations risk mitigation. In the case of debt, a diversified multinational company reported executing a capital raise for a variety of projects, while leveraging its palm oil balance sheet as partial collateral. The international commercial bank that ultimately financed the firm established RSPO certification as a loan condition. Several other cases emerged in which RSPO provided a key element of the value proposition to investors, including preparations for Initial Public Offering and attracting foreign investors into downstream joint ventures.

Due to increasing land and labor constraints in Southeast Asia, palm oil companies are increasingly expanding operations into geopolitically risky countries in West and Central Africa. Capital-raising from commercial sources is more difficult in these regions, and developers must often turn to development finance institutions (DFIs) such as IFC, CDC, FMO and others. DFIs provide loans, project finance and private equity investment under their mandate. They require compliance with the IFC Performance Standards, which contain many of the same requirements as RSPO. DFIs are increasingly requiring RSPO certification specifically.

The Performance Standards form the basis for the Equator Principles, a voluntary credit risk management framework for determining, assessing and managing environmental and social risk in project finance transactions. Since their inception, these Principles have been adopted by 73 financial institutions, thus affecting access to capital well beyond Africa and DFIs. The updated and revised IFC Performance Standards, which feed into the Equator Principles, include strong language around credible standards such as the RSPO, which will broadly impact project financing terms offered to the palm oil industry from global banks. There is also discussion among the Equator Principle Financial Institutions of expanding the application of the Performance Standards beyond project finance to other forms of lending. The criteria include these statements: “The client will implement sustainable management practices to one or more relevant and credible standards as demonstrated by independent verification or certification” and “Where relevant and credible standard(s) exist, but the client has not yet obtained independent verification or certification to such standard(s), the client will. . . take actions to achieve such verification or certification over an appropriate period of time” (IFC, 2012).

The investment community has also added pressure on palm oil buyers by engaging with large retailers and food brands to encourage them to source sustainable palm oil. One such initiative is the Sustainable Palm Oil Investor Working Group (IWG). The IWG is a grouping of investment organizations, representing assets under management of over \$1.4 trillion, who are members of the United Nations Principles for Responsible Investment (UNPRI). UNPRI’s IWG supports the development of a sustainable palm oil industry through the work of the RSPO. In addition, Environmental, Social and Governance Data Providers who evaluate and rate food, agribusiness, and packaged goods companies on environmental and social performance and sell such data to banks, are increasingly weighting company risk based on RSPO commitments and the use of other credible standards for other high risk commodities. These efforts and more will place financial pressure on major buyers of palm oil to join RSPO and implement sustainable palm oil purchasing.

### **Support for RSPO from Financial Institutions**

“[RSPO] serves to benefit Rabobank and its clients from a business perspective. This is because a certified palm oil producer offers the security and comfort that a bank looks for when considering a financing opportunity. Clients that have more sustainable operations pose fewer risks (for example reputation damage) to themselves and to the bank. These companies are usually the better performing, innovative companies that are able to build upon their reputation as reliable business partners. As such, palm oil companies who are not willing to commit to the RSPO are not eligible for Rabobank financing.”

**Thomas Ursem, Manager Corporate Social Responsibility,  
Rabobank International**

“Above all we want to invest in a responsible way as it will help our investment return and in the end our pensioners want to retire into a safe and secure world. This is especially relevant in the production of our food supplies. Investors do not drive the agenda, but have a role to play in helping achieve these goals. Producers and buyers of palm oil are now able to understand, measure and monitor production in ways previously impossible, which allows for a better understanding of costs and benefits. This provides clearer supply chain responsibility, improved processes which benefit all of society, and support for the case of sustainability in agribusiness.”

**Paulus Ingram, Senior Governance and Sustainability Specialist,  
APG Asset Management**

“Credit Suisse requires that its clients’ operations be certified according to the Principles and Criteria of the Roundtable on Sustainable Palm Oil (RSPO), or that a client has made a commitment to a time-bound plan to achieve RSPO certification. We consider this to be our corporate responsibility. The RSPO P&C help us to identify and manage environmental, social and associated reputational risks while meeting the expectations of a range of stakeholders. Clients that commit to comply with the P&C are able to demonstrate that they have similar corporate values, and this eases the way towards relationship building.”

**Ben Ridley, Regional Head, Sustainability Affairs,  
Asia-Pacific, Credit Suisse**

*Smallholder making notes of how much fruit is harvested, since payment is by weight. (Sumatra, Indonesia)*

“IFC has increased its requirements around the adoption of credible agro-commodities standards by our clients involved in primary production. This commitment has also been specifically reflected in the recently adopted World Bank Group Framework and IFC Strategy for Engagement in the Palm Oil Sector. Under that Framework for Engagement, IFC will require palm oil producers to obtain RSPO and/or an equivalent certification scheme within a three-year period. Many other banks and companies use IFC’s Performance Standards so this should increase the number of parties requiring certification. Most importantly, financial institutions can and will increasingly tie access to finance to sustainable practices. Banks and other sources of capital, bound by their own E&S standards, are looking to credible certification systems as proxy indicators of compliance as well as essential mitigators of risk.”

**William Bulmer, Environment, Social, and Governance Director, International Finance Corporation**







## 6. COSTS AND BENEFITS OF RSPO IMPLEMENTATION FOR SMALLHOLDERS

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The key costs and benefits of RSPO implementation for smallholders were

- Smallholder certification incurred training and monitoring costs of US\$1.19 to \$34.66 per smallholder hectare
- Productivity gains from smallholders were typically large — one firm reported a 186% increase in MT FFB production per hectare per year
- Smallholders lacked funding for RSPO implementation; primary motivation was hope of market premiums

Both scheme and independent smallholders (see definitions, p. 42) are essential components of the oil palm industry. In Malaysia and Indonesia, smallholders represent approximately 35% and 45% of national production respectively (NEAC, 2009; RSPO, 2011a). These governments have promoted the smallholder palm oil industry as a strategy for poverty alleviation (in Malaysia under the Federal Land Development Authority). Most production companies are also dependent on smallholders in order to supply their mills to maintain full utilization. All the firms participating in our survey rely on smallholders for a portion of their fresh fruit bunches. Palm oil plantations selling CSPO are required to convert their scheme smallholders to RSPO criteria within a three-year time frame.

Interviews with smallholders were limited yet informative. RSPO implementation expenses were greater per hectare for smallholders than for the company plantations, as expected. Furthermore, smallholders have fewer capital resources for such investments. Primary costs include HCV assessments and audits, trainings for RSPO implementation including better agricultural practices, and ongoing RSPO management. These expenses are typically met through a combination of the estate/buyer, the smallholder cooperatives themselves, and in some cases foreign donors. The total reported costs for plantations to implement ongoing smallholder training and monitoring ranged from US\$1.19 to \$34.66 per smallholder hectare. This range of costs is inversely proportional to the total number of smallholder hectares; that is, it is far cheaper per hectare to incorporate a large number of smallholders into RSPO than a small number.

Opportunities for productivity improvements from oil palm smallholders are manifold. Production from smallholders typically varies from 200 kilograms to 2 MT per hectare, which is far lower than the global average of 3.6 to 3.8 MT per hectare. The productivity gains realized through company investments were difficult to measure but seemingly large. One firm reported increases in smallholder yields from 9.4 to 26.9 MT FFB per hectare — a 186% improvement. Another company enthusiastically stated that, “Until last year, our smallholder yields were actually better than our core plantation yields.” However, a third company shared the statement, “We love our 20,000 smallholders, but I estimate that we only see half of our investment back.”

The yield and other gains among smallholders can be tremendous due to a low baseline. One 1,500 member smallholder cooperative interviewed had no

*A smallholder farmer displays harvested palm fruit in Riau, Sumatra.*

calculated improvement in volumes, simply because they had never before documented yields. The cooperative members would harvest, bring to market, and sell, without ever comparing figures and assuming that there was nothing to improve. RSPO documentation immediately identified two sources of corruption within the cooperative which were subsequently eliminated. Cooperative leaders thereafter believe they have achieved yield improvements of “up to 70%,” yet have no baseline for measurement. They are now very proud of a recently installed weigh station and computers, and they have hired a clerical staff of young women from the local community.

At an estate where RSPO development is further along, the cooperatives are so enthusiastic that they have begun to mimic the company and train themselves in emerging best practices. Several cooperatives have gone as far as to establish their own “CSR Departments” in the same vein as their corporate counterpart.

The desire for sales premiums was universally expressed as the primary interest of smallholders in RSPO. Smallholders have no strategic relationships with large buyers, and also face relatively higher implementation costs. They are therefore highly price sensitive. The irony thus emerges that while smallholders have the most to gain from operational improvements through RSPO implementation, they are initially driven entirely by the hope of market premiums, which have declined in recent years.

### Smallholder Definitions

**Smallholders** are defined by the RSPO as farmers growing oil palm, sometimes along with subsistence production of other crops, where the planted areas of palm are usually below 50 hectares in size. This farm provides the majority of income to the family, and in turn the family provides the majority of labor on their farm. Smallholders can be organized as either “scheme” or “independent” smallholders (RSPO, 2009).

**Independent smallholders** are farmers who have freedom to choose how to use their lands, which crops to plant, and how to manage them. Independent smallholders are self-organized and self-financed, and not contractually bound to any particular mill or association. They may receive support or extension services from government agencies (RSPO, 2009).

**Scheme smallholders** can be a diverse group of small farmers who are structurally bound by contract, a credit agreement, or some other form of planning, to a particular mill. Scheme smallholders are often not free to choose which crop they plant. They are supervised in their planting and crop management techniques by the managers of the mill, estate or scheme to which they are structurally linked. Scheme smallholders are also known as “contract farmers” or “outgrowers.”

**Perkebunan Inti Rakyat (PIR) or INTI** are government-mandated smallholder grower schemes. Plantations develop oil palm plots for smallholders in a “plasma” area around their own plantation “nucleus.” Management of these plasma plots — often 2 hectares of oil palm plus 1 hectare for other subsistence crops — is then transferred to individual smallholders after 3 to 4 years of development.

*Palm oil fruit ready for milling (Kimbe Bay, West New Britain, Papua New Guinea)*







“You must have the benefit of the premium up front. That’s the sugar. The things that you learn by doing, you have to do it. But ultimately, you will learn that the premium, the short-term benefit, is not the same as the long-term benefit. And the latter is bigger.”

**Simon Siburat, Group Sustainability Controller,  
Wilmar International Ltd.**





# CONCLUSION

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## BENEFITS

- Community Relations
- Operations
- Staff and Labor
- Revenues and Market Access
- Access to Capital

## COSTS

- HCV
- RSPO Certification
- RSPO Staff and Trainings
- Segregation

*Profitability and Sustainability in Palm Oil Production* analyzes the costs and benefits of integrating the RSPO Principles and Criteria into palm oil production. Interviews with eight leading palm oil companies, who collectively make up 54% of total CSPO and CSPK production, resulted in a rich set of quantitative and qualitative data. The information is presented as ranges of data, with discussion on key drivers, interrelationships and intangibles. The actual experience of any one firm, however, is highly contingent upon size, geography, prior practices and ambitions. Thus there is no “one size fits all” number representing the return on investment for RSPO compliance. One can, however, illuminate several trends based on the findings of this study.

Large estates and companies, for example, were able to achieve economies of scale in their RSPO implementation costs, and thus experienced lower barriers to entry. Such firms are also often already performing close to best management practices. Thus, some of the RSPO benefits simply entail enhanced ability to demonstrate what they are already executing. However, the RSPO documentation systems and auditing requirements can provide a wide swathe of “micro-improvements” across highly complex and often far-flung operations, including improved uniformity, timeliness and overall operational optimization. Given these firms’ scale, such gains add up quickly.

Size also matters when it comes to raising capital and defending markets. The interest in liquidity from debt and equity markets is an incentive for clear demonstration of best practices. Financial institutions are increasingly requiring or encouraging RSPO compliance as a financing prerequisite. And in the final analysis of many such high-volume companies, the risk of any potential loss of access to significant buyer market greatly outweighs RSPO implementation costs.

For mid-sized firms, implementation costs vary based on number of smallholders, amount of HCV, and preexisting practices. In addition to documentation systems, RSPO tools can provide substantive operational improvements in individual areas. Some surveyed firms uncovered significant cost savings in annual pesticide and herbicide application. Even more surprising were the major financial benefits realized through improved community and labor relations, which rewarded management with a clear and positive investment return on the RSPO process. The value of improved market access depends on orientation. Yet overall, producing CSPO helps ensure room for growth and flexibility in the dynamic global palm oil market.

Smallholders demonstrate the greatest productivity and operational gains from RSPO adoption, dramatically boosting yields, routing corruption, and professionalizing their operations overall. With very low baseline production figures, or in some cases zero prior documentation, there is substantial room for improvement. CSPO development among smallholders can be the lowest hanging fruit for increased yields. Such efforts also enhance social development while arguably mitigating one of the most significant threats to the environment from the oil palm industry — smallholder expansion. Simultaneously, however,

*Harvesting oil palm at a plantation in Sumatra, Indonesia*



smallholders are the most sensitive to price in their adoption decisions, and thus they are increasingly constrained by the decline in CSPO premiums.

Other major factors cross-cut the analysis and can influence costs and benefits. Some companies had already invested in high-quality EIA and SIA consulting processes before RSPO and experienced fewer HCV costs and corrective actions. Other firms may have operated at or below legal compliance and had to cover more ground. Conversely, one of the principles of RSPO is “Continuous Improvement.” Whereas this report studied the basic entry costs and resulting benefits of CSPO production, companies should continue to deepen their efforts and ultimately go “above and beyond” in order to realize maximum benefits. This progression often occurs organically as firms realize the intrinsic benefits of the system and orient themselves toward transparency and the ambition of becoming a world-class company.

Are there companies for whom RSPO does not provide a net benefit? This is a valid and challenging question, for which the answer surely is “Yes.” In particular, mid-sized companies (with simpler, more manageable operations) producing on a high percentage of peatland or HCV and selling CPO domestically, may calculate that they are better served through business-as-usual. Yet even in domestic markets, consumers are beginning to avoid purchasing cooking oil from areas that cause severe social conflict and the death of orangutans. For example, a recent TV documentary in Indonesia highlighting these two issues has triggered cautious consumer preference. Overall, for most operations, it would appear that such a stance reflects a short-term view of the market, a narrow view of the surrounding economic ecosystem, and a lack of ambition regarding performance optimization.

RSPO is not, in fact, an agricultural practice or textbook manual. It is an industry-developed system for aligning internal personnel towards best practices and continuous improvement, and effectively communicating with important stakeholders. Certification appears to reflect a company that is systematically evaluating and documenting its performance and prospects, and operating with a vision towards maximum and sustained profitability.

# RECOMMENDATIONS

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The following are recommendations for how players in the palm oil value chain can optimize the business benefits of RSPO. These insights are generated by the authors of *Profitability and Sustainability in Palm Oil Production* based on the research and analysis performed for this report.

**PRODUCERS.** Companies that are considering adopting RSPO and selling CSPO should not underestimate the benefits to their businesses beyond simple premiums. All interviewed producers entered the system with this top-line motivation, and yet they ultimately discovered a number of operational benefits that they had not anticipated and which exceeded expectations. In many cases, the effects of the RSPO better management and agricultural practices were transformational for the business.

For CSPO producers seeking new investment opportunities, engagement with and training of smallholders may prove to be a low-hanging fruit. Large numbers of scheme smallholders actually translate into significantly lower per-hectare investment requirements, and initial data indicates the potential for a high return on investment from improving the operations and yield of these farmers.

In new developments, producers (both CSPO and non-CSPO) should carefully consider the value of the RSPO New Plantings process (RSPO Principle 7). While acquisitions are already inherently complex and challenging, and the RSPO Principles and Criteria add an additional layer of requirements, the payoff for deploying the RSPO social engagement tools in acquiring new properties was one of the largest and most surprising findings of this study. Returns from averted social conflicts and related costs easily offset initial investment. In particular, as the industry moves into more difficult acquisitions in Indonesia, or heavily populated and socially risky regions abroad, this best practice can quickly prove its worth.

Finally and across the board, top management buy-in and a view toward continuous improvement is reported as the key to effective execution and value creation from RSPO implementation.

**BUYERS.** Buyers face pressure from concerned consumers and investors to support the system through purchasing of CSPO. This report demonstrates a range of intrinsic benefits from the RSPO system. Yet if the product is not finding uptake in the market, it threatens the platform to which end-users have attached their brands. End users who have joined RSPO but are not purchasing a significant portion of their palm oil as certified are also open to attacks from civil society. Consumers and responsible investors are increasingly aware of these distinctions and wary of greenwashing, given the ease and low cost of procuring CSPO.

**INVESTORS.** Financiers play a key role in the palm oil supply chain. RSPO should stand as both a reputational and business risk management tool (and already does for many banks and funds). The reputational risks of unsustainable palm oil production are well-known. Business risks include loss of market share, costly

social conflicts, underperforming agricultural practices, and weak or absent company documentation. On the positive side, CSPO production may also serve as a proxy to offset certain due diligence costs, indicating early on that there is strong documentation, full legal compliance, better agricultural practice, and forward-looking market positioning.




















In these evaluations, investors are reminded not only to note RSPO “membership,” but to observe whether companies are applying RSPO New Planting Procedures to new developments and are honoring their RSPO time-bound plans to certify all production. Reputational risks for end-users and traders who are major purchasers of palm oil are also high. It is recommended that their investors require CSPO purchasing or work with their clients to achieve such procurement policies.



The oil palm sector may also provide upside opportunities for sizeable investments in capital expenditures among sustainable producers, such as palm oil mill effluent (POME) methane capture systems to fuel mill operations and POME composting for fertilizer substitution. In recent years, palm oil has proven to be a profitable yet risky investment. This important sector requires intelligent capital that understands the risks and rewards resulting from different levels of management practice. RSPO certification can be used as a proxy to enable financiers to choose companies that manage these risks well.



**Figure 8. Summary of Relative Costs and Benefits for Different-Sized Companies**

Costs	Smallholders	Mid-Sized Estates	Large Estates
HCV/EIA/SIA			
Audit and Certification, including staffing and training			
Segregation	if 100% CSPO, then no incremental segregation cost		

Benefits	Smallholders	Mid-Sized Estates	Large Estates
Market Premiums			
Market Defense			
Market Access			
Corporate Reputation			
Increased Productivity			
Reduced Inputs (pesticide, herbicide, fertilizer)			
Employee Motivation/Morale			

 Symbols are indicative of the relative costs and benefits to companies depending upon their size.  
 Outcomes depend upon a multitude of factors and are not intended to be absolute.

## Abbreviations

AMDAL	Analisis Mengenai Dampak Lingkungan/Environment Impact Assessment in Indonesia for >3,000ha
BMP	Best Management Practices
CDC	UK's Development Finance Institution
CPO	Crude Palm Oil
CSPK	Certified Sustainable Palm Kernel (to RSPO Principles and Criteria)
CSPO	Certified Sustainable Palm Oil (to RSPO Principles and Criteria)
DFI	Development Finance Institutions
EIA	Environmental Impact Assessment
ESG	Environmental, Social and Governance
EU	European Union
FFA	Free Fatty Acid
FFBs	Fresh Fruit Bunches
FMO	Netherlands Development Finance Company
FPIC	Free, Prior and Informed Consent
GIS	Geographic Information System
HCV	High Conservation Value
HCVF	High Conservation Value Forest
IFC	International Finance Corporation, the private sector investment arm of the World Bank
INTI	Perkebunan Inti Rakyat
IPM	Integrated Pest Management
ISCC	International Sustainability and Carbon Certification
IWG	Sustainable Palm Oil Investor Working Group
MT	metric tonnes
NGO	nongovernmental organization
PIR	see INTI
PNG	Papua New Guinea
POME	Palm Oil Mill Effluent
PPE	Personal Protective Equipment
RED	Renewable Energy Directive
REDD	Reduced Emissions from Deforestation and Degradation
ROI	Return on Investment
RSPO	Roundtable on Sustainable Palm Oil
SIA	Social Impact Assessment
SEKALA	An Indonesian-based NGO aiming to develop innovative solutions for environmental problems to bring benefits to local people and the environment
tC/ha	tonnes Carbon per hectare
UNPRI	United Nations Principles for Responsible Investment
UN-REDD	The United Nations Collaborative Programme on Reducing Emissions from Deforestation and Forest Degradation in Developing Countries
UKL/UPL	Environmental Management and Monitoring Plan in Indonesia for <3,000ha
WWF	World Wildlife Fund / Worldwide Fund for Nature

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