the sustainable trade initiative

Assessing IDH's contribution to public good impacts at scale

Baseline report on the existing evidence behind the IDH impact story

Prepared by Wageningen University & Research and KPMG Advisory N.V.

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WAGENINGEN UNIVERSITY & RESEARCH

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Preface

The present report provides baseline information on the existing evidence of the activities undertaken by the Sustainable Trade Initiative (IDH) for improving the economic, social and environmental sustainability of production systems in developing countries through sector systemic change. Based on the overall IDH intervention logic that is based on strategies of convening, co-funding and learning & innovation, the report focuses on information in three result areas: (a) changes in business practices, (b) improving sector governance and (c) improving field level sustainability. IDH pursues global public good impact at scale in areas of (i) inclusive business models and farmers' livelihoods, (ii) mitigation of deforestation, (iii) living wages and improved working conditions, and (iv) responsible agrochemicals management.

The analytical framework for assessing the plausibility of the IDH approach is based on an innovative combination of information from different sources that provide detailed and reliable insights in the existing evidence base and the registered direction of change indicated by different information sources. The triangulation of information from detailed literature reviews, sector surveys, monitoring indicators (registered in IDH's Results Monitoring Framework), in-depth stakeholder interviews, staff round table discussions and proof of concept impact studies permits to reconstruct a dynamic '*impact story'* that offers key insights in the evidence base behind the pathways towards systematic sector change.

This baseline report provides insights in the registered progress achieved by IDH program activities for each of the indicated impact themes and throughout the result areas. Even while credible impact has been registered in several areas, the baseline suffers some limitations. IDH maintains the responsibility for its reporting on activities.

Recently started new activities cannot yet deliver tangible results. Moreover, results from in-depth impact studies around proofs of concept (PoC) and monitoring information generated by IDH's Result Management Framework (RMF) are not yet fully available. Consequently, this baseline represents the first stage of the scheduled sequence of deliverables that intends to provide progressive insights in the catalytic impact of IDH.

The report is prepared by a team from Wageningen University & Research (WUR) and KPMG Advisory N.V. coordinated by Yuca Waarts and Karine Basso Gumbis de Souza, and under overall guidance by Ruerd Ruben and Jerwin Tholen. A large number of thematic experts contributed to the report; we are grateful to Just Dengerink, Giel Ton, Marcel van Asseldonk, Cor Wattel, Linda Puister, Andrea Bolhuis, Jessie Heemskerk, Sophia Weituschat, Christa van Nieuwenhoven, Eric Arets, Joost Lahr, Roel Kruijne, Cecile Kusters, Dieuwke Klaver, Kristel Vermeulen, Zayd Abdulla and Kirsten Haak. We are grateful to IDH HQ staff and program officers for providing access to information and feedback on earlier drafts.

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Executive summary

The IDH impact evaluation 2016-2020

To measure its impact within the four public good impact themes through a program evaluation, as well as evaluate IDH impact at corporate level, IDH has requested Wageningen University & Research (WUR) & KPMG Advisory N.V. (further 'KPMG') to design and conduct a five-year impact evaluation program. This program is implemented between 2016 and 2020, and supervised by the IDH Impact Committee.

This study is the baseline report of the impact evaluation program. In it, we provide a baseline synthesis of the available impact evidence for each impact theme as well as per result area. The synthesis combines **information on IDHs contribution to public good impact so far** and information from the literature on the impact of and lessons learnt from similar approaches, to come to **conclusions on the plausibility of IDH's approach**.

Public good impact at scale in commodity production systems

IDH - the Sustainable Trade Initiative was founded in 2008. Its objective is to improve the economic, social and environmental sustainability of production systems in developing countries through sector systemic change. They implement their activities on internationally traded commodities in 11 sector and 11 landscape programs in over 50 countries working together with a large variety of partners, including supply chain partners, governments and NGOs. IDH aims to achieve the following public good impacts:

1. Inclusive business models and smallholder farmers' livelihood improvements
2. Mitigation of deforestation
3. Living wage and improved working conditions
4. Responsible agrochemical management.

Convening, co-funding and learning are the heart of the IDH approach

For achieving public good impact IDH deploys three strategies: The first strategy is to **convene sector actors**, including governmental organisations, supply chain actors from producers to retailers, as well as NGOs. IDH has supported 201 convening projects between 2008-2015.

A second strategy is to **co-fund the implementation of projects with match funding** by the private sector. This includes the de-risking of investments of financial institutions. Examples of such projects are to deliver service packages to smallholder farmers in several sectors, and train workers. More than 1.5 million farmers and workers had been trained by the end of 2015.

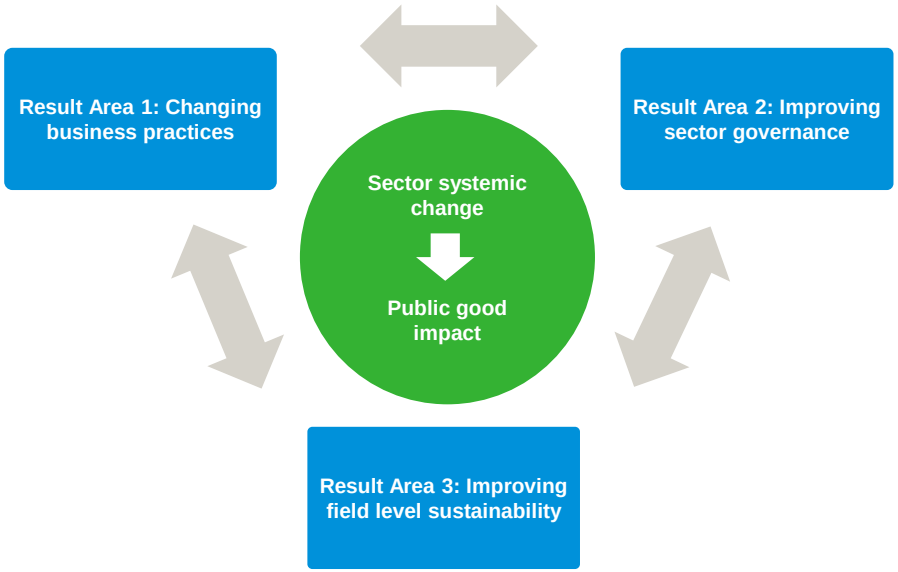
Finally, IDH **implements pilots together with partners, evaluates and disseminates lessons learned and best practices**. A recent example is IDH's

support to Service Delivery Models (SDMs). IDH supported the development of 12 SDM case studies in 9 countries in the cocoa and coffee sectors. Working closely together with the private sector, these studies have created a wealth of information on the costs and potential benefits of delivering service packages to farmers and insights that can be used to further improve the SDMs.

Improving sector governance, changing business practices and improving field level sustainability to create sector systemic change

The IDH strategy to reach public good impact through sector systemic change is to focus their activities on: **improving public and private sector governance**, **improving field level sustainability** for farmers, workers and the environment and **changing business practices** towards more sustainable production and sourcing methods.

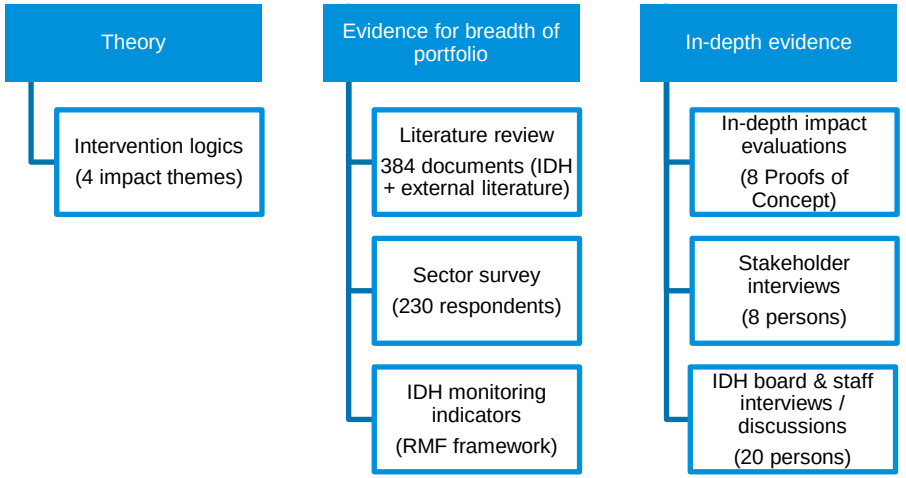
Figure E.1: *The overall IDH intervention logic*



2016-2020 baseline report

For this baseline report, we have created the evidence base for IDH's contribution to impact and information on similar interventions in a catalogue, by listing all information found in credible sources. Through this exercise we have been able to assess the **quantity of the available evidence**, per impact theme and result area, as well as the **direction of change** indicated per information source. This catalogue forms the basis of our conclusions on IDH's contribution to impact and the plausibility of IDH's approach. It is important to note that for the period 2016-2020, IDH has developed a multi-year plan which contains a more holistic approach to measuring impact than for the period prior to 2016. Results of this multi-year plan will serve as input to future impact reports.

Figure E.2*: Sources of information used in the evaluation*



The four impact themes, and the underlying IDH activities, together address the following Sustainable Development Goals (SDGs):

- SDG 1: No poverty
- SDG 2: Zero hunger

- SDG 5: Gender equality
- SDG 12: Responsible consumption and production
- SDG 15: Life on land.

The evidence base improved sector governance, improved field level sustainability and changes in business practices

IDH has already reached certain expected outcomes related to their sector governance and field level sustainability result areas, the latter mainly within the smallholder livelihoods impact theme. But there is still limited information available on how these outcomes have enabled the conditions to reach field level impacts.

It is not easy to draw fact based conclusions on the plausibility of the IDH approach through its unique and innovative character – and therefore – the limited availability of applicable studies on other initiatives. As a consequence the literature on the plausibility of the IDH approach is often inconclusive, if applicable information is available at all. Specifically for the result areas on changing business practices and improving sector governance there is limited concrete information available in the wider literature to assess the plausibility of IDH's approach.

One of the reasons why such information is limited is that some IDH activities are quite unique. A concrete example of this is the establishment of production-protection-inclusion deals and projects to mitigate deforestation. Another example is to include an innovative finance element to service delivery models through which IDH de-risks investments into service packages to improve smallholder farmers' livelihoods.

Improving sector governance: partners positively assess multi-stakeholder initiatives

More than 90% of 215 IDH partners who responded to our survey, value the multi-stakeholder processes and initiatives supported by IDH. They indicate that the multi-stakeholder platform has translated its visions and goals into actionable targets and that the multi-stakeholder process is on track to achieve the formulated goals. Very limited evidence exists however on whether such multi-stakeholder initiatives have led to impact on smallholders, workers or the environment. The recent example in the Malawi tea sector, in which IDH support has contributed to the establishment of a Collective Bargaining Agreement which increased nominal wage levels for all workers in the tea sector already clearly illustrates the potential of the approach.

Improving field level sustainability: existing evidence on impact on smallholders and wage workers

Because of IDH's initial focus on co-funding projects on smallholder livelihoods, the main evidence found on IDH's contribution to impact stems from studies in this area. Most evidence found relates to the tea and cocoa sectors. Positive impacts are found on adoption of good agricultural practices and yield improvements. But these do not generally translate in higher farmer incomes, for instance because costs of production increased, or crop prices decreased. This is in line with the wider literature on the impact of farm-level interventions outside IDH.

Limited concrete evidence on changing business practices

Concrete evidence on changes in business practices because of interventions by IDH or similar initiatives are scarce. One reason for this is that the effects of interventions on changes in business practices are hardly ever documented and published, for instance because such publications would contain competitive and/or sensitive information. An example would be the analysis of changes in gross margins and wages paid to workers. Another reason is that it is still too early to assess the impact of some activities, for instance with regard to proving the scalability and replicability of newly piloted interventions such as Service Delivery Models.

Proofs of concept

IDH has selected 8 specific projects to test and showcase their approach, referred to as Proofs of Concept. These projects are divided between the four impact themes to further demonstrate the mechanisms at work when efforts related to sector

governance, business practices and field level are combined. We expect evidence from in-depth studies on these Proofs of Concept to provide more insights into IDH's contribution to impact in the next years. IDH is also working on the implementation of the Result Measurement Framework to more systematically monitor key indicators on all three result areas.

Table E.1: *In-depth impact research in 8 proofs of concept*

Impact theme 1: Inclusive business models and smallholder farmers' livelihood improvements	
1	Innovative service delivery approaches targeting yield and livelihood improvement in coffee in East Africa
2	Improved productivity and livelihoods (including gender and nutrition) for cocoa farmers in West Africa (Cote d'Ivoire). Amongst others by financing of Productivity Packages (PP) for smallholder cocoa producers in Cote d'Ivoire
Impact theme 2: mitigation of deforestation	
3	Landscapes approach for protection of High Conservation Value (HCV) forest and business cases for Sustainable Forest Management in West Kalimantan
4	Landscape model for sustainable management of Mau Forest watershed, Kenya
Impact theme 3: Living wage and improved working conditions	
5	Malawi 2020 Tea Revitalization Program - living wages
6	Clean manufacturing, improved working standards and satisfaction in Apparel, Vietnam
Impact theme 4: Responsible agrochemical management	
7	Reduced toxic load of agro-chemicals in spices, table grapes, cotton and tea in India
8	Reduced toxic load of agro-chemicals in coffee, Fresh & Ingredients and tea, Vietnam (water & soil pollution) - part of ISLA

The evidence base per impact theme

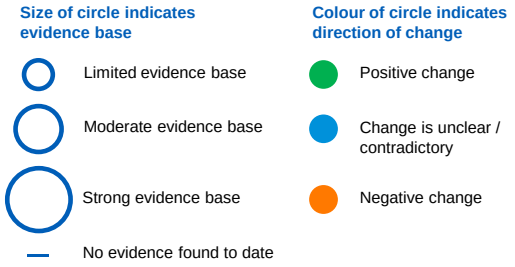
Inclusive business models & smallholder farmers' livelihood improvements: some IDH contributions found for most outcomes, but lack of evidence on impacts on livelihood improvements

Some studies show IDH's contribution to the adoption of practices and productivity. The Farmer Field School program implemented by the Kenya Tea Development Agency – supported by IDH and Unilever – increased the adoption of good agricultural practices, productivity of smallholders as well as the diversification of income. Also, IDH contributed to cocoa profitability in Ghana. The project participants received a higher price for their cocoa because of UTZ certification. The study on this intervention did, however, did not measure the adoption of practices and found no effects on productivity. Meanwhile the price premiums for certified cocoa have decreased since the study was published. Another study in the cocoa sector in Ghana concluded that training leads to the adoption of practices which are associated with higher yields and profitability, but that this was the case for both the project participants and the comparison group farmers as the latter had also been trained. In all studies, farmers remain poor even though effects on profitability or income have been found. A point of attention for IDH is thus to increase the evidence base for impacts on smallholders, specifically in relation to whether IDH's activities to improve sector governance create an enabling environment for field level change, and whether business models are scalable and replicable. Please find more information on how to address such points of attention in the recommendations below. Several field level impact studies are already underway, for the cocoa, coffee and tea sectors.

Figure E.3 *Summary of conclusions for impact theme inclusive business models & smallholder farmers' livelihood improvements*

Smallholder inclusion and improved smallholder farmer livelihoods …	Was enhanced through...	Which has led to...	Evidence from wider literature	Evidence on IDH contribution to impact
… by improving sector policies and strategies (public-private)	Support to multi-stakeholder processes OUTPUT	Formulation of national agenda-setting sustainability strategies in a sector OUTCOME	●	●
Result area: sector governance	National sustainability strategies OUTCOME	Improved sector governance, creating an enabling environment for field level change IMPACT	●	–
… through adoption of good agricultural and business practices by farmers **Result area: field level sustainability**	Support to farmers with services, including training, inputs, credit OUTPUT	Increased adoption of good agricultural practices* OUTCOME	●	●
	Increased adoption of good agricultural practices OUTCOME	Increased yield per hectare OUTCOME	●	●
	Increased adoption of good agricultural practices OUTCOME	Increased profitability, household income and nutrition** IMPACT	●	●
… through developing replicable service delivery models **Result area: business practices**	Support to the development of service delivery models OUTPUT	Increased the access to services (training, inputs, credit) OUTCOME	●	●
		Scalable and replicable service delivery models OUTCOME	●	–

**This does not imply that all farmers adopt all practices*
*** The more complete the support package, the higher farmers' incomes.*



Note to the reader: Evidence from the wider literature refers to evidence from the literature not focused on IDH but which assesses similar approach to the IDH approach/ impact stories listed in the table.

Mitigation of deforestation: IDH approach to improve public-private sector governance, increase market demand and support field level projects appears plausible.

Because this impact theme has been quite recently established, we have not been able to fully assess the evidence base. IDH has initiated and supported production-protection-inclusion (PPI) activities which are expected to lead to sustainable land management in 9 landscapes in 7 countries in Asia, Africa and Latin America. By implementing these PPI activities IDH aims to transform finance and business models in mainstream markets. These improved finance and business models are expected to sustain land-use practices in which the production of agro-commodities contributes to the protection of forests and the inclusion of smallholders and forest communities in the economy. The PPI approach appears to be quite unique; in the literature we have not been able to find information on similar approaches. However, based on the findings and recommendations from the literature, it appears plausible that the combined IDH approach to improve public-private sector governance, increase market demand and support field level projects will support mitigation of deforestation. We look forward to assessing the evidence on IDH's contribution to impact in the future.

Figure E.4 *Summary of conclusions for impact theme mitigation of deforestation*

Reduced deforestation and forest degradation…	Was enhanced through…	Which has led to…	Evidence from wider literature	Evidence on IDH contribution to impact
… through improving land use governance (public-private) to enable and enforce compliance	Support to multi-stakeholder coalitions OUTPUT	Regulatory frameworks and enforcement capacity strengthened, and land use planning improved OUTCOME	●	–
Result area: sector governance	Strengthened regulatory frameworks and enforcement capacity and improved land use planning OUTCOME	Improved landscape governance , creating an enabling environment for reduced deforestation and forest degradation IMPACT	●	–
… by supporting the adoption of sustainable landscape management practices through PPI deals/projects	Support to establish PPI deals/projects OUTPUT	Sustainable landscape management, forest conserved and restored IMPACT	–	–
Result area: field level sustainability	Increased farmer incomes, resulting from intensification of production or diversification of income* OUTCOME	Reduced deforestation and forest degradation: forest protected , forest restored IMPACT	●	–
… by creating effective and profitable PPI business models	Support and commitments for the creation of production-protection-inclusion activities OUTPUT	Establishment of Production-Protection-Inclusion (PPI) deals and projects OUTCOME	–	●
Result area: business practices	Market demand and investments for sustainable produce OUTCOME	PPI integrated within business models and investments IMPACT	–	–

**This point is to be taken with caution, intensification can also increase pressure on forested land if land use governance is not implemented and enforced.*

See page 11 for legend

Living wage and improved working conditions: IDH's approach in supporting sector initiatives has already contributed to first impacts on wage workers in Malawi

IDH has contributed to the establishment of the first collective bargaining agreement (CBA) in history in the tea industry, which was signed in August 2016. The CBA immediately led to an increase in nominal wage for 50,000 workers between 18 and 24 percent at 9 tea companies or estates in the tea sector. A question is what the real effects of the wages will be as inflation is a huge issue in Malawi, which eliminates the wage increases in terms of purchasing power. This wage increase is a first step in reaching 'living wage' levels in the tea sector; the gap between wage levels and the 'living wage' has decreased with 20% because of the CBA. The wage levels are currently two thirds of the 'living wage' when in-kind benefits such as housing and welfare are included. A point of attention for this impact theme is for IDH to generate evidence for IDH's business model interventions which are to create financial room for increased wage levels and can be scaled and replicated. Recommendations on how to address identified actions points are presented on table E.1.

Figure E.5 *Summary of conclusions for impact theme living wage and improved working conditions*

Improving worker wages, in-kind benefits and working conditions…	Was enhanced through…	Which has led to…	Evidence from wider literature	Evidence on IDH contribution to impact
… by improving sector policies (public-private)	Support to multi-stakeholder sector initiatives OUTPUT	Worker-management dialogue and collective bargaining agreements OUTCOME	●	●
Result area: sector governance	Worker-management dialogue and collective bargaining agreements OUTCOME	Improved sector governance, creating an enabling environment for higher wages IMPACT	●	●
… by improving human resource management	Support to companies (capacity building) OUTPUT	Improved human resources management OUTCOME	●	●
Result area: field level sustainability	Better skills, meals and housing OUTCOME	Improved worker productivity and nutrition* IMPACT	●	●
… through making business models more efficient and effective	Business model interventions that improve the margins of supported companies OUTPUT & OUTCOME	Increased wage levels IMPACT	—	—
Result area: business practices	Proven business models OUTCOME	Business models are scaled and replicated IMPACT	—	—

** The evidence found on IDH impact refers to improved nutrition, not to worker productivity. The evidence from the wider literature refers to improved productivity, not to nutrition.*

See page 11 for legend

Responsible agrochemical management: First IDHs contribution to sustainability outcomes found, but there is a lack of evidence on whether outcomes lead to public good impacts

As with the smallholder livelihoods impact themes, there is ample evidence on field level outcomes of training of farmers, specifically in the wider literature (also because IDH has been working with this theme for not such a long period). In terms of sector governance activities, IDH assisted in setting up the Better Cotton Initiative (BCI) with companies and civil society actors and played a vital role in developing Better Cotton Fast Track program which hugely upscaled the implementation of BCI. Furthermore, IDH support has resulted in stakeholders aligning around the goal of 20% of all Indian spices to be sustainable by 2025. Whether these initiatives will indeed lead to improved sector governance, improved market access for better products and field-level impacts on farmer profitability, improved health of workers and farmers, improved food safety and reduced ecosystem impacts, will be assessed in future studies.

Figure E.6 *Summary of conclusions for impact theme responsible agrochemical management*

Improving farmers pesticide management…	Was enhanced through…	Which has led to…	Evidence from wider literature	Evidence on IDH contribution to impact
… through improving public and private pesticide policies	Support to public and private policy development through multi-stakeholder initiatives OUTPUT	Development of public and private policies and standards concerning pesticide management OUTCOME		
Result area: sector governance	Changes in policies and standards OUTCOME	Improved sector governance, creating an enabling environment for changes in pesticide use by farmers IMPACT	–	–
Improving farmer profitability and market access, as well as food safety, ecosystem and occupational health and safety through responsible pesticide management	Training of farmers OUTPUT	Improved pesticide management* OUTCOME		
	Improved pesticide management OUTCOME	Farmer profitability or income IMPACT		–
Result area: field level sustainability	Improved pesticide management OUTCOME	Positive impact on ecosystems, health and safety, market access and food safety IMPACT		–
… through proven service delivery models and market demand for sustainable produce	IDH support to companies OUTPUT	Improved access to agrochemicals through service delivery models OUTCOME		
Result area: business practices	Proven service delivery models and demand for sustainable produce OUTCOME	Embedded sustainability at corporate level** IMPACT	–	

**Please note, not all farmers necessarily adopt all recommended practices.*

*** the IDH evidence on embedded sustainability at corporate level from the RMF is a generic IDH result, so not a result of IDH support regarding service delivery models.*

See page 11 for legend

Key recommendations on addressing evidence gaps in measuring IDH's contribution to impact towards 2020

Based on our review of the evidence on IDH's contribution to impacts as well as the impact of similar approaches, we come to the conclusion that the key challenges in measuring IDH's contribution to impact are to verify whether outcomes reached in all result areas translate into the expected changes and impacts. Please find more information on the evidence per impact theme in chapters 4-7. Specific challenges are to evaluate whether:

1. Changes in policies lead to improved sector governance, creating an environment for field level change (for smallholders, workers and the environment)
2. Changes in business practices at companies IDH works with incite other companies to also change their practices
3. The developed business models are profitable, scalable and replicable.

In the coming years, IDH will address many of these gaps in the evidence through funding in-depth impact studies around the IDH Proofs of Concept and collecting monitoring information on 16 output and outcome indicators through the Result Measurement Framework. Also, IDH plans to create an annual report on progress made within each Proof of Concept, including an assessment of changes and impacts in business practices and sector governance.

One of our recommendations is to conduct additional stakeholder interviews around IDH's Proof of Concepts, and specifically to assess changes in sector governance and business practices applying the 'process tracing' methodology[i]. Because the stakeholder interviews have proven to generate very detailed and specific information on activities, outcomes and impacts, information which cannot easily be collected through the sector survey. As IDH also plans to conduct stakeholder interviews for its annual Proof of Concept report, it will need to be discussed who will be doing which interviews and how, to avoid stakeholders to be interviewed twice on similar topics, but also to ensure that high quality information on the impact of IDH activities on sector governance and business practices will become available.

Please find below our recommendations towards tackling the current gaps in the evidence base. Specific recommendations per impact theme are presented in the impact theme chapters (4-7), in Appendix 2.2 (on IDH Proof of Concepts) and Appendix 3 (detailed recommendations per impact theme). Please note that the overview below is not a total

[i] Process tracing is a methodology is used to explain outcomes in psychology, political science and historical studies. Through process tracing it is established, per specific case, what (kind of) processes have taken place, which are verified by exploring real events in time in a transparent way, including whether other actors and factors influenced the processes and/or outcomes and impacts reached.

overview of all monitoring and evaluation activities by IDH and the WUR/KPMG team in the coming years, but focuses on the gaps in the evidence which should be addressed to measure IDH's contribution to impact towards 2020.

Table E.2 *Overview of recommendations on addressing the evidence gaps for evaluating the IDH program 2016-2020*

Result areas	Sector governance	Field level sustainability	Business practices
Key challenges in measuring IDH's contribution to impact			
	To evaluate whether changes in policies and strategies lead to improved sector governance, creating an enabling environment for field level change (for smallholders, workers and the environment)	To evaluate the impact of field level programs on profitability and incomes for farmers and workers, and the environment	To evaluate changes in business practices, embedded sustainability at business level and whether changes in business practices at companies incite other companies to also change their practices
			To evaluate the effectiveness, profitability, scalability and replicability of business models.
Recommendations per evidence source			
In-depth studies / information on the IDH Proof of Concepts	IDH to ensure that information will become available for the Proof of Concepts, through applying appropriate research methodologies, on: 1. Changes in policies and strategies through the IDH program 2. Whether such changed policies/strategies lead to improved sector governance creating an enabling environment for field level change. A baseline assessment is not required for measuring such outcome and impacts.	There are methodological challenges with several of the currently available baseline studies for them to be used for evaluating IDH's impact. Please find concrete recommendations for all in-depth studies in Appendix 2.2.	IDH to ensure that information will become available, through applying appropriate research methodologies, for the Proof of Concepts on: 1. Changes in business practices through the IDH program and whether such changes have incited other companies also to change their practices. 2. The effectiveness, profitability, scalability and replicability of business models. The effectiveness of business models is sometimes already addressed through field level in-depth research. A baseline assessment is not required for measuring such outcome and impacts.

RMF		Definitions / guidance of some impact indicators from the RMF could be improved (e.g. toxic load, bankability, productivity)	
Stakeholder interviews*	30 additional stakeholder interviews to be conducted to assess sector governance changes and whether such changes have created an enabling environment for field level change. 'Process tracing' to be used as a methodology for the interviews. As some stakeholders can be interviewed for multiple purposes, the final number of interviews to be done could be less than the sum of all interviews mentioned.	4 additional interviews with stakeholders to assess field level impacts within the living wage and working conditions impact theme As some stakeholders can be interviewed for multiple purposes, the final number of interviews to be done could be less than the sum of all interviews mentioned.	18 additional interviews with stakeholders to be conducted to obtain qualitative information on the IDH contribution to changes in business practices, and whether they incited other companies to change their practices. As well as to obtain information on effectiveness, profitability, scalability and replicability of business models. 'Process tracing' to be used as a methodology for the interviews. As some stakeholders can be interviewed for multiple purposes, the final number of interviews to be done could be less than the sum of all interviews mentioned.
Sector survey	Include questions on whether sector governance changes have created an enabling environment for field level change		Include questions on whether and how business practices have changed.
Other sources of evidence**	IDH's annual report on the Proof of Concepts.	IDH to explore with various partners/programs the possibilities to use their data for the measurement of impact at field level. Examples of such partners/programs are: Better Cotton Initiative (BCI), the Cocoa Rehabilitation and Intensification Programme (CORIP), the Cocoa Productivity and Quality Programme (CPQP), the African Cashew Initiative (ACI), Cropin data (India), Trustea, Aquaculture Stewardship Council (ASC) certification, Floriculture Sustainability Initiative (FSI), MPS***. And the NICFI-IDH Partnership Program.	IDH's annual report on the Proof of Concepts. Monitoring information from the SDMs, Innovative Finance projects and the NICFI-IDH Partnership Program in the evaluation.

* In total, 10-15 interviews are already planned to be conducted in 2018 for the midterm review, and the same number in 2020 for the end line report. The number of interviews mentioned in this overview are additional to that number.

** The research activities in the "Other sources of evidence" category are not planned and budgeted for in the current evaluation program (2016-2020).

*** Initially MPS was the acronym for 'Milieu Project Sierteelt'. MPS merged with ECAS B.V. in 2007, and the new organization continued its activities as MPS.

1 Introduction

1.1 IDH and its strategies to improve economic, social and environmental sustainability of commodity production systems

IDH - the Sustainable Trade Initiative was founded in 2008. Its objective is to improve the economic, social and environmental sustainability of production systems in developing countries, focusing on internationally traded commodities.

IDH convenes governments, civil society organisations and companies in public-private action-oriented coalitions across global commodity supply chains. IDH co-creates and prototypes private-sector-driven solutions that are to be internalised by businesses, in an enabling environment of effective public-private collaboration. These concepts are set up to help upscale and accelerate global sustainable production and trade.

To this end, IDH deploys several strategies:

- Convening: IDH bundles public and private interests and strengths to solve complex issues and unlock large scale sustainable production and trade.
- Co-funding: through co-funding IDH leverages business interests to drive sustainable sector transformation
- Learning & Innovation: IDH pilots, evaluates and disseminates lessons learned and best practices.

IDH is currently implementing its strategy for 2016-2020, with financial support of the Dutch, Swiss and Danish governments. IDH is active in 11 commodity sectors in over 50 countries. Cross-cutting the commodity sectors, IDH also implements programs on innovative finance, sustainable landscapes and a partnership with the Grow Africa initiative[ii].

1.2 A focus on reaching 'deep impact' in four impact themes

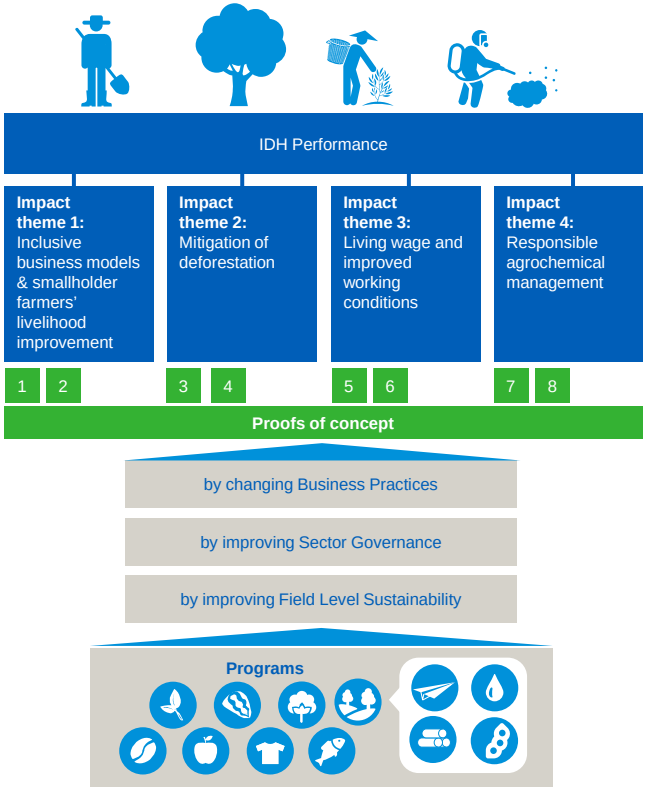
Up to 2013, IDH focused strongly on the certification of primary producers, according to a variety of mainstream sustainability standards. In its strategy 2016-2020, IDH has chosen to move beyond certification. This was amongst others inspired by IDH's own experience as well as a broad impact evaluation by the Ministry of Foreign Affairs in 2014[1]. IDH's ambition is now to achieve public good impacts which are generally not easily achieved ('high hanging fruits'), within four impact themes:

1. Inclusive business models and smallholder farmers' livelihood improvements
2. Mitigation of deforestation,
3. Living wage and improved working conditions
4. Responsible agrochemical management.

[ii] Grow Africa is an initiative of the African Union, NEPAD and the World Economic Forum, to increase private sector investments in agriculture.

Within these impact themes, IDH aims to transform business practices, strengthen public-private sector governance and improve field level sustainability. Social and environmental externalities are to be internalised into the commodity markets, which is to contribute to positive impact at scale on people and planet, supported by viable economic mechanisms. IDH is also working on the theme gender as a learning theme, which is therefore not included in this evaluation as activities are still in its infancy.

Figure 1.1. *IDH impact themes, result areas and programs*



1.3 IDH impact evaluation 2016-2020

To measure its impact within the four impact themes through a program evaluation, as well as evaluate IDH impact at corporate level, IDH has requested Wageningen University & Research (WUR) & KPMG to design and conduct a five-year impact evaluation program. This program is implemented between 2016 and 2020, and supervised by the IDH Impact Committee. For this same period 2016-2020, IDH has developed a multi-year plan which contains a more holistic approach to measuring impact than for the period prior to 2016. Results of this multi-year plan will serve as input to future reports (mid-term and end-term).

On a yearly basis, we report on the progress in impact evidence, by synthesising the growing body of evidence on IDH activities and impact from impact evaluations and other materials. These annual reports enable IDH to use the findings for improving its operations.

This study is the baseline report of the impact evaluation program. In it, we provide a baseline synthesis of the available impact evidence for each impact theme. The synthesis combines information on IDH's contribution to public good impacts until present and information from the literature on the impact of and lessons learnt from similar approaches.

Table 1.1. *Deliverables within the IDH evaluation program 2016-2020*

	2016	2018	2019	2020	2021
Report	Baseline report	Midterm review	Yearly synthesis report	Yearly synthesis report	End line report
Contents	Program evaluation	Program and corporate evaluation	Intermediate results of program evaluation	Intermediate results of program evaluation	Program and corporate evaluation

1.4 Report structure

This baseline report is structured as follows: in Chapter 2 we present the methodology used for concluding on the IDH contribution to sustainability goals and the plausibility of IDH's approach. The baseline study results per result area are discussed in Chapter 3 as well as the overall conclusions of the baseline study results and recommendations for future impact evaluation activities. Finally, we present the evidence base per impact theme in Chapters 4-7, in one chapter per impact theme.

2 A credible framework to evaluate IDH's contribution to public good impact

2.1 Methodological approach

The IDH impact evaluation is methodologically challenging. Not only is IDH active in many different countries and commodity chains, its intervention models have also diversified over time, from the promotion of certified produce to a much wider range of activities, including landscape programs and multi-stakeholder partnerships. This increasing complexity is deliberate, yet it creates a particular challenge of 'breadth versus depth' in the impact evaluation. It makes it necessary to aggregate outcomes in a large diversity of situations into more general and concise IDH impact storyline.

Another challenge is the 'attribution' of changes to IDH's interventions. For most outcomes, IDH collaborates with multiple parties which all contribute to the change processes. For instance, it is difficult to directly attribute impacts at the level of business practices and sector governance to IDH support alone, as other factors and actors also have had an influence on such impacts.

Below, we present the methodology for the **program evaluation**, as conducted for this baseline study. More information on the methodology can be found in in Appendix 1.

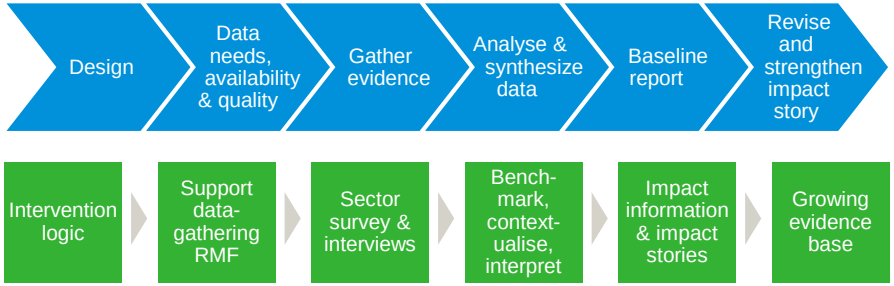
2.2 Contribution analysis

First of all, we developed a **theory-based methodology**. IDH constructed an intervention logic for each of the four impact themes, with our assistance. The intervention logics reflect IDH's expectations about the causal relations between its support activities and their final outcomes and impact.

Subsequently, we collected **multiple sources of available evidence** to be able to investigate the evidence for the causal relations for each of the impact themes. Please find more information on sources used in Section 2.3.

In the **analysis and synthesis stage**, we critically analysed the available evidence in order to verify and refine the rationale behind each of the four impact themes. Contribution analysis is a systematic way to exploit a variety of information sources to assess impact, even where it is not possible to attribute the outcomes unambiguously to IDH. Rather than attribution of net-effects, contribution analyses focus on whether a convincing claim can be made that IDH has been a necessary factor, in a configuration of actors and factors, which created the observed changes. One of the methodologies we used to assess whether changes occurred and whether IDH contributed to such changes was 'process tracing'. We did so by asking interviewees about specific moments in time that changes have taken place in the sector, and examples of how IDH activities and events have played a role in these change processes.

Figure 2.1 *The six steps in the contribution analysis framework*



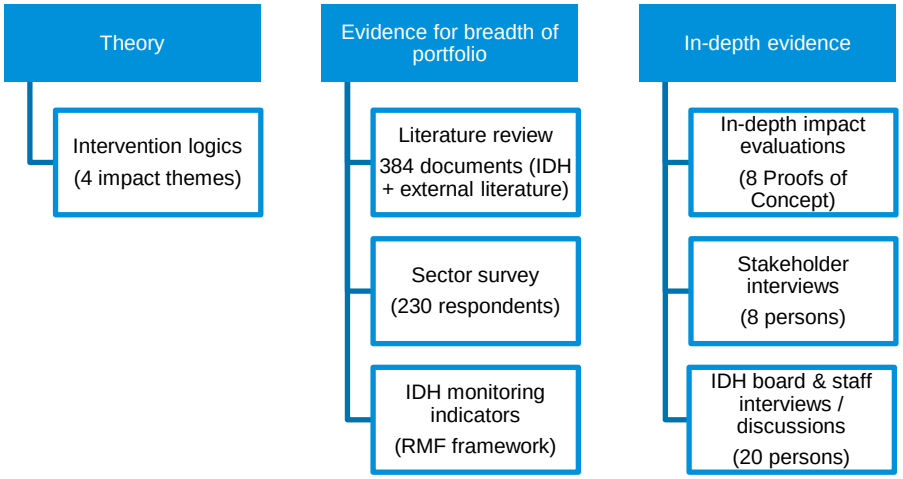
Validation of the evaluation results took place in two ways. We validated the intervention logics with IDH staff for each impact theme, and we discussed the draft impact stories -- based on all the available material - during four thematic results workshops with IDH staff and management. After the results workshops, the impact stories were adjusted according to IDH's feedback and new information that became available. The results are presented in this baseline report.

For each impact theme three impact stories have been identified. In the next reports the different impact stories will be integrated into one story of IDH's impact. In the next years, we will build up the evidence base to verify and strengthen the IDH impact story.

2.3 Multiple information sources used for the analyses

We use a variety of sources of evidence for the impact evaluation. Some of the sources cover the entire scope of IDH's portfolio. Others take an in-depth look at a selection of IDH projects.

Figure 2.2 *Sources of information used in the evaluation*[iii]



2.3.1 Literature review

Based on the draft intervention logics, we conducted a review of the literature to seek for existing evidence on IDH types of interventions, and on the impact of and lessons learnt. In view of time constraints, we focused the literature review on (academic) review papers in which various research reports had already been synthesised. But we also reviewed separate studies related to IDH support activities. In addition, we reviewed IDH's strategy documents, plans and activity reports in the review. See the final section to this report with the reference list containing all the studies included in the report.

IDH has commissioned or will commission in-depth and robust impact research in eight field programs for the 2016-2020 period, two for each impact theme (Figure 2.3). These studies will be conducted by third parties. IDH has defined these field programs as Proofs of Concept, which are intended to be scaled up and replicated, if successful. Most of these in-depth studies will consist of a baseline, a mid-term and an end-line study. IDH outsources such studies to third parties, under methodological supervision of WUR & KPMG. Please find more information on these studies in Appendix 2.

We have reviewed 47% of the baseline studies for the Proofs of Concept for the present report because the other studies were not yet available. We will take up the other reports in the Midterm review report. Please find an overview of the status of affairs of all in-depth studies related to the Proof of Concepts in Appendix 2.

[iii] We have not used the RMF indicators for the baseline analyses. They are included in Appendix 4

Table 2.1 *In-depth impact research in 8 Proofs of Concept*

Impact theme 1: Inclusive business models and smallholder farmers' livelihood improvements	
1	Innovative service delivery approaches targeting yield and livelihood improvement in coffee in East Africa
2	Improved productivity and livelihoods (including gender and nutrition) for cocoa farmers in West Africa (Cote d'Ivoire). Amongst others by financing of Productivity Packages (PP) for smallholder cocoa producers in Cote d'Ivoire
Impact theme 2: mitigation of deforestation	
3	Landscapes approach for protection of High Conservation Value (HCV) forest and business cases for Sustainable Forest Management in West Kalimantan
4	Landscape model for sustainable management of Mau Forest watershed, Kenya
Impact theme 3: Living wage and improved working conditions	
5	Malawi 2020 Tea Revitalization Program - living wages
6	Clean manufacturing, improved working standards and satisfaction in Apparel, Vietnam
Impact theme 4: Responsible agrochemical management	
7	Reduced toxic load of agro-chemicals in spices, table grapes, cotton and tea in India
8	Reduced toxic load of agro-chemicals in coffee, Fresh & Ingredients and tea, Vietnam (water & soil pollution) - part of ISLA

2.3.2 Sector survey

To capture perceptions on IDH's impact from a broad group of stakeholders, we conducted a sector survey. It focuses on IDH's impact on sustainable business practices and improved sector governance, for which 'hard' impact evidence is more difficult to get than for the field level. It also includes questions on IDH's contribution to some field level changes. The sector survey will also be conducted in 2018 and 2020 in order to capture trends and lagged effects. The target audience includes the complete scope of IDH stakeholders, including public, private and civil society actors, international and local partners, allies and 'engaged outsiders'. Engaged outsiders are people who know IDH and their approach on which they can reflect critically because they are not directly involved in IDH programs, e.g. through a contract. We sent the 2016 survey to 622 persons, and received responses from 37% of the invitees. Please find more information in Appendix 5 on the design of the sector survey and its 2016 results.

2.3.3 Indicators monitored by IDH through their Result Measurement Framework

IDH developed a Result Measurement Framework (RMF) with a coherent set of 17 output and outcome and 16 impact indicators. All programs and projects are expected to collect data bi-annually or annually for the *output* and *outcome* indicators which apply to their activities. In-depth impact studies conducted by 3rd parties will deliver evidence on IDH's contribution to public good impact for the *impact* indicators. The present baseline report includes the indicator values of the RMF output and outcome indicators with the baseline date of 1/1/2016, in Appendix 4. As the RMF was revised throughout 2016 it is seen as a starting point for measurement performance in the coming period. As the information included currently in the RMF are a baseline picture, we include these metrics in the Appendices but these were not used to make any detailed analysis as of yet. We expect to be able to do so in the next reports. As with any system for monitoring performance, it is important that IDH ensures a consistent data collection process and implements data quality checks to ensure the robustness of the data. Furthermore, for indicators that have a consolidated IDH target, definitions used by the different programs should be aligned so the indicator values can be aggregated.

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2.3.4 Interviews with IDH staff, stakeholders and 'engaged outsiders'

We interviewed and discussed with 20 persons at IDH itself, ranging from IDH management to program directors, and managers and officers of commodity and cross-cutting programs. Also, we conducted 8 interviews with external stakeholders

(companies, governmental organisations, NGOs and engaged outsiders). See Appendix 6 for a list of interviewees. For this baseline study, the interviews served to gain a better understanding of the context and dynamics of the programs, and of the role of IDH in supporting sustainability processes. The interviews did thus not generate a total overview of IDH impact according to IDH staff and stakeholders so far (2013-present). In the future evaluation activities, we will focus more obtaining evidence on IDH's contributory role in achieving impacts in the interviews.

2.4 Methodology to come to conclusions on IDH's contribution to impacts and the plausibility of IDH's approach

To come to conclusions on IDH's contribution to impact and the plausibility of IDH's approach, we have created a database containing the evidence found on IDH's contribution to public good impact and information on similar interventions, by listing all information found in credible sources. Through this exercise we assessed the *quantity* of the available evidence: i) per impact theme, ii) per result area as well as iii) per part of the impact story, e.g. whether IDH support leads to outcomes and whether such outcomes lead to impact.

In this exercise, we also assessed the *direction of change* indicated per information source. This database forms the basis of our conclusions on IDH's contribution to public good impacts and the plausibility of IDH's approach.

The following steps were undertaken to create a catalogue of all the information used in the impact study and assess the evidence base:

1. All documents received, from IDH and the literature review, were listed in an Excel database. The database distinguishes between types of document: i) studies on IDH impact, ii) individual studies on similar interventions, iii) review studies on similar interventions, iv) IDH program related documents and v) IDH documents related to corporate information.
2. All interviews with IDH staff and external stakeholders were listed in the database
3. Each source was listed indicating: i) the impact theme covered, ii) the result area covered, iii) the program covered, iv) a summary of the information found, referring to indicators from the intervention logics, outcome and impact indicators.
4. The sector survey responses were not taken up in the database, and neither were the first results from the Balanced Score Card questionnaire from the RMF. They were reviewed separately.

The information in this database as well as information from the sector survey and RMF results was used to conclude on the evidence base - the quantity of evidence available for the impact themes and result areas, as well as the direction of change found in the sources.

Finally, the evidence was added up per impact theme and result area, which created an overview of the quantity of the evidence found, and the direction of change. Please find more information on the quantification of the impact evidence in Appendix 1.

2.5 Dynamics at IDH with some implications for the baseline study

During the research for the baseline report, IDH has been making several changes to its programs and impact themes, and RMF indicators, partly in response to a dynamic business environment, partly because some approaches were not yet fully crystallised earlier. This was specifically the case for the impact themes 'Mitigation of deforestation' and 'Responsible agrochemical management'. But also the RMF

strategy was refined, including a review of the output and outcome indicators to be reported upon by program teams and implementing partners. This can be read positively as a high degree of responsiveness and a quick learning ability which is also confirmed through the interviews with stakeholders.

We adapted the intervention logics and literature review where possible in an agile way, but these dynamics have sometimes had implications for the depth of the literature reviewed, specifically for the two impact themes mentioned above. Also, this has led to us not being able to use the RMF indicator baseline values in the analyses. Finally, IDH staff interviews could have been more informative for the research for all the impact themes, if we would have known earlier about some of the changes made in the intervention logics. We do not consider this to be a real problem as we will assess the evidence base periodically between 2016 and 2020, and will refine the evolving IDH impact story in the coming years.

2.6 Limitations

2.6.1 The evidence on IDH contribution to impact in this report

In this baseline study, we have presented the evidence for IDH's contribution to impact. We have included an overview of the information available at the time of writing, and have included information on some specific results related to the IDH Proof of Concepts so far. However, we have not assessed the *extent* of IDH's contributions to the results mentioned (i.e. it could be that IDH contributed to a result to a limited extent because other partners contributed much more), nor do the highlighted cases necessarily represent the overall IDH contributions to impact. For instance, we find some early results in Malawi within the living wage impact theme, but this does not mean that we can conclude that IDH has contributed to living wage and working conditions through similar activities elsewhere. Also, it is unclear yet what the relative importance is of the evidence and highlighted cases within the IDH strategy, world markets and/or number of people involved in the sector. For instance, it may be that evidence on the impact of a certain approach is found for a select group of stakeholders. A question to be answered then is whether the impact would also be found for others, and under what conditions. In the midterm and end line reports, we will review and weigh all evidence on IDH's contribution to impact regarding the representativeness of the evidence in the whole IDH strategy, as well as sector/stakeholder representativeness. Based on such evidence we will draw conclusions on the overall IDH contribution to impact for each impact theme.

2.6.2 Data presented and use of the report

The procedures that have been performed to establish this report did not constitute an audit or other assurance engagement. We often used data provided by IDH and other parties to come to conclusions (i.e. annual reports, RMF metrics, baseline reports), Consequently, our report does not express any assurance as to the reliability of such financial or other data, provided by IDH and other parties, in the report..

Finally, this report is intended solely for the information and use of IDH - The Sustainable Trade Initiative. Any other party than IDH that obtains a copy and chooses to rely on it in any capacity does so at its own risk. It is not the responsibility of WUR and KPMG to provide information to any third party that has become known or available at any time after the date of this report. WUR and KPMG accept no responsibility or liability for the use of this report other than for the purpose for which it has been prepared and accept no responsibility or liability to other parties than IDH.

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3 Overall IDH evaluation results

3.1 IDH targets per impact theme

To improve the economic, social and environmental sustainability of production systems in developing countries, IDH focuses its programs on four impact themes. For each impact theme, IDH has specified targets to be reached by 2020 regarding the number of people (farmers and workers) to benefit and the number of hectares under sustainable or responsible land management practices. As many of IDH's program activities aim to achieve impact within multiple impact themes, a similar number of people and hectares to be impacted upon are presented for multiple impact themes. Thus, the figures cannot be added up to come to total IDH targets.

Table 3.1 *IDH targets per impact theme for 2016-2020 period, including expected impact on key Sustainable Development Goals.*

Impact theme	# People impacted	# Area impacted	Sustainable development goals
Inclusive business models & smallholder farmer livelihoods	3.75m smallholders significantly improve yields and incomes	13.2m ha farm land and fish ponds under responsible management practices	**1 - No poverty** **2 - Zero hunger** **5 - Gender equality** **12 - Responsible consumption and production**
Mitigation of deforestation		3.55m ha of reduced deforestation and forest degradation	**12 - Responsible consumption and production** **15 - Life on land**
Living wage and working conditions	1.35m workers directly benefit		**1 - No poverty** **2 - Zero hunger** **5 - Gender equality** **12 - Responsible consumption and production** **15 - Life on land**
Responsible agrochemical management	5.48m farmers and workers	13.32m ha of farm land under responsible management practices	**12 - Responsible consumption and production** **15 - Life on land**

Source: IDH Multi-Year Plan 2016-2020[2].

Below are the targets for the result areas improve sector governance and change business practices presented separately for each commodity sector. Performance against this targets will be discussed in the course of the coming years. We can see that not all programs have defined the same type of targets, which may reflect the different strategies and specificities of each commodity.

Figure 3.1 *IDH targets for improving sector governance 2016-2020 period*

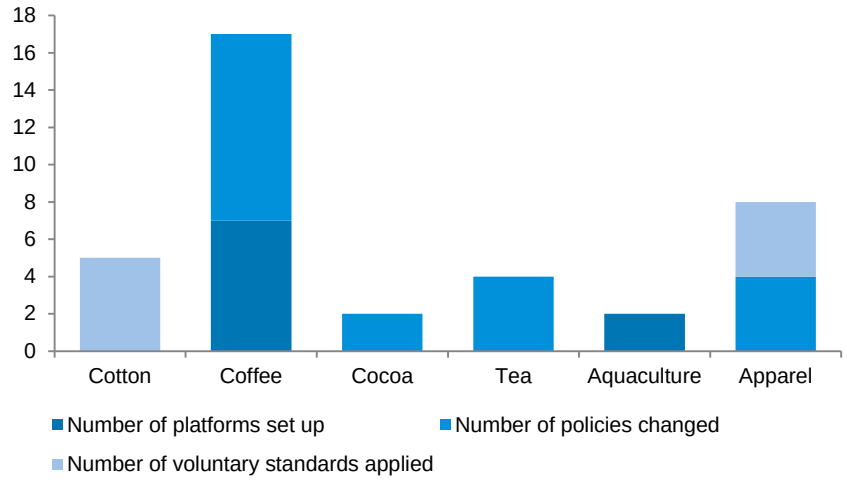
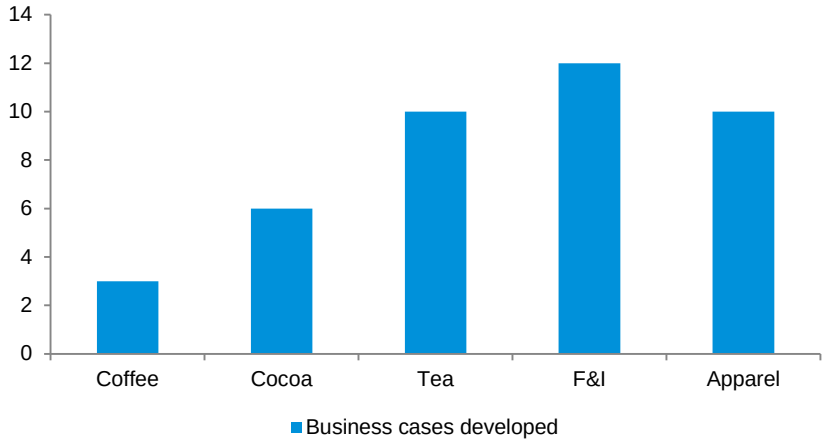


Figure 3.2 *IDH targets for improving sector governance 2016-2020 period*



3.2 IDH programs implemented per impact theme

Each IDH program is assigned to one or more impact themes.

Table 3.2 *IDH commodity programs connected to each impact theme*

Programs	Impact themes			
	Smallholders	Living wage	Deforestation	Agrochemicals
Apparel		✓		
Aquaculture				✓
Cocoa	✓			
Coffee	✓			✓
Cotton	✓	✓		✓
Fresh & ingredients	✓	✓		✓
Tea	✓	✓		✓
IDH Landscapes	✓		✓	✓
Brazil			✓	
Cote d'Ivoire	✓		✓	
Ethiopia	✓		✓	✓
Indonesia	✓		✓	
Kenya	✓		✓	
Liberia	✓		✓	
Vietnam	✓			✓

3.3 Geographic spread of IDH program activities

Below is an overview of IDH's presence worldwide. Information about which programs and countries in scope for the IDH impact evaluation for the 2016-2020 period are available Appendix 1.

Figure 3.3 *Overview countries in which IDH programs are active with the different impact themes*

3.4 Stakeholders perception on IDH's approach and roles in sustainability processes

3.4.1 Role of IDH in sustainability processes in terms of added value/ difference in strategy vis-a-vis other funders

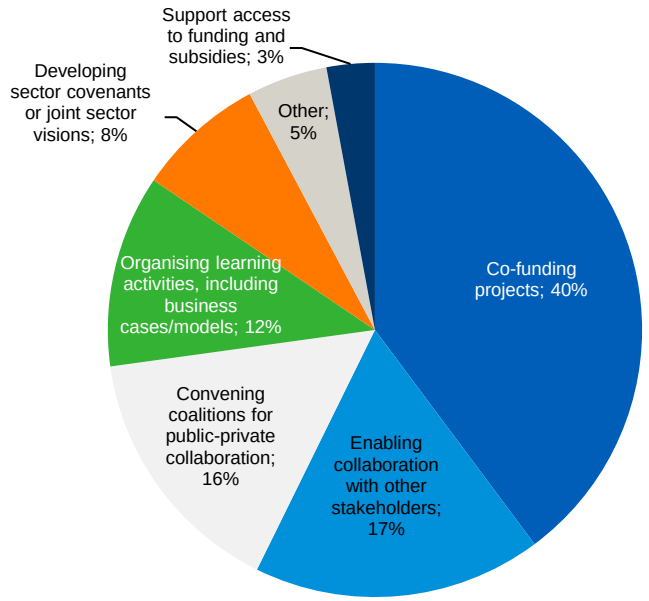
This paragraph describes the perceived impact of IDH based on its key stakeholders. It is based on the results of the sector survey as well as on interviews with key stakeholders of IDH and IDH staff active in all four impact themes. In total, 12 IDH staff and 8 IDH stakeholders were interviewed in order to explore what processes of change has resulted from IDH supported activities.

Interviewees were asked five questions: (1) how they see the role and added value of IDH in sustainability processes, (2) how the contribution of IDH differs from other funders/partners, (3) whether and how they changed strategies because of working with IDH, (4) what would have happened had they not partnered with IDH and (5) if there would be anything IDH could do better.

The majority of stakeholders (both from the sector survey as well as from interviews) indicate that they have positive experiences with IDH's approach and the role of IDH in sustainability processes. They consider IDH as a valuable partner and a professional organization that drives real change.

The sector survey shows that the co-funding role of IDH is seen as the most important driver in bringing about change in sustainable business practices. In the perception of stakeholders, the roles of enabling collaboration between stakeholders and convening public and private actors take a second and third place. IDH support to learning activities, sector covenants and support in accessing funds and subsidies are deemed less central to bringing about sustainable change.

Figure 3.4 *Perception of private sector stakeholders on which IDH activities were particularly important in bringing about changes in sustainable business practices (N = 103)*



A slightly different picture emerges from the in-depth stakeholder interviews, where the majority of respondents place a high value on the learning component. They value the fact that IDH goes beyond the role of the donor by actively engaging in discussions on how things work in practice and what would be needed to improve the activities they fund. They value the fact that IDH has become less prescriptive and more open to learn together with its partners.

The convening role of IDH is valued for bringing all the important stakeholders together and developing common industry approaches in a pre-competitive manner. IDH's co-funding role is appreciated as it enables companies to make certain

investments in sustainability that they would have otherwise not made because of high risks. Also, many respondents mention the role of IDH as accelerator, by bringing scale and speed in sustainability processes.

When comparing IDH with similar institutions, four things are often mentioned. First, IDH is described as being more 'hands on', having a much better connection with the practice in the field than many other donors. They value the increasing tendency to have IDH staff on the ground which facilitates learning and interaction. Second, the flexibility of IDH is praised. IDH is seen as less prescriptive and more open to conversations on how to spend the money they provide. The fact that IDH has expertise on a broad range of commodities and themes, is highly valued.Third, IDH's drive to innovate is indicated as a unique value of the organization. The room for experimentation and evaluation is appreciated as well as the possibility of focusing on smaller number of farmers, which allows stakeholders to be more impactful. Fourth, IDH is seen as more collaborative than other donors, by engaging whole groups of companies at the same time and taking national and local governments as well as civil society organizations on board in the process.

3.4.2 Whether and how partners changed strategies because of the partnership with IDH

When asked to what extent stakeholders changed their strategies because of their partnership with IDH, most respondents indicated some strategies had been adjusted due to their cooperation with IDH. Only a few respondents indicated that they did not make any significant changes to their strategy as a result of working with IDH.

Many respondents indicated that the learning activities of IDH, whether they were discussions on fertilizer and tree rehabilitation or exercises of developing new service delivery or business models, have contributed much to the strategic thinking in their organization. Epecially the importance of profitability instead of productivity and the attention to themes such as child labour, poverty and climate change are much valued by the stakeholders.

Other respondents indicate that the cooperation with IDH has inspired their organization to cooperate more and establish partnerships with other organizations in the sector. A few respondents also indicated that the involvement of IDH had encouraged their commitment to certain sustainability goals. IDH is recognised both for its support in scaling up successful projects, as well as showing the value of more focussed interventions, to increase their effectiveness.

3.4.3 Additionality of IDH: What would have happened when they would not have partnered with IDH

When asked about what would have happened when they had not partnered with IDH, most respondents indicate they would not have carried out the activities in the same way as they have done.

The majority of these respondents indicate that they would have done similar activities, but on a much smaller scale than when IDH would be involved. A few respondents indicated that it would have taken much longer for their organization to commence those activities had they not received assistance from IDH.

Some respondents also indicated they might have worked in other regions or locations when they would not have the involvement of IDH. Others indicate that they would have engaged with other stakeholders in a platform, but without the participation of certain crucial stakeholders.

Finally, a few respondents indicate that when they would not have worked with IDH they had cooperated with a less stringent partner, leading to lower levels of ambition for the programme they would engage in.

Only a small number of respondents indicated they would have found the same funding for the same projects and approaches, or that they would expect the same commitment of partners in case they would not have worked with IDH.

3.4.4 Is there anything IDH could do better?

Four different types of advice were given when the IDH stakeholders were asked what IDH could do better. The most prominent one concerned the 'straightforward' attitude of IDH. While in some cases this was perceived as an asset, in other cases respondents would prefer a more humble approach. One respondent added the side-note that IDH has already started shifting to a more inclusive approach, where programs are no longer pushed too much, without first bringing everyone along in the process.

A second piece of advice offered by some of the respondents concerns the learning agenda. According to them, the learning role of IDH is a very important one, but more effort could be done to better explain this role to IDH's partners in order to better manage expectations.

Third, some respondents offered the advice to shift more attention to pilots and experiments rather than support mainstream projects. These respondents acknowledged that there is already a trend in this direction, but would like to see this trend strengthened in the future.

Finally, the advice was given by some respondents to better make use of the influence IDH has when discussing with buyers and retailers. In their opinion, IDH could ask for more commitment to the process based on the relationships that have been built.

3.4.5 Stakeholder perceptions about the contribution of IDH to sector change and field level impacts

The sector survey asked respondents whether changes took place since 2013 in the sector, and to what extent they considered that IDH did have an influence on this. Based on these two questions in the survey, an IDH Contribution Score is computed. Both questions had Likert-scale answer categories. We combined both answers categories and ranked them with 'no changes and no contribution' as 0 and 'very much changes/ very high influence' as 100 (see Appendix 5.4 for details).

The IDH Contribution Scores that we derived from the survey are self-assessments, and will always be positive when at least some of the respondents indicate that there are changes in which IDH contributed. The IDH Contribution Score varies between areas, which helps to identify areas in which IDH seems more effective. Because the data is based on one survey round only (cross-sectional), at the start of many of IDH program activities, and based on self-reported changes, the interpretation of the contribution scores needs to be cautious. Follow-up surveys will make it possible to derive stronger conclusions about IDH impact.

The results of the first round of the sector survey provide suggestive evidence that IDH is contributing to improved sector governance, improved field level sustainability and changes in business practices. Figure X.1 shows that the IDH Contribution scores on business practices are fairly high (between 44 and 53%).

The respondents consider IDH most effective in improving the engagement of other businesses and stakeholders on sustainability issues.

Figure 3.5 *IDH Contribution Score – Business practices (chain)*

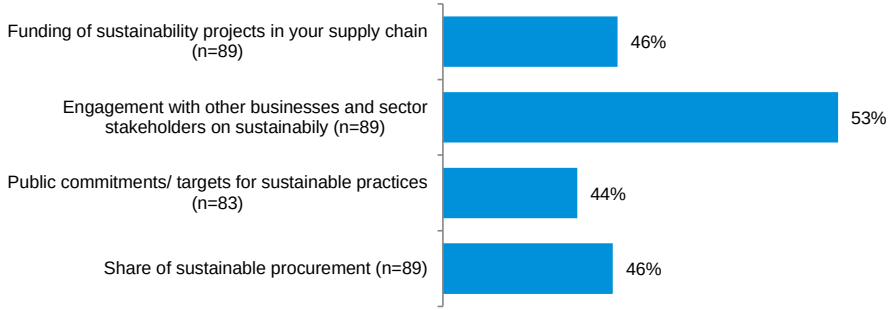
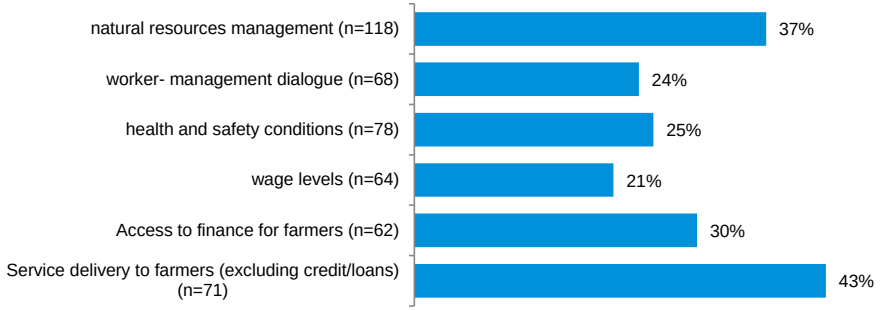


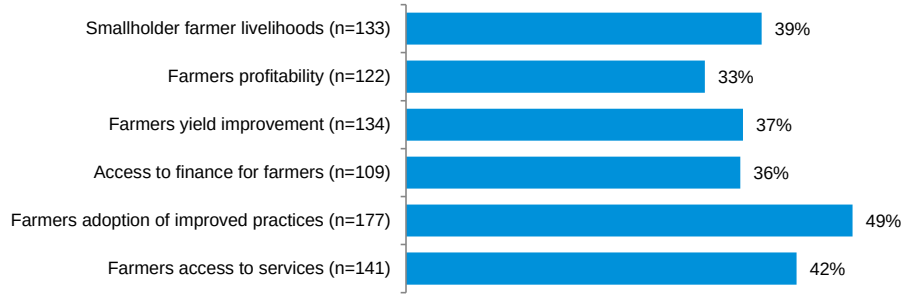
Figure 3.6 shows the changes in business practices at the firm level. IDH contribution is highest on service delivery to farmers and natural resource management. IDH has less impact on changes in wage levels, health and safety and worker-management dialogue.

Figure 3.6 *IDH Contribution Score – Field level (firms)*



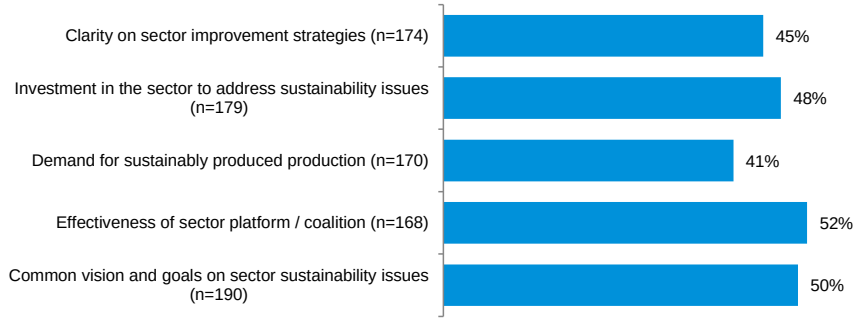
When we look at the changes field level for farmers (Figure 3.7), we see that the influence of IDH is especially on the improvement of farmers access to non-financial services and the application of better agricultural practices.

Figure 3.7 *IDH Contribution Score – Field level (farms)*



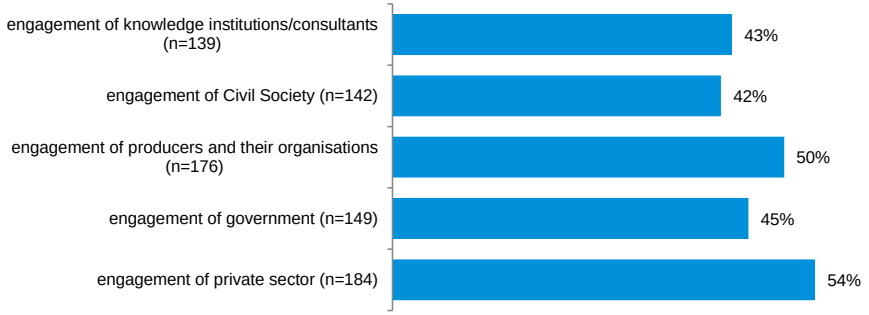
IDH has a large contribution to sector governance, especially in the areas where stakeholders convene to develop a common vision on sustainability issues (Figure 3.8).

Figure 3.8 *IDH Contribution Score - Sector governance*



The IDH Contribution Scores in the area of stakeholder engagement are relatively high (Figure X.5. IDH contribution in sector governance is especially strong in the mobilization of the engagement of the private sector and the producers and their organizations that supply to them.

Figure 3.9 *IDH Contribution Score – Engagement of stakeholders*



When we compare the IDH Contribution Score per impact theme (see Appendix 5.5), we do notice several differences in the answers of respondents and the respective IDH Contribution scores. The differences are especially among stakeholders that work on smallholder livelihoods and those working on living wage and working conditions and relate to field level impacts for farmers and changes in business practices, such as wage levels, service delivery to farmers, access to finance. Except on the issue of access to finance, the respondents that work on Living wage and working conditions value the IDH contribution more positively than the respondents that work in the impact area Smallholder livelihoods. On the questions related to sector governance, the various impact areas show similar average contribution scores.

The contribution scores of the respondents directly involved in IDH are slightly higher than the scores of respondents that are only indirectly involved. However, only on two questions are these differences statistically significant (see Appendix 5.6): the contribution of IDH to a Common vision on sustainability and the Engagement of business and sector stakeholders. As can be expected, the respondents directly involved in IDH activities are more positive than indirectly involved.

3.5 Key metrics on IDH outputs and outcomes for 2008-2015 period[iv]

IDH has prepared a summary report in which it presents results obtained since the beginning of its activities in 2008. To prepare this report, IDH went through an extensive exercise of collecting and checking information on results obtained to date. The information reported in the Summary Report relates to total results obtained between 2008 and 2015, with no yearly break-downs. Therefore, we can not isolate results for the period of 2013-2015 only. Thus we have opted in this section to present data from 2008 to 2015, using IDH's Summary Report as our source. This larger period implies that the KPIs presented here do not necessarily coincide with the RMF indicators which can be found in Appendix 4.

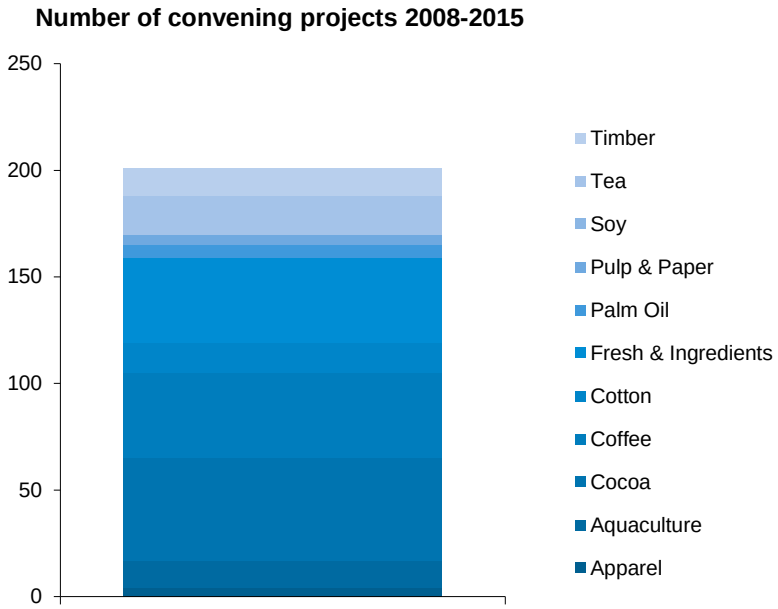
3.5.1 Improving sector governance

IDH has worked on the establishment of convening coalitions of sector actors, organising sector learning and engaging with government, unions and employers.

Since its start in 2008, IDH has initiated 201 convening projects for the programs in scope for this review. Cocoa, coffee and fresh & ingredients contributed to the majority of projects with 48, 40 and 40 respectively. Only the soy program did not report projects in the period.

[iv] Metrics reported in this section are extracted from *IDH Summary Report 2016: First funding phase*. No checks on data accuracy and completeness have been performed.

Figure 3.10 *Dashboard IDH outputs and outcomes 2008 - 2015 for result area: Improving sector governance*

Result area	Activities	Outputs 2008-2015	Outcomes 2008-2015
	Convening coalitions of sector actors Organizing sector learning Engagement with government, unions, employers		No metrics available in Summary Report: First funding phase IDH

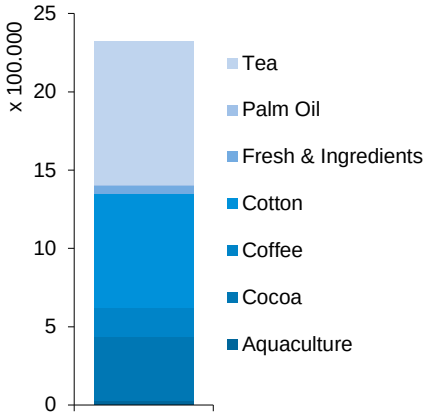
Source: IDH (2016) Summary Report: First funding phase

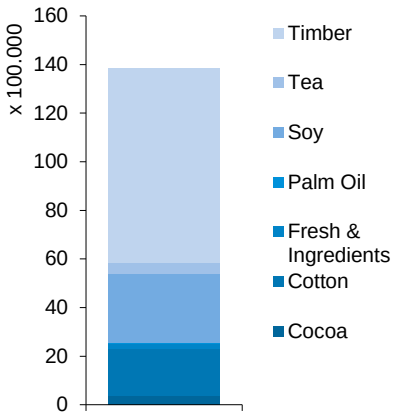
3.5.2 Improving field level sustainability

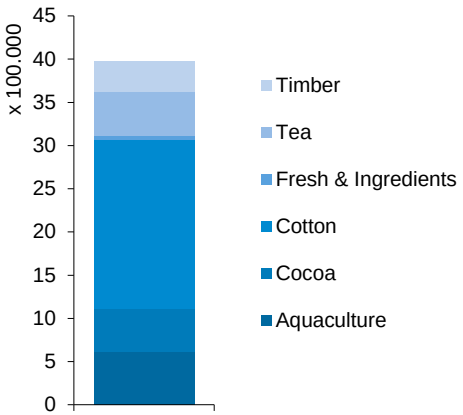
The key indicators for field level outcomes are the numbers of producers and workers trained, the area under sustainable production, and the volume of sustainably produced products. With IDH co-funding 2.3 million producers and workers were trained by 2015. These trainings took place in the aquaculture, cocoa, coffee, cotton, tea, fresh & ingredients and palm oil programs. IDH monitored the area under sustainable production for the cocoa, cotton, tea, timber, soy, palm oil and fresh & ingredients programs, with 13.8 million hectares reported by 2015. According to the report, the volume of sustainable production within their aquaculture, cocoa, cotton, tea, soy and fresh & ingredients programs was 4 million metric tonnes by 2015.

Figure 3.11 *Dashboard IDH outputs and outcomes –2008-2015 for result area: Improving field level sustainability*

Result area	Activities	Outputs 2008 - 2015	Outcomes 2008- 2015	
	Benchmarking Training Working with companies to improve working conditions (HR)	**Number of producers/workers trained**	**Area under sustainable production (ha)**	**Volume of sustainable production (metric tons)**





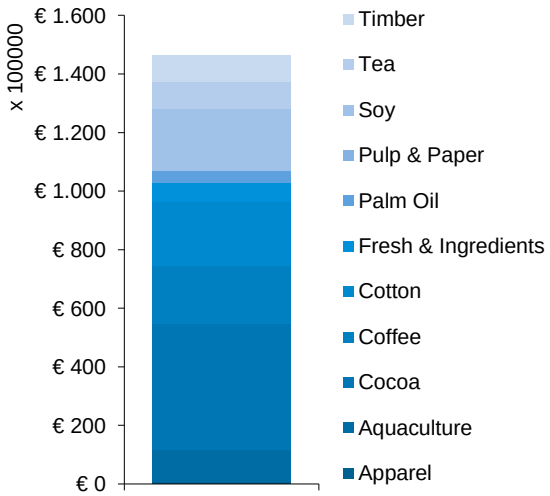
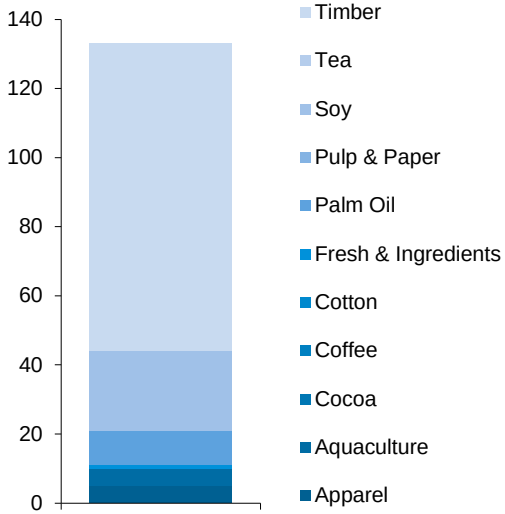


Source: IDH (2016) Summary Report: First funding phase

3.5.3 Improving business practices

For the result area on improving business practices, IDH has reported the number of market demand projects (projects aimed at trying to boost the market demand for sustainable products) and the total private sector contribution for the period 2008-2015. The timber and soy programs were the ones that presented the most number of market demand projects in the period (89 and 23 respectively). This demonstrates the focus of IDH on fostering market demand more strongly in certain commodities. In terms of private sector contribution, the cocoa program is by far the one who received the most contributions with a total of €43 MM of contributions through this period. Outcome indicators were not available for the period for this result area.

Figure 3.12 *Dashboard IDH outputs and outcomes 2008 - 2015 for result area: Improving business practices*

Result area	Activities	Outputs 2008-2015	Outcomes 2008-2015
	Development SDM Development Innovative Finance Best practice business cases Outreach to financers/donors Capacity development	**Private sector contribution 2008 - 2015**  **Number of market demand projects** 	No metrics available in Annual report

Source: IDH (2016) Summary Report: First funding phase

3.6 Key recommendations for addressing the evidence gaps in verifying IDHs contribution to impact towards 2020

Based on our review of the evidence on IDH's contribution to impacts as well as the impact of similar approaches, we derive recommendations to increase the evidence base in order to verify whether outcomes reached in all result areas translate into the expected changes and impacts. Please find more information on the evidence per impact theme in chapters 4-7. Specific challenges are to verify whether:

1. Changes in policies lead to improved sector governance, creating an environment for field level change (for smallholders, workers and the environment)
2. Changes in business practices at companies IDH works with incite other companies to also change their practices
3. The developed business models are profitable, scalable and replicable.

In the coming years, IDH will address many of these gaps in the evidence through funding in-depth impact studies around the IDH Proofs of Concept and collecting monitoring information on 16 output and outcome indicators through the Result Measurement Framework. Also, IDH plans to create an annual report on progress made within each Proof of Concept, including an assessment of changes and impacts in business practices and sector governance.

One of our recommendations is to conduct additional stakeholder interviews around IDH's Proof of Concepts, and specifically to assess changes in sector governance and business practices applying the 'process tracing' methodology[v]. The stakeholder interviews have proven to generate detailed and specific information on activities, outcomes and impacts, information which cannot easily be collected through the sector survey. As IDH also plans to conduct stakeholder interviews for its annual Proof of Concept report, coordination is needed, to avoid stakeholders to be interviewed twice on similar topics, and select a diverse enough group of interviewees to ensure that credible and high quality information on the impact of IDH activities on change processes will become available.

Please find below our recommendations towards tackling the current gaps in the evidence base. Specific recommendations per impact theme are presented in the impact theme chapters (4-7), in Appendix 2.2 (on IDH Proof of Concepts) and Appendix 3 (detailed recommendations per impact theme). Please note that the overview below is not a total

[v] Process tracing is a methodology is used to explain outcomes in psychology, political science and historical studies. Through process tracing it is established, per specific case, what (kind of) processes have taken place, which are verified by exploring real events in time in a transparent way, including whether other actors and factors influenced the processes and/or outcomes and impacts reached.

overview of all monitoring and evaluation activities by IDH and the WUR/KPMG team in the coming years, but focuses on the gaps in the evidence which should be addressed to measure IDHs contribution to impact towards 2020.

Table 3.3 *Overview of recommendations to address the evidence gaps for evaluating the IDH program 2016-2020*

Result areas	Sector governance	Field level sustainability	Business practices
Key challenges in measuring IDH's contribution to impact			
	To verify whether changes in policies and strategies lead to improved sector governance, creating an enabling environment for field level change (for smallholders, workers and the environment)	To verify the impact of field level programs on profitability and incomes for farmers and workers, and the environment	To verify changes in business practices, embedded sustainability at business level and whether changes in business practices at companies incite other companies to also change their practices
			To verify the effectiveness, profitability, scalability and replicability of business models.
Recommendations per evidence source			
In-depth studies / information on the IDH Proof of Concepts	IDH to ensure that information will become available from the Proof of Concepts, through applying appropriate research methodologies, on: 3. Changes in policies and strategies through the IDH program 4. Whether such changed policies/strategies lead to improved sector governance creating an enabling environment for field level change. A baseline assessment is not required for measuring such outcome and impacts.	There are methodological challenges with several of the currently available baseline studies for them to be used for evaluating IDH's impact. Please find concrete recommendations for all in-depth studies in Appendix 2.2.	IDH to ensure that information will become available, through applying appropriate research methodologies, for the Proof of Concepts on: 3. Changes in business practices through the IDH program and whether such changes have incited other companies also to change their practices. 4. The effectiveness, profitability, scalability and replicability of business models. The effectiveness of business models is sometimes already addressed through field level in-depth research. A baseline assessment is not required for measuring such outcome and impacts.
RMF		Definitions / guidance of some impact indicators from the RMF could be improved (e.g. toxic load, bankability, productivity)	

Stakeholder interviews*	30 additional stakeholder interviews to be conducted to assess sector governance changes and whether such changes have created an enabling environment for field level change. 'Process tracing' to be used as a methodology for the interviews. As some stakeholders can be interviewed for multiple purposes, the final number of interviews to be done could be less than the sum of all interviews mentioned.	4 additional interviews with stakeholders to assess field level impacts within the living wage and working conditions impact theme As some stakeholders can be interviewed for multiple purposes, the final number of interviews to be done could be less than the sum of all interviews mentioned.	18 additional interviews with stakeholders to be conducted to obtain qualitative information on the IDH contribution to changes in business practices, and whether they incited other companies to change their practices. As well as to obtain information on effectiveness, profitability, scalability and replicability of business models. 'Process tracing' to be used as a methodology for the interviews. As some stakeholders can be interviewed for multiple purposes, the final number of interviews to be done could be less than the sum of all interviews mentioned.
Sector survey	Include questions on whether sector governance changes have created an enabling environment for field level change		Include questions on whether and how business practices have changed.
Other sources of evidence**	IDH's annual report on the Proof of Concepts.	IDH to explore with various partners/programs the possibilities to use their data for the measurement of impact at field level. Examples of such partners/programs are: Better Cotton Initiative (BCI), the Cocoa Rehabilitation and Intensification Programme (CORIP), the Cocoa Productivity and Quality Programme (CPQP), the African Cashew Initiative (ACI), Cropin data (India), Trustea, Aquaculture Stewardship Council (ASC) certification, Floriculture Sustainability Initiative (FSI), MPS***. And the NICFI-IDH Partnership Program.	IDH's annual report on the Proof of Concepts. Monitoring information from the SDMs, Innovative Finance projects and the NICFI-IDH Partnership Program in the evaluation.

* In total, 10-15 interviews are already planned to be conducted in 2018 for the midterm review, and the same number in 2020 for the end line report. The number of interviews mentioned in this overview are additional to that number.

** The research activities in the "Other sources of evidence" category are not planned and budgeted for in the current evaluation program (2016-2020).

*** Initially MPS was the acronym for 'Milieu Project Sierteelt'. MPS merged with ECAS B.V. in 2007, and the new organization continued its activities as MPS.

4 Inclusive business models & smallholder farmers' livelihood improvements

In this chapter, detailed information on the IDH impact theme 'inclusive business models and smallholder farmers' livelihood improvements' is presented. This includes the activities and targets for the impact theme as well as the intervention logic; how IDH intends to achieve the expected impacts. A large part of the chapter is dedicated to presenting the current evidence on IDH's contribution to impacts and information from the wider literature on similar interventions and strategies for each impact story.

The following impact stories are discussed in this chapter:

- 4.2 Improving smallholder farmers' livelihoods by improving sector policies and strategies
- 4.3 Improving smallholder farmers' livelihoods through adoption of good agricultural and business practices
- 4.4 Improving smallholder farmers' livelihoods through developing scalable and replicable service delivery models.

Based on the existing evidence, we recommend research activities to enhance the evidence base towards 2020.

4.1 IDH support activities and targets

IDH supports inclusive business models and smallholder farmers' livelihoods through:

1. Convening trade and industry to create market commitments for sustainability and sustainable sourcing
2. Convening coalitions of sector actors to create an enabling environment at national and/or local level
3. Organising sector learning
4. Benchmarking private sector sustainability efforts
5. Training and coaching of smallholder farmers
6. The strengthening of Service Delivery Models
7. The development of Innovative Finance to unlock service supply to smallholder farmers

Through these activities, IDH aims to improve yields and incomes for **3.75 million smallholder farmers** and bring **13.2 million hectares of farm land** under responsible management practices.

Table 4.1 *Programs in which IDH supports smallholder farmers*

Programs in which IDH supports smallholder farmers
Cocoa
Coffee
Cotton
Fresh & Ingredients
Tea
Palm oil (part of the IDH Landscapes program)
Innovative finance

Below is a summary of findings and description of the available PoC studies to date.

Table 4.2 *Description of available studies related to the Proof of Concepts for the impact theme inclusive business models and smallholder farmers' livelihood improvement*

PoC	Improved productivity and livelihoods (including gender and nutrition) for cocoa farmers in West Africa (Cote d'Ivoire). Amongst others by financing of Productivity Packages (PP) for smallholder cocoa producers in Cote d'Ivoire
Available study related to PoC	Kuit Consultancy (2016) Farmer Field Book 2015: Company Report
Details	This report presents the first results of a cocoa company in Ghana using the Farmer Field Book methodology to collect real-time yield, income and diversification data from close to 1000 farmers. The collected data shows that yield levels are in line with general literature, with smaller farms and certified farms showing higher productivity per hectare than bigger and non-certified farms. Also, attending training and the use of fertilizer have a significant correlation with yield increases. Farm owners and farmers that had more training

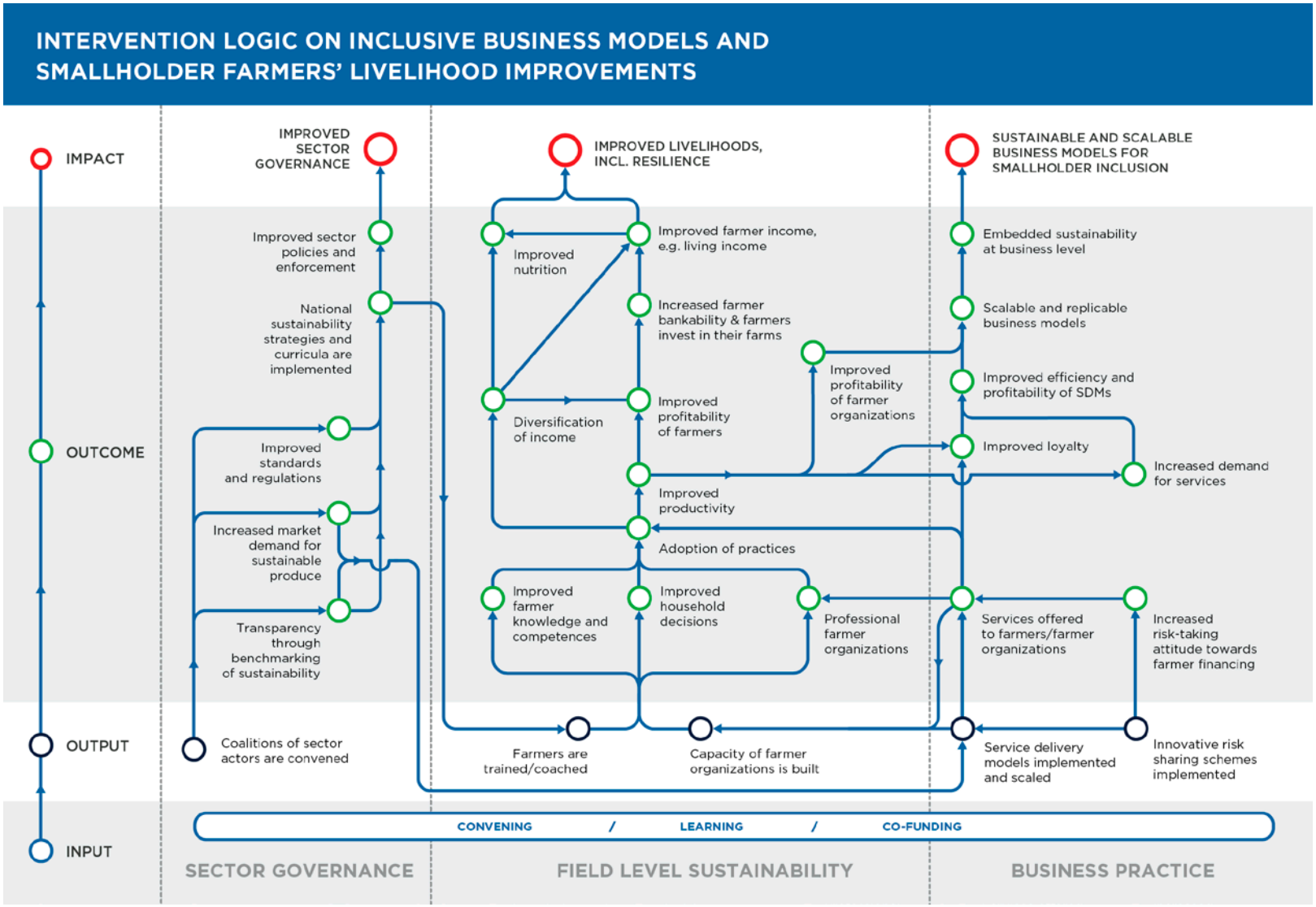
invested more in their farm. A large share of the farmer population remains below the poverty line: 35 % below 1.25 USD/day and 54% below 1.9 USD/day.

Table 4.3 Field-level sustainability targets for smallholder theme (by 2020)

	Cotton	Coffee	Cocoa	Tea	F&I
Farmers trained	3.500.000	30.000	30.000	140.000	50.000
Farmers adopting GAP	2.625.000	22.500	22.500	98.000	30.000
Farmers with improved livelihood/yields	2.625.000	30.000	30.000	100.000	27.000

Source: IDH

Figure 4.1 Intervention logic for impact theme: Inclusive business models and smallholder farmers' livelihood improvements



Source: IDH

4.2 Improving smallholder farmers' livelihoods by improving sector policies and strategies

IDH intends to improve the livelihoods of smallholder farmers through supporting multi-stakeholder initiatives, geared towards developing (national) sustainability strategies, both public and private. The implementation of such sustainability strategies is expected to improve smallholder farmers' livelihoods.

There is strong evidence from the wider literature but also from early results by IDH, that IDH has a contributory role in multi-stakeholder processes which lead to the development of (country-specific) sustainability strategies. But there is only limited evidence as yet that such sustainability strategies indeed lead to improved smallholder farmers' livelihoods.

Figure 4.2 *The evidence base on impact on farmer incomes through improving sector policies and strategies*

	Impact before 2016			
	Literature			
Impact story	**On impact others than IDH**	**On IDH contribution to impact**	**Interviews IDH**	**Sector survey**
IDH → MSP → sustainability strategies	●		●	●
Sustainability strategies → improved livelihoods	●		–	–

See chart's legend on page 11

In the next two paragraphs, we will present the evidence base of key assumptions in the impact story.

4.2.1 Does IDH support to multi-stakeholder initiatives lead to the development of (national) sustainability strategies?

Evidence on IDH's contribution to changes

IDH has a role in supporting the major sectoral multi-stakeholder platforms, which is acknowledged by most stakeholders[3]. We understand from both interviews with IDH, first results from the RMF as well as the sector survey, that indeed IDH has contributed to the formation of sustainability strategies in some countries. For instance through their support to national platforms and policy formulation, in Vietnam, Uganda and Cote d'Ivoire, but also in countries like Brazil.

In Uganda for instance, IDH supported the harmonisation of extension materials in the coffee sector, an activity which 'was recognised by the Ministry of Agriculture as an example of how to integrate coffee-specific extension into the new national extension strategy'[4]. In Vietnam, a National Sustainability Curriculum for the coffee sector and the Vietnam Coffee Coordination Board have been developed and established under the Sustainable Coffee Program supported by IDH. Other National Sustainability Curricula for the coffee sector have been established in Tanzania, Colombia and Brazil. In the cocoa sector, IDH indicates that convening activities in Cote d'Ivoire have led to more general acceptance by companies of the need for farmers to apply fertilisers (specially nitrogen) and that small steps are made in moving towards cocoa fertiliser recommendations. It has also led to companies testing different mechanisms to actually deliver fertilizer at the doorstep of farmers.

Since IDH stepped in as a partner to the Better Cotton Initiative (BCI), it has played a major role in integrating the BCI standard into national standards through close collaboration with local governments of countries like Mozambique and Brazil. Its support to BCI assisted these countries in developing their sustainability strategies. Both Turkey and Brazil developed their local self-sustaining BCI chapters.

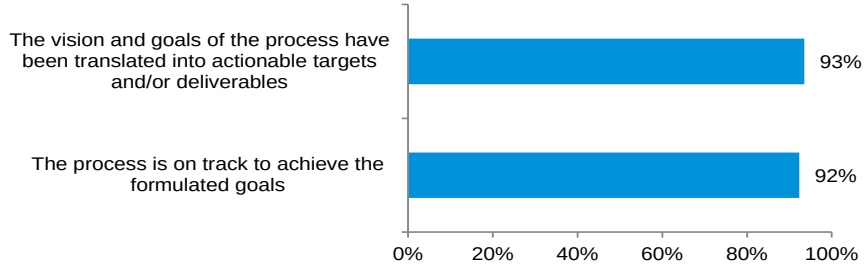
Multi-stakeholder platforms are also central to the Fresh & Ingredients program, which hosts the Sustainable Fruits and Vegetables Initiative (SIFAV) across a range of countries in Africa, Asia and South America, the Sustainable Spices Initiative, active in both India and Vietnam, the Sustainable Vanilla Initiative in Madagascar , the Sustainable Nuts Initiative in India and West Africa, the Plants & Flowers Initiative, the Sustainable Grapes Initiative in India and the global Floriculture Sustainability Initiative. All of these initiatives have contributed to the aim of bringing stakeholders in the sector together around commonly agreed targets.

Another piece of evidence for successful multi-stakeholder initiatives is the collaboration of Unilever, Tata Global Beverages and the Tea Board of India on Trustea, addressing complex sustainability issues such as gender and living wages.

In Malawi, a similar deep-dive exchange on key sustainability issues is organized in the Malawi Tea 2020 Roadmap, which has led to the first-ever Collective Bargaining Agreement (CBA) in the Malawi tea industry, agreed between the Tea Association of Malawi (TAML) and the Plantations Agricultural Workers Union. Through this CBA wages for 50,000 workers rose from 660 to 1178 Malawian Kwacha per day[5].

Almost all (93%) sector survey respondents agree that within their sector, visions and goals of the multi-stakeholder process have been established through sector collaboration, and that they have been translated in actionable targets and deliverables. Furthermore, 92% of the respondents indicate that the multi stakeholder process is on track to achieve the formulated goals. It needs to be verified in a future assessment what IDH's specific contribution has been to these multi-stakeholder processes.

Figure 4.3 *Percentage of stakeholders agreeing with statements on strategy formation through sector collaboration IDH is involved in (N = 215 and N = 209)*



Evidence from the wider literature on the plausibility of IDH's approach

In general, round tables or sector platforms such as the ones in which IDH is involved tend to work towards building a shared vision amongst stakeholders and formulating strategies to be implemented by the private and the public sector in order to reach a pre-established goal. There is sufficient evidence that these platforms indeed support an agenda-setting[6], in line with IDH's strategy.

Some authors argue that such sector approaches tend to be too uniform and addressed through tool-box approaches rather than contextualised innovations[7]. We have seen, however, that even though the IDH approach could be seen as similar over the sectors and countries involved, the actual implementation in terms of issues addressed and stakeholders involved in the multi-stakeholder initiatives are adapted to the local context of the sector and country in question, addressing therefore the drawback of such approaches as mentioned by some authors.

Even though comparative research on the dynamics of sector initiatives is still scarce but some best practices are suggested for multi-stakeholder moderation[8]:

- stakeholder participation in the design and monitoring of implementation;
- legitimacy involving all those affected and those affecting the scheme

- put in place grievance mechanisms
- manage power relations
- create market demand

An analysis of IDH's activities combined with the results from interviews and sector survey responses confirm that the IDH approach to managing multi-stakeholder initiatives includes several of these best practices (see Appendix 5). There is little information yet on whether and how in IDH's initiatives power relations are managed and grievance mechanisms are handled.

Another element we derive from the literature that can contribute to the success of multi-stakeholder platforms through the creation of a cooperative atmosphere are small-scale projects between some of the partners in the platform have proven to be conducive to establishing larger scale initiatives. They may contribute to building trust between project partners[9]. We will verify in the next evaluation activities (in 2018) whether such initiatives have indeed taken place by the IDH supported platforms and if so, what their results were in terms of their effectiveness in trust building and a subsequent implementation at scale.

4.2.2 Do sustainability strategies lead to the implementation of public and private policies that improve farmer livelihoods?

Evidence on IDH's contribution to changes

To this date we have found little evidence that the sustainability strategies promoted by these platforms have been implemented at scale, which is not surprising considering that these multi-stakeholder platforms are still new and also that implementation of policies can take time. Evidence on the improvement of smallholder farmers' livelihoods through these implemented policies is yet to be provided. We expect to include such information in the coming evaluation reports.

Evidence from the wider literature on the plausibility of IDH's approach

There is also limited evidence from the wider literature, which is in line with findings from IDH's contribution and again not surprising considering the nature of these activities. The implementation of policy proposals by national governments is a process that can take time. In public policy formulation and implementation, the coordination with an inter-ministerial group of policy makers is often a key factor for effectiveness, because different government agencies tend to have specific agendas and political aspirations[10].

Multi-stakeholder initiatives aiming to develop and set standards do not necessarily impact positively on smallholder farmers' livelihoods (see also section 4.3); there is little evidence on field-level effects of these implemented policies. There are indications however that these effects tend to concentrate in larger farms. For example, the impact of round table induced certification in soy and palm oil is especially on farmers with larger landholdings not smallholder farmers[11].

The literature suggests some enablers and barriers for effectiveness of IDH-like support to multi-stakeholder platforms which are important to be aware of. For example, national sustainability initiatives are not always in line with international sector initiatives which can hinder their development. Some scholars explain this with reference to major incentives for multinational firms to establish supra-national initiatives and voluntary standards, to avoid country- specific state regulations that may hamper global trade[12].

Also, country-specific sustainability strategies that emerge in a particular sector tend to have components (credit, investments, and trade issues) that transcend the sector and need negotiation between sectors in the economy. The participation of non-sectoral (e.g. national) unions/federations of firms, workers or farmers, with established links to multiple ministries in the sector platform discussions, may

facilitate policy implementation. In line with IDH's approach, evidence shows that certain sustainability goals are only possible at landscape level, and thus require inter-sectoral geographical coordination[13]. This sector focus also concerns the international round-tables, where the communication with the public sector in each country tends to be limited to only one ministry, which may hamper the effective implementation of public policies within these countries.

4.3 Improving smallholder farmers' livelihoods through adoption of good agricultural and business practices

Apart from working on improving sector governance, IDH also supports businesses and other partners to deliver services to farmers. These services are to assist them to improve their farm management, which in turn will improve their incomes and livelihoods.

Being a baseline report, we could, of course, not yet register a change in farmer practices due to the current IDH support. However, there is strong evidence, both from early results of IDH activities and the wider literature on agricultural training and extension that this type of support leads to an increased adoption of better agricultural practices. The literature on the impact of these good agricultural practices on profitability, household income and nutrition is much more contested, with only a moderate evidence base, where change is unclear. The literature does suggest that the more complete the support package to farmers, the higher the effects on farmer incomes. This reflects positively on IDH's approach to broaden the range of services provided to farmers through the companies farmers supply to.

Figure 4.4 The evidence base on impact on farmer incomes through the adoption of good agricultural and business practices

	Impact before 2016			
	Literature			
Impact story	On impact others than IDH	On IDH contribution to impact	Interviews IDH	Sector survey
IDH → better agricultural and business practices	●	●	●	●
Better practices→ improved productivity	●	●	–	●
Better practices→ improved profitability and income	●	●	–	–

See chart legend on page 11

4.3.1 Do IDH supported service delivery models lead to the adoption of good agricultural and business practices?

Good agricultural practices differ per sector. In all these sectors, the improvement of production techniques but also business practices by farmers is a key issue. IDH supports companies to develop and implement various training modalities, and also supports public extension schemes to implement training modalities, which are connected to the delivery of other services such as access to credit and inputs

(planting material, fertiliser, crop protection products), and often also with an incentive package, like a price premium (certification).

The intervention modalities in which training on good agricultural practices is a key feature, without or with limited support in credit and inputs, are Farmer Field Schools, training and coaching models, and certification-related training. More and more, 'farm business schools' are also included as training components, and farm development plans are established with the farmers to plan farm investments for the next few years to optimise profitability.

Evidence on IDH's contribution to changes

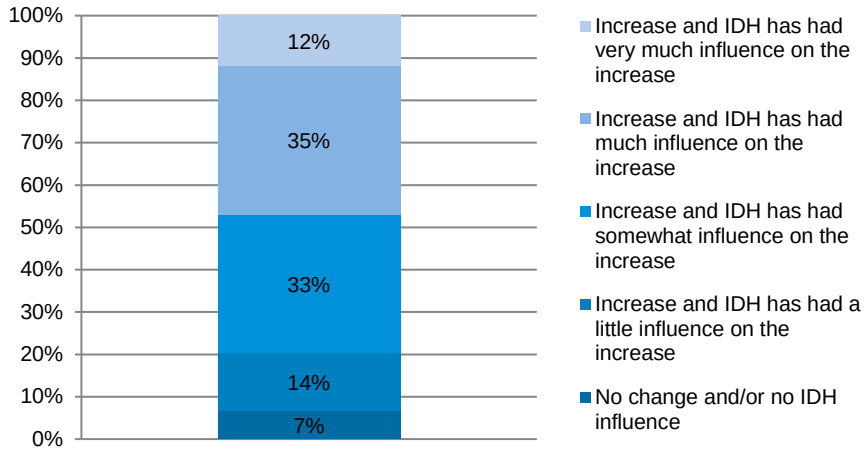
There is strong evidence from a limited number of impact evaluations on IDH supported interventions in the tea and cocoa sectors that training leads to the adoption of good agricultural practices[14]. However, such results do not imply that all farmers apply all recommended practices because of the training programs which is also a concern raised in the wider literature.

In the cotton program, the IDH support to BCI, training close to 750,000 farmers while drastically reducing the production costs of sustainable cotton, has increased the total area of sustainable cotton production to close to 2 million hectares. While BCI succeeded in reaching large-scale sustainable production, it remains to be seen to what extent cotton farmers apply the practices they were taught.

IDH has supported private actors in providing a broad spectrum of services. In the cocoa sector, the CPQP (Cocoa Productivity and Quality Program) launched the idea of the productivity package: a mix of services enabling farmers to increase their productivity to 1.000 kilogram per hectare. For the CORIP (Cocoa Rehabilitation and Intensification Program), IDH contributed to the establishment of 10 Resource Service Centres to offer a wide range of services, from inputs to credit. Future research needs to show to what extent these models would be replicable.

The sector survey results confirm this moderately positive outlook on adoption, and IDH's contribution: 47% of all respondents that could give an answer indicated that farmers have increased the adoption of good agricultural practices, and that this change was influenced much or very much by IDH.

Figure 4.5 *Stakeholders perception on change in adoption of practices and IDH's influence on that change (N = 177)*



Evidence from the wider literature on the plausibility of IDH's approach

The adoption of better practices is considered an essential component to get a more sustainable production. Though the wider literature differs on the cost-effectiveness of more-intensive or less-intensive training modalities, the assumption that training has a positive effect on the adoption of good agricultural practices is not contested[15]. Some studies indicate that the effects on knowledge are large immediately after the training, but can be diluted over time[16].

In discussions with two large companies sourcing from smallholders at the Innovation Forum workshop on 'how to build supply security and resilience with smallholder farmers' in March 2016, they indicated that farmers did not generally

adopt new practices through participating in large scale and relatively uniform training programs alone.

This is in line with the literature, and the experience with modelling the expected benefits of interventions through the IDH supported Service Delivery Models (SDM) studies: the most successful programs provide training alongside other interventions to address farmer constraints along the whole value chain, especially market access and access to inputs/credit[17].

Some of the programs IDH supports assume that farmers who do not participate in the trainings will learn from their neighbours and also adopt practices (spill over effects). There is, however, only limited evidence of such trickle down/diffusion effects from trained farmers to their neighbours[18]. It is important to note that the fact that there is limited evidence does not mean that spill over effects do not happen but simply that these effects are not thoroughly available in the current literature.

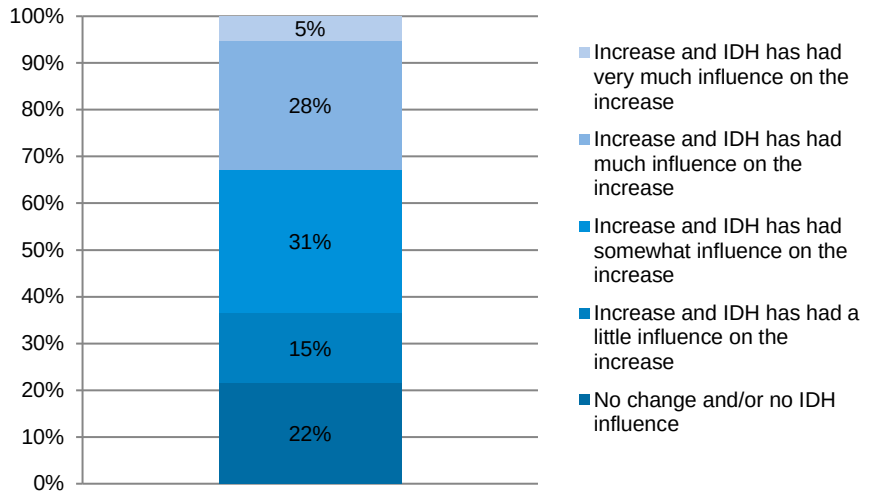
4.3.2 Does adoption of good agricultural practices lead to improved productivity, profitability, higher incomes, and better nutrition of smallholder farmers?

Evidence on IDH's contribution to changes

There is limited but positive evidence from IDH supported interventions that IDH support leads to higher yield. In two studies in the tea sector, this yield increase is connected to the adoption of practices[19]. One study in the cocoa sector in Ghana concludes that adoption of practices is associated with higher yields and profitability, and farmers still remain poor in terms of income earned per day[20]. Another study in the cocoa sector in Ghana shows impact on cocoa profitability because project participants receive a higher price for their cocoa due to UTZ certification[21]. Farmers in the IDH Cashew Program showed an average net income increase of USD 91 per farmer due to the farmer training in Good Agricultural Practices[22]

Thirty-three percent of IDH stakeholders are positive about IDH's contribution to yield increases. They indicate that yields have increased and that IDH has had much or very much influence on this increase.

Figure 4.6 *Stakeholders perception on change in yields and IDH's influence on that change (N = 134)*



Evidence from the wider literature on the plausibility of IDH's approach

While the effects of training on knowledge and adoption are supported by most studies, the positive impact of training modalities on farmer income is more contested. In most of the evaluations, the impact of training on productivity, profitability and income is limited and only positive for some subgroups of beneficiaries[23]. The inclusion of inputs next to the training improves the effectiveness[24]. Good agricultural practices sometimes imply additional costs, which

are not compensated by higher yields (e.g. higher labour costs because of organic production, using different and more costly pesticides, post-harvest grading requirements, etc.).

Some scholars point to the tendency that local lead firm partners, exporters or traders, shift the standard compliance costs to their suppliers. These adjustments impose additional costs on smallholders and in many cases lead to marginalisation of smallholders[25]. This is a point to be taken into consideration by IDH when discussing initiatives with private partners that require additional investments in the supply chain. The learning agenda around Service Delivery Models has already shown to be a good starting point for bringing farmer costs and their return on investment to the forefront.

In relation to food security, most agricultural interventions targeted at increasing it do increase food production, but do not necessarily improve nutrition or health within participating households[26]. On the other hand, those projects investing in human capital (such as nutrition education & gender issues) next to production have greater chance of effecting positive nutritional change[27]. Over the past year, IDH has already started to pay more explicit attention to malnutrition and gender issues in its tea and cocoa programs. This could be further strengthened in the future.

The literature suggests that the more complete the support package provided to farmers, the higher the effects on income[28]. This reflects positively on IDH's approach in which more and more specific groups of farmers are offered multiple services through service delivery models (discussed in Section 4.4). But more complete packages can be seen as too labour and time-intensive to be affordable for most farmers, meaning that these can be more suitable for commercially oriented farmers.[29]. The use of ICT (Information and Communication Technology) is presented by many as a venue to counteract this, lowering training costs, expanding reach and improving the provisioning of timely advice on pests or market opportunities to smallholders[30].

4.4 Improving smallholder farmers' livelihoods through developing scalable and replicable service delivery models

An important element in the IDH strategy is to assist private sector partners to think strategically on service delivery models, by analysing what benefits different models could bring to both the companies involved and the other actors in the supply chain, including smallholder farmers. By strategic thinking, fed by business model analyses, potentially replicable service delivery models are designed and tested at field level by the companies. With the improved service delivery, the smallholder farmers are expected to increase their incomes. Not only because they change their farm and management practices of the crop they already work on (see Section 4.3), but also because the new business models open up new strategies that improve total household income, not only the productivity of the target crop.

There is strong evidence, both from early results of IDH activities and the wider literature, that the supported pilots of service delivery models increase the access to services (training, inputs, and credit). The published literature reports high income effects of SDM, for example in contract farming arrangements, in which farmers are contractually bound to supply a certain quantity and quality of their crop to a buyer, who often provides these farmers with a range of services. Studies report an average 40-80% income increase related to contract farming models. However, these results are (too optimistic because failing service delivery arrangements tend not to be published (survivor bias) and only large effects are statistically significant in research with small samples and submitted for publication in journals (publication bias). Contract farming between a firm and farmers is increasingly common to organise service delivery in the value chain, especially in products that have no local market. More complex service delivery models, such as interlocking contracts with multiple parties, incur higher transaction and governance costs. There is,

limited evidence on the scalability and replicability of these service delivery models (for more information see section 4.4.2).

Figure 4.7*The evidence base on impact on farmer incomes through developing scalable and replicable service delivery models*

	Impact before 2016			
	Literature			
Impact story	On impact others than IDH	On IDH contribution to impact	Interviews IDH	Sector survey
IDH → SDMs → Improved access to inputs, credit	●	–	●	●
SDMs→ scalable and replicable in the sector	●	–	–	–

See chart legend on page 11

4.4.1 Does IDH support lead to service delivery models that provide increased access to inputs, credit and information to smallholders at scale?

Evidence on IDH's contribution to changes

Service delivery models (SDMs) are supply chain structures, often formal or informal contractual arrangements between chain actors, which provide services such as training, access to inputs and financing inputs, credit, information and also to markets and value adding services like processing to farmers in order to increase their performance and sustainability[31].

Early evidence exists that IDH has contributed to the implementation of pilot service delivery models in which farmers are offered multiple services, for example in the cocoa sector in Cote d'Ivoire and in the coffee sector in Uganda. The extent of this contribution is not always clear, as these service delivery models are implemented by companies who already supported farmers with services before IDH started to work with them. The major goal of IDH is to facilitate uptake at scale. This implies that this process of scaling of SDM implementation/uptake needs to be described in detail in order to verify if IDH is a necessary factor in the configuration of actors that help companies to scale SDMs. These two projects were covered by a research endeavour, initiated by IDH, to analyse 12 Service Delivery Models in 9 countries in the coffee and cocoa sectors. IDH expects to implement more SDMs in the coming years.

The SDM pilot in Cote d'Ivoire has been made possible through an innovative finance scheme in which IDH shares the risk of a loan provided by IFC to a large cocoa buyer. A study on the IDH contribution to f the SDM pilot in Cote d'Ivoire by an independent party is currently underway.

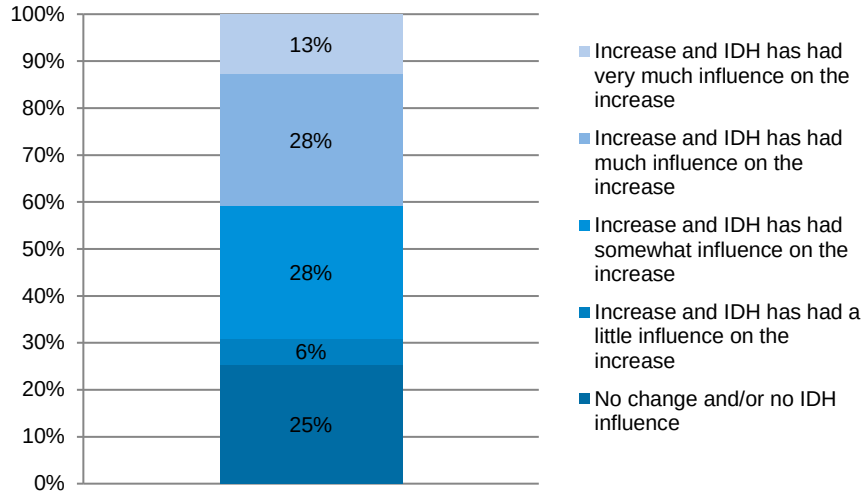
There is also early evidence from the sector survey that indicates that IDH is considered as a contributory factor to the increase in service delivery. Seventy-five percent of the private sector respondents to the sector survey indicate that they have increased service delivery to smallholder farmers since 2013, and that 41% of the respondents indicated that IDH contributed much or very much to that change.

Through the close involvement of IDH with its private sector partners, they are willing to invest substantially in sustainable business models and service delivery. For example, in the coffee program, the strong engagement with big roasters has triggered mayor players in the sector to invest in improved services to farmers. With €12 million injected from IDH, IDH has mobilized €50 million in sustainable coffee production. Due to these investments in services, 29% of global sales of green coffee is now sustainably sourced[32].

Partners in the IDH cocoa program are experimenting with service delivery models in which farmers are paying for their package of services on credit. This allows more farmers to access the services they could previously not afford. Farmers now use the money from their yields to pay back the cost of their services. While potentially increasing access to important services, services on credit also create the risk of high debts when yields are below expectations.

In the IDH cashew program, IDH supported the development of a traceability system, which has been implemented now by key cashew players, who due to the involvement of IDH have started to source directly from smallholders.

Figure 4.8*Change in service delivery by companies to smallholder farmers and IDH's influence on that change (N = 71)*



Evidence from the wider literature on the plausibility of IDH's approach

The IDH support to SDMs represents a change from IDH's earlier support which was more centred on the development of voluntary standards and certification schemes, as well as different training models to improve farmers' livelihoods. The economic sustainability of the services provided under these certification schemes is increasingly questioned[33] and other business models to organize service delivery, such as different modalities of contract farming, are being explored[34]. IDH is considered by many as a key partner to develop these new ways of delivering services to farmers. However, is not unique in this endeavour. Especially the World Bank and USAID have traditionally played a major role in the set-up of novel service delivery models for farmers[35].

Contract farming has become increasingly popular as a business model to get to a more sustainable production, especially in high-value export crops and/or markets that pay a price-premium[36]. The firm needs to contain the risk of side-selling by farmers, especially when provided on credit, in order to recover its investment in the service provisioning to these farmers[37].

The literature reports highly positive income effects of contract farming for smallholders (on average a 62% increase), However, a recent systematic review[38] shows that this literature is highly biased, and presents a too optimistic picture. Most studies cover contract farming arrangements that have been in place already for several years and, therefore, leave out the negative results of contract farming arrangements that fail in the first years (survivor bias). The review also shows that scholars tend to publish only statistical significant findings. Because these studies use relatively small samples, only large effects are published (publication bias). An issue raised in the literature[39] is that these services have to prevent the 'lock-in' of farmers when service provision leads to a monopoly with a lack of price competition among buyers[40] and the contract has provisions on land or credit that create the impossibility of farmers to move to a different buyer because they have a multi-year contract. When farmers are free to opt-out of the contractual arrangement, negative effects are unlikely to last.

4.4.2 Are the service delivery models scalable and replicable?

Evidence on IDH's contribution to changes

The SDM models supported by IDH will be tested in the next years. IDH expects to know more in 2020 about whether the SDMs developed and implemented are scalable and replicable. This much-needed evidence will consist of process descriptions of companies that, for example, adopt the SDMs without external support, or extend the SDMs to other regions/countries, or banks that take over the loan portfolio from the company and scale it up as one of their regular financial services offering (as is the plan for Cote d'Ivoire).

Evidence from the wider literature on the plausibility of IDH's approach

One of the main incentives for firms in order to scale and replicate new business models is their financial sustainability. Higher consumer prices are often needed to recover investments, and certification is seen as a way to communicate to consumers that the product is more sustainable than the mainstream product in the market. In the agricultural sector, certification may enable large corporate buyers to interact directly with producers and communicate their quality requirements, rather than communicating only through intermediary traders. Such direct firm-farm interactions could ultimately substitute or rationalize the role of such 'middlemen' in the future, further streamlining supply chains[41]. There is a concern, however, that the proliferation of labels will lead, or has already led, to consumer confusion and a consequent decrease in consumer demand[42].

Many brands are working to differentiate their certified products on sustainability credentials and not on consumer price. The absence of a clear price-premium, however, negatively affects the possibilities of the supplying firms to recover their investment in service delivery and therefore their willingness to scale up these SMDs. Contract farming by a firm is increasingly common in developing countries and especially in sectors where there is no local market for the product or variety (broiler chicken, perishable vegetables, cereal varieties for breweries, etc.). Often the contracts between the firm and the farmers are facilitated by farmer organizations. When farmer organizations are absent, a price premium (a substantial higher price than in the local market) is necessary to convince farmers that their loss of autonomy in production and sales is fairly compensated. The provisioning of credit and/or inputs without a price premium is often not sufficient to prevent farmers to opt-out or side-sell (part of) their produce[43].

The service provisioning and need to offer attractive prices makes it costly for firms to contract with many small firms, and creates a tendency to concentrate on a smaller number of larger farmers[44]. Larger farmers need less additional investments in services or extension support. Also, for them, because of the larger volume, even a small price premium per kilo still results in a total profit that compensates for the costs that have to be made to contact and contract with the firm.

Interlocking contracts, contractual arrangements that include commitments of various stakeholders in the value chain, not only the firm and the farmers, are increasingly common. Generally, these interlocking contracts include a financial institution that provides the trade capital for transactions between firms, with a forward-sales agreement as guarantee for the loan[45]. Warehouse Receipt Systems are an example of interlocking contracts, where farmers get cash payment when they deposit their produce in a specially designated warehouse, co-managed by a bank to reduce the risk for default. There are still many challenges to convert these multi-party pilot service delivery models into economically sustainable business models[46]. Despite many pilots to include smallholders in high value-adding supply chains by these multi-party service delivery models, scaling or scaling up of these models has so far proven elusive[47].

Brand image is the main driver to generate markets or up-mark prices that can be used to pay for the improved service provisioning by firms to farmers. In doing so,

firms usually respond to the demands of their powerful primary stakeholders[48]. NGO engagement and co-creation is not a primary driver for the adoption of new service delivery models by firms; though primary stakeholders may respond to pressure from (more hostile) NGOs[49]. The literature on the effectiveness of public co-funding to private business initiatives is, however, inconclusive[50]. Based on a review of several private-sector development instruments, the DCED (the Donor Committee for Enterprise Development) argues that public funding for a multi-stakeholder partnership appears as more effective than co-funding pilots of single firms to spur innovation and sector growth[51].

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4.5 Conclusions on IDH's contribution to public good impact and the plausibility of IDH's approach

The table below summarises the key conclusions for the Impact Theme smallholders. Certain impact stories do not have enough supporting evidence, the next page explores the recommendations to IDH in order to address these gaps in the coming years in order to allow for a full impact story to be told in 2020.

Figure 4.9 *Summary of conclusions for impact theme Inclusive business models & smallholders farmer livelihood improvements*

Smallholder inclusion and improved smallholder farmer livelihoods …	Was enhanced through...	Which has led to...	Evidence from wider literature	Evidence on IDH contribution to impact
… by improving sector policies and strategies (public-private) **Result area: sector governance**	Support to multi-stakeholder processes OUTPUT	Formulation of national agenda-setting sustainability strategies in a sector OUTCOME		
	National sustainability strategies OUTCOME	Improved sector governance, creating an enabling environment for field level change IMPACT		–
… through adoption of good agricultural and business practices by farmers **Result area: field level sustainability**	Support to farmers with services, including training, inputs, credit OUTPUT	Increased adoption of good agricultural practices* OUTCOME		
	Increased adoption of good agricultural practices OUTCOME	Increased yield per hectare OUTCOME		
	Increased adoption of good agricultural practices OUTCOME	Increased profitability, household income and nutrition** IMPACT		
… through developing replicable service delivery models **Result area: business practices**	Support to the development of service delivery models OUTPUT	Increased the access to services (training, inputs, credit) OUTCOME		
		Scalable and replicable service delivery models OUTCOME		–

**This does not imply that all farmers adopt all practices*
*** The more complete the support package, the higher farmers' incomes.*

See legend on page 11

4.6 Baseline situation impact theme inclusive business models & smallholder farmers' livelihood improvements

At this moment, as some studies are not finished and metrics were not yet available at the time of writing, it is not possible for us to report on all required KPIs to tell a full baseline story. In the tables below the available data is presented. In the coming years additional KPIs and analysis of the combined information will be included.

Table 4.4 *Selected baseline metrics impact theme inclusive business models & smallholder farmers' livelihoods improvements*

	Private sector investments in program (mln euro)	Business cases developed to show the potential of sustainable practices	Changes in policies in line with increased sustainability and management of resources	Number of producers/workers trained (#)	Volume of sustainably produced crop (MT)	Farmland area where practices applied (ha)
Cocoa	24.9	0	0	0	0	0
Coffee	19.8	0	0	0	0	0
Cotton	21.6	-	-	1,500,000	3,000,000	3,500,000
Fresh & ingredients	6.4	0	-	0	0	0
Tea	9.4	0	0	193,000	220,000	30,530
Landscapes – Vietnam	0.0	0	0	0	0	0
Landscapes - Cote d'Ivoire	0.0	0	0	0	0	0
Landscapes – Indonesia	0.0	0	0	0	0	0
Landscapes – Ethiopia	0.0	0	0	0	0	0
Landscapes – Kenya	0.0	0	0	0	0	0
Landscapes – Liberia	0.0	0	0-	0	0	0

Cells marked with '-' mean that baseline data was not yet available for a certain program for a specific indicator or that the indicator has not been selected by the program as an indicator to report upon. These cases are not distinguished in the table.

Source: IDH Result Measurement Framework

Table 4.5 *Baseline information for PoC Improved productivity and livelihoods (including gender and nutrition) for cocoa farmers in West Africa (Cote d'Ivoire). Amongst others by financing of Productivity Packages (PP) for smallholder cocoa producers in Cote d'Ivoire: Farm productivity and farmer investment per acreage quartile.*

Quartile by acreage	Acreage (ha)	Productivity (kg bean/ha)	% female farmer	Labour time (h/ha)	Total cost (GHS/ha)	Total cost (GHS/kg)
1	0.85	796	35%	266	973	4.83
2	1.82	659	24%	151	683	1.19
3	2.88	578	15%	140	520	1.42
4	6.46	407	15%	79	291	1.23

Source: Kuit Consultancy (2016)

Table 4.6 *Baseline information for PoC Improved productivity and livelihoods (including gender and nutrition) for cocoa farmers in West Africa (Cote d'Ivoire). Amongst others by financing of Productivity Packages (PP) for smallholder Cocoa producers in Cote d'Ivoire: Productivity and gross income per investment class*

Investment class (GHS/ha)	% farmers in class	Average productivity (kg/ha)	Avg. gross income (GHS/ha)
<100	20	378	2117
100-500	42	587	3286
500-1000	22	720	4032
1000-1500	8	761	4264
>1500	8	796	4457
TOTAL	**100**	**603**	**3378**

Source: Kuit Consultancy (2016)

4.7 Recommendations for measuring IDH's contribution to public good impact towards 2020

Please find below an overview of recommendations that will assist the measurement of the impact of IDH in the next years. The activities are proposed based on the challenges with the evidence base for this impact theme encountered during the baseline study. Thus it does not contain a list with all research activities and analyses to be undertaken. A total overview on how we will measure the impact of IDH can be found in Chapter 2

One of our recommendations is to conduct additional stakeholder interviews around IDH's Proof of Concepts, and specifically to assess changes in sector governance and business practices applying the 'process tracing' methodology[vi]. The stakeholder interviews we conducted have proven to generate very detailed and specific information on activities, outcomes and impacts, information which cannot easily be collected through the sector survey. As IDH also plans to conduct stakeholder interviews for its annual Proof of Concept report, it will need to be discussed who will be doing which interviews and how, to avoid stakeholders to be interviewed twice on similar topics, but also to ensure that high quality information on the impact of IDH's activities on sector governance and business practices will become available.

Please find more specific recommendations in Appendix 2 (for the IDH Proof of Concept studies) and Appendix 3 (concrete recommendations per impact theme).

Table 4.7 *Overview of recommendations for the impact theme Inclusive business models & smallholders livelihood improvements*

Impact routes	4.6.1 Sector policies and strategies → Improved sector governance, creating an enabling environment for field level change	4.6.2 Adoption of good agricultural and business practices→ smallholder farmer livelihoods	4.6.3 SDMs --> effectiveness, replicability, scalability and adoption of similar SDM approaches by other companies
Key challenges in measuring IDH's contribution to impact			
	Evaluate IDH's contributory role in multi-stakeholder processes and whether they result in changes in public and private policies and strategies. Evaluate whether and how changes in policies and strategies lead to improved sector governance, creating an enabling environment for field level change.	Evaluate IDH's contribution to profitability, farmer incomes and nutrition. Understand for what type of farmers, do the interventions seem to work better.	Limited availability of empirical evidence on the costs, effects and impacts of the actual implementation of the SDMs developed by IDH and partners[vii]. To evaluate the conditions under which IDH supported SDM pilots are scalable and replicable.

[vi] Process tracing is a methodology is used to explain outcomes in psychology, political science and historical studies. Through process tracing it is established, per specific case, what (kind of) processes have taken place, which are verified by exploring real events in time in a transparent way, including whether other actors and factors influenced the processes and/or outcomes and impacts reached.

[vii] The SDM studies commissioned by IDH do not contain empirical evidence on the impact of the SDMs as they present the expected outcomes and impacts of SDM implementation based on a modelling exercise. In this modelling exercise, the studies have used data, but also assumptions on causal relations between outputs, outcomes and impacts, which is why the studies cannot be used to conclude on the impact of the SDMs and IDHs contribution to the SDMs. To do so, empirical evidence on the 'real life impact' of the SDMs would need to be collected.

			To evaluate whether changes in business practices at companies incite other companies to also change their practices.
Recommendations per evidence source			
In-depth studies on the IDH Proof of Concepts	IDH to ensure that information will become available for the Proof of Concepts, through applying appropriate research methodologies, on: 1. Changes in policies and strategies through the IDH program 2. Whether such changed policies/strategies lead to improved sector governance creating an enabling environment for field level change. A baseline assessment is not required for measuring such outcome and impacts.	Adapt the methodology for current study on cocoa in Cote d'Ivoire. Ensure a credible methodology for the impact evaluation study on the two coffee projects in Uganda to verify their impact on crop profitability, crop incomes and nutrition (e.g. research design, sample size)	IDH to ensure that information will become available, through applying appropriate research methodologies, for the Proof of Concepts on: 1. Changes in business practices through the IDH program and whether such changes have incited other companies also to change their practices. 2. The effectiveness, profitability, scalability and replicability of business models. The effectiveness of business models is sometimes already addressed through field level in-depth research. A baseline assessment is not required for measuring such outcome and impacts. Conduct comparative research on enablers/barriers for scalability and replicability between SDM pilots
Stakeholder interviews*	Conduct 10 additional stakeholder interviews in the coffee and cocoa sectors on sector governance changes, and whether they have created an enabling environment for field level change.		Interview 4 private sector stakeholders on scalability and replicability of the SDMs and IDH's contribution (2 for the coffee sector, 2 for the cocoa sector)
Sector survey	Include questions on IDH's contribution to policy and strategy changes and whether and how they have led to sector governance changes	Include questions in the sector survey on changes in income and nutrition	
Other**		IDH to explore with various partners/programs the possibilities to use their data for the measurement of impact at field level. Examples of such partners/programs are: Better Cotton Initiative (BCI), the Cocoa Rehabilitation and Intensification	Include monitoring information from the SDMs and Innovative Finance projects

		Programme (CORIP), the Cocoa Productivity and Quality Programme (CPQP), the African Cashew Initiative (ACI), Cropin data (India), Trustea, Aquaculture Stewardship Council (ASC) certification, Floriculture Sustainability Initiative (FSI), MPS***.

* In total, 10-15 interviews are already planned to be conducted in 2018 for the midterm review, and the same number in 2020 for the end line report. The number of interviews mentioned in this overview are additional to that number.

** The research activities in the “Other sources of evidence” category are not planned and budgeted for in the current evaluation program (2016-2020).

*** Initially MPS was the acronym for 'Milieu Project Sierteelt’. MPS merged with ECAS B.V. in 2007, and the new organization continued its activities as MPS.

5 Mitigation of deforestation

In this chapter, we present detailed information on the IDH impact theme 'mitigation of deforestation'. This includes the activities and targets for the impact theme as well as the intervention logic; how IDH intends to achieve the expected impacts. A large part of the chapter is dedicated to presenting the current evidence on IDH's contribution to impacts and information from the wider literature on similar interventions and strategies for each impact story.

The following impact stories are discussed in this chapter:

- 5.2 Mitigating deforestation through improving land use governance (public-private) to enable and enforce compliance
- 5.3 Mitigating deforestation by supporting the adoption of sustainable landscape management practices through Production Protection Inclusion (PPI) deals/ projects
- 5.4 Mitigating deforestation by creating effective and profitable PPI business models

Based on the existing evidence, we recommend research activities to enhance the evidence base towards 2020.

5.1 IDH support activities and targets

IDH supports reduction of deforestation and forest degradation through:

1. Convening trade and industry to create market commitments for sustainability and sustainable sourcing
2. Convening multi-stakeholder coalitions, in which companies, local governments, communities and civil society commit to Production, Protection and Inclusion (PPI)
3. Supporting commitment and implementation of PPI agreements and finance deals
4. Establishing verified region-based sourcing systems
5. Supporting the development of regulatory frameworks and strengthening enforcement capacity of regulations
6. Generating a knowledge base on Production, Production and Inclusion

Through these activities, IDH aims to reduce deforestation and forest degradation on **3.55 million ha** of land as a direct result of the IDH interventions.

Table 5.1 *Programs in which IDH supports mitigation of deforestation*

Programs in which IDH supports mitigation of deforestation
Cocoa
Coffee
Palm Oil*
Pulp & Paper*
Soy*
Timber*

*As of 2017, these programs will be combined in the IDH Landscapes program together with current ISLA activities and activities funded by NICFI.

More information on which countries IDH supports activities for each of these programs and specific targets for each program are available on Appendix 1.

Below is a summary of findings and description of the available PoC studies to date.

Table 5.2 *Description of available studies related to the Proof of Concepts for the impact theme mitigation of deforestation*

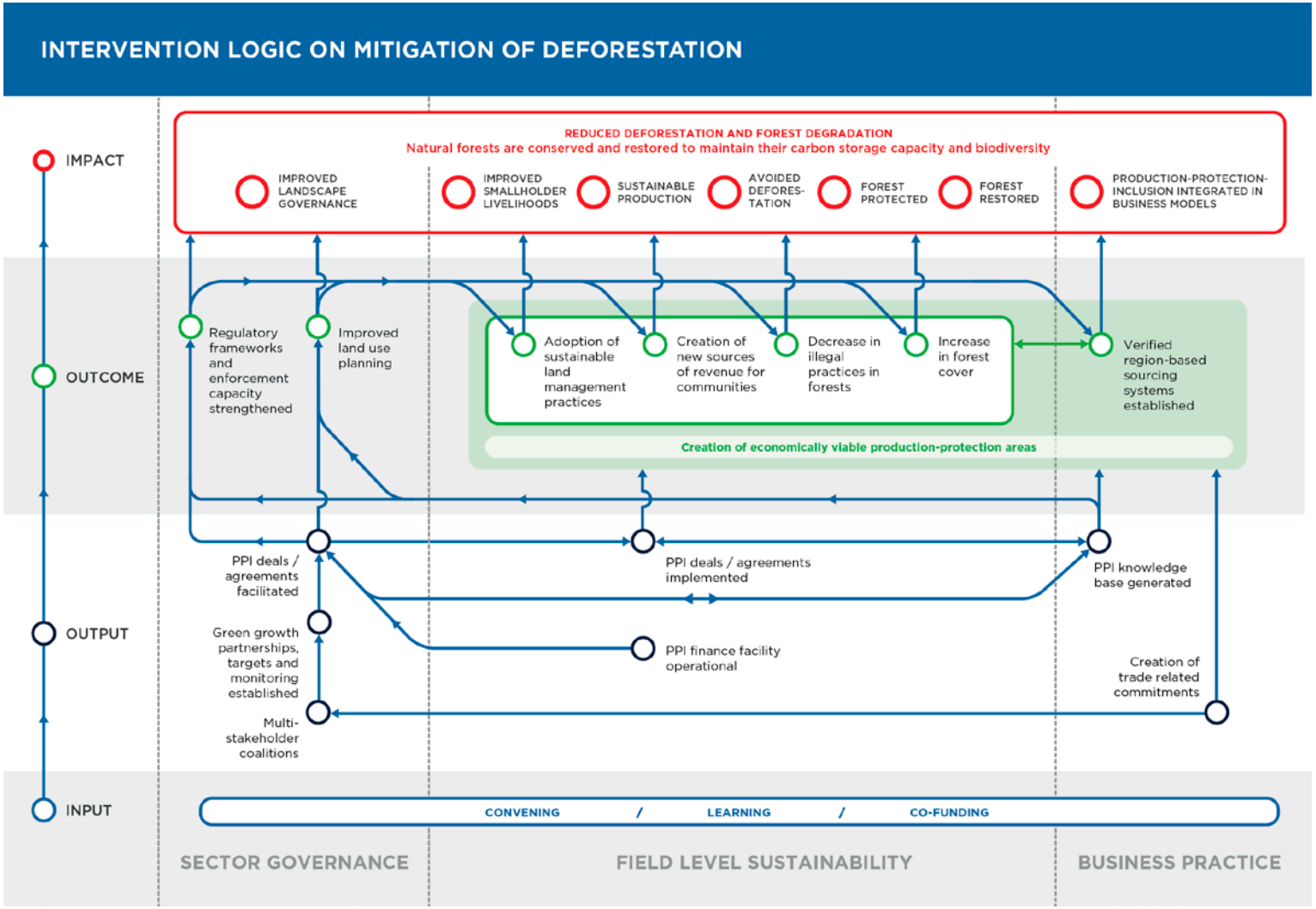
PoC	Landscapes approach for protection of High Conservation Value (HCV) forest and business cases for Sustainable Forest Management in West Kalimantan, West Kalimantan
Available study related to PoC	Kemitraan (2016) Forest Fire Prevention and Orangutan / Proboscis Monkey Conservation in Kubu Raya and Ketapang Landscape
Description	This baseline study describes the problem of forest fires, which have a severe impact on the orangutan population. . It describes several causes of forest fires: (1) local communities continue to clear land by burning; (2) local governments lack a clear strategy for prevention and (3) adequate spatial planning is lacking which could influence more positive behaviour. The study recommends a community-based forest fire management and conservation approach. Use could be made of participatory social mapping and border mapping exercises to involve communities in possible solutions. Also, communities should be trained on more settled farming, which will decimate slash-and-burn practices. Finally, it suggests building a coordination management for forest fire management with local governments.
PoC	Landscape model for sustainable management of Mau Forest watershed, Kenya
Available study related to PoC	CIFOR (2016) Inventory of promising interventions and identification of gaps for the Sondu River Basin, SW Mau, Kenya
Description	This study aimed to develop a baseline of current and proposed interventions of the IDH Initiative for Sustainable Landscapes (ISLA) operating in South West Mau forest in Kenya. Population increase, agricultural development and hydropower generation have led to conversion of forest to other uses. To address this problematic, the study proposes three types of interventions: (1) forest rehabilitation and afforestation through erosion control, tree planting and forest fencing; (2) watershed rehabilitation and water resources conservation through spring protection and wetland restoration and (3) improving livelihoods at community level through zero-grazing dairy, bee keeping and fish farming projects.

Table 5.3 *Main targets per programme*

	Timber	**Soy**	**Palm Oil**
Sustainable land use farmland	-	5.300.000	99.000
Intensification of farmland	-	-	-
Avoided deforestation	-	-	-
Forest restored	-	-	30.000
Forest conserved	2.789.000	-	260.000

Source: IDH

Figure 5.1 *Intervention logic impact theme: Mitigation of deforestation*



Source: IDH

This impact theme has been recently defined by IDH as one of the main four impact themes to focus on. Therefore, there is limited evidence yet on IDH's contribution to impacts for this theme even though they have supported mitigation of deforestation already in current programs. Also, the intervention logic for this impact theme has been under development until recently as it was designed parallel to the development of the NICFI program. One of the implications of this fact is that the targets for this impact theme have been redefined to specify the various types of effects IDH aims to have within this theme, including: sustainable land use, intensification of farmland, forest restoration and forest conservation.

Because of these dynamics, the information on this impact theme focuses on mitigation of deforestation through improving land use governance (public-private) to enable and enforce compliance (Section 5.2), mitigating deforestation by creating effective and profitable PPI business models (Section 5.3), and mitigating deforestation by supporting the adoption of sustainable landscape management practices through PPI deals/projects (Section 5.4) . In the next reports, we will further build the evidence base for the outcomes and impacts which are currently missing.

5.2 Mitigating deforestation through improving land use governance (public-private) to enable and enforce compliance

IDH supports the reduction of deforestation and the reduction of forest degradation through improving land use governance by public and private parties, to enable and enforce compliance.

Multi-stakeholder platforms can only be effective if the public and private sectors are aligned and work towards the same goal and incentives are in place for all stakeholders. This includes enforcement of laws and regulations which is a challenge in many countries. There is no clear evidence that voluntary sustainability standards by itself lead to mitigation of deforestation. The combined approach of IDH to strengthen regulatory and enforcement capacity, working with companies and other stakeholders to establish Production Protection Inclusion (PPI) deals and projects, and improve market demand for sustainable produce appears to be an approach that could be effective to mitigate deforestation.

The establishment of PPI deals is a new approach by IDH. With the Production Protection Inclusion approach, IDH aims to transform finance and business in such a way that they will sustain land-use practices in which the *production* of agro-commodities contributes to the *protection* of forests and the *inclusion* of smallholders and forest communities in the economy. The approach is built around a special financial facility to incentivise capital investment from the financial industry and with the 'potential to bring forest protection to unprecedented scale, at a lower cost for the donor investors (given the revolving and catalytic nature of the financial facility)'[52]. IDH will convene multi-stakeholder coalitions to come to agreements that enable investments into land-use based production, in return for hard commitments on protection and smallholder inclusion. PPI deals are to enable landscape actors to produce more efficiently, and stimulate them to take care of the landscape.

Figure 5.2 *The evidence base on mitigation of deforestation through improving land use governance (public-private)*

	Impact before 2016			
	Literature			
Impact story	**On impact others than IDH**	**On IDH contribution to impact**	**Interviews IDH**	**Sector survey**
IDH → Establishment of multi-stakeholder coalitions	N/A	–		–
Multi-stakeholder coalitions→ improved land use governance (public- private)		–	–	–
Improved land use governance (public – private) → Mitigation of deforestation		–	–	–

See chart legend on page 11

5.2.1 Does support to multi-stakeholder coalitions lead to strengthened regulatory and enforcement capacity and improved land use planning to mitigate deforestation?

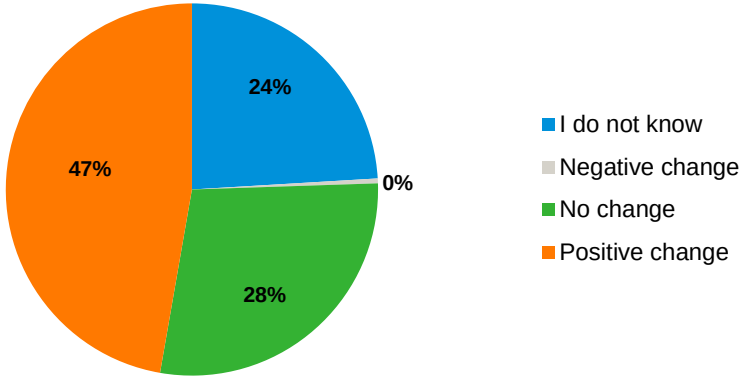
Evidence on IDH's contribution to changes

IDH activities related to Production Protection Inclusion arrangements are rather new. Therefore, we did not find robust evidence yet on the contributory role of IDH for changes in regulatory and enforcement capacity to mitigate deforestation.

First positive signs are seen in the landscape of West Kalimantan, which has been selected as the testing area for the recognition of High Conservation Value (HCV) by the Indonesian government, where the Ministry of Agriculture and the Ministry of Environment and Forestry are in the process of developing guidelines and recommendations at the highest level of Indonesian law[53].

Furthermore, 47 percent of the respondents to the sector survey indicate that policy changes have taken place in the last three years, geared towards forest protection. Of the people who indicated that policies had changed, 56% indicated that IDH had influenced that change, though the influence was limited (on average "some influence"). 44% indicated that IDH did not influence the policy change or did not know whether IDH influenced the change.

Figure 5.3 *Stakeholder perception on policy change regarding forest protection and IDH's influence on that change (n = 237)*



Evidence from the wider literature on the plausibility of IDH's approach

Multi-stakeholder coalitions aiming to mitigate deforestation have received much attention in the academic literature (examples are: FSC – Forest Stewardship Council, FLEGT- Forest Law Enforcement, Governance and Trade, RSPO – Roundtable on Sustainable Palm Oil, RTRS – Round Table Responsible Soy). However, still little is known about whether these certification initiatives have much impact in overall mitigation of deforestation[54]. There is little evidence that voluntary standards caused large scale changes in forestry management[55]. This explains why currently there is renewed attention towards the improvement of land use planning, national legislation and enforcement to reduce deforestation[56].

Another important issue with certification initiatives of some agro-commodities, relates to relatively weak traceability requirements in the chain of custody[57]. As a result there is a risk that produce from areas subject to deforestation still enters the supply chain, undermining the enforcement of the certification initiative. The PPI arrangements implemented by IDH aim to address the weaknesses identified currently in certification systems in relation to traceability. Furthermore, certification

initiatives tend to focus on a single farm/ plantation instead of focusing on the landscape level (which is actually the focus of IDH's PPI arrangements).

Regulatory mandates and incentives are important in markets in which certification has less scale, is less well understood or not taken into consideration by consumers and producers[58]. In many countries, next to certification, stronger non-compliance sanctions are needed[59]. For that, governments would need to get more involved by cooperating with NGOs and industry and by investing into education and technology[60].

Multi-stakeholder partnerships, which bring together the public and private sector, can be effective to get synergy between public and private regulations. For example, in Brazil the Soy and Cattle Moratorium are quite effective. They cover any kind of deforestation, not only of primary forests. The environmental police in Brazil fines illegal deforestation on plots and these properties are (publicly) published on a list that is consulted by soy traders, who (privately) agreed to refrain from buying from these properties[61]. However, a major concern with the Amazon soy moratorium is that, while it is aimed at stopping deforestation in the Amazon frontier, leakage of deforestation to other areas, notably the 'Cerrado biome' may occur.

According to several scholars, the greatest effect can be expected from applying combined public and private approaches[62]. The complementarity of such approaches can close loopholes and prevent leakage of deforestation to other areas. Public and private regulations need to mutually reinforce each other[63]. For example, the Brazilian Soy and Cattle Moratorium had private sector leverage, because the traders who initiated the soy moratorium manage 90% of the soy produced in Brazil[64]. Another example of an effective multi-stakeholder approach is the case of São Félix do Xingu municipality in Brazil, where a Pact for End of Illegal Deforestation was signed in 2011 by more than 40 entities, including government bodies, producers unions, community associations, NGOs and others. This initiative organized the public registration of over 87% of privately owned properties, creating the basis for monitoring activities and for distributing incentives for owners to stop using their land for deforestation[65].

The combined attention of IDH to strengthen regulatory and enforcement capacity to ensure enforcement of policies, working with companies and other stakeholders including the government to establish PPI deals, and improve market demand for sustainable produce therefore appears to be an approach that could be effective to mitigate deforestation.

5.2.2 Do improved regulatory and enforcement capacity and improved land use planning lead to mitigation of deforestation?

Evidence on IDH's contribution to changes

As we did not find evidence yet on the IDH contribution to regulatory and enforcement capacity, we also do not have evidence on this contribution to have led to a mitigation of deforestation.

Evidence from the wider literature on the plausibility of IDH's approach

While multi-stakeholder platforms may be effective for improving sector governance, this is not a guarantee that such governance will become effective at landscape level. Deforestation proceeds at an alarming rate, in spite of the efforts to improve regulatory and enforcement capacities[66]. A specific example is Indonesia, where deforestation rates attributed to conversion of forests to palm oil plantations continues to be high, despite growing levels of RSPO certification and multi sector platforms[67], which is partly due to contradictory government policies[68].

However, evidence does exists of effective initiatives improving public governance capacities in forest management. Especially, improved law enforcement (as promoted in the EU FLEGT - Forest Law Enforcement, Governance and Trade - Action Plan) has been evaluated as a relevant and innovative response to the challenge of illegal logging. It has improved forest governance in all EU FLEGT target countries, including in developing and emerging economies[69].

Regulations and market demand by traders and consumers, coupled with strong incentives, e.g. by applying strict requirements in consumer and government procurement programs, and effective control on imports (e.g. on illegal timber), may create conditions that ensure forest managers to limit deforestation and increase the quality of forests. This combines market based incentives to halt deforestation with regulatory mechanisms to monitor, prevent and sanction deforestation.

An interesting example of combining market based incentives and regulatory arrangements to combat deforestation is the municipality of Sao Felix Do Xingu in Brazil, where support programmes for sustainable intensification of cattle production are combined with an embargo on goods produced in illegally forested areas, reduced access to credit from the Bank of Brazil and an improved rural registry. This has resulted in deforestation rates dropping with 85% over a period of 10 years[70].

5.3 Mitigating deforestation by supporting the adoption of sustainable landscape management practices through PPI deals/projects

The improvements in sector governance and the establishment and implementation of PPI projects and deals are expected to improve sustainable use of forested landscapes by farmers and landowners, and consequently to mitigate deforestation.

One of the elements IDH uses to support sustainable land management by farmers is to improve farmer incomes by increasing their productivity and/or finding alternative income sources. This is expected to decrease the pressure on land.

So far, we have found limited evidence on similar approaches to the PPI projects and deals aimed for by IDH. Furthermore, the assumptions that increased productivity and incomes reduce pressure on forested land does not always hold. In some cases intensification will even increase the pressure on forested land, especially when land use governance is not regulated and enforced. It is therefore important that different aspects of the PPI approach are carried out in parallel: intensification should go hand in hand with the proposed changes in diversification of livelihoods, strengthened land governance and pressure on reinforcing regulations.

Figure 5.4 The evidence base on mitigation of deforestation by supporting the adoption of sustainable landscape management practices

	Impact before 2016			
	Literature			
Impact story	On impact others than IDH	On IDH contribution to impact	Interviews IDH	Sector survey
PPI deals / projects → sustainable landscape management, forest conserved and restored	●	—	—	—
Sustainable landscape management, forest protected, forest restored because of incomes from commercial crops or alternative livelihoods	●	—	—	—

See chart legend on page 11

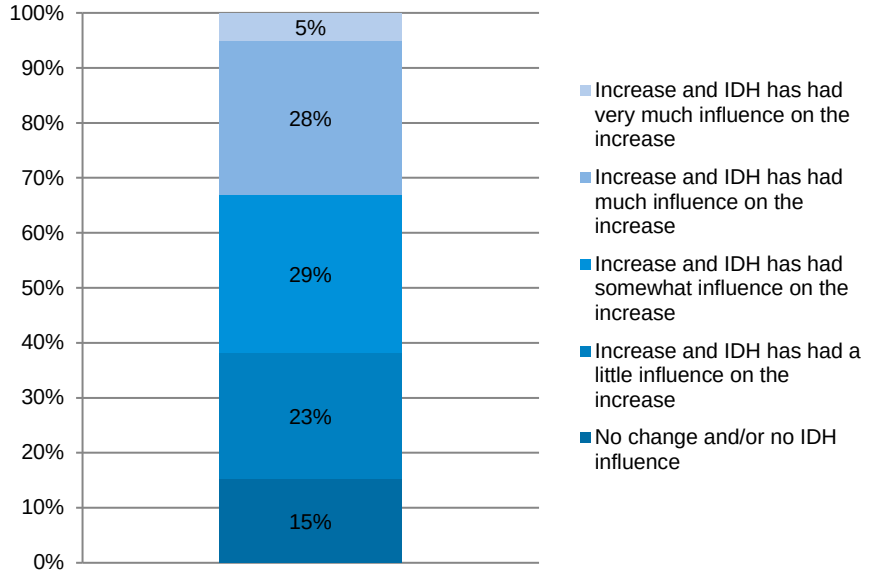
5.3.1 Production-protection-inclusion agreements lead to sustainable land use by farmers, forest conserved and restored?

Evidence on IDH's contribution to changes

So far, little evidence is available on the impact of production-protection-inclusion agreements on sustainable land use as this is still a new initiative within IDH. First pilots have started with sustainable land use, forest conservation as well as reforestation in both Ethiopia and around the Southwest Mau forest in Kenya, but as this projects are rather recent evidence is not yet available on its actual impacts on sustainable land use to this date.

The only source of evidence we have for this IDH impact story line is information from the sector survey on changes in natural resources management. Thirty-three of the respondents within the sectors related to this impact theme indicated that IDH contributed much or very much to an increase in natural resources management.

Figure 5.5 *Change in natural resources management and IDH's influence on that change (N = 118)*



Evidence from the wider literature on the plausibility of IDH's approach

No literature on the effectiveness of PPI agreements in increasing sustainable land use is available at this point in time. So far, mainly information on voluntary

sustainability standards and their impacts on sustainable forest management is available.

An important factor regarding deforestation is the cut-off date after which forest conversion is not allowed. The majority of commodity initiatives apply cut-off dates 5-8 years prior to certification. Only static cut-off dates that are set long ago will provide some form of guarantee that no recent deforestation occurred for produce from that area. When setting the cut-off dates, there should, however, be a certain weighing of ambition, to prevent producers that only recently made sustainability commitments or are producing close to forest frontiers from being left out[71].

This touches on the additionality of sustainability certification. Certification programs that mainly attract producers that already meet (large parts of) the certification standard will not result in additional environmental benefits and will not contribute to further reduction in deforestation rates[72]. Furthermore, unintended side effects of the RSPO and RTSR certification that are reported, are the focus on large landowners and exclusion of smallholders[73] and indigenous people living in these certified areas[74]. IDH's PPI agreements and landscape approach aim to go beyond farm level certification to address the issues mentioned in relation to sustainability certification; the aim of a landscape approach is to increase the focus on smallholder farmers and reduce deforestation happening around a certified plot of land.

Nevertheless, evidence exists of multi-stakeholder initiatives that combine with financial incentives provided by the government based amongst others on the deforestation rate and on building capacity of farmers around sustainable forms of land use. The municipality of São Félix do Xingu in Brazil has managed to reduce deforestation rate in 85% from 1999-2008 to 2014 based on such a diversified approach including support to implement more sustainable cattle production practices, using cocoa production as a reforestation tool and involvement of indigenous communities in the development and implementation of Territorial and Environmental Management Plans[75].

According to literature it is likely that the type of projects/deals aimed for by IDH are more feasible with larger landowners, including publicly owned land, and is less feasible in areas with smallholders[76]. Even where smallholders are organised, their capacity to significantly contribute financially to initiatives is low, and sanctioning when they breach the agreements is expensive and difficult to enforce. It is important to note though that the IDH approach focus on the inclusion of smallholder farmers.

5.3.2 Do increased incomes from commercial crops and alternative livelihoods assure sustainable land use, forest conserved and restored by farmers?

Evidence on IDH's contribution to changes

Intensification of land use, increasing farmer incomes from commercial crops, and the diversification of income is one of the elements of PPI project / deal implementation. Funds are made available to invest in intensification strategies, and agreements are made with the landscape actors to protect the forest. Together with the enforcement of laws and regulations, this is expected to lead to a mitigation of deforestation. As PPI arrangements are still new within IDH's approach, evidence of its effectiveness is not yet available.

Evidence from the wider literature on the plausibility of IDH's approach

Evidence from the literature is undecided whether the intensification strategy indeed leads to a mitigation of deforestation[77]. There are strong indications that intensification actually leads to increased deforestation, especially for commodities for which an increase in supply does not lead to lower prices[78]. This is the case, for

instance, for internationally traded commodities like soy and palm oil, but probably also for charcoal production which is often an important driver for deforestation in the Mau forest in Kenya, one of the landscapes IDH is active in.

For intensification to be effective, it is important that the forest protection mechanisms work well, such as sector policies and their enforcement. If such mechanisms do not work well in reality, there is a risk that deforestation actually increases. It is very important for IDH to monitor the processes and mechanisms well, as well as their effects, so that unwanted risks and their effects become clear quickly. And then to undertake action quickly to mitigate these risks and effects. The production-protection-inclusion approach of IDH does reflect the evidence in the literature that strategies combatting deforestation are more effective when they combine elements of conservation, sustainable land use and reforestation.

5.4 Mitigating deforestation by creating effective and profitable PPI business models

A second strategy by IDH has been the development of a production protection and inclusion approach, in which commodity production is combined with the protection of forest and peat land of high conservation value and high carbon stocks and the inclusion of smallholders and other stakeholders. Through this approach, they work together with partners from the public and private sectors as well as NGOs in 11 landscapes in 7 countries in Asia, Africa and Latin America.

A specific element of this approach is to work with companies to create effective PPI deals, which can be funded through a Production Protection fund. Market demand for sustainable products is to render such PPI investments profitable, leading to profitable business models for PPI implementation.

IDH is implementing PPI projects 11 landscapes across 7 countries:

- Mato Grosso in Brazil
- South West Mau Forest in Kenya
- Wider Tai Forest Area in Côte d'Ivoire
- Central Rift Valley in Ethiopia
- Three landscapes in Liberia (South East, West and Nimba)
- Three landscapes in Indonesia (South Sumatra, West Kalimantan and Aceh)

In Indonesia, Liberia and Brazil, a Production Protection Inclusion fund aims to help to catalyse private capital investments into deforestation-free, rather than expansion led production. The Fund aims to provide long-term unfunded or funded subordinate debt toward projects which deliver strong environmental land-based gains linked to the production assets being financed. In the other landscapes, the PPI agreements will be put in place without intervention of the fund, co-funded by IDH and partners.

So far, the effectiveness of PPI agreements and impact of PPI funds in mitigating deforestation has not been sufficiently tested. We could only find evidence on market demand for certified sustainable produce, with targets at company level. The intervention is plausible, but evidence on effectiveness is not yet available.

Figure 5.6 The evidence base on mitigation of deforestation by creating effective and profitable PPI business models

	Impact before 2016			
	Literature			
Impact story	On impact others than IDH	On IDH contribution to impact	Interviews IDH	Sector survey
IDH support → effective PPI deals / projects	–	–	●	–
Market demand and investments → PPI integrated within business models and investments	–	–	–	–

See chart legend on page 11

5.4.1 Does IDH support and commitments lead to effective production-protection-inclusion projects and deals?

Evidence on IDH's contribution to changes

As indicated, IDH has established PPI projects and deals in 11 landscapes in 7 countries in Asia, Africa and Latin America. So far, the effectiveness of this approach has not been tested since the landscape program is quite recent.

Evidence from the wider literature on the plausibility of IDH's approach

PPI deals and agreements are implemented under the assumptions that:

1 Improved productivity will reduce pressure on forests and will not increase demand for land because the current land use is profitable
2 Enhancing communities' livelihoods through the creation of new revenue-generating activities will reduce pressure on forests
3 Protecting forests through gazetting or other protection mechanisms (e.g. fencing) is effective in reducing deforestation rates
4 There is no leakage of activities to/from other locations.

Whether we expect such assumptions to hold will be discussed in Section 5.4

One condition for success of such deals/projects is that all actors in the landscape need to be willing to accept the conditions of the PPI deals/projects. This includes actors who do not financially invest, like the local population, and smallholder farmers and sharecroppers.

5.4.2 Does market demand and investments lead to PPI integrated within business models and investments?

Evidence on IDH's contribution to changes

While this approach has been developed alongside the ISLA program since 2013, pilots have only started recently. For this reason, the effectiveness of market demand and investments to integrate PPI arrangements within business models and investments have not yet been tested.

Evidence from the wider literature on the plausibility of IDH's approach

Production-protection-inclusion projects and deals (PPIs) assume that improved yields and market demand for commercial production will automatically lead to a business case for deforestation, new business models and investments. In timber production there is an indication that the process of developing demand side measures can accelerate forest governance reform[79]. Different demand side interventions exist, ranging from consumer campaigns, through private sector measures such as voluntary certification or roundtables, voluntary moratoria and investor interventions, to public sector measures like the FLEGT action plan and

legislative provisions like the EU timber regulation[80]. FSC is one of most successful of the available standards in stimulating demand side reform[81].

A growing number of retailers, manufacturers, processors and traders in the food, fuel and fibre sectors are making public commitments to establish deforestation-free supply chains. In addition, national governments are introducing procurement policies to purchase certified commodities, like the New York Declaration on Tropical Forests (2014), Tropical Forest Alliance 2020 (2012), and Consumer Goods Forum (2010). Inclusive value chains taking a landscape approach are presented as needed next generation approaches[82] but little evidence of their effectiveness currently exist.

Large companies seem more likely to make commitments to source only sustainably managed forest products than small ones, possibly as a result of pressure and requirements in public procurement programs, and higher standards for disclosure from financial institutions that fund their activities. Market demand is also contingent on the credibility of the different timber certification systems that are in place[83]. Some labels are being questioned, like the Malaysian timber certification MTCC when compared to FSC. But even these lower national standards seem to have a positive effect on local forest governance[84].

Furthermore, the case of the IOI Group which has been suspended due to non-compliance to RSPO shows the consequences of not having an integrated landscape approach as it demonstrates that companies are willing to take drastic action against suppliers that do not follow sustainability commitments. Several companies, including Unilever, have suspended the supplier. Furthermore the suspension had an impact on IOI's share, which fell by 18% when the suspension was announced[85].

5.5 Conclusions on IDH's contribution to public good impacts and the plausibility of IDH's approach

The table below summarises the key conclusions for the impact theme 'mitigation of deforestation'. Certain impact stories do not have enough supporting evidence yet; the next page includes recommendations to IDH in order to address these gaps in the coming years in order to allow for a full impact story to be told in 2020.

Figure 5.7 *Summary of conclusions Impact theme Mitigation of deforestation*

Reduced deforestation and forest degradation…	Was enhanced through…	Which has led to…	Evidence from wider literature	Evidence on IDH contribution to impact
… through improving land use governance (public-private) to enable and enforce compliance	Support to multi-stakeholder coalitions OUTPUT	Regulatory frameworks and enforcement capacity strengthened, and land use planning improved OUTCOME		–
Result area: sector governance	Strengthened regulatory frameworks and enforcement capacity and improved land use planning OUTCOME	Improved landscape governance , creating an enabling environment for reduced deforestation and forest degradation IMPACT		–
… by supporting the adoption of sustainable landscape management practices through PPI deals/projects	Support to establish PPI deals/projects OUTPUT	Sustainable landscape management, forest conserved and restored IMPACT	–	–
Result area: field level sustainability	Increased farmer incomes, resulting from intensification of production or diversification of income* OUTCOME	Reduced deforestation and forest degradation: forest protected , forest restored IMPACT		–
… by creating effective and profitable PPI business models	Support and commitments for the creation of production-protection-inclusion activities OUTPUT	Establishment of Production-Protection-Inclusion (PPI) deals and projects OUTCOME	–	
Result area: business practices	Market demand and investments for sustainable produce OUTCOME	PPI integrated within business models and investments IMPACT	–	–

**This point is to be taken with caution, intensification can also increase pressure on forested land if land use governance is not implemented and enforced.*

See legend on page 11

5.6 Baseline situation impact theme mitigation of deforestation

At this moment, as some studies are not finished and metrics were not yet available at the time of writing, it is not possible for us to report on all required KPIs to tell a full baseline story. In the tables below the available data is presented. In the coming years additional KPIs and analysis of the combined information will be included.

Table 5.4 *Selected baseline metrics impact theme inclusive business models & smallholder farmers' livelihoods improvements*

	Private sector investments in program (mln euro)	Business cases developed to show the potential of sustainable practices	Sustainability embedded at corporate level	Changes in policies in line with increased sustainability and management of resources	Number of producers/workers trained (#)	Volume of sustainably produced crop (MT)	Farmland area where practices applied (ha)
Cocoa	42.9	0	0	0	0	0	0
Timber	9.1	-	-	0	0	0	0
Landscapes - Cote d'Ivoire	0.00	0	0	0	0	0	0
Landscapes - Indonesia	0.00	0	0	0	0	0	0
Landscapes - Brazil	0.00	0	0	0	0	5,000,000	0
Landscapes - Ethiopia	0.00	0	0	0	0	-	0
Landscapes - Kenya	0.00	0	0	0	0	-	0
Landscapes - Liberia	-	-	-	-	-	--	0

Cells marked with '-' mean that baseline data was not yet available for a certain program for a specific indicator or that the indicator has not been selected by the program as an indicator to report upon. These cases are not distinguished in the table.

Source: IDH Result Measurement Framework

Table 5.5 *Baseline information for PoC Landscapes approach for protection of High Conservation Value (HCV) forest and business cases for Sustainable Forest Management in West Kalimantan: Hectare affected by forest fire in selected districts of West-Kalimantan (up to 29 September 2015)*

District & Sub-districts	Hectare	District & Sub-districts	Hectare	District & Sub-districts	Hectare
North-Kayong		**Ketapang**		**Kuba Raya**	
Maya Karimata Island	4,283	Benua Kayong	84	Batuampar	9,173
Sepanti	1,767	Kendawangan	16,585	Kualamandor	120
Sukadana	8,326	Manisamata	2,825	Kubu	1,780
Teluk Batang	2,459	South Matanhilir	1,036	Sungairaya	1,527
		North Matanhilir	895	Telukpakedai	535
		Muarapawan	821	Terentang	203
Total	**16,833**	**Total**	**22,247**	**Total**	**13,339**

Source: Kemitraan (2016)

Table 5.6 *Baseline information for PoC Landscape model for sustainable management of Mau Forest watershed, Kenya: Environmental issues affecting different landscape zones in Sondu Basin, South West Mau, Kenya*

Headwaters	Middle slopes	Deposition zone
Forest excision resulting in conversion of forest to settlements, mismanagement of industrial forest plantations, illegal forest resource extraction and overgrazing	Riparian zone encroachment	Riparian zone and wetlands encroachment
Biodiversity loss due to forest cover loss, bush meat harvest, large strands of bamboo forest excised or encroached	Biodiversity loss due to forest cover loss, riverbank farming, growing of eucalyptus along riverine zones	Biodiversity loss due to wetlands reclamation and extraction of papyrus vegetation
Drying up of springs, poor water quality	Spring siltation, springs drying up, water quality and quantity	Siltation and flooding, water quality and quantity
Gully erosion on steep slopes	Riverbank and gully erosion	Soil erosion and siltation

Human settlements encroachment into forests and associated environmental degradation	Human settlements encroachment into forests and associated environmental degradation	Human settlements expansion and associated environmental degradation (increased pressure on resources)
Food security	Food security	Food security
High wood fuel demand	High wood fuel demand	High wood fuel demand
Climate change impact (high temperatures, long dry spells)	Climate change impact (long dry spells)	Climate change impact (flooding, long dry spells)
Poor soil management practices: cultivation on steep slopes, no soil and water conservation structures	Poor on-farm fertilizer application, e.g. both application rates and timing	Eutrophication of wetlands – fertilizers washed from croplands

Source: CIFOR (2016)

5.7 Recommendations for measuring IDHs contribution to public good impact towards 2020

Please find below an overview of recommendations that will assist the measurement of the impact of IDH in the next years. The activities are proposed based on the challenges with the evidence base for this impact theme encountered during the baseline study. And do thus not contain a list with all research activities and analyses to be undertaken. A total overview on how we will measure the impact of IDH can be found in Chapter 2

One of our recommendations is to conduct additional stakeholder interviews around IDH's Proof of Concepts, and specifically to assess changes in sector governance and business practices applying the 'process tracing' methodology[viii]. Because the stakeholder interviews we conducted have proven to generate very detailed and specific information on activities, outcomes and impacts, information which cannot easily be collected through the sector survey. As IDH also plans to conduct stakeholder interviews for its annual Proof of Concept report, it will need to be discussed who will be doing which interviews and how, to avoid stakeholders to be interviewed twice on similar topics, but

[viii] Process tracing is a methodology is used to explain outcomes in psychology, political science and historical studies. Through process tracing it is established, per specific case, what (kind of) processes have taken place, which are verified by exploring real events in time in a transparent way, including whether other actors and factors influenced the processes and/or outcomes and impacts reached.

also to ensure that high quality information on the impact of IDH activities on sector governance and business practices will become available. Please find more specific recommendations in Appendix 2 (for the IDH Proof of Concept studies) and Appendix 3 (concrete recommendations per impact theme).

Table 5.7 *Overview of recommendations for impact theme mitigation of deforestation*

Impact routes	**5.6.1 Strengthened regulatory frameworks and enforcement capacity and improved land use planning → Improved landscape governance , creating an enabling environment for reduced deforestation and forest degradation**	**5.6.2 Adoption of sustainable landscape management, forest conservation and restoration practices → mitigation of deforestation**	**5.6.3 Effectiveness and profitability of PPI business models → PPI integrated within business models and investments**
Key challenges in measuring IDHs contribution to impact			
	To verify whether governance improvements due to the IDH support have catalysed actions that are expected to lead to sustainable land use and a mitigation of deforestation.	To measure changes in land management and deforestation rates (and IDH's contribution) To assess whether the intensification of production and increase in farmer incomes lead to sustainable land management	To ensure that sufficient evidence becomes available in the next years on the effects of the IDH supported Production Protection Inclusion approach and whether uninvolved companies also take over the approach
Impact routes	**5.6.1 Strengthened regulatory frameworks and enforcement capacity and improved land use planning → Improved landscape governance , creating an enabling environment for reduced deforestation and forest degradation**	**5.6.2 Adoption of sustainable landscape management, forest conservation and restoration practices → mitigation of deforestation**	**5.6.3 Effectiveness and profitability of PPI business models → PPI integrated within business models and investments**
Recommendations per evidence source			
In-depth studies on IDH Proof of Concepts	IDH to ensure that information will become available for the Proof of Concepts, through applying appropriate research methodologies, on: 1. Changes in policies and strategies through the IDH program 2. Whether such changed policies/strategies lead to improved sector governance creating an enabling environment for field level change. A baseline assessment is not required for measuring such outcome and impacts.	Ensure that the two in-depth studies, for which a baseline study is available, in the future include an evaluation of land management adoption, production intensification and income increase, and take into account leakage effects	IDH to ensure that information will become available, through applying appropriate research methodologies, for the Proof of Concepts on: 1. IDH's contribution to establishing profitable and effective PPI deals / projects. 2. Whether the PPI approach is integrated within business models and investments A baseline assessment is not required for measuring such outcome and impacts.

Stakeholder interviews*	Conduct 6 interviews with stakeholders (public and private) in West Kalimantan and Mau Forest		Conduct 6 interviews with stakeholders to verify the effectiveness and profitability of PPI deals and projects and whether other companies have adopted similar approaches.
Sector survey	Include a question on whether policy and strategy change, to which IDH contributed, catalysed actions that are expected to mitigate deforestation or to lead to sustainable land use	Include better questions on changes in sustainable land use and the mitigation of deforestation and IDH's contribution to both	
Other**		Use monitoring information from the NICFI-IDH Partnership Program	Use monitoring information from the NICFI-IDH Partnership Program

* In total, 10-15 interviews are already planned to be conducted in 2018 for the midterm review, and the same number in 2020 for the end line report. The number of interviews mentioned in this overview are additional to that number

** The research activities in the "Other sources of evidence" category are not planned and budgeted for in the current evaluation program (2016-2020).

6 Living wage and improved working conditions

In this chapter, we present detailed information on the IDH impact theme 'living wage and improved working conditions'. This includes the activities and targets for the impact theme as well as the intervention logic; how IDH intends to achieve the expected impacts. A large part of the chapter is dedicated to presenting the current evidence on IDH's contribution to impacts and information from the wider literature on similar interventions and strategies for each impact story.

The following impact stories are discussed in this chapter:

- 6.2 Improving worker wages and in-kind benefits by improving sector policies (public-private)
- 6.3 Improving working conditions by improving human resource management
- 6.4 Improving wages through more efficient and effective business models

Most of the information on IDH's activities in this chapter is based on a very recent example from the tea sector in Malawi. IDH also started addressing living wage in its Fresh & Ingredients program for the banana and flower sector and has been working on improved working conditions in its Apparel and Cotton programs.

As for the latter programs limited information is available to date, thus we have focussed this chapter on the Malawi activities. To what extent these Malawi activities and outcomes are representative for the entire impact theme will be verified in the midterm review. Based on the existing evidence, we recommend research activities to enhance the evidence base towards 2020.

6.1 IDH support activities and targets

IDH supports inclusive business models and smallholder farmers' livelihoods through:

1. Convening trade and industry to create market commitments for sustainability and sustainable sourcing
2. Support living wage benchmark setting as per Anker methodology and measurement of prevailing wage and in-kind benefits
3. Convening multi-stakeholder coalitions that include the industry, local governments, unions, employers and the civil society to create an enabling environment
4. Creating roadmaps for value creation and value sharing
5. Outreach to financers and donors to finance the roadmap; e.g. replanting in Malawi
6. Strengthening human resource management (HR) systems
7. Supporting the creation of worker management dialogue
8. Supporting policies and standards to improve working conditions and to prevent discrimination including sexual harassment
9. Organising sector learning.

Through these activities, IDH aims for the working conditions of **1,347,600 workers to be improved** as direct result of the IDH interventions.

Table 6.1 *Programs in which IDH supports workers*[ix]

Programs in which IDH supports workers
Apparel
Cotton
Fresh & Ingredients
Tea

More information on in which countries IDH supports activities in these programs and specific targets for each program can be found in Appendix 1.

Below is a summary of findings and description of the available PoC studies to date.

Table 6.2 *Description of available studies related to the Proof of Concepts for the impact theme living wage and improved working conditions*

PoC	Malawi 2020 Tea Revitalization Program - living wages
Available study related to PoC	Anker & Anker (2014) Living Wage for rural Malawi with Focus on Tea Growing area of Southern Malawi
Description	This report estimates a living wage for rural Malawi with a focus on tea growing regions in Southern Malawi. While prevailing wages are between 839 and 965 MWK a day, including in-kind benefits, the living wage for tea worker families to afford a basic life style is calculated to be 1,531 MWK. This is around triple the Malawian statutory agricultural minimum wage, which is MWK 551 per day.
Available study related to PoC	GAIN/IMANI (2015) Nutrition for Malawian Tea Workers: The Options
Description	This concise report describes the nutritional status on Malawi tea estates. A share of 25-35 % of rural Malawians have low dietary diversity. 3 out of 4 children have mild vitamin A deficiency. In the tea regions Thyolo and Mulanje 50% of children are stunted and 50-60% have anaemia (iron deficiency). Tea estates in Malawi provide their workers with a midday meal consisting of maize flour (nisma) and beans or pigeon peas. The study recommends looking at the possibility of fortifying the maize flour used for the midday meals, at a cost of less than 1 dollar per worker per year. Other nutrition recommendations include quick-wins such as improvements in crèche meals and the introduction of a 'Good Start Monday meal' on production-critical days, to alleviate 'problem days' in production.

PoC	**Clean manufacturing, improved working standards and satisfaction in Apparel, Vietnam**
Available study related to PoC	No available study at this moment in time related to this PoC

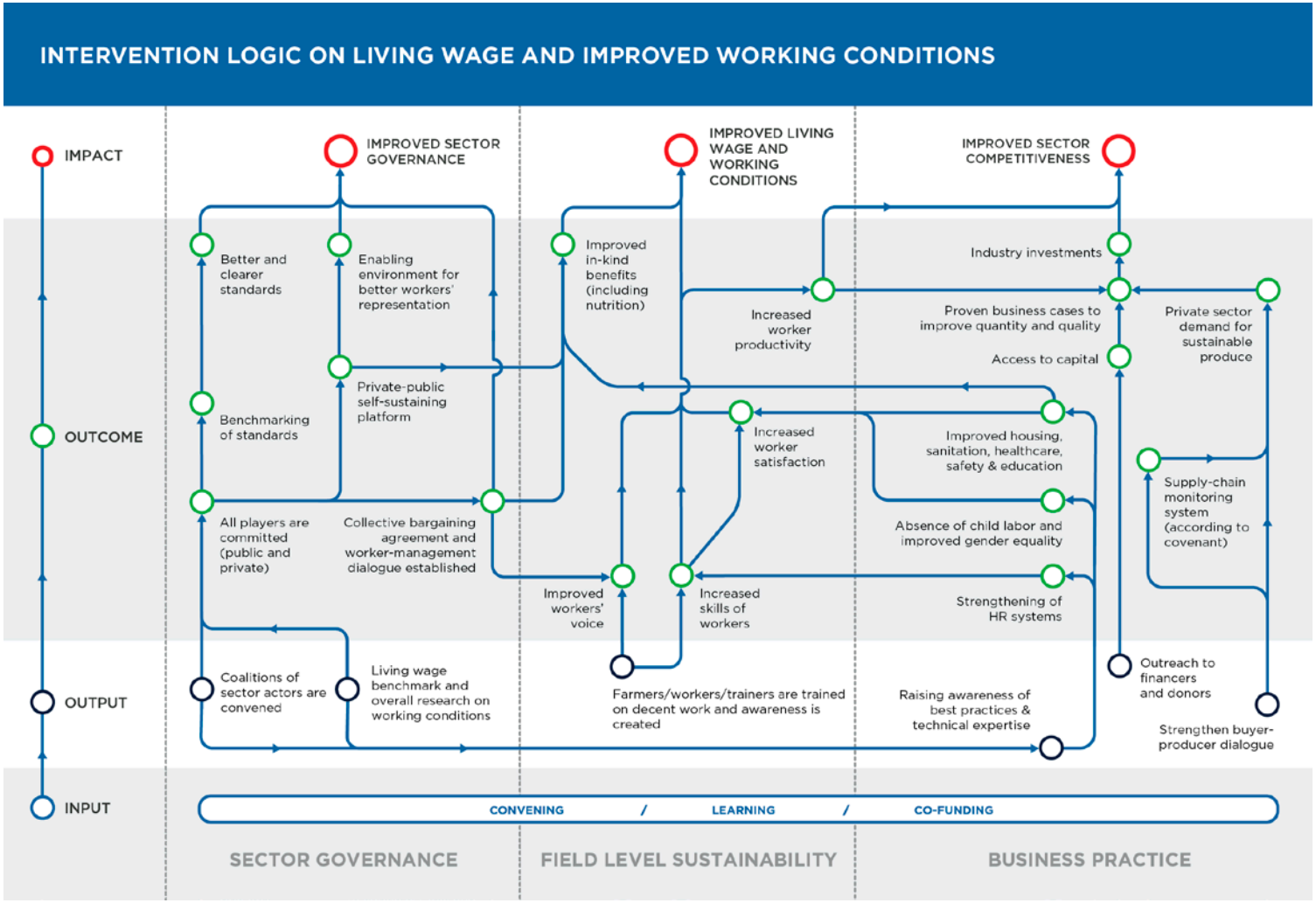
Table 6.3 *Main targets per program*

	Cotton	Tea	F&I	Apparel
Workers with improved working conditions	35.000.000	200.000	30.000	60.000
Workers with increase in living wage	-	50.000	30.000	-

Source: IDH

[ix] It is important to note that IDH has worked extensively on this topic through their electronics program. The impact of IDH's efforts on the electronics sector is not in scope of this report.

Figure 6.1 *Intervention logic for impact Theme: Living wage and improve working conditions*



Source: IDH

6.2 Improving worker wages and in-kind benefits by improving sector policies (public-private)

One of IDH's strategies to improve working conditions of workers in factories, firms and farms is to support sector initiatives which lead to committed policy makers (both public and private) and worker-management dialogue. Committed policymakers and worker-management dialogue is expected to lead to higher wages and increased in-kind benefits.

The IDH activities take place in a complex and highly political context, in which generally impacts cannot be expected to be realised in the short term. IDH already played a role in a sector initiative to increase tea worker's wages in Malawi through which a collective bargaining agreement was established. We will verify in the midterm report to what extent IDH contributed to this development. In the other sectors we expect the impacts to take longer.

There is strong evidence, from the wider literature, but also from interviews with IDH, that IDH supported sector initiatives lead to (better) worker-management dialogue, which may lead to collective bargaining agreements. In general, there is strong evidence that collective bargaining agreements lead to improved wages.

Figure 6.2 *The evidence base on improving worker wages and in-kind benefits by improving sector policies (public-private)*

	Impact before 2016			
	Literature			
Impact story	**On impact others than IDH**	**On IDH contribution to impact**	**Interviews IDH**	**Sector survey**
IDH → worker management dialogue		–		–
Worker-management dialogue → improved wages (→ nutrition)		–		

See legend on page 11

In the next two paragraphs, we will present the evidence base of both elements of the impact story.

6.2.1 Does IDH support to sector initiatives lead to committed public and private policymakers, worker-management dialogue and collective bargaining agreements?

Evidence on IDH's contribution to changes

The interviews with the IDH staff and a review of information available about these support activities show that IDH has supported activities processes to come to committed policy makers, worker-management dialogue, and collective bargaining agreements. They have also already contributed to concrete outcomes in the Malawi tea sector, where IDH contributed to the establishment of the first Collective Bargaining Agreement (CBA) in the tea industry in history in August 2016. While the

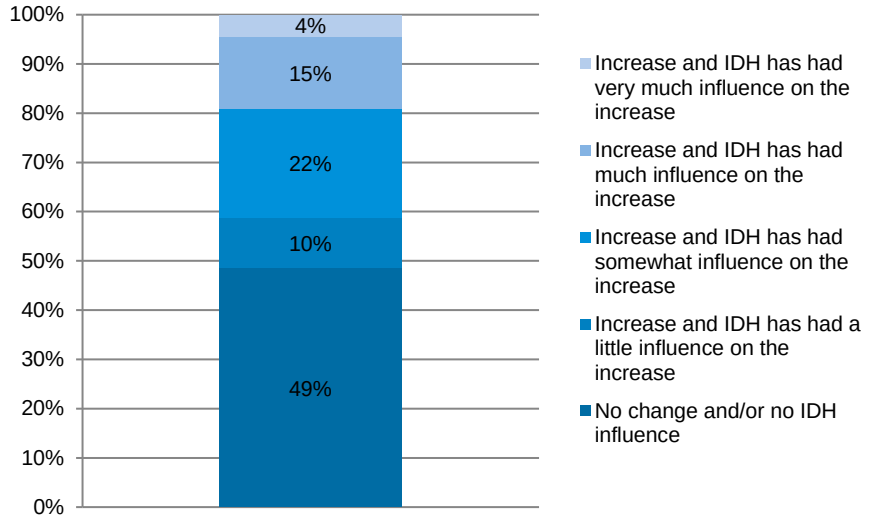
CBA has been established, its implementation is still in process; the union membership is still low, and a question is whether the wage levels of seasonal labourers also fall within the CBA. This will be investigated in the midterm review.

IDH's contribution is part of a broad Malawi 2020 partnership effort for a sustainable tea industry. Examples of IDH support activities are that IDH worked closely with the Tea Association of Malawi, employers and the Plantation Union to support the establishment of the CBA. They also funded the living wage benchmark and progress studies. As the CBA establishment is such a recent outcome, we will more concretely verify IDH's contribution to the CBA establishment process and other outcomes of the Malawi 2020 partnership at a future date.

In terms of the commitments by private sector policymakers, one of the results of the Malawi 2020 partnership process is that a major tea buying company has now closed a three-year contract in order to source from one and the same tea plantation for the first time, a change from their usual buying practices of closing a contract every year. This contract includes a minimum and maximum price to be paid, and a commitment to source a certain volume of a certain quality in the next three years. Also the company has committed to assist the plantation to improve its tea quality. The three year contract enables the plantation to plan ahead and to invest in the plantation because cash flow is assured. Also, the guaranteed cash flow enhances the potential to obtain more finance for reinvestments, for instance for replanting tea bushes, irrigation and work on its tea factories.

In terms of changes in worker-management dialogues, 19% indicated that IDH has already contributed much or very much to a positive change in worker-management dialogue between 2013 and 2016 while 22% indicated that IDH has somewhat influence on the increase.

Figure 6.3 *Change in worker-management dialogue by companies connected to IDH programs, and IDH's influence on that change (N = 68)*



Evidence from the wider literature on the plausibility of IDH's approach

The claim that worker-management dialogue and collective bargaining contribute to the attainment of better wages and working conditions is not contested in the literature.

The composition of the multi-stakeholder process proves important in order to be more effective and reach the first that need it most. Not always do these partnerships result in the improvement of the worst practices in the sector but in driving changes in already relatively well performing international firms. For

example, in the apparel sector, after a discussion initiated at a 3GF[x] summit IDH developed the 'Race to the Top' program and started scaling up the multi-stakeholder process. IDH's approach includes a focus, also in local factories, through training and engagement with sector associations and governments. However, according to IDH, their approach seems to initially provide faster results with foreign-owned companies that are among the most progressive in Vietnam, instead of with the local firms, where more improvement is needed.

6.2.2 Do worker-management dialogue and collective bargaining agreements lead to improved wages and in-kind benefits?

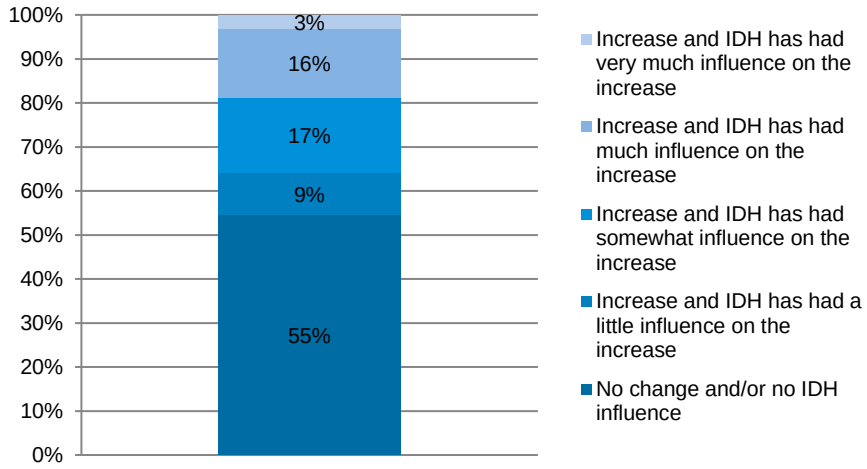
Evidence on IDH's contribution to changes

As indicated earlier, the only example we have at present is IDHs work in the tea sector in Malawi. In Malawi, a CBA was established for the entire tea sector in August 2016. The CBA led to an increase in nominal wage for 50,000 workers between 18 and 24% at 9 tea companies or estates in the tea sector[86]. However, inflation is a huge issue in Malawi, which eliminates the wage increases in terms of purchasing power. Also, we understand that workers may end up paying more taxes because of the wage increase as they fall within another ' tax bucket', leading to some workers to have decreased days of work. The real-life effects of the wage increase in Malawi, at worker level, will thus need to be verified.

The wage increase intended to be a first step in reaching 'living wage' levels in the tea sector. The current wage levels are two thirds of the 'living wage' when in-kind benefits such as housing and welfare are included[87].

Evidence from the sector survey also shows a positive contribution of IDH to wage levels: 19% of the respondents from the private sector indicate that wages increased and that IDH has had much or very much influence on this change, whereas 17% say that IDH has had somewhat including on this increase.

Figure 6.4 *Change in wage levels at companies connected to IDH programs, and IDH's influence on that change (N = 64)*



x A collection of multi-stakeholder initiatives, funders, development experts, international institutional efforts, and apparel and footwear companies

One of the instruments that assisted the changes in Malawi was support by IDH to establish a living wage benchmark by using the Anker-methodology, a worldwide recognized methodology to calculate reference wage levels in different countries and sectors. We do not know yet whether such a benchmark would have been established without IDH; this will be investigated in the midterm report. This methodology has become the main wage trajectory monitoring system used in the Malawi program.

A question that remains is what the effect of these wage increases will be on tea sector's competitiveness. Foreign tea buyers pay for their tea in US Dollars, while plantation's expenses are made in Malawi Kwacha. Introducing a living wage in the tea sector is likely to impact the wider economy of Malawi. Exchange rate dynamics and inflation are thus important to take into account in assessing the effects on the sector. We hope to see an evaluation of the sector effects towards 2020.

Evidence from the wider literature on the plausibility of IDH's approach

Most scholars are supportive of the assumption that in order to get better wages and working conditions, collective action by workers is essential[88]. There is some discussion in the literature on the enabling or constraining role of foreign direct investment for collective wage bargaining. Some scholars show that foreign direct investment is lower in countries where union density is bigger[89]. Others disagree and show that freedom of association is not correlated at all with the level of foreign direct investments[90].

Most European countries have sector-wide collective bargaining agreements. This is facilitated by legal obligations that give national trade unions negotiating power and a tendency to prevent union fractioning. One would expect collective bargaining to be less effective in sectors where firms can change countries fairly easily, like apparel, and more effective in the sector of tropical commodities that are geographically less foot-loose, such as tea. However, IDH points to the huge gap between actual wages and living wages in tropical commodity sectors (80%), while in apparel this is 'only' 30% where bridging this gap could be considered more realistic. Nevertheless, as we have seen, in Malawi there is first evidence that even such a large wage gap can be reduced by joint efforts in the tea sector.

6.3 Improving working conditions by improving human resource management

Improving human resource management (HRM) by plantations and other companies is considered an important factor for improving working conditions. IDH support is geared towards improving HRM systems which is expected to improve worker's skills, meals at work, and housing conditions, which in turn should increase worker productivity.

There is little evidence from the wider literature on the improvement of human resource management systems in firms. We found early evidence in IDH support for improved nutrition of workers at a tea plantation in Malawi through the Malawi 2020 program. This plantation started to serve fortified maize to 18,800 plantation workers instead of 'normal' maize. 12,000 more workers will receive such fortified meals in the future, reaching in total 62% of all 50,000 workers in the tea sector in Malawi. There is an abundant literature on the benefits of fortified meals on nutritional status. The exact role and contribution of IDH in this is to be verified.

Figure 6.5 *The evidence base on improving worker conditions by improving human resource management*

	Impact before 2016			
	Literature			
Impact story	On impact others than IDH	On IDH contribution to impact	Interviews IDH	Sector survey
IDH → better human resource management	●	–	●	–
Better skills, meals and housing → higher worker productivity + improved nutrition	●	–	●	–

See legend on page 11

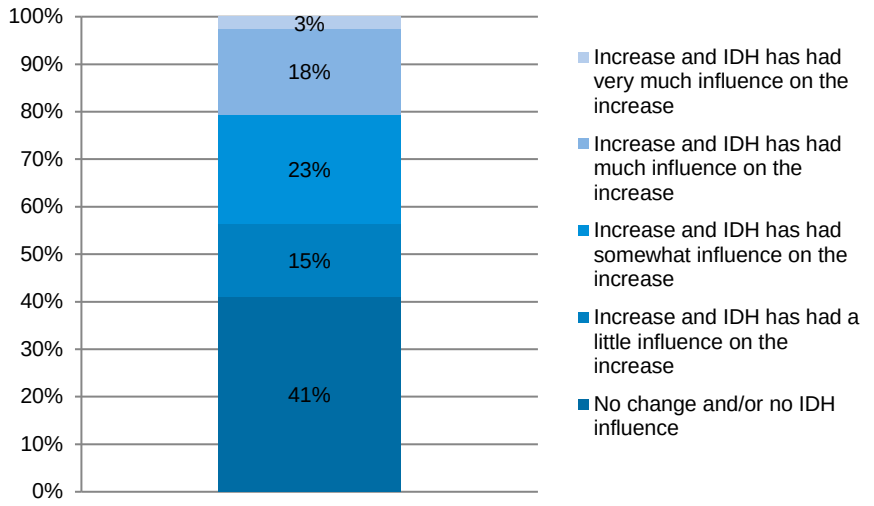
In the next two paragraphs, we will present the evidence base of both elements of the impact story.

6.3.1 Does IDH support lead to better human resource management?

Evidence on IDH's contribution to changes

The only evidence on changes to which IDH contributed found so far is responses by private sector representatives to the sector survey. A share of 21 % of respondents indicate that health and safety conditions have improved at their company in the last three years, and that IDH has had much or very much influence on that change. As the programs within this impact theme have started relatively recently, we expect more respondents in a future survey to draw conclusions on IDH contributions on impacts.

Figure 6.6 *Change in health and safety conditions at companies connected to IDH programs, and IDH's influence on that change (N = 78)*



Evidence from the wider literature on the plausibility of IDH's approach

Certification is one strategy which is applied in the IDH supported sectors and could have an effect on human resource management. The role of certification in generating better corporate human resource management is still limited, as documented for example in a study on banana plantations in the Philippines[91]. The blaming and shaming incentives provided by transparent certification systems or codes of conduct work especially in firms that sell their products in developed countries, and when public procurement policies can enforce compliance[92]. Generally, these firms have better human resource management than firms that sell to the local market. The presence of worker representation is a key factor to stimulate firms to improve human resource management. For example, the IDH supported research by Economic Rights Institute in the electronics sector in China show improvements in worker satisfaction due to better HRM and employee

representation, with worker representatives prioritising the issue of food subsidies or selection of catering services[93].

6.3.2 Better human resource management leads to better skills, meals and housing which leads to higher worker productivity and nutrition?

Evidence on IDH's contribution to changes

We could detect some early results of IDH supported activities. IDH support has most likely contributed to improved nutrition of workers at a tea plantation in Malawi because of the serving of fortified maize to 18,800 plantation workers instead of 'normal' maize. Most likely this introduction of fortified flour in Malawi will translate to a better nutritious status of the workers.

Evidence from the wider literature on the plausibility of IDH's approach

There are few labour management studies in agribusiness that have been able to provide evidence of a substantial relationship between any particular HRM practice and productivity or competitive advantage. These studies cover generally large companies in developed countries. These show that firms with a well-managed HR system have the potential to create economic value through their employees, but the potential is only realised when the HRM functions are aligned with the overall competitive strategy of a firm, and when employees are not easily substituted[94].

The assumption that better worker skills leads to higher productivity is likely self-evident. There is ample academic literature that show that fortified maize flour has a positive effect on health[95]. Likely, the assumption that better meals leads to improved nutrition holds independently of sector and country, though the specific improvements in skills, meals and housing will be very context specific.

In terms of housing, the provisioning of better quality housing is generally rare (e.g. by tea estates), and the literature about it is often associated with bounded labour and slavery, especially when housing costs are deducted from the worker's wage[96].

6.4 Improving wages through more efficient and effective business models

Another type of IDH support which is geared towards making wage increases possible is to work with companies on more efficient and effective business models. Such models enable profit margins to improve, which creates room for an increase of wages. This strategy is implemented in the tea sectors (in Vietnam and Malawi respectively), and with companies connected to the IDH Fresh and Ingredients program. One of the additional expected effects of these new business models is that companies will produce in a more environmentally-friendly way.

However, as of yet, there is little evidence from the literature or from early results of the IDH support, that such business model interventions indeed improve the margins of supported companies and result in increased wage levels. This is understandable because specific effects at company level in terms of margins and wage levels are generally not documented and published because of its sensitive and competitive nature.

Figure 6.7 *The evidence base on improving wages through making business models more efficient and effective*

	Impact before 2016			
	Literature			
Impact story	On impact others than IDH	On IDH contribution to impact	Interviews IDH	Sector survey
IDH support → proven business models through which higher wages can be paid	—	—	—	—
Proven business models → scaled + replicated in sector	—	—	—	—

In the next two paragraphs, we will present the evidence base of both elements of the impact story.

6.4.1 Does IDH support lead to business models for more efficient production, through which higher wages can be paid?

Evidence on IDH's contribution to changes

As IDH has recently started with this approach, to date it has not yet been tested whether IDH has supported business models to become more efficient.

Evidence from the wider literature on the plausibility of IDH's approach

Many studies support IDH's strategy that there is a need to shift from Corporate Social Responsibility (CSR) subsidised pilots to business models based on a sustainable sourcing strategy[97].

6.4.2 Are such proven business models scaled and replicated sector wide?

Evidence on IDH's contribution to changes

As IDH has started recently, there is no evidence yet on whether business models have been scaled or replicated sector wide.

Evidence from the wider literature on the plausibility of IDH's approach

We did find information in the wider literature on conditions for scaling. For instance, DCED finds that using matching grants with co-funding by companies, instead of full-project funding might improve the future replicability of pilot projects for the company itself as well as others in the sector[98]. This improves the seriousness of the business plan, and results in the involvement of senior staff of a company, instead of CSR project office staff. This is in line with the IDH strategy to provide companies with matching funds for pilot projects, and support them in developing their business models through the establishment of best practice business cases and by organising learning activities.

Scaling up good experiences and outcomes of pilot activities requires a step-by-step approach, careful local adaptation, and clarity in what is being scaled up[99]. The investments in scaling up might not automatically comply with a corporate return on investments strategy. Even if a successful pilot project shows good potential, the conditions on a large scale may differ significantly from the pilot project situation.

An example of that is direct sales to buyers, which could also be a business innovation strategy to improve margins. The limiting factor for scaling is that organising direct procurement is costly, therefore having support in pilot phases and insights on the business case of pilot initiatives can be helpful. Otherwise, such efforts are likely to remain small CSR pilot projects[100].

6.5 Conclusions on IDHs contribution to public good impact and the plausibility of IDH's approach

The figure below summarises the key conclusions for the impact theme 'living wage and improved working conditions'. Certain impact stories do not have enough supporting evidence yet; the next page includes recommendations to IDH in order to address these gaps in the coming years in order to allow for a full impact story to be told in 202

Figure 6.8 *Summary of conclusions for the impact theme Living wage and improved working conditions*

Improving worker wages, in-kind benefits and working conditions…	Was enhanced through…	Which has led to…	Evidence from wider literature	Evidence on IDH contribution to impact
… by improving sector policies (public-private) **Result area: sector governance**	Support to multi-stakeholder sector initiatives OUTPUT	Worker-management dialogue and collective bargaining agreements OUTCOME	●	●
	Worker-management dialogue and collective bargaining agreements OUTCOME	Improved sector governance, creating an enabling environment for higher wages IMPACT	●	●
… by improving human resource management **Result area: field level sustainability**	Support to companies (capacity building) OUTPUT	Improved human resources management OUTCOME	●	●
	Better skills, meals and housing OUTCOME	Improved worker productivity and nutrition* IMPACT	●	●
… through making business models more efficient and effective **Result area: business practices**	Business model interventions that improve the margins of supported companies OUTPUT & OUTCOME	Increased wage levels IMPACT	—	—
	Proven business models OUTCOME	Business models are scaled and replicated IMPACT	—	—

** The evidence found on IDH impact refers to improved nutrition, not to worker productivity. The evidence from the wider literature refers to improved productivity, not to nutrition.*

See page 11 for legend

6.6 Baseline situation impact theme living wage and improved working conditions

At this moment, as some studies are not finished and metrics were not yet available at the time of writing, it is not possible for us to report on all required KPIs to tell a full baseline story. In the tables below the available data is presented. In the coming years additional KPIs and analysis of the combined information will be included.

Table 6.4: *Selected baseline metrics impact theme inclusive business models & smallholder farmers' livelihoods improvements*

	Private sector investments in program (mln euro)	Business cases developed to show the potential of sustainable practices	Number of producers/workers trained (#)	Volume of sustainably produced crop (MT)	Adoption rate by producers/workers of improved practices	Farmland area where practices applied (ha)
Apparel	0.8	0	-	0	0	-
Cotton	21.6	-	1,500,000	3,000,000	-	3,500,000
Fresh & ingredients	6.4	0	0	-	0	0
Tea	9.4	0	193,000	220,000	0	30,530

Cells marked with '-' mean that baseline data was not yet available for a certain program for a specific indicator or that the indicator has not been selected by the program as an indicator to report upon. These cases are not distinguished in the table.

Source: IDH Result Measurement Framework

Table 6.5 *Baseline information for PoC Malawi 2020 Tea Revitalization Program: Living wage for Malawi compared to poverty lines and other wage standards*

	Malawian Kwacha
Living wage per workday for rural Malawi (without in-kind benefits)	1,531
Living wage per workday for rural Malawi (with in-kind benefits)	1,408
Poverty line (World Bank)	1,241
Prevailing wages of tea estate workers (including in-kind benefits)	839 - 965
Extreme poverty line (World Bank)	776
National poverty line (Malawi)	728
Tea Association of Malawi (TAML) basic wage	560
Malawian statutory agricultural minimum wage	551

Source: Anker & Anker (2014)

Table 6.6 *Baseline information for PoC Malawi 2020 Tea Revitalization Program - living wages: Information box on nutrition on tea plantations in Malawi*

- A share of 25-35 % of rural Malawians have low dietary diversity
- 3 out of 4 Malawian children have mild vitamin A deficiency
- In the tea regions Thyolo and Mulanje 50% of children are stunted
- In the tea regions Thyolo and Mulanje 50-60% have anaemia (iron deficiency).
- At visited tea estates, half of total absenteeism (16-20%) is caused by employee sickness
- At some estates, volume targets are regularly not achieved due to high absenteeism rates

Source: GAIN/IMANI (2015)

6.7 Recommendations for measuring IDHs contributions to public good impact towards 2020

Please find below an overview of concrete activities to focus on to be able to measure the impact of IDH in the next years. We present further details per result area in Appendix 3. The activities are proposed based on the challenges with the evidence base for this impact theme encountered during the baseline study. They thus do not contain a list with all research activities and analyses to be undertaken. A total overview on how we will measure the impact of IDH can be found in Chapters 2 and 3.

Table 6.7 *Overview of recommendations for impact theme living wage and improved working conditions*

Impact routes	**6.6.1 Improving sector policies → Improved sector governance, creating an enabling environment for higher wages (Impact)**	**6.6.2 Improving Human Resource Management → Improved worker productivity and nutrition**	**6.6.3 Effectiveness and efficiency of business models → investments in better working conditions**
Key challenges in measuring IDHs contribution to impacts	To verify whether and how changes in public and private policies that result from IDH supported multi-stakeholder initiatives influence wage levels and in-kind benefits	To increase the evidence base regarding changes in human resources management due to IDH support, and its effects on working conditions.	To verify the effectiveness and efficiency, and the scalability and replicability of business models, especially on the whether they lead to investments in better working conditions
Recommendations per source of evidence			
In-depth studies on the IDH Proof of Concepts	IDH to ensure that information will become available for the Proof of Concepts, through applying appropriate research methodologies, on: 1. Changes in policies and strategies through the IDH program 2. Whether such changed policies/strategies lead to improved sector governance creating an enabling environment for field level change (working conditions, wage levels and in-kind benefits). A baseline assessment is not required for measuring such outcome and impacts.	Ensure that the Malawi study includes an assessment of IDH's contribution to changes in HRM, working conditions, including its effects on nutrition and wage levels. And that the Vietnam study includes evaluation of HRM, working conditions and worker productivity	IDH to ensure that information will become available, through applying appropriate research methodologies, for the Proof of Concepts on: 1. Changes in business practices through the IDH program 2. The effectiveness, profitability, scalability and replicability of business models. A baseline assessment is not required for measuring such outcome and impacts
Stakeholder interviews*	Conduct 6 additional stakeholders interviews (public and private) in Malawi (tea sector) and Vietnam (Apparel)	Conduct 4 additional interviews with private sector stakeholders in Malawi (tea sector) and Vietnam (Apparel). These interviews could overlap with the	Conduct 4 additional interviews with private sector stakeholders in Malawi (tea sector) and Vietnam (Apparel). These interviews could overlap with the

	interviews for assessing changes in business practices	interviews for assessing changes in field level sustainability
Other**	IDH to explore with various partners/programs the possibilities to use their data for the measurement of impact at field level. Examples of such partners/programs are: Better Cotton Initiative (BCI), the African Cashew Initiative (ACI), Trustea, Floriculture Sustainability Initiative (FSI), and MPS***.	

* In total, 10-15 interviews are already planned to be conducted in 2018 for the midterm review, and the same number in 2020 for the end line report. The number of interviews mentioned in this overview are additional to that number

** The research activities in the “Other sources of evidence” category are not planned and budgeted for in the current evaluation program (2016-2020).

*** Initially MPS was the acronym for 'Milieu Project Sierteelt'. MPS merged with ECAS B.V. in 2007, and the new organization continued its activities as MPS.

7 Responsible agrochemical management

In this chapter, we present detailed information on the IDH impact theme 'responsible agrochemical management'. This includes the activities and targets for the impact theme as well as the intervention logic; how IDH intends to achieve the expected impacts. A large part of the chapter is dedicated to presenting the current evidence on IDH's contribution to impacts and information from the wider literature on similar interventions and strategies for each impact story.

The following impact stories are discussed in this chapter:

- 7.2 Improving farmers' pesticide management through improving public and private pesticide strategies
- 7.3 Improving farmer profitability, market access, food safety, ecosystem health, health and safety through improved pesticide management
- 7.4 Improving pesticide management through proven service delivery models and market demand for sustainable produce

Based on the existing evidence, we recommend research activities to enhance the evidence base towards 2020.

7.1 IDH support activities and targets

IDH supports responsible agrochemical management through:

1. Convening trade and industry to create market commitments for sustainability and sustainable sourcing
2. Convening coalitions of sector actors to create an enabling environment at national and/or local level
3. Supporting the development & improvement of policies and standards
4. Organising sector learning
5. Developing & improving data collection and management tools
6. Supporting the analysis of data to identify useful information for sector actors
7. (Risk based) training and coaching of producers
8. Development of service delivery models.

Through these activities, IDH aims to work with **5.48 million farmers and workers**, bringing **13.32 million hectares** of land under responsible management practices.

Table 7.1 *Programs in which IDH works*

Programs supported by IDH
Aquaculture
Coffee
Cotton
Fresh & Ingredients
Tea
Spices

Table 7.2 *Description of available studies related to the Proof of Concepts for the impact theme responsible agrochemical management*

PoC	**Reduced toxic load of agro-chemicals in spices, table grapes, cotton and tea in India**
Available study related to PoC	CMS (2015) Baseline study report on chili cultivation in Guntur and Khammam.
Description	The baseline study explored the agricultural practices of chili farmers in the Andhra Pradesh and Telangana region in India, who are trained by IDH on sustainable cultivation principles. On average farmers, have 1.7 hectare. Most of them are first generation farmers. Their yields are between 4.2 and 4.9 tonnes per hectare, which is much higher than the national average productivity in chili (1.64 tonnes) and still considerably higher than the state average productivity (3.26 tonnes per hectare). Farmers do apply practices such as summer ploughing, using high yielding varieties and regular monitoring of signs of pest and disease attacks. However, levels of applying manure are low and the awareness on the types of pesticides and details on the labels were low. Approximately half of the households had faced health issues related to chilli cultivation, like nausea and skin related problems. Some recommendations were done for the programme. First, it is recommended to use more visual media to

	disseminate information as the literacy of farmers is generally low. Second, attention could be focused on building strong and lasting institutions as the results show the membership in institutions is relatively low. Third, more use could be made of influencing actors such as experienced farmers and opinion leaders, as farmer decisions turn out to be highly influenced by their peers.
Available study related to PoC	CMS (2016) Study of current scenario in grape farming in Nashik district of Maharashtra, India
Description	The study shows that grape farmers in the Nashik district in Maharashtra India, have average yields of 193 qt/ha, which is 14 % lower than the national average of 220 qt/ha and 30 % lower than the expected yield of 250 qt/ha of the Thompson seedless variety these farmers are using. Net income per hectare for farmers exporting grapes is 9940 USD per year. Half of the costs these farmers make is spend on pesticides and fungicides. A third of them uses bio pest control measures. The study recommends five lines of action: (1) designing a package of good practices for grape cultivation'; (2) reducing harmful chemical usage; (3) increasing water saving measures; (4) promote farmer access to crop insurance and (5) linking farmers up with new technologies.
Available study related to PoC	BCI (2014) Better Cotton Initiative 2013 Harvest Report
Description	This report gives an overview of the activities of the Better Cotton Initiative for the year 2013 and compares key metrics on BCI farmers in 6 countries with metrics collected from farmers not participating in BCI. The results show that while BCI farmers use 9 up to 63 % less pesticides then non-BCI farmers, their profit is 2 up to 44 % higher than profits among non-BCI farmers. In most countries, BCI farmers have decreased their synthetic fertiliser use and increased their organic fertiliser use in comparison to the non-BCI group. Average yields decreased in most countries; only in Tajikistan and Turkey yields dropped relative to non-BCI farmers.

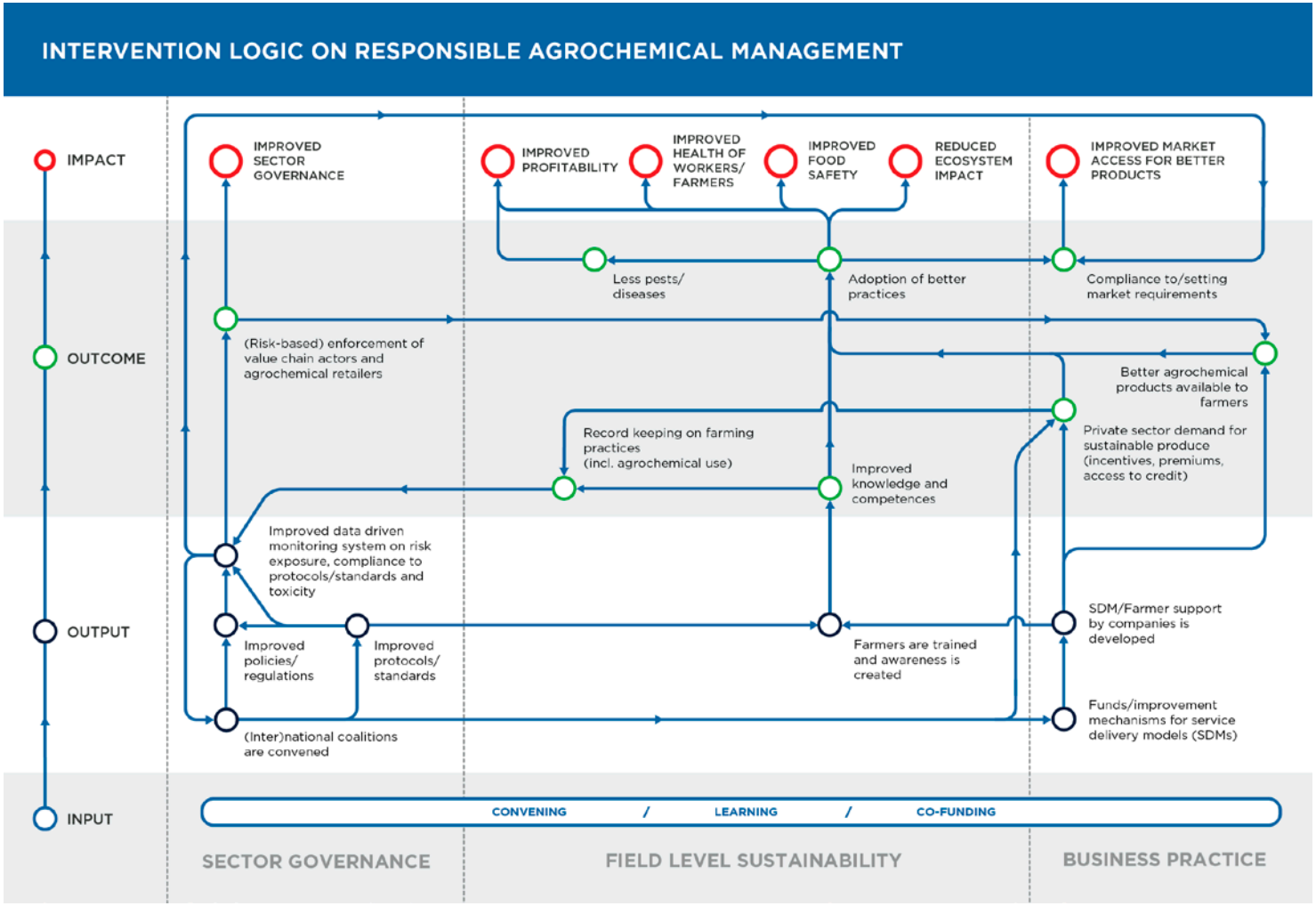
PoC	**Reduced toxic load of agro-chemicals in coffee, Fresh & Ingredients and tea, Vietnam (water & soil pollution) - part of ISLA**
Available study related to PoC	No available study at this moment in time related to this PoC

Table 7.3 *Main targets per program*

	Cotton	Tea	Aquaculture	F&I
Farmers/ workers trained on better agrochemical management	3.500.000	340.000	50.000	25.000
Farmers/workers adopting better agrochemical management	2.625.000	170.000	37.500	15.000
Farmers/workers with improved agrochemical management	2.625.000	170.000	37.500	15.000

More information on in which countries IDH supports activities in these programs and specific targets for each program can be found in Appendix 1.

Figure 7.1 *Intervention logic for Impact theme Responsible agrochemical management.*



Source: IDH

As this impact theme has been redefined recently by IDH as one of the main impact themes, there is limited evidence yet on impact of IDH support for all the result areas in this theme. But IDH has already supported the training of farmers in better pesticide practices, and the increase in market demand for sustainable produce. Because of these dynamics, the information on this impact theme focuses on field level sustainability aspects (Section 7.3) and market demand for sustainable produce (Section 7.4). In the upcoming reports, we will further build the evidence base for the outcomes and impacts which are currently missing.

An important element of the recent developments is that the impact theme was renamed from 'Reduction of toxic load (by agro-chemical use)' to 'Responsible agrochemical management'. The IDH target and RMF indicator related to toxic load will thus also be adjusted to reflect this change.

Note for the reader: agrochemicals as a group of products also formally includes chemical fertiliser. But the IDH work in this theme mainly focuses on responsible pesticide use (including herbicides, insecticides and fungicides), while also including use of antibiotics in aquaculture. In this chapter, we thus refer to pesticide use and management only. Furthermore, pesticide application may be done by both farmers and farm workers. As farmers, who can range from smallholder farmers to large farmers including plantations/estates, are responsible for pesticide use and management, and thus also bear the costs, we have focused our review of the evidence on *farmer* behaviour and profitability.

7.2 Improving farmers pesticide management through improving public and private pesticide strategies

IDH intends to support responsible agrochemical management by farmers and workers through supporting the development and implementation of public and private policy instruments. The implementation of such policy instruments is expected to improve farmers' pesticide management, in terms of reducing amounts of pesticides used, and applying less toxic pesticides.

So far, we found only limited evidence from the wider literature, that multi-stakeholder initiatives have been effective in the development of public and private policies concerning agrochemical management. The same counts for evidence on changes in pesticide management by farmers because of such policy changes.

Figure 7.2 *The evidence base on improving farmer pesticide management through improving public and private pesticide strategies*

	Impact before 2016			
	Literature			
Impact story	**On impact others than IDH**	**On IDH contribution to impact**	**Interviews IDH**	**Sector survey**
IDH → policy instruments and standards	●	–	●	–
Policy instruments and standards → improved pest management	●	–	–	–

See legend on page 11

In the next two paragraphs, we will present the evidence base of both elements of the impact story.

7.2.1 Does IDH support to multi-stakeholder coalitions lead to public and private policies that aim to improve agrochemical management at farm level?

Evidence on IDH's contribution to changes

IDH supported the Better Cotton Initiative (BCI), cooperating with companies and civil society actors, and implemented the Better Cotton Fast Track Program together with partners which hugely up-scaled the implementation of BCI. See for more information on BCI Section 7.3.1. Also, we understand that IDH support has contributed to stakeholders aligning around the goal of 20% of all Indian spices to be produced sustainably by 2025.

Another major activity of IDH in agrochemical management is the work in the Aquaculture Program, where IDH has contributed to the establishment of the Aquaculture Stewardship Council (ASC). The ASC successfully scaled up the volume of responsibly produced fish in countries such as Thailand and Vietnam and, with the assistance of IDH the sector recently adopted a data driven approach to stimulate aquaculture farmers to reduce the use of antibiotics and other chemicals through lowering the risk of diseases.

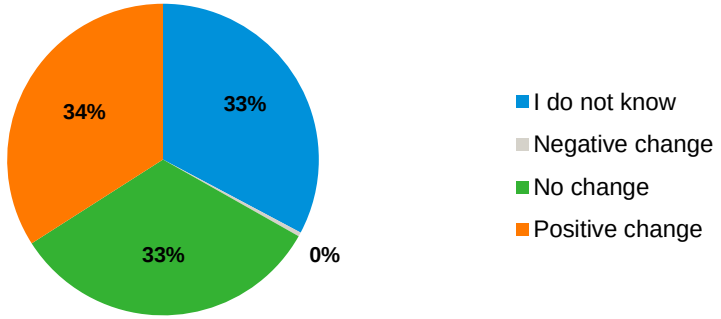
IDH has also been active in hosting the Sustainable Spices Initiative, bringing together processers, blenders, brands, retailers and NGO's to address key sustainability issues in the sector, such as residue levels of agrochemicals. Although SSI and its local platforms in India, Vietnam and Madagascar have been engaging in constructive discussions with local governments market uptake of sustainable spices has been limited with 10-20% uptake targets being far from met.

In Vietnam, IDH has engaged in a public-private dialogue and lessons sharing on agroforestry and water management. The Ministry of Agriculture in Vietnam is now involved in the steering groups of different IDH commodity programs. Moreover, IDH has contributed to the establishment of the Vietnam Coffee Coordination Board as well as the development of a National Sustainability Curriculum for coffee, in which the reduction of agrochemical use has a prominent place.

In the tea program, IDH participates in the steering committee of the KTDA program in Kenya and chairs the quarterly meetings of the Malawi Tea 2020 steering committee meetings, therefore having a significant influence in the national sector policies related to agrochemical use in the tea sector.

Additional information was gathered through the sector survey with regard to agrochemicals. One third of the respondents to the sector survey indicate that policy changes regarding agrochemicals have taken place in the last three years. One third indicated no change to have taken place, and one third indicated to have no knowledge on policy changes. Of the people who indicated that policies had changed, 50% indicated that IDH had influenced that change, though the influence was limited (on average "some influence"). 50% indicated that IDH did not influence the policy change or did not know whether IDH influenced the change.

Figure 7.3 *Stakeholder perception on policy change regarding agrochemicals and IDH's influence on that change (n = 235)*



Evidence from the wider literature on the plausibility of IDH's approach

As farmers' behaviour is difficult to monitor and influence, state regulations have an important role in preventing the availability of the most toxic agro-chemicals in a country[101]. It is more effective to avoid bad products on the market than to try to control farmers' usage. Though many governments are aware of irresponsible agro-chemical management practices, the policies and institutional environment are limited by the lack of effective legislation[102].

The influence of international requirements on residues depend on the international trade patterns of a country. In less demanding markets, as in Vietnam[103] there may be less focus on responsible agrochemical management or on preventing residues in food products. Supplying more demanding markets in Europe creates a need to ensure Maximum Residue Levels (MRLs) are not exceeded, as in the East-African fresh fruit and vegetable sector.

Some experts doubt if sector specific action plans are the best way to reach the goal of better public policies[104]. Likely, the work of multilateral organisations like FAO and WHO on these issues has more leverage to change policies and regulations in a country than sector platforms, but that is something to be verified later. Also, because many institutions need to be set up in order to convert intentions into effectively implemented policies that control trade and use of agro-chemicals. However, the national legislations and policies themselves are crucial as the basis for authorising plant protection products on the market and also for inspection of trade and preventing sales of unauthorised pesticides.

On the private policy side, sector plans could be effective if companies agree together on a strategy to make better agrochemical products available to farmers, or themselves decide to change the products they make available to farmers. Improved protocols and standards are also likely to have an influence, if implemented appropriately. IDH supports such processes, but no evidence is available at this point in time on the effectiveness of their support.

7.2.2 Does the implementation of public and private policies lead to improved farmers' pesticide management?

We did not focus our literature review on whether policy instruments will actually lead to improved farmers' pesticide management. However, what our experts do know is that public policies, even though well-defined and formally agreed upon, may not necessarily lead to effective policy implementation. One of the key elements of policy implementation is, for instance, enforcement. Enforcement is a challenge in most developing countries, but is required to address problems of illegal imports and trade of highly hazardous pesticides. Enforcement through risk based mechanisms is part of the IDH approach.

7.3 Improving farmer profitability, market access, food safety, ecosystem health, health and safety through improved pesticide management

IDH supports farmers and workers through training aiming to improve farmers' pesticide management. Responsible pesticide management is expected to lead to:

1. Improved farmer profitability because of a reduction of pesticide costs and reduction of diseases
2. Reduced ecosystem impact because of reduction of pesticides used, and application of less toxic pesticides
3. Improved occupational health and safety of farmers and workers (no information available yet in this chapter)

4. Improved market access for farmers and improved food safety for consumers because of lower or no MRLs (no information available yet in this chapter).

So far, the evidence base from the wider literature on the effects of farmer training indicates that training of farmers often leads to improved pesticide management in only some of the farmers, and not all farmers adopt all recommended practices. The evidence on the impact of improved pesticide management on farmer profitability or income is, however, generally positive. While there is little evidence actually available, the impacts of improved agrochemical use on the ecosystem, health and safety, market access and food safety are likely self-evident as there seems a clear direct link between the use of agro-chemicals and food safety and health concerns of consumers, as well as effects on the ecosystem.

Figure 7.4 *The evidence base on improving farmer profitability, market access, food safety, ecosystem health, health and safety through improved pesticide management*

	Impact before 2016			
	Literature			
Impact story	**On impact others than IDH**	**On IDH contribution to impact**	**Interviews IDH**	**Sector survey**
IDH support → improved pest management	●	–	●	–
Pest management → profitability / market access	●	–	●	–
Pest management → impact ecosystem / food safety / OHS	●	–	–	–

See page 11 for legend

7.3.1 Does IDH support lead to responsible pesticide management by farmers?

Evidence on IDH's contribution to changes

IDH supports the implementation of activities of the Better Cotton Initiative (BCI) through their BCI Growth & Innovation Fund (former Better Cotton Fast Track Program), which in 2016 continued in the form of the BCI Growth and Innovation Fund. In this section, we present a discussion on the effectiveness of BCI as a mechanism for supporting responsible agrochemical management. We do not discuss the extent of IDH's contribution to BCI through the BCI Growth & Innovation Fund and the Growth and Innovation Fund, nor do we reflect on the representativeness of better cotton production in the total cotton market. Such discussions will be included in the midterm review.

BCI, and the BCFTP/Growth and Innovation Fund, work with cotton farmers to train them on optimizing the use of chemical fertilizer and pesticides, also aiming to improve farmer's profitability through reduced costs. By mid-2016, a total of 724,000 cotton farmers had been trained. However, we have not seen evidence through independent evaluation studies that this support has been effective, by comparing BC verified farmers over time with non-verified farmers. A promising baseline study on BC in India has just been published[105]. This baseline report is methodologically strong and is likely to capture the net-effects of the IDH supported Better Cotton Initiative in one district in India.

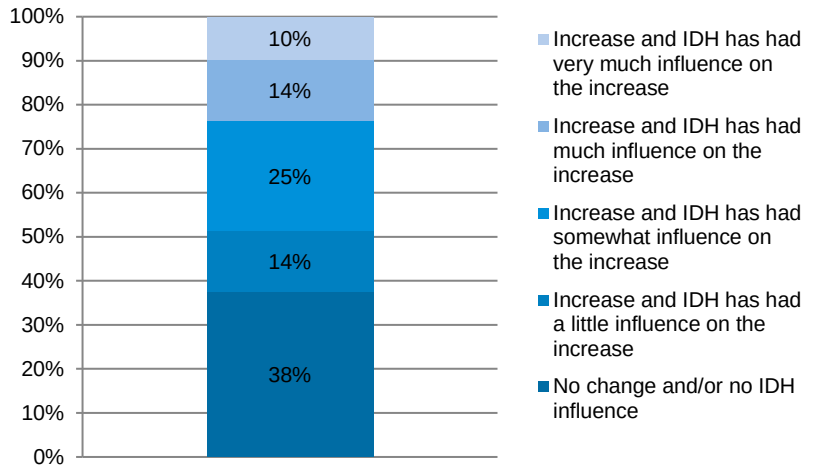
Several other programs of IDH have an explicit focus on reducing the use of agrochemicals: the Fresh & Ingredients program hosted a range of projects on responsible agrochemical use: a producer-support project on table grapes in India; the Sustainable Spices Initiative, focussing on excessive pesticide use in the production of spices in different Asian countries; and two projects on IPM and residue contamination in the flower sector in both Kenya and Ethiopia.

In the tea program, the Trustea certification has verified 250 estates and bought-leaf factories verified, thereby reducing the irresponsible use of agro-chemicals in the sector. In the aquaculture program, IDH partnered supported the development of an innovative tool to analyse disease risk factors, which was rolled out across all field-level projects in Vietnam to reduce the amount of antibiotics used.

Whereas many examples of IDH involvement in reducing the use of agro-chemicals are available, little evidence is available on the exact level of adoption of responsible pesticide management by producers.

The sector survey responses on changes in agrochemical use, and IDH's influence on that change are highly polarised. 38% of the respondents report a decrease in agrochemical use, positively influenced by IDH. And 62% reports an increase in agrochemical use, positively influenced by IDH. Most probably, the respondents have rightfully interpreted agrochemicals to include both pesticides and chemical fertilisers. Because of this, an overall conclusion is difficult to draw. In the next surveys, we will specify what type of agrochemicals we refer to.

Figure 7.5 *Change in agrochemical use and IDH's influence on that change (N = 72)*



Evidence from the wider literature on the plausibility of IDH's approach

The overall impact of pesticide use in agricultural crops can be monitored in terms of pesticide use and its potential risks to human health or to the environment. But actual risks are to a large extent related to their *proper* use and field level application.

There are different ways to train and educate farmers about toxicity and pesticide management practices. Examples are intensive training modalities in the field (such as through Farmer Field Schools), training and visits by extension services, public broadcasting or ICT-based techniques. Most studies detect a positive response by farmers on the various training modalities[106], though there is some concern about the low level of adoption, especially of practices that have less visibility or require insight into pest cycles and ecosystems[107]. Research in Vietnam shows that group size matters, and needs to be not too small nor too big for Integrated Pest Management (IPM) training to be effective; 'higher pesticide residues were found in

both very small and large groups due to the combined effects of economy of scale (more support of technical staff) and free riding (less control on effective implementation)'[108]. In aquaculture, the adoption of more sustainable practices by smallholders is limited compared with the change in practices by plantations or industrial firms[109]. Furthermore, evidence exists that despite many programs across the globe, the application of complex IPM practices by farmers is still very limited[110]. In a review of IPM efforts in Asia and Africa, it was concluded that policy support for IPM is relatively rare, counter-interventions from the pesticide industry are common, and that the challenged related to management of pests is always changing as pests, diseases and weeds evolve and move'[111].

To improve farmers' pesticide management, it is important that conditions for the proper application of responsible pesticide management are met, e.g. the availability of less harmful products in shops, no unauthorised products, the availability of protective equipment, etc. Pesticide use is furthermore a joint result of retailers' information provision strategies and farmers' trust. The lowest pesticide use occurs when accurate information is provided and when farmers highly trust the information provider. Overuse occurs with either information distortion or low levels of trust. Cooperatives have advantages both in terms of information provision and trust, thereby leading to the lowest use of pesticides[112].

A regular review of the promoted 'good' agricultural practices by a sector-specific expert panel that includes different perspectives could strengthen the evidence-base, because a reassurance that the practices that are being trained are appropriate may reduce doubts of 'critical outsiders'. This is especially related with the recommendations regarding new varieties and the use or non-use of fertilizers and pesticides.

7.3.2 Does responsible pesticide management lead to improved farmer profitability?

Evidence on IDH's contribution to changes

So far we have found no documented evidence on IDH's contribution to farmer profitability through responsible pesticide management.

Evidence from the wider literature on the plausibility of IDH's approach

The literature is quite positive about the effects of better pest management practices on income[113]. Reviews of Integrated Pest Management (IPM) projects shows a very high profitability due to pesticide reduction, principally because the high frequency of 'calendar spraying', the application of chemicals at certain times of the year or in set intervals, proved to be unnecessary in many crops, thus reducing the amount of pesticides used (reduced costs) without affecting crop yields (and thus income)[114].

Scholars warn for the exclusion of smallholders as a result of voluntary standards and certification systems that require and control farm level pesticide management practices[115]. For example the profitability of organic farming in developed countries is largely dependent on a price premium, due to on average lower yield levels. In Africa and Latin America, input use is far lower and yields respond well to organic practices[116], while Asian smallholder agriculture is characterised by a much higher levels of application of agro-chemicals[117].

7.3.3 Does responsible agrochemical management lead to reduced ecosystem impact?

Evidence on IDH's contribution to changes

The focus of IDH in the past years has been mainly on smallholders, therefore the effectiveness of the approach towards responsible agrochemical management has not been tested yet.

Evidence from the wider literature on the plausibility of IDH's approach

The literature suggests that BCI-type of interventions may be able to reduce environmental impacts. But regarding actual evidence on the impacts of BC verification, the study of Kumar et al. (2015)[118] indicates that it is too early for BCI to see major changes in labour practices that reduce environmental problems in cotton production. Contract farming or the implementation of sustainability standards may also lead to positive environmental effects and health effects through less use of pesticides[119].

7.4 Improving pesticide management through proven service delivery models and market demand for sustainable produce

IDH also supports the improvement of farmers' pesticide management through:

1. improved service delivery to farmers which leads to better access to less toxic agrochemical products and because of that to responsible agrochemical management
2. Increasing market demand for sustainable produce.

We found limited evidence that farmers improve their pesticide management because of improved access to agrochemicals through service delivery models. Also because we did not conduct an extensive research in this topic. However, it is plausible that such interventions would have an effect.

Figure 7.6 *The evidence base on improving pesticide management through proven service delivery models and market demand for sustainable produce*

	Impact before 2016				
	Literature				
Impact story	**On impact others than IDH**	**On IDH contribution to impact**	**Interviews IDH**	**Sector survey**	**RMF**
IDH support → better access to less toxic agro-inputs	●	●			
Proven models + demand for sust. produce → embedded sustainability	●				●

7.4.1 IDH support leads to better access to less toxic agrochemicals for farmers and to responsible agrochemical management?

Evidence on IDH's contribution to changes

As described in section 7.3.1, there is a range of IDH programs with an explicit focus on reducing the amount of agrochemicals used in production processes: the Cotton, Tea program, the Aquaculture program and the Fresh & Ingredients Program in its flower, spices and table grape activities. However, no data available is at this moment in time on the exact reduction in agrochemical use for these programs.

Evidence from the wider literature on the plausibility of IDH's approach

The effects of service delivery and adoption by smallholder farmers has been described in Chapter 4 on inclusive business models & smallholder farmers'

livelihood improvements. IDH support to service delivery models, including inputs and finance is a recent development, especially in the programs connected to this impact theme. It is thus too early to evaluate their effectiveness and financial sustainability.

The current literature on services to smallholder farmers states that the role of producer groups/cooperatives in providing services related to agrochemicals (quantity and quality) is considered key by many scholars[120], next to the collaboration of agro-input dealers[121].

Croplife, the industry association of the major agro-chemical suppliers, has a long history of training farmers on responsible agro-chemical management and IPM in many countries around the world. Another interesting example is the training in VietGAP, a standard for aquaculture in Vietnam, with a special focus on reducing the use of antibiotics and other toxins. Another interesting example is the technical support of the Dutch PSOM program of the Vietnamese Metro Distribution Centre of Fruits and Vegetables, assisting them with checking for high agrochemical values and achieving the HACCP (Hazard Analysis and Critical Control Points) certificate.

7.4.2 Do proven service delivery models and demand for sustainable produce lead to embedded sustainability at corporate level?

Evidence on IDH's contribution to changes

The only information we have available so far on embedded sustainability at corporate level is information from the RMF survey which IDH sent to its partners early 2016. The respondents generally confirm that[xi]: i) they have defined Key Performance Indicators and targets related to sustainability issues, ii) they have made progress in connecting the sustainability issues to a dedicated rewarding system/internal performance based HRM policy, iii) they have embedded sustainability in the procurement system of the company, iv) their CEO paus attention to sustainability issues in defining the strategic direction of the company and, v) they report externally on the progress made in addressing sustainability issues.

The companies also indicate that they are more aware of the importance of addressing the sustainability issues in the sector because of partnering with IDH. But they less strongly perceive that IDH has contributed to embed sustainability at corporate level in the company.

Evidence from the wider literature on the plausibility of IDH's approach

Procuring companies like Unilever are increasingly sourcing their products from suppliers that comply with minimum requirements related to agro-chemical use. This provides a venue for replication and upscaling of proven business models that manage to balance the costs and benefits of changing pest management and pesticide use. The direct link of agro-chemicals to food safety and health concerns of consumers makes the leverage for these type of business models larger than for

xi The average score is 4 on a scale of 1-5 in which 1 is "strongly disagree", 3 is "neither agree nor disagree" and 5 is "strongly agree".

business models with more social related quality attributes. The main motivation for consumption of certified products are consumers' health concerns[122].

The effectiveness of this demand-pull process will be higher in products that are consumed without pre-processing (fresh vegetables and spices) and less effective in products that are not eaten (like cotton, apparel, flowers). Also the market for products with reduced agro-chemical content is in the OECD countries, and less in the emerging economies in Asia or Russia[123].

7.5 Conclusions on IDHs contributions to public good impact and the plausibility of IDH's approach

The figure below summarises the key conclusions for the impact theme 'responsible agrochemical management'. Certain impact stories do not have enough supporting evidence yet; the next page includes recommendations to IDH in order to address these gaps in the coming years in order to allow for a full impact story to be told in 2020

Figure 7.7 *Summary of conclusions for impact theme responsible agrochemical management*

Improving farmers pesticide management…	Was enhanced through…	Which has led to…	Evidence from wider literature	Evidence on IDH contribution to impact
… through improving public and private pesticide policies	Support to public and private policy development through multi-stakeholder initiatives OUTPUT	Development of public and private policies and standards concerning pesticide management OUTCOME		
Result area: sector governance	Changes in policies and standards OUTCOME	Improved sector governance, creating an enabling environment for changes in pesticide use by farmers IMPACT		
Improving farmer profitability and market access, as well as food safety, ecosystem and occupational health and safety through responsible pesticide management	Training of farmers OUTPUT	Improved pesticide management* OUTCOME		
	Improved pesticide management OUTCOME	Farmer profitability or income IMPACT		
Result area: field level sustainability	Improved pesticide management OUTCOME	Positive impact on ecosystems, health and safety, market access and food safety IMPACT		
… through proven service delivery models and market demand for sustainable produce	IDH support to companies OUTPUT	Improved access to agrochemicals through service delivery models OUTCOME		
Result area: business practices	Proven service delivery models and demand for sustainable produce OUTCOME	Embedded sustainability at corporate level** IMPACT		

**Please note, not all farmers necessarily adopt all recommended practices.*

*** the IDH evidence on embedded sustainability at corporate level from the RMF is a generic IDH result, so not a result of IDH support regarding service delivery models.*

See legend on page 11

7.6 Baseline situation impact theme responsible agrochemical management

At this moment, as some studies are not finished and metrics were not yet available at the time of writing, it is not possible for us to report on all required KPIs to tell a full baseline story. In the tables below the available data is presented. In the coming years additional KPIs and analysis of the combined information will be included.

Table 7.4 *Selected baseline metrics impact theme inclusive business models & smallholder farmers' livelihoods improvements*

	Private sector investments in program (mln euro)	Changes in policies in line with increased sustainability and management of resources	Number of producers/workers trained (#)	Volume of sustainably produced crop (MT)	Adoption rate by producers/workers of improved practices	Farmland area where practices applied (ha)
Aquaculture	1.1	0	0	0	-	0
Coffee	19.8	0	0	0	0	0
Cotton	21.6	-	1,500,000	3,000,000	-	3,500,000
Fresh & ingredients	6.4	-	0	-	0	0
Tea	9.4	0	193,000	220,000	0	30,530
Landscapes – Ethiopia	0	0	0	0	-	0

Cells marked with '-' mean that baseline data was not yet available for a certain program for a specific indicator or that the indicator has not been selected by the program as an indicator to report upon. These cases are not distinguished in the table.

Source: IDH Result Measurement Framework

Table 7.5 *Baseline information PoC Reduced toxic load of agro-chemicals in spices, table grapes, cotton and tea in India: Difference in key indicators between Better Cotton Initiative farmers and comparison farmers*

Country	Yield	Pesticide Active Ingredient use	Synthetic Fertiliser use	Organic Fertiliser Use	Water Use	Profit
China	+ 11 %	- 10 %	- 1 %	+ 42 %	- 23 %	+37 %
India	+ 18 %	- 22 %	- 28%	+ 22 %	- 14 %	+ 44 %
Pakistan	+ 15 %	- 24 %	- 17 %	+ 85 %	- 14 %	+ 42 %
Tajikistan	- 5 %	- 63 %	+ 25 %	- 10 %	N.A.	+ 18 %
Turkey	- 1 %	- 9 %	- 18 %	N.A.	N.A.	+ 2 %
Mali	+ 8 %	- 55 %	- 2 %	+ 46 %	N.A.	+ 14 %

Source: BCI (2014)

Table 7.6 *Baseline information PoC Reduced toxic load of agro-chemicals in spices, table grapes, cotton and tea in India: Key metrics on yields, income, and pesticide related practices in chili cultivation in Guntur and Khammam*

Chili productivity per hectare (programme)	4.2 – 4.9 tonnes per hectare
Chili productivity per hectare (state average)	2.26 tonnes per hectare
Chili productivity per hectare (national average)	3.26 tonnes per hectare
Probability of living under the international 1.25 $ poverty line	9 – 14 %
Health problems mentioned related to chili cultivation	Nausea and skin problems
Average number of days lost due to ill health in last season	20 agricultural working days

Source: CMS (2016)

Table 7.7 *Baseline information PoC Reduced toxic load of agro-chemicals in spices, table grapes, cotton and tea in India: Yields, income and agrochemical use in grape farming, Nashik district, Maharashtra, India*

Yields of grape farmers in Nashik district	193 qt/ha
Expected yield from Thompson seedless grapes	250 qt/ha
National average yield of grapes	220 qt/ha
Net income for farmers exporting grapes	9940 USD/year
Share of farming cost spent on pesticides/fungicides	50%
Share of farmers using bio pest control measures	33%

Source: CMS (2015)

7.7 Recommendations for measuring IDHs contributions to public good impact towards 2020

Please find below an overview of recommendations that will assist the measurement of the impact of IDH in the next years. The activities are proposed based on the challenges with the evidence base for this impact theme encountered during the baseline study. And do thus not contain a list with all research activities and analyses to be undertaken. A total overview on how we will measure the impact of IDH can be found in Chapter 2

One of our recommendations is to conduct additional stakeholder interviews around IDH's Proof of Concepts, and specifically to assess changes in sector governance and business practices applying the 'process tracing' methodology[xii]. Because the stakeholder interviews we conducted have proven to generate very detailed and specific information on activities, outcomes and impacts, information which cannot easily be collected through the sector survey. As IDH also plans to conduct stakeholder interviews for its annual Proof of Concept report, it will need to be discussed who will be doing which interviews and how, to avoid stakeholders to be interviewed twice on similar topics, but also to ensure that high quality information on the impact of IDH activities on sector governance and business practices will become available.

Please find more specific recommendations in Appendix 2 (for the IDH Proof of Concept studies) and Appendix 3 (concrete recommendations per impact theme).

Table 7.8 *Overview of recommendations for Impact theme Responsible agro-chemical management*

Impact routes	**7.6.1 Improving public and private pesticide policies and standards → Improved sector governance, creating an enabling environment for changes in pesticide use by farmers (Impact)**	**7.6.2 Improving pesticide management → profitability, health & safety, market access, food safety, and ecosystem health**	**7.6.3 SDMs and market demand for sustainable produce → enhanced service delivery, and adoption of SDMs by other companies.**
Key challenges in measuring IDHs contributions to impact	To assess changes in public and private policies due to IDH supported multi-stakeholder partnerships. To verify whether and how such policy changes catalysed actions that influence responsible agrochemical management by farmers.	To have and use a good indicator of 'toxic load'. To measure impacts on farmer profitability, ecosystems, food safety, market access, and occupational health and safety.	To generate evidence on proven business models that help to provide farmers with less, better quality and less toxic agro-chemicals. And whether and how such business models are adopted by other companies not partnering with IDH

[xii] Process tracing is a methodology is used to explain outcomes in psychology, political science and historical studies. Through process tracing it is established, per specific case, what (kind of) processes have taken place, which are verified by exploring real events in time in a transparent way, including whether other actors and factors influenced the processes and/or outcomes and impacts reached.

Recommendations per source of evidence			
In-depth studies on IDH Proof of Concepts	IDH to ensure that information will become available for the Proof of Concepts, through applying appropriate research methodologies, on: 1. Changes in policies and strategies through the IDH program 2. Whether such changed policies/strategies lead to improved sector governance creating an enabling environment for field level change (farmer pesticide management). A baseline assessment is not required for measuring such outcome and impacts.	Ensure that all studies include an assessment of: pesticide use in kilogram of active ingredients per hectare, toxic load, occupational health & safety related to pesticide use and adoption of practices distinguished by farmer type. And verify IDHs approaches to change farmer's practices: what is the IDH strategy, does it work, for whom and under what conditions? Please find more information on the toxic load indicator to be used in Appendix 2.2.	IDH to ensure that information will become available, through applying appropriate research methodologies, for the Proof of Concepts on: 1. Changes in business practices through the IDH program 2. The effectiveness, profitability, scalability and replicability of business models. 3. Whether and how business models are adopted by other companies not partnering with IDH. A baseline assessment is not required for measuring such outcome and impacts
Stakeholder interviews*	Conduct 8 stakeholders in Vietnam (coffee) and India (cotton, tea, fresh & ingredients)		Interview 4 stakeholders in Vietnam and India, focused on this topic
Sector survey	Include a question in the sector survey on IDH's contribution to policy and strategy changes and their impacts on farmer's pesticide use	Include better questions in the sector survey on IDH's contribution to responsible pesticide management. Now respondents have replied having either fertilizers or pesticides in mind.	
Other**		IDH to explore with various partners/programs the possibilities to use their data for the measurement of impact at field level. Examples of such partners/programs are: Better Cotton Initiative (BCI), the African Cashew Initiative (ACI), Cropin data (India), Trustea, Aquaculture Stewardship Council (ASC) certification, Floriculture Sustainability Initiative (FSI), MPS***.	
Methodology		IDH to explore if the Farmer Field Book work in the coffee sector in Vietnam can be connected to the baseline study in Vietnam	

* In total, 10-15 interviews are already planned to be conducted in 2018 for the midterm review, and the same number in 2020 for the end line report. The number of interviews mentioned in this overview are additional to that number

** The research activities in the "Other sources of evidence" category are not planned and budgeted for in the current evaluation program (2016-2020).

*** Initially MPS was the acronym for 'Milieu Project Sierteelt'. MPS merged with ECAS B.V. in 2007, and the new organisation continued its activities as MPS.

Appendices

The appendices to this report can be found on a separate document.

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