

# Study on Public Private Partnerships for Contribution to Inclusive Green Growth

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# Foreword

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Public private partnerships have become increasingly popular in government policy. Especially in the domain of international cooperation and development aid, an increasing part of the budget is spent on public private partnerships. The expectation is that this will enhance the efficiency of public good provisioning, improve local representation and increase the overall effectiveness of international cooperation and development aid.

Although it is too early to evaluate this claim, the findings in this explorative study show that the different partnerships have found alternative ways of approaching efficient service delivery, local representation and public good provisioning in the design and implementation of their partnerships. We have asked Aidenvironment and Triple E Consulting to explicitly focus on the potential contribution of partnerships to Inclusive Green Growth objectives, given our work on Inclusive Green Growth for the Dutch ministry of Foreign Affairs- Directorate General Trade and International Cooperation. Interviewing the actors involved in innovative partnerships has generated interesting insights into the potential contribution of partnerships to Inclusive Green Growth. Further work will be required to elaborate the implications of these insights for partnerships design.

Based on the findings presented in this study we will prepare a more comprehensive PBL report on the potential of public private partnerships for Inclusive Green Growth, which will be forthcoming Spring 2015. In this report we will further elaborate the conceptual framework and explore the conditions for effective partnership design. Please don't hesitate to contact us or check our website to learn more about the follow up.

We hope you will enjoy reading this report as much as we did and learn about the potential contribution of public private partnerships to Inclusive Green Growth.

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# 1. Introduction

Inclusive Green Growth, or ‘the economics of sustainable development’ (WB 2012) is concerned with the welfare of current and future generations, e.g. a growth that is both inclusive (relating to social issues such as equality) and green (relating to environmental sustainability). It is based on the assumption of the need for economic growth- to reduce poverty and accommodate a growing world population- but underlines the need for growth to be green and inclusive in order for it to be welfare enhancing. Economic growth is usually not green nor inclusive because of failures in the current market system and in governance (non-priced environmental resources, non-representative or lacking institutions, weak property rights etc). Effective Inclusive Green Growth strategies address these underlying market and governance failures and thus manage to create synergies between growth, social inclusiveness and environmental sustainability. A further elaboration of the concept of Inclusive Green Growth (IGG) and of the elements of Inclusive Green Growth strategies can be found in Bouma and Berkhout (2015).

Public-Private Partnerships (PPPs) have the potential to be an effective vehicle for Inclusive Green Growth strategies because they combine the efficiency of private sector actors with the regulatory capacity of public actors and social representation of civil society organizations. The Netherlands Environmental Assessment Agency (PBL) is interested to know under which conditions and to which extent public private partnerships contribute to Inclusive Green Growth objectives. This is why they commissioned this study and collaborated in the design of the analytical framework. Based on the findings of this study, the Netherlands Environmental Assessment Agency will prepare a separate publication, in which the analytical framework of the analysis and assumptions behind Inclusive Green Growth and the potential of public private partnerships will be further elaborated.

Against this background, the objectives of this project are:

- To explore whether the PPPs promoted by the Dutch Ministry of Foreign Affairs address the objectives of Inclusive Green Growth in their plans and actions;
- To reflect on the opportunities and constraints for strengthening Inclusive Green Growth effects, by considering their (potential) role in addressing underlying market and governance failures.

It must be emphasised that this is an exploratory study, and not an evaluation study. The PPPs that were selected for this study do not have explicit Inclusive Green Growth objectives, so they cannot be judged on whether they do nor do not achieve IGG objectives. Any comparisons between projects that will be made in this report purely have the aim to distinguish patterns and draw explorative lessons with regard to PPP design.

The study was carried out by Aidenvironment (project leader) and Triple E Consulting. During the inception phase of the study there has been close collaboration with the Ministry of Foreign Affairs and the Netherlands Enterprise Agency (RVO) in order to select the PPPs to be studied and agree on the approach to be taken. There have also been meetings with the PPP Lab, to coordinate our study with their activities.

## 2. Method and concepts

### 2.1 Approach and methods

For the analysis, we selected partnerships initiated by the Ministry of Foreign Affairs in the field of water (FDW), food security (FDOV) and renewable energy. Further details of these three facilities are provided in chapter 3.1.

To select the PPPs to be studied from these 3 facilities, we positioned the partnerships on the basis of their potential contribution to Green Growth (eco-efficiency, sustainable resource use), Inclusive Growth (resource access, poverty alleviation) or Inclusive Green Growth (attention for both access & eco-efficiency, integrated decision-making) objectives, as well as the expected potential of the PPP to address underlying market and governance constraints. We scored the 46 partnerships available from these 3 facilities as potential case-studies on their potential to contribute to Green (environmental) objectives and/or Inclusive (social equality) objectives, within the perspective of growth. Using this overview we then selected 9 PPPs based on the following criteria:

- Equal representation (3 each) of PPPs from the food security, water and sustainable energy subsidy facilities;
- Expected contribution to green and inclusive objectives, according to project design and first results<sup>1</sup>;
- Access to information and availability of partners for interviews.

For the 9 selected partnerships the available project documentation was analysed and of each PPP 3 partners were interviewed to discuss and reflect on the potential of partnerships for Inclusive Green Growth. Interviews were semi-structured, based on an interview protocol developed beforehand, but also leaving sufficient flexibility for additional insights gained during the interviews. In some cases a list of questions was sent in advance for interviewed persons to prepare themselves (see Appendix 1). To address the various issues that might play a role in assessing the contribution by PPPs to IGG, a framework was developed (Figure 1), that was used as general guidance for the interviews. The background behind this framework will be further elaborated in the forthcoming PBL report.

**Figure 1 Methodological Framework**

	Direct (project) effects	Indirect (systemic) effects
Partnership objectives and characteristics	<ul style="list-style-type: none"> <li>• Choice of objectives (synergies/trade-offs)</li> <li>• Partnership characteristics (expertise &amp; experience)</li> </ul>	<ul style="list-style-type: none"> <li>• Long term commitment with topic/in region</li> <li>• Specific attention for systemic constraints</li> </ul>
Underlying factors influencing effects (design, contract, context)	<ul style="list-style-type: none"> <li>• Design of agreement (financing, division of risk &amp; responsibilities)</li> <li>• Implementation (monitoring, enforcement, internal organisation)</li> </ul>	<ul style="list-style-type: none"> <li>• External accountability</li> <li>• Stakeholder participation</li> <li>• Learning and knowledge exchange system</li> <li>• Flexibility</li> <li>• Roles for local authorities</li> </ul>
	Context factors: urgency of problem, institutional context, socio-economic context, finances available	

<sup>1</sup> For energy, 3 projects were available; these were all selected although not all of them at the outset had inclusive and green objectives

At the PPP project level, the analysis focused on the project objectives and theory of change, the concrete activities and expected results, how risks and responsibilities are divided between the partners, how the project is financed and how knowledge sharing, communication and decision-making are organized. We were especially interested in the partnership agreement, including questions related to the monitoring and (internal) enforcement of responsibilities, but also related to external accountability and transparency of partnership objectives. Therefore we paid specific attention to the business models and roles of private partners in the partnerships – as a fundamental aspect in which PPPs differ from conventional development projects.

Several underlying factors (both internal and external) can influence the performance of the partnerships, and whether results are being achieved. We distinguish between success factors that are internal to the PPP (i.e. show up in the design phase of the project and its implementation) and success factors that relate to the relations of the PPP with external factors, stakeholders and contextual factors.

One particular design factor is the nature and content of the partnership agreement. Other factors are characteristics of the partners involved in the PPP, problem analysis, objectives, intervention strategy, target groups, instruments and mitigation / compensation measures. With respect to success factors for systemic effects in the design phase, we will analyse to what extent upscaling and other impacts in the design phase are directly or indirectly addressed. Process- or implementation factors include the role of the public agency partner, working relationships in practice and internal knowledge exchange (project level effects) and the extent to which systemic effects are addressed during the implementation. We also studied how the different interests are represented in decision-making, both internally (of the different partners) and externally (representation of stakeholders). Finally, also contextual factors were examined on a project and systemic level.

## **2.2 Concepts**

We hereby provide some more background in the use of the concepts that are fundamental to this study: direct and indirect GGG issues and effects. For a further elaboration we refer to Bouma and Berkhout (2015) and the forthcoming PBL report on PPPs for Inclusive Green Growth.

### **Direct IGG effects**

The concept of Inclusive Green Growth should be understood against the background of the current non-green and non-inclusive growth of the world economy. It acknowledges the trade-offs between growth, green and inclusiveness, but stresses that in the overarching objective of social welfare there is room for synergies: Environmental degradation reduces welfare, and increasing inequality reduces welfare also, so growth that is environmentally sustainable and socially just enhances welfare more than growth that is destructive and that leads to inequality (Bouma and Berkhout, 2015). Therefore, in terms of direct effects this study focuses at environmental ('green') effects and socio-economic and equity ('inclusiveness') effects, within the context of a sound business plan which guarantees economic viability. It would be a wrong assumption that this will always lead to economic growth, but at least the green and inclusive model should be financially and economically viable ('growth') to assure long-term sustainability.

Environmental effects can be in particular resource efficiency; (renewable) energy; CO<sub>2</sub> emissions; biodiversity and ecosystems; waste. Inclusiveness effects can be improved access to resources, finance and knowledge; improved / equitable income; appropriate technology; employment for the poor; green job creation; education; health. Economic (growth) effects are captured by analyzing in detail the business opportunities and risks for private sector partners involved in the PPP. Tabular overviews of possible direct and indirect IGG effects are given in chapter 4 (tables 4.1 and 4.3).

**Indirect IGG effects**

The concept of IGG holds an important promise as compared to conventional interventions with environmental or social objectives, by emphasizing the need to address underlying governance or market failures to green or inclusive growth. These are considered to be indirect effects of PPPs, because the PPPs do not normally have objectives to address these underlying issues. We refer to indirect or systemic effects of the PPP as related to underlying governance or market failures or opportunities. These indirect effects of the PPP may operate through leverage of the existing funding, or follow-up activities that can be either new subsidized projects or commercial activities, or through new stakeholders joining the project.

Systemic effects can show in factors like more equitable distribution of user rights; representation of marginalised groups in decision making; improved accountability; leadership and alignment of multi-stakeholder interests; learning mechanisms and open access knowledge sharing mechanisms; appropriate technologies with enhanced mutual efficiencies (e.g. in the area of water and energy). We made a distinction between systemic effects that directly correspond to the public objectives of the PPP and systemic effects by way of creating a long-term interest of private partners to continue with the activities initiated by the project - as a result of market creation or stabilization of existing markets caused by the project (see further).

### 3. Findings per Case Study

As outlined in chapter 2, in this project nine case studies are examined, financed by three Dutch subsidy facilities in respectively the food, water and sustainable energy sectors. Below, first a brief introduction to the three subsidy facilities will be given, then in a nutshell the nine case studies will be introduced based on their key characteristics. The study resulted in detailed analytical reports for each selected PPP, and of these reports summaries were made. The summaries can be found in Appendix 2. Interested readers can also request for more detail the full case study reports, available from PBL.

#### 3.1 Introduction of the subsidy facilities

1. *The Sustainable Water Fund (FDW)* stimulates public/private collaboration in the water sector in order to contribute towards water safety and water reliability in developing countries. In real terms this means collective initiatives between governmental bodies, industry and NGOs or knowledge institutions that focus on the following sub-themes and which could be eligible for subsidies from FDW:

- Improved access to drinking water and sanitation;
- Efficient and sustainable water use, particularly within agriculture;
- Safe deltas and improved basin management.

2. *The Facility for Sustainable Entrepreneurship and Food Security (FDOV)* stimulates PPPs within the sphere of food security and private sector development in developing countries. In concrete terms this means that governmental parties, businesses and NGOs or knowledge institutions can collectively enter into a cooperative partnership with the Dutch ministry of Foreign Affairs and become eligible for a grant for a project respecting the following thematic conditions:

- Proposals should evidently contribute to improving local or regional availability of qualitatively good food and nutrition;
- Proposals aiming at market efficiency and at making (food)chains sustainable should in any case focus on national and regional markets;
- Proposals exclusively concerning non-food trade crops are excluded from this call.

3. *In the DGIS Promoting Renewable Energy Programme*, the Dutch government has allocated a budget of €500 million for promoting the use of renewable energy in developing countries in the period 2008-2014. The programme is implemented through over 30 partners including World Bank, GIZ, HIVOS/SNV, and a range of innovative private sector partners. The objective of the Dutch government's Promoting Renewable Energy Programme (PREP) is to encourage the use of renewable energies in developing countries. The ultimate goal is to support developing countries to draw up and implement effective renewable energy policies. The programme has four pillars:

- Direct investments in access to renewable energy in priority regions in Sub Saharan Africa and Indonesia
- Influencing the policies of partners who are responsible for investments in the field of renewable energy
- Ensuring sustainability of the production of biomass that is used for energy consumption purposes
- Building knowledge and capacity in recipient countries

Proposals for all above three facilities must demonstrate to have positive effects in terms of access to water or food security or sustainable energy, and contribute to poverty reduction. The proposals are also assessed in terms of their possible negative effects on environmental and social sustainability issues, and where negative effects are identified these must be mitigated or compensated.

## 3.2 Introduction to the case studies

### 3.2.1 The water projects

#### 1. Malawi: Water Demand Management to Mitigate Water Shortages

Topic / sector	Water supply and sanitation in Malawi The PPP focuses at water supply and sanitation by the approach of water demand management.
Country & region	Malawi (1 region)
Budget	€ 2.6 million, of which almost 49% grant, 25% by Dutch water company, 6% by Dutch NGO and 20% by Malawi water company (cash and in-kind)
Types of partners	<ul style="list-style-type: none"> <li>• Dutch water company (semi-private)</li> <li>• Dutch NGO with local presence and office (NGO)</li> <li>• Malawi water company (private)</li> <li>• Malawi local government (public)</li> </ul>
Project phase	April 2013 to April 2019
Business model	There are serious problems in the availability of water for serving all local communities (32% still has no access to water), while some institutions use much water. Sanitation facilities have a lower coverage (80% has poor access). By reducing non revenue water losses, water will become available for new water connections. The private Malawi water company intends, with the financial help of Dutch government, a private Dutch water company and a Dutch-based NGO, to improve access to water in Malawi. For a viable business model it would be required that poor consumers pay low fees and larger consumers pay for their mandatory water tariffs, but this is unlikely to happen soon. The Dutch water company provides expert knowledge, but does not have a commercial interest to expand business in Malawi without development aid. Their activities can be seen as consultancy-based hard- and software provision to improve access to water in an effective way. To be able to do so, the collaboration with the Dutch-based NGO is essential.

#### 2. Vietnam: Climate Change and Water Supply in the Mekong Delta

Topic / sector	Water supply and sanitation in Vietnam The PPP focuses at water supply and climate change adaptation.
Country & region	Vietnam (3 provinces)
Budget	€ 10 million, of which 44% grant. Both cash and in-kind contributions by Vietnam partners
Types of partners	<ul style="list-style-type: none"> <li>• Northern / Dutch water company (semi-private)</li> <li>• Three Vietnam water companies (semi-public)</li> <li>• Three provincial government agencies (public)</li> <li>• Northern and southern research institutes</li> </ul>
Project phase	April 2013 to April 2017.
Business model	There are serious problems in the source of water, due to salinisation and declining groundwater table. The PPP provides short-term solutions by water infrastructure development, including a shift to using surface water ('hardware'), and long-term solutions by a climate adaptation plan ('software'). In this project, the Dutch water company provides both consultancy services (climate adaptation plan, capacity building) and hardware (including surface water treatment facilities and piped systems). The hardware component, supported by capacity building, is business-as-usual. The second component is

	more challenging, and will generate a suite of potential follow-up activities. The project leads to perspectives for future investments in line with the climate change adaptation plan, and therefore commercial follow-up activities beyond the project context can be considered likely. For the Vietnam water companies a viable business model is difficult to achieve, as public subsidies are not transparent and water tariff rates are probably too low.
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### **3. Colombia: Integrated Water Management System for a Climate Intelligent Coffee Sector in Colombia**

Topic / sector	Integrated water management in Colombia The PPP focuses at integrated water management in 25 river basins, with the aim to stabilise and improve coffee production
Country & region	Colombia 25 river basins: 25 coffee-growing municipalities in 5 departments (provinces) of Colombia (Antioquia, Caldas, Cauca, Narino, Valle del Cauca)
Budget	Total € 25 million, with the following contributions: <ul style="list-style-type: none"> <li>• FDW: € 9.5 million</li> <li>• Private company : € 4.5 million</li> <li>• National coffee federation: € 2.5 million</li> <li>• Public agency: € 2.5 million</li> <li>• Research institute: 5% all in kind</li> <li>• The in-kind contribution by project beneficiaries (farmers) is € 4.3 million</li> </ul>
Types of partners	<ul style="list-style-type: none"> <li>• National coffee federation (non-profit with semi-public character)</li> <li>• Global private company</li> <li>• Colombia public institution</li> <li>• Northern research institution</li> <li>• Southern public research institution</li> </ul>
Project phase	The project started in July 2013 and will run up to June 2018 (5 years).
Business model	In coffee production areas in 2012 there were serious floods, while in other years there was drought and diseases, all being triggered by climate change. Together this causes a 30-40% reduction in coffee production, which means a serious loss of income for farmers and reduced security of supply for the coffee traders. Coffee production and processing are also the main water user in the region. Colombia coffee has a special flavor and has a special value for the global coffee trader. The private global coffee trader has two main interests in this PPP. First it wants to stabilize and secure its special brand coffee supply. Second, it has decided to globally work on the water challenge and from this PPP wants to develop an integrated water management approach that can be applied in other regions. The PPP allows to develop such an approach because of the good relations with research institutes and the national coffee federation that has national coverage. Although water is the entry point, the PPP actually aims to develop a financially viable landscape management model, which all partners see as a major challenge and interest.

#### **3.2.2 The Food Security projects**

### **4. Ghana: Sustainable Maize Programme in Northern Ghana**

Topic / sector	Food Security - improvement of maize production and sales via a farmers' cooperative in which private and public partners participate.
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Country & region	Ghana – Northern Region
Budget (public/private)	Total € 4.1 million, of which 2 million provided by Dutch government to a Northern NGO, and the rest contributed by the farmers' cooperative (17.3%), which is founded by a large Northern private fertilizer company active in the region (also contributing 17.3%) and a North/Southern agricultural inputs company (17.3%).
PPP partners	<ol style="list-style-type: none"> <li>1. Northern NGO aiming to promote fair and sustainable international supply chain arrangements in the West African agricultural commodity sectors (public partner)</li> <li>2. North/Southern fertilizer and agricultural inputs provider (private partner)</li> <li>3. Northern large mineral fertilizer company from Norway (private partner)</li> <li>4. Agricultural cooperative set up in 2009 by the Northern and North/Southern (private company)</li> </ol>
Project phase	The project started in 2014 and will last until 2018. So far, the inception phase of the project in which the project organization was set up has been completed and 2,500 out of targeted 12,000 farmers have been involved in the project.
Business model	Key private interest in this project is the stabilization and improvement of a food supply chain (maize). Agricultural inputs are sold by the private parties to farmers who are trained to apply better farming practices so that production is more efficient and more sustainable. The resulting outputs are bought by the private parties at a guaranteed price from the farmers and subsequently sold on the market. Main public interest in the project is an increase in food security and better livelihoods of subsistence farmers in Northern Ghana through improved farming methods.

### **5. Ethiopia and Kenya: Food Security through Improved Resilience of Small Scale Farmers in Ethiopia and Kenya (FOSEK)**

Topic / sector	Food Security – Agriculture (coffee and local food crop)
Country & region	Ethiopia and Kenya
Budget	Total € 9,267,581 (50% by the Dutch government and 50% by the project partners)
Types of partners	<ul style="list-style-type: none"> <li>• Northern NGO</li> <li>• Northern private partner (large international coffee trading organization)</li> <li>• Southern private partners (local coffee traders)</li> <li>• Southern for profit member based organizations</li> <li>• Southern research institution</li> </ul>
Project phase	The PPP started in 2014, the project has conducted the baseline study for intercropping possibilities. Implementation of activities will start in January 2015.
Business model	<p>The business case has the following components:</p> <ol style="list-style-type: none"> <li>1) The establishment of nurseries at cooperative level that should become a viable business and new commercial activities of the farmer organizations after 7 years;</li> <li>2) The buying, collecting, storing, selling and distribution of locally produced food crops;</li> <li>3) A pilot in Kenya for the establishment of milk cooling plants at farmer organizations to collect, buy, store, sell and distribute cooled, locally produced milk for local markets.</li> </ol> <p>The business model in this case for the private partners is that the local coffee market in the participating countries is stabilized and supply to the traders is</p>

	increased through improved productivity by stimulated better farming practices of local farmers. Public interest is that farmers profit from growing a larger variety of crops in various ways, which directly benefits their own nutrition and indirectly benefits from selling excess food crops to the local market and selling improved coffee yields to the coffee traders.
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### **6. Uganda, Kenya, Tanzania: 4S@scale: Creating viable smallholder-based coffee farming systems**

Topic / sector	Agriculture – Integrated farm management systems including biogas. The PPP focuses at coffee producers and the coffee value chain.
Country & region	Uganda, Kenya and Tanzania.
Budget	€ 16.296.530, with following cash contributions: Northern NGO: 32% (these are all expected carbon income and carbon loans that are expected to become available in the coming 5 years, starting this year) Large coffee trader and FDOV: both 34%
Types of partners	<ul style="list-style-type: none"> <li>• Northern / Dutch NGO (lead partner)</li> <li>• Large international coffee trader (private)</li> <li>• Local trade companies (daughters of above) in the three countries (private)</li> <li>• Other private, semi-private or NGO partners, specialized in biogas</li> </ul> DGIS / FDOV could be considered the northern public partner. There are several other local NGOs involved in the PPP implementation, but these are not formal partners.
Project phase	The inception phase ran from July 2013 to May 2014, after which implementation started in Kenya. The PPP was launched in Uganda in July 2014. The PPP will start in Tanzania by July 2015.
Business model	There is soil degradation on coffee farms due to overuse of agro-chemicals, causing low yields. Climate change is another threat. A long-term / sustainable solution requires an integrated approach, which looks beyond coffee production only. The business model for the international coffee trader is that helping farmers to diversify and increase their yields results in a more stable and increased supply of coffee. Increased and more stable supply of coffee is a long-term interest of the private partner. Local traders are involved in the business model as intermediates and daughter companies of the international trader. Diversification of production and the introduction of biogas digesters are part of the equation, with revenues also to be captured from carbon credits. The business model for the coffee trader requires improved coffee yields and producers paying for the services being delivered. Thus, it requires a viable coffee producer farm system (whereby women and youth benefit as well). Systemic impacts in terms of market access and governance of the value chain are expected to last beyond the project context in case of a successful project.

### **3.2.3 The sustainable energy projects**

#### **7. Kenya: Lake Turkana wind power project**

Topic / sector	Energy - wind energy project
Country & region	Kenya – Lake Turkana
Budget	Total € 622 million (Equity € 125 million; Debt € 435 million senior debt, € 63 million mezzanine debt) FMO provides €35m in senior debt and up to €8.5m in (partly stand-by) equity through a shareholder. In addition, the Dutch Government provided a

	€10m grant for the rehabilitation of the access roads to the project site.
Types of partners	<ul style="list-style-type: none"> <li>• Northern private project developers</li> <li>• Northern public financial institutions</li> <li>• Northern private financial institutions</li> <li>• Southern private financial institutions</li> <li>• Southern public government institutions (transmission company and power company)</li> </ul> <p>Technically the project is split into wind farm construction and road rehabilitation on one hand (of which the above are partners) and the construction of the transmission line on the other hand. The transmission line is constructed by the Southern national transmission company and financed by a Northern government.</p>
Project phase	The PPP reached financial close in 2014. Implementation of activities will start in 2015.
Business model	The objective of the program is to increase domestic renewable energy generation in Kenya by the construction of a 300 MW wind park, which will operate at commercial rates to generate benefits for the private parties involved. As specified in a 20 year power purchase agreement, the power company will buy electricity generated by the wind turbines at a fixed rate. Construction costs and risks are carried by the private project developers and public equity providers, whereas the infrastructure development (road and transmission line) are carried by public participants. Public interest (for the Kenyan government) is the replacement of expensive imports of fossil power by domestic renewables.

### **8. Indonesia: Geothermal Capacity Building Program**

Topic / sector	Energy - geothermal energy project
Country & region	Indonesia
Budget	Total € 5,717,261 financed by the Government of the Netherlands. Partners contribute by working at cost price.
Types of partners	<ul style="list-style-type: none"> <li>• Northern public knowledge institutions (universities)</li> <li>• Northern private knowledge institutions (consultancies)</li> <li>• Southern non-profit member based organization</li> <li>• Southern knowledge institutions (universities)</li> </ul>
Project phase	The PPP started in end 2014 by detailing the work plan in a conference with all project partners. Implementation of activities will start in 2015.
Business model	<p>The objective of the program is to increase the capacity of Indonesia's ministries, local government agencies, public and private companies and knowledge institutions in developing, exploring and utilization of geothermal energy sources, and to assess and monitor its impact on the economy and environment.</p> <p>The project has three components:</p> <ol style="list-style-type: none"> <li>1. Development of a database for geothermal data</li> <li>2. Training and course materials</li> <li>3. Awareness raising among local people and local and regional governments on the use of geothermal resources for generating energy in a safe and environmentally friendly manner</li> </ol> <p>Long-term interest of the private parties in this project is to gain knowledge of the Indonesian geothermal market (database, contacts) for future projects in this field. Interest of the participating Indonesian public parties is to gain new knowledge on geothermal as well as market knowledge. Interest of the</p>

	Northern public donor is, next to capacity building and market development, to contribute to global climate change mitigation by providing renewable energy technology knowledge to the recipient country.
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**9. Uganda, Kenya, Ghana and Tanzania: Sustainable Energy Services for Africa**

Topic / sector	Energy - Sustainable energy sources for communities and households. The projects deal with solar energy mainly.
Country & region	Uganda, Kenya, Ghana and Tanzania.
Budget	For this study, two PPPs were selected with a focus on consumer lighting (there are also PPPs on improved cookstoves and community lighting, these were not selected). For the selected projects, the DGIS grants are € 100-200K per project (total project budgets are up to € 500 K).
Types of partners	For the selected consumer lighting projects, following are the partners: <ul style="list-style-type: none"> <li>• Southern NGOs (in both cases innovative NGOs supporting renewable energy introduction for poor consumers)</li> <li>• Southern public or semi-public partner (in one case from the education sector, in the other case from the tea sector)</li> <li>• Northern private consultancies, bringing in knowledge, supporting market studies and learning initiatives</li> <li>• Northern public partner: the Ministry of Foreign Affairs</li> </ul>
Project phase	The PPPs started in 2014, solar devices sales have started, around 25% of intended target consumers have been reached. The local partners in all cases already have working relations of at least 2 years.
Business model	<ul style="list-style-type: none"> <li>• For the first PPP, the sale of pico solar energy lanterns to poor rural households follows a step-wise market development strategy, starting to create demand via head-teachers and then serving the increasing demand through agents that should gradually become self-supporting;</li> <li>• For the second PPP, the sale of micro solar energy devices aims to serve tea producers, and is introduced through the national tea agency, via solar shops and agents that should become self-supporting, supported by a credit system available for the tea producers that want to purchase a package.</li> </ul>

## 4. Results of the analysis

In the following sections results of the analysis of the case studies are presented: direct effects, indirect (systemic) effects, underlying factors. These analytical findings must be considered with the following limitations:

- All PPPs are in an early stage of development, so there are in most cases no significant effects realised yet; however, we have tried to consider the expected (potential) effects by looking at the preliminary results and discussing possible constraints and expectations with the interview partners.
- We only interviewed partners or stakeholders directly related to project execution; their responses might be biased towards the positive side because they have an interest in a positive positioning of the PPP.
- The PPPs are generally not easy to compare because they are related to different sectors and geographical contexts; we have tried to draw generic insights, but in many cases our findings apply to certain types of PPPs or certain specific conditions.

### 4.1 Achievement of direct effects

In the analysis of the direct effects we distinguish green effects and inclusive effects. The growth effects are analysed and discussed in section 4.2.3. Typical green and inclusive effects are listed below in table 4-1, with reference to the occurrence of these effects with the studied PPPs.

**Table 4-1: Checklist direct Green and Inclusive effects, with reference to projects**

<b><i>Direct Green effects</i></b>	<b><i>References from studied PPPs</i></b>
• Improved resource efficiency	• All projects
• Reduced CO <sub>2</sub> emissions, more (renewable) energy, more energy efficiency	• SESA and wind energy projects; 4S with biogas; Water Vietnam
• Reduced waste or improved waste management	• None specifically
• Increased land or water use efficiency	• All projects except Geocap
• Improved biodiversity and ecosystem management	• Colombia water; food security projects to some extent
• Integrated basin/landscape management	• Colombia water; other water projects to some extent
• Reduced (soil, water, air) pollution	• All food security projects; SESA consumer lighting
<b><i>Direct Inclusive effects</i></b>	<b><i>Examples from studied PPPs</i></b>
• Improved / equitable access to natural resources	• All water and food security projects
• Improved / equitable income, poverty reduction	• All projects except for large-scale energy projects
• Employment for the poor, green job creation	• SESA, food security projects
• Improved / equitable access to knowledge & technology	• SESA, food security projects, Colombia water
• Improved / equitable access to services	• All projects except for large-scale energy projects
• Improved / equitable access to finance	• SESA, food security projects, Colombia water
• Enhanced food security, reduced vulnerability	• Food security projects, Colombia water
• Inclusion in decision-making processes	• All projects
• Access to water and sanitation/health	• All water projects; SESA (health)

Table 4-2 gives a summary of our assessment of the direct green and inclusive effects of the nine case-study projects. We distinguished between strong, limited, no and uncertain effects. This is an expert judgment made based on the available literature and interviews. The distinction between these categories is not sharp but aims to give an indication of effects relative to each other. We emphasize that the scores do not imply any evaluation or judgment of the projects.

**Table 4-2: Summary overview positive and negative Green and Inclusive effects of projects**

Project	Green effects		Inclusive effects	
	Positive	Negative	Positive	Negative
<i>FDW / Water</i>				
WASH Malawi	+	0	++	0
Water Vietnam	+	0	++	0
Coffee and water Colombia	++	0	+	0
<i>FDOV / Food security</i>				
Maize Ghana	+	0	+ / ++	(-)?
Fosek farming East Africa	++	0	+ / ++	(-)?
4S farming East Africa	++	0	+ / ++	(-)?
<i>Sustainable energy</i>				
SESA consumer lighting	+	0	++	0
Lake Turkana wind energy	++	(-)	0	(-)
Geocap geothermal energy	+	(-)	0	(-)

*Legend:*

Positive: 0 = none, + = limited, ++ = strong; ? = uncertain

Negative: 0 = none; - = potential negative effect; (-) = potential negative effect compensated

Below more specific insights from our analysis of the direct effects are given, largely grouped per sector (water, food security, energy):

- The WASH Malawi and Water Vietnam projects mainly have inclusive effects, in terms of improving access to water and sanitation for those that do not yet have such access. In both cases these benefits are achieved through a **combination of reducing water losses (improved efficiency – green) and using these gains to meet further water demand**. The projects focus at access for the poor and women, not for commercial actors. In addition, the projects aim to improve the efficiency of water use by large commercial users, but this is a secondary objective. The Water Vietnam project has additional potential green effects by working on the underlying causes of poor access to water, being the salinisation of water sources due to excessive use of groundwater and sea level rise due to climate change.
- The Colombia water project is in fact a combination of a water- and a food security project: it potentially links integrated water management at a landscape level with a value chain approach (coffee). Specific for the project is the **area-based river basin management approach** taken, with expected benefits in terms of improved management of natural resources at landscape level. In this case current water users do not have problems with access to water but are threatened by landslides and floods due to climate change. Coffee producers and processors also make inefficient use of free water resources, with potential efficiency gains to be achieved. The potential benefits and revenues from coffee farming should create the interest (and possibly revenues) to improve water management.
- The food security projects all aim at a **combination of (i) more sustainable farm practices (Green), (ii) higher incomes for producers (Inclusive) and (iii) improved security of supply for the private companies involved (Growth)**. The focus at both smallholders and

women is in all cases explicit, although it may be debated whether the smallest producers are always targeted. For instance, for maize in Ghana, the improved service delivery, farm production and marketing model depends whether yields can be improved from 1.4 to 4 tons /ha remains. For the food security projects inclusiveness may remain challenging, as better educated and richer farmers may adopt innovations easier than others. For 4S farming in East Africa the proposed farming system is being finetuned to the conditions in the three countries to make it accessible for the smallholders (due to investments required for biogas and access to credit). The monopoly of the coffee trader has a risk of leading to a focus at the larger farmers.

- Among the energy projects, the small-scale energy project (pico or micro solar systems) is very different from the other two which focus at large-scale energy supply (wind energy, geothermal energy). The benefits of **small-scale energy solutions** are social in the first place (less risk of fire, improved health and improved education). In Kenya SESA customers request solar systems for domestic and also commercial purposes, such as milk cooling and a chicken feeding device (which was initially not expected, but opens up a whole new business opportunity). Maintenance and replacement of solar lanterns remains to be tested.
- The two large energy projects both have important **potential to significantly improve access to renewable energy at national scale**. The large energy PPPs are entirely focused at the grid-based end-users, often richer consumers in the cities that can afford to be connected to the grid. There are no direct positive effects foreseen for local communities, although communities are reported to be pleased with the improved access to the area as a result of the developed road. Both initiatives can potentially lead to significant negative environmental and social effects (as is common for large infrastructural projects). These effects are recognized in environmental impact assessments and aimed to be mitigated.
- **Employment aspects** of the different projects vary substantially. In many cases local cooperatives are used as a main vehicle for employment. This does not imply, however, the creation of 'new jobs', but rather the improvement of existing 'jobs' (livelihoods) of local farmers. In the case of Lake Turkana, temporary jobs are created in the construction of the wind turbine site and infrastructure as well as a limited number of longer term low-skilled jobs (site security). Geocap specifically aims at capacity building for higher-skilled jobs (university level).

Some overall insights regarding direct effects of the projects are:

- All projects show **potential positive green and inclusive aspects**, whereby the distinction between 'limited' and 'strong' effects is at this stage not easy to make.
- PPPs in the **water and energy sectors** generally support 'access to water and energy' public policy objectives (i.e. inclusiveness). Since these objectives are directly linked to natural resources (water, energy) these objectives can be achieved by infrastructure development. Green is related to making use of renewable (water and energy) sources and making efficient use of these resources.
- The public policy objective of **food security or 'access to food'** is not so easy to achieve, as it needs to be translated into concrete land management or agricultural production objectives. In the agricultural sector, being inclusive is more complex as smallholders may not own land or if they own land are less productive. Therefore, to be inclusive special efforts are required to reach smallholders, as well as women and youths.
- Only in the cases of the **two large-scale energy projects** do we see significant potential negative effects in terms of landscape occupied by the new infrastructure (Lake Turkana) or by future infrastructure projects that might result from the capacity building (Geocap). These are aimed to be mitigated by standard environmental and social assessment procedures. Motivation for public intervention in these two cases is climate change (and national security of supply), rather than access to energy.

## 4.2 Achievement of systemic effects

In the analysis of the indirect effects we distinguish systemic changes associated with governance failures and those associated with market failures. Typical indirect effects are listed below in table 4-3, with reference to the occurrence of these effects with the studied PPPs.

**Table 4-3: Checklist indirect (systemic) inclusive green growth effects**

<b>Indirect IGG effects</b>	<b>Examples from studied PPPs</b>
<i>Governance failures or opportunities addressed</i>	
<ul style="list-style-type: none"> <li>• Acknowledgement of (informal) user rights and attention for right enforcement</li> </ul>	<ul style="list-style-type: none"> <li>• Being addressed by some food security projects and the Colombia water</li> </ul>
<ul style="list-style-type: none"> <li>• Establishment of accountability mechanisms, including monitoring and enforcement</li> </ul>	<ul style="list-style-type: none"> <li>• To some extent by learning platforms: food security projects and SESA</li> </ul>
<ul style="list-style-type: none"> <li>• Establishment of participatory decision-making mechanisms, alignment of multi-stakeholder interests</li> </ul>	<ul style="list-style-type: none"> <li>• Food security and water projects; SESA, not always sure whether marginalised groups are well represented</li> </ul>
<ul style="list-style-type: none"> <li>• Technology transfer and access to knowledge and knowledge sharing and learning mechanisms</li> </ul>	<ul style="list-style-type: none"> <li>• All projects</li> </ul>
<ul style="list-style-type: none"> <li>• Shared management responsibilities and co-management approaches with local stakeholders, including farmer cooperatives and (local) public actors</li> </ul>	<ul style="list-style-type: none"> <li>• All projects except for the two large energy projects</li> </ul>
<ul style="list-style-type: none"> <li>• Creation of rules and enforcement mechanisms and contribution to local institution-building</li> </ul>	<ul style="list-style-type: none"> <li>• Some evidence from water projects, SESA, 4S food security</li> </ul>
<i>Market failures or opportunities addressed</i>	
<ul style="list-style-type: none"> <li>• Creation of cost-recovery or financing arrangements for an efficient use of public good resources</li> </ul>	<ul style="list-style-type: none"> <li>• 4S in using carbon credits; Colombia coffee in using payment for ecosystem services</li> </ul>
<ul style="list-style-type: none"> <li>• Removal of adverse price incentives and facilitation of longer term, low interest loans</li> </ul>	<ul style="list-style-type: none"> <li>• All projects (except the two large energy projects) pay attention to improving access to finance for producers, but do not address this issue at a macro scale</li> </ul>
<ul style="list-style-type: none"> <li>• Infrastructural development and creation of market infrastructural facilities</li> </ul>	<ul style="list-style-type: none"> <li>• Energy projects, water projects, 4S on biogas</li> </ul>
<ul style="list-style-type: none"> <li>• Formulation of contracts/agreements to create incentives for cooperation and sustainable resource use.</li> </ul>	<ul style="list-style-type: none"> <li>• All projects (except the two large energy projects) develop service supply systems with incentives for more sustainable resource use, not formalised in contracts</li> </ul>
<ul style="list-style-type: none"> <li>• Eco-innovation and removal of institutional barriers that constrain efficiency of resource use.</li> </ul>	<ul style="list-style-type: none"> <li>• Some evidence from all water projects, SESA, 4S food security</li> </ul>
<ul style="list-style-type: none"> <li>• Increasing returns to human, natural and other capital resources, through education, restoration and reduced inequality</li> </ul>	<ul style="list-style-type: none"> <li>• All projects except the two large energy projects focus on capacity building, with a focus at gender, BoP or smallholders</li> </ul>
<ul style="list-style-type: none"> <li>• Improved / equitable access to markets by the poor; equitable share of market value for local producers</li> </ul>	<ul style="list-style-type: none"> <li>• As above</li> </ul>
<ul style="list-style-type: none"> <li>• Representation of producers in value chain multi-stakeholder platforms</li> </ul>	<ul style="list-style-type: none"> <li>• This generally takes place through NGOs or farmer cooperatives</li> </ul>
<ul style="list-style-type: none"> <li>• Public goods resources internalised in markets</li> </ul>	<ul style="list-style-type: none"> <li>• Energy projects (climate change, water Vietnam), food projects (soil degradation, biodiversity loss), water projects (depletion of water resources)</li> </ul>

Table 4-4 gives a summary of our assessment of these indirect effects in the nine case-study projects. We distinguished between strong, limited, no and uncertain effects. This is an expert judgment made based on the available literature and interviews. The distinction between these categories is not sharp but aims to give an indication of effects relative to each other. We emphasize that the scores do not imply any evaluation or judgment of the projects.

**Table 4-4 Summary overview indirect /systemic impacts**

Project	Governance failures addressed	Market failures addressed
<i>FDW / Water</i>		
WASH Malawi	+	0
Water Vietnam	+	0
Coffee and water Colombia	++	+
<i>FDOV / Food security</i>		
Fosek farming East Africa	+ / ++	++
Maize Ghana	+?	++
4S farming East Africa	+ / ++	++
<i>Sustainable energy</i>		
SESA consumer lighting	+	++
Lake Turkana wind energy	+	+?
Geocap geothermal energy	+	+?

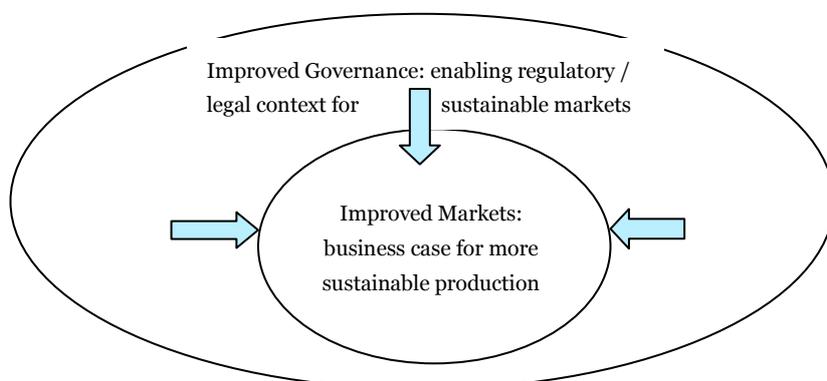
*Legend:*

Positive:        0 = none, + = limited, ++ = strong; ? = uncertain

Negative:        0 = none; - = potential negative effect; (-) = potential negative effect compensated

Systemic effects are oriented at governance and market failures that form constraints to green and inclusive growth, or opportunities to improve markets or governance systems. The two dimensions of governance and market-based systemic effects can be considered as interrelated and reinforcing each other for a business case that stimulates green and inclusive growth. While market-based factors are essential to the business case of making use or creating new markets, the governance factors constitute the enabling legal and regulatory context. Since we are dealing with objectives of green and inclusive growth, we are dealing with a case for (more) sustainable business operations, and the legal and regulatory and market context for (more) sustainable production systems (figure 4-2).

**Figure 4-2 Governance and market factors influencing more sustainable production**



Following are specific insights from this overview. We also indicate to what extent PPPs have an added value in realising these changes.

#### 4.2.1 Governance failures or opportunities addressed

In terms of governance aspects, we note the following systemic changes:

- **Land registration** is an important condition for farmers to acquire loans, and PPPs may have contributed to improved land security. In Colombia the PPP has supported the establishment of a kadaster and registration of farmers, which enabled them to acquire loans. In the case of Ghana, the strengthening and expansion of a farmers cooperative helps to strengthen informal claims to land with respect to the local authorities.
- The projects are aligned with national public policies in the project country, e.g. on food security or access to water. However, in practice in many cases there are governance or market failures hampering the effective and efficient realisation of PPP objectives (in line with public policies). There are examples of PPPs **creating a break-through in governance failures**, due to joint actions by the PPP partners, for instance:
  - Producer cooperatives in Kenya have restructured their legal entity to be able to establish long-term contracts with a large coffee trader and acquire access to finance to make the necessary investments to enhance environmental sustainability;
  - The WASH project in Malawi creates transparency in water use by local public institutions, showing that some of these use large volumes of water while average access to water is poor; this is a necessary first step towards claiming rights to access to water.
- In many cases, the good management of water, land or energy resources is hampered by policy incoherence. In almost every PPP more **integrated resource management approaches** are being promoted, and to be able to do so there is need for improved policy coherence. Typically, ministries of agriculture, environment, water and energy are involved. For instance, in Colombia, at least three ministries have an interest in water use and landscape management. In this case a landscape-based integrated water management system is being developed with involvement of 4 ministries at the PPP Board level, which contributes to mutual understanding and expected alignment of policies. Also, a nested system was developed of local, regional and national water management platforms. There are indications that policy coherence around sustainable management of water catchments is improving. Another example is that of WASH Malawi, where the PPP includes the two main local partners responsible for water and for sanitation: their joint involvement and capacity building in the PPP leads to improved collaboration (which has been a problem so far). In the case of Water Vietnam the expected collaboration between different public agencies is related to the development of a climate adaptation plan, which, if adopted, will have potential large spin-off to a joint policy with sectors that all have their own responsibility. These are added values of the PPP by bringing together different players in the PPP governance structure, and thus stimulating improved policy coherence through dialogue and collaboration.
- **Multi-stakeholder platforms** are being established by PPPs in water and food security, in order to negotiate and decide upon the management of natural resources. If these platforms are institutionalised and do not become dependent on the project (for funding or facilitation) one could speak of a systemic change. These platforms can be instrumental for accountability and transparency purposes, and can be associated with decentralised governments. It appears that if these platforms will be local (i.e. at District or regional level) it is possible to have more direct contacts with communities. In the water sector, in Malawi local community-level workshops are held, in Vietnam the focal point is the District level, In Colombia local water platforms are formed. In the food security PPPs in East Africa, and also in the SESA project, it seems that local governments are eager to get directly involved to meet local demands.
- Another example of an enabling legal context are **tax exemptions** for importing solar devices, which is important to keep the costs low. This was partly achieved due to the awareness created by

the SESA PPP, both in Tanzania and Kenya. Also, the Lake Turkana project benefits from such tax exemptions and **from long-term fixed pay-back tariffs** arranged with the national government.

- In all the above cases for governance changes the chances for successful legal and policy appear to be better if **southern public institutions are involved in the PPP**, and if the private sector promotes the need for such changes from a business and sustainability point of view. Private sector partners provide assistance in defining the necessary policy changes.

#### 4.2.2 Market failures or opportunities addressed

In terms of market-based aspects, we note the following systemic changes:

- **Recognising the value of natural resources** and legislation to support payment for scarce natural resources (such as water) is being worked on by some PPPs. In all water projects (Malawi, Vietnam and Colombia) it is important to increase water tariffs, as a first step to more viable water companies and the possibility of managing scarce water resources. However, it is difficult to change the water tariff system as users are either (too) poor or too powerful. In Malawi policies and by-laws are being developed in line with principles of water demand management. In the two food security projects in East Africa, consumers might in due time be willing to pay for more sustainable coffee (certified or not). Most promising are initiatives of **payment for ecosystem services**, applied by the 4S project in East Africa through carbon credits associated with reduced carbon emissions due to the use of biogas. In the Colombia PPP options of payment for ecosystem services by downstream water users (e.g. sugarcane plantations) for stabilised water supply are being studied.
- The water, food security and the small-scale energy project (SESA) have all contributed to create **new service delivery systems** including delivery of knowledge (training), inputs and/or credit. In most cases, these are delivered by the local private operator on the basis of the business model. Having private, public and civil society partners in the PPP greatly increases the chance for success as partners have complementary expertise. If firmly established, the model advanced by the PPP could lead to a systemic change in the sector. It is emphasised that the private sector should acknowledge the important role of NGOs in this model, to avoid a monopoly and assure inclusiveness.
- Among the services delivered to producers, **improved access to finance** is an important potential systemic change as it will enable producers / farmers to make the necessary investments to improve their farming system. All food security projects have a component to improve access to finance, and have developed special credit facilities for smallholder farmers to access finance. It remains to be seen whether these finance systems will be accessible for every type of farmer. For continuity of the activities once the PPP has ended, in several cases a **revolving fund** has been established, e.g. the cases of SESA and Colombia water.
- The two large-scale energy projects have the potential to set an example of **new ways of generating energy** in southern countries, which could be considered as a systemic change.

#### 4.2.3 Business models for inclusive and green markets

The unique feature of a PPP is the involvement of private parties in the achievement of a public goal, and is closely related to economic viability of the initiative (see section 2.2). Therefore, in this section we focus in more detail on the role of the private partners in the PPP.

Obviously, for the participation of a private party there needs to be a commercial interest for this party to participate. This interest should be reflected in the business model applied in the project. Ideally, the business model creates incentives for the private parties to sustain the initiated inclusive and green activities, also after the project has ended. This is the case if the project either creates a new financially sustainable business opportunity and market for the private party/ies involved, or if it strengthens an existing market by making it more financially sustainable. In either of these two situations, the private party gets an interest to generate systemic effects such as described in sections 4.2.1 and 4.2.2. The creation of a new financially sustainable inclusive and/or green market or strengthening of an existing market to make it more green and inclusive therefore can be seen as a systemic impact.

For making an existing or new market (or business case) – i.e. a market serving a public goal- more financially sustainable, the following are considered the most relevant systemic changes:

1. (Increased) access to funds / funding
2. (Increased) access to content- and market knowledge
3. (Increased) access to market networks and contacts
4. Improved access to service delivery and strengthened relations in the production chain between private partner and producers / customers
5. Improved capacity to address and help solve governance constraints

Table 4-5 lists business models of the examined projects and long-term market interests generated for private parties by the projects.

**Table 4-5 Business models and long-term market interests for private partners**

<b>Project</b>	<b>Business model / direct financial interest for private partner<sup>2</sup></b>	<b>Long-term market interest generated for private partner</b>
WASH Malawi	The Malawi water company is the main project executing organization. Helped by the Dutch water company it provides hardware (water systems) and with the NGO it provides software (Community Led Total Sanitation) leading to increased demand for access to water.	<b>New market creation</b> in which consumers demand for access to water; paying for the water services provided shows difficult, as poor consumers are not able to pay and larger consumers are not willing to pay.
Water Vietnam	The Northern water company provides hardware (surface water technology and piped systems), consultancy services (climate adaptation plan, capacity building) are provided with the research partner. Main executive body are the Southern water companies, of which the business model is not clear due to their entanglement with the public sector.	<b>New market creation.</b> The climate adaptation plan can potentially generate a suite of follow-up activities, such as the shift to surface water use and reduced water use by and institutional users.
Colombia	The well-established private global coffee secures its special brand coffee supply by adopting an integrated water management approach, in collaboration with research institutes and the national coffee federation.	<b>Strengthen existing market.</b> The integrated water management / landscape approach leads to a suite of follow-up activities to sustain and diversify production systems, and also generates a model that can be applied in other regions.

<sup>2</sup> In practice, the activities described are carried out by all or several PPP partners. Here, only the interest for the private party is described.

<b>Project</b>	<b>Business model / direct financial interest for private partner<sup>3</sup></b>	<b>Long-term market interest generated for private partner</b>
4S	The international coffee trader together with local daughter trade companies and the NGO helps farmers via the federation to make their production system more sustainable and diverse, which results in a more stable and increased supply of coffee to the trader.	<b>Strengthen existing market.</b> The coffee trader builds long-term relations with producers/ farmers on the basis of service delivery model (inputs, training, credit supply). Governance failures are also addressed.
Fosek	The international coffee trader together with Southern partners realizes increased and more stable yields of coffee via crop diversification and capacity building of farmers.	<b>Strengthen existing market</b> by integration in the supply chain through the establishment of long-term relations and service delivery with producers/farmers.
Ghana maize	Two Northern agricultural inputs providers sell their products to farmers and provide services via a farmers' cooperative they founded. They buy maize outputs and sell these at the market.	<b>Strengthen existing market</b> by integration in the supply chain through the establishment of long-term relations with producers/farmers and service delivery systems.
SESA	Southern NGOs helped by the Northern private consultancies set up a distribution system on a commercial basis for delivery of solar devices to poor consumers that do not have access to the electricity market yet.	<b>New market creation.</b> The distribution system is expected to expand within an existing public network (schools, tea sector); it is financially self-supporting; governance failures (tax exemptions) are addressed.
Lake Turkana	The project developers and wind turbine producer generate profits by a long-term electricity supply contract with the public electricity regulator in which electricity is sold against a fixed price. The project due to its size is partly funded by public institutions, but also by private banks.	<b>New market creation.</b> After the end of the long-term supply contract, the main interest of the suppliers is renewal of the contract. Infrastructure (transmission line, road) may lead to new projects or an expansion of the existing project. The project might also have a signpost effect for other renewables projects.
Geocap	The consultancy and knowledge partners provide consultancy based services (capacity building, site specific database) that result in very valuable market information.	<b>New market creation.</b> Knowledge of the local market and contacts gained in the project are likely to be used for future geothermal (drilling) projects on promising sites identified.

Table 4-5 shows an interesting variety in types of private parties, business models and long-term market interests generated in the nine cases. Following are the main observations.

### **Types of private parties**

In all projects, Northern private parties are involved, often in cooperation with Southern private companies or NGOs (see summaries in section 3.2). Sometimes these are formally private but still have close ties to public service companies from which they originated, such as with the semi-private Northern water companies involved. Some of the private parties involved can be seen as innovative

<sup>3</sup> In practice, the activities described are carried out by all or several PPP partners. Here, only the interest for the private party is described.

SMEs, but also (very) large, well-established companies are involved in the PPPs examined (the coffee companies).

It is interesting to discuss to what extent there is a causal relationship between the kind of private partner involved and the business model applied and the long-term inclusive green market interest being generated. Although such a one-to-one causal relationship cannot be established, a pattern seems to emerge. Whereas the innovative SMEs and the semi-public water companies are mainly involved in setting up new markets (SESA, Lake Turkana, Geocap, Malawi, Vietnam), the larger established companies particularly aim to strengthen their existing markets (Ghana maize, Fosek, Colombia, 4S). The existing networks of the latter are highly functional to roll-out new approaches and thus increase impact. From a PPP design point of view, this could lead to the implication that in the proposal stage projects could be screened on the kind of parties involved in relation to the project aims. If the main aim is to strengthen an existing market, it could be recommended to examine the need to include a large and established partner, whereas in the case of establishment of a new market as a main aim the need for involvement of an innovative SME should be examined.

### **Types of business models**

Business models of the case-studies substantially differ. They often are based on the provision of services to producers, including knowledge provision, input supply and credit systems. To be able to supply these services and build up trust, the collaboration with local NGOs is important. Sometimes they combine these services with the delivery of hardware (such as in WASH Malawi, the Vietnam water project, the Ghana maize project and the SESA off-grid electricity project). In one case, the Lake Turkana wind project, service provision can be seen as 'hardware' only (wind park, plus transmission line and road).

The commercial value of the projects where coffee traders are involved in securing supply is evident. However, it is new that they address the underlying causes (soil degradation, from farm level to an integrated water basin approach), where initially the focus has been at 'binding' individual producers. In all cases, the private partners not only buy the products, but also provide services. The challenge will be to assure that producers will pay for these services.

The Lake Turkana is a wind farm of the type that is also constructed in many other countries. It generates its profits from a long-term electricity supply contract. As such, it is in fact not a development project per sé. The profits of the Geocap projects can be seen in terms of strategic knowledge and contacts for future geothermal drilling projects.

### **Long-term market interests generated**

There are also differences in the kind and strength of long-term market interests generated between the projects examined. Some projects are directed at strengthening of existing markets by creating stronger links between different parts of the supply chain (4S, Fosek, Maize, Colombia), thus leading to more integrated approaches, and by using the existing private sector networks to roll out a new model. Others attempt to generate new markets in a variety of ways – from introducing new technologies (solar lamps), gaining essential market intelligence (Geocap) to providing hardware that can still be used beyond the project context (Lake Turkana). Table 4-6 provides a qualitative assessment of the strength of the private interest beyond project context that is created.

Table 4-6 suggests that particularly strong long-term interests for private parties are created in the case that existing markets are strengthened and addressing underlying governance or market failures. In this case activities are particularly tailored to the needs of the participating parties. In the case of creation of new markets both PPP private partners and other private parties might enter into the new opportunities generated. The least secure long-term interests in the WASH Malawi project, where the ability of new consumers to pay seems insecure. In projects like Water Vietnam, SESA or

Geocap, where essentially development of new markets takes place, the long-term opportunities and interests of partners are still open and depend on how the market will develop in the future.

**Table 4-6 Qualitative assessment of long-term market interest generated**

<b>Project</b>	<b>Strength of private interest beyond project</b>	<b>Explanation</b>
WASH Malawi	+ / -	Insecure willingness and ability to pay of future customers (mainly poor households)
Water Vietnam	+	Willingness and ability to pay of future customers (industry, water companies) seems available
Colombia	++	Water basin management approach fits in global strategy of coffee trader and helps stabilize supply
4S	++	Improving the supply chain by stronger links to producers, higher yields and a paid service delivery system are direct business interests. Also, there are long-term revenues expected from carbon credits.
Fosek	+	As above, without carbon credits
Ghana maize	+	As above, without carbon credits
SESA	+	A carefully designed marketing approach based on trusted persons or institutions is applied to attract new customers. The purchasing power of the customers is very limited, although commercial interests of using solar energy also appear.
Lake Turkana	++	Once the costly infrastructure has been constructed, there is a strong interest for private parties to recover sunk costs also after termination of the existing long-term contract
Geocap	+	The project creates essential intelligence for future drilling projects

### 4.3 Internal underlying factors

We now look at the factors within the PPPs that have stimulated the achievement of direct or indirect IGG effects. In this section we look at factors internal to the PPP (i.e. between PPP partners), in the next section we look at factors external to the PPP, i.e. the interaction of the PPP with external stakeholders and the external context.

#### *Partnership characteristics and objectives*

A success factor that has come forward from earlier research on PPPs<sup>4</sup> is confirmed by our interviews, being the fact that PPP partners have **earlier experience in working together**. This does not simply mean that they have learned how to work together. More important is that key partners trust each other and have experienced their shared sustainability ambitions.

Having PPP partners with **strong local presence, established stakeholder relations and local experiences** is another clear success factor. Absence of such a local partner was one major reason why the SESA PPP initially failed. Consequently, the SESA PPP was restructured to project initiatives driven by local partners, which appears to be much more successful. In all water and food security PPPs there are partners with a long track record in the countries where the PPP operates.

<sup>4</sup> Midterm review of 53 Millennium partnerships by Aidenvironment, Evaluation of Schokland PPPs.

In the PPPs at most one southern public institution participates. However, in practice multiple public institutions have an interest in management of natural resources (such as water, land, forest) and their sustainable management is often constrained by policy incoherence. To achieve better policy coherence, **relevant public institutions must be involved in the PPP**, either as partner or as stakeholders. For instance, in Colombia both the Ministry of Agriculture and Environment are directly involved. However, according to FDOV guidelines only one can participate as a PPP partner. This seems like a flaw in the set-up of the PPP in view of its potential to contribute to policy coherence for more sustainable natural resource management.

Most PPPs have kept the **core set of PPP partners limited** in order to speed up decision making at initial stages of the PPP (which often includes the need to refine the PPP approach). It can be observed that relevant stakeholders (e.g. local NGOs) are successfully involved at a later stage, as partners or through the learning platform. The large number of partners in the Turkana energy PPP (necessary for funding) has slowed down the design process.

Three aspects of the **governance structure of the PPP** are important:

- the PPP partners participate on an equal basis (e.g. no dominance by private sector partner);
- the PPP leader is the one with most experience ‘on the ground’ (i.e. contacts with the target groups and local stakeholders);
- there is ownership at higher (corporate, management) levels within the PPP partners.

In two food security and the Colombia PPP, large private sector partners are involved. There are both **advantages and risks of working with a large private sector agency**. Positive is the fact that the private trader has an extensive network and reputation, thus potentially reaching a large number of targeted people. The risk is that a large private partner has much power in the value chain (monopoly), and can determine marketing or contractual relations, e.g. by focusing on large-scale producers. The PPP can reduce this risk by safeguarding an equal position of the NGOs and representatives of producers in the PPP governance system.

**Having a research institute as a PPP partner is an interesting option**, for different reasons. First, these institutions are able to advance new concepts in an objective way. For instance, in the water project in Vietnam the research institutes successfully raised awareness on the inequality of access to water. Secondly, the research institute can train graduates on new concepts which will then be applied if they get a new job in the administration (e.g. curricula development in Vietnam). Third, the research institute can provide the inputs for evidence-based learning. It can establish the baseline in an objective way, forming the basis for measuring progress. Last, the research institute can bring forward innovations and assist in sharing global experiences. In the Colombia coffee project, the research institutes facilitate advances in integrated water management, which is a sensitive issue.

#### *Stakeholder participation*

In many PPPs the beneficiaries (producers, consumers) are represented by **local NGOs or cooperatives** (note that the presence of a *local* NGO is not a requirement of the PPP). This is clearly the case in the PPP of maize Ghana and FOSEK where the farmers are co-owners through the cooperative/s as a PPP partner. In the other water and food security PPPs this relation is more indirect (through NGOs or public agencies). In the small-scale energy project (SESA) semi-public partners represent consumers (but it should be noted that the SESA projects were selected on this criterion). This is not the case in the large-scale energy projects. Participation of an NGO or cooperative can contribute to local stakeholder participation.

The participation by **local public agencies** (i.e. at decentralised levels) is useful in order to improve alignment with local demands and local environmental and social conditions / contexts, which potentially leads to more Green and Inclusive impacts. Local public agencies have more direct

interests and contacts with local customers. This is the case in three PPPs where local public agencies are PPP partners (Water Vietnam, WASH Malawi and SESA projects). In all the food security projects and the Colombia water/coffee project, local public agencies have been increasingly involved, either as stakeholders associated with the PPP or by signing of an MoU. The Colombia integrated water management approach operates through local water platforms, in which local government, farmer and community representatives and other stakeholders operate. The need for working with local public agencies has generally increased as a result of ongoing decentralisation in many southern countries.

#### *Design / division of tasks*

Most PPPs have a **development phase and then (after approval of the PPP) have an inception phase**. In both cases, we find evidence that stakeholder participation is an important success factor, especially to test and provide feed-back on new models (e.g. of service delivery, farming systems, technologies, etc.). The inception phase usually involves testing of the new approach or model.

A **sound business model** is at the basis of a successful PPP. To have a good business model, the PPP undertakes good marketing studies, and undertakes testing of the new model in the inception phase. This has taken much time in some PPPs. Also, rather than creating new distribution channels for new products or services, it is useful to make use of existing distribution channels.

Establishing a **good baseline** should be one of the first activities, and is an important element to be able to demonstrate impact at a later stage. It is uncertain whether all PPPs have done this. The process of measuring the baseline and presenting the findings to relevant partners and stakeholders can be organised in such a way to maximise its awareness raising effect (example of Colombia coffee).

In most PPPs specific attention for **gender issues** is provided in the design to assure that women will benefit. This attention needs to be continuous and mainstreamed throughout the whole PPP in order to assure concrete results. For instance, with the PPP on maize in Ghana access to land for female farmers is promoted through land registration activities.

The presence of **northern private and public sector partners** has strengthened the need for environmental and social impact assessments according to international (IFC) standards. Whether this leads to improved compliance with environmental and social standards remains to be seen, and would therefore require good follow-up by the PPP partners.

Good collaboration within a PPP was found to depend to a large extent on well defined **complementarity of roles**. PPP have defined these complementary roles within a broad theory of change and implementation framework with indication how these roles interact and create synergy to realise the set objectives.

Most PPPs provide a **combination of ‘software’** (e.g. capacity building on operation & maintenance) **and ‘hardware’** (infrastructure, concrete investments). The combination seems effective, in many cases the one cannot go without the other, especially in countries where hardware infrastructure is still missing (e.g. on water and energy). In Vietnam the PPP will also advise companies to make more efficient use of available water, but it remains to be seen whether this will work out. The Colombia PPP has a separate facility to fund or co-fund bio-engineering initiatives that might emerge from the local decision-making platforms. Also, possibilities are explored to co-fund these initiatives through payment for ecosystem services.

**The private partners have difficulties with the detailed and strict results framework.** This feels like a straight jacket and reduces their flexibility, which is contrary to principles of adaptive

management. We are often dealing with new approaches or models, and with variable markets or price levels, which are to some extent unpredictable. Here, flexibility would be an advantage.

A useful role of the **Dutch embassy is to participate in multi-stakeholder events and establish an enabling context**, e.g. by smoothening administrative procedures or addressing national authorities on governance constraints. This can help in the establishment of the project as well as in its execution, as showed e.g. in the Geocap and Ghana Maize projects. In the first case, a project proposal could only be successfully agreed on after high-level diplomatic contacts between the Dutch and Indonesian side. In the second case, the Dutch embassy helped through its contacts with Ghanaian counterparts to obtain necessary environmental permits.

## 4.4 External underlying factors

There is also a variety of external underlying factors, in particular related to external learning, attention to systemic constraints and long-term commitment with the region.

### *External Learning*

**Multi-stakeholder events** can help develop approaches or concepts introduced by the PPP and ensure stakeholder involvement. In Vietnam the new concept of a climate change adaptation plan was introduced by the PPP in a workshop with a large number of invited stakeholders. The participation of high level people (embassy of the Netherlands, local officials) was very helpful. During the introduction by the 4S PPP of its program in Uganda the Dutch ambassador and the minister of the Ministry of Agriculture participated, which helped to raise attention to the program.

Many PPPs have installed an **open learning platform**, explicitly oriented at further developing new models or approaches, with participation by various relevant stakeholders. It is also a medium for inviting and involving relevant public agencies and indirectly addressing governance failures. These events seem to be appreciated. They also serve accountability and transparency purposes. In most cases research institutions are also involved, and the focus is at evidence-based learning. There is an advantage of a PPP initiating such a platform (rather than one partner on itself) because the PPP in many cases already represents a respectable 'weight' of relevant actors, which others are then more willing to join. The large-scale energy PPPs do not have a learning platform. Obviously learning also takes place as part of the local level multi-stakeholder platforms, although in more informal way.

### *Specific attention to systemic constraints*

**Changes in policies or legislation** related to a sector are systemic changes to improve the enabling context. Both water projects are explicitly working on changes in legislation, with respect to relevant by-laws or national policies. These are long-term processes that may require supportive diplomacy or advocacy activities.

**It is not easy to draw firm conclusions on transparency and accountability** to beneficiaries (producers, consumers). Of course all PPPs have reporting obligations, but these reports are confidential and not accessible. There are generally exchange and learning events (see below) but information about the use of resources will not be made available. Typically, information about a baseline measurement is also not available.

**It is not obvious that private sector partners in a PPP are willing to share experiences** and thus contribute to upscale the approach, because of confidentiality and competition aspects. Their interests do not necessarily match with that of overcoming systemic constraints or transforming a sector.

## 5. Conclusions and recommendations

### 5.1 Main conclusions

This project set out to explore whether the PPPs promoted by the Dutch Ministry of Foreign Affairs address the objectives of Inclusive Green Growth in their plans and actions as well as to reflect on the opportunities and constraints for strengthening Inclusive Green Growth impacts, by considering their (potential) role in addressing underlying market and governance failures. The project also examined added value and risks of a PPP compared to a 'conventional' development project.

Below the main conclusions of the project are given. Each conclusion is followed by the underlying evidence and further details.

**1. All PPPs show positive green as well as inclusive direct effects, with the exception of two large energy projects that were more designed as green rather than as inclusive projects. Possible negative effects are either not there (or at least not observable at this stage of the project) or will be mitigated by appropriate procedures.**

- This finding as such is not surprising, as projects were designed to include green and/or inclusive aspects in the first place, and also includes procedures for assuring that no negative environmental or social effects will occur. Thus, the study confirms that these policy objectives in line with IGG objectives can be realized. It must be stated, however, that these conclusions cannot be generalized, as we selected PPPs with good potential to achieve green and inclusive effects. Also, projects are still in an early phase, so it remains to be seen if the effects stated will indeed be achieved.
- PPPs in the water and energy sectors generally support 'access to water and energy' public policy objectives (i.e. inclusiveness). Since these objectives are directly linked to natural resources (water, energy), these objectives can be achieved by infrastructure development. The objective 'green' is related to making use of *renewable* (water and energy) instead of non-renewable sources and making *more efficient* use of these resources.
- The public policy objective of food security or 'access to food' is not so easy to achieve, as it needs to be translated into concrete land management or agricultural production objectives. In the agricultural sector, being inclusive is more complex as smallholders may not own land or if they own land are less productive. Therefore, particular attention and resources are generally required to successfully reach smallholders, as well as women and youths, .
- Only in the cases of the two large-scale energy projects we see significant potential negative effects. Motivation for public intervention in these two cases is to install renewable energy, motivated by climate change and national security of supply, rather than access to energy. In both cases, the potential negative effects are identified and mitigated, although in the case of geothermal energy there is more uncertainty about such a mitigation, since the actual construction of infrastructure in the future is not part of the project itself.

**2. The interests and roles of private sector parties in PPPs are related to the underlying business model, with strengthening of existing markets or creation of new markets with green and inclusive objectives, as two relevant mechanisms.**

- Large parties such as coffee traders in the case-studies examined were found to be mainly involved in strengthening relationships in their existing markets. Improved relationships with producers by

stimulating increased yields and better livelihoods of farmers offer potential to them for a long-term better and more sustainable integration of the product chain that in the future could flourish on a commercial basis without further public intervention.

- Smaller scale innovative SMEs as well as private water companies with a semi-public background on the other hand seemed to focus more on the creation of new markets. Making customers pay for water services provided, gaining market intelligence for future geothermal projects, or straightforward renewable electricity provision via a long-term contract are some of the ways in which new markets were created in the case studies examined.
- Either of the two ways can work for creating a long-term interest for the private parties to continue on a commercial basis with the sustainable business activities initiated in the PPP. The most stable way for such activities to continue on a long term seems the strengthening of existing markets, as here the market is already established and market opportunities are relatively clear. The establishment of new markets on the other hand is less certain, but might provide for large growth opportunities, such as in new geothermal projects to be initiated as a result of the Geocap project.

### **3. Many PPPs address systemic issues related to underlying market and governance failures, which is relevant in view of the need for strengthening the long-term viability of the business model and for stimulating further upscaling.**

- Potential systemic effects have been found in all projects. By realising systemic effects, a leverage effect of each project can be obtained by creating a long-term interest for private parties to continue with the market activities initiated by the project without the intervention or subsidy of public sources.
- Examples of *market issues* being addressed in the projects examined are the following, although it should be mentioned that in many cases it is too early to know whether the results will be significant and will sustain:
  - *Creation of cost-recovery or financing arrangements* for an efficient use of public good resources: in the water projects there is advocacy for higher water tariffs and two projects are developing innovative models for payment for ecosystem services;
  - *Access to financial resources for investments by smallholders* in more sustainable production systems is being created in most projects;
  - The water, food security and the small-scale energy project (SESA) have all contributed to *create new service delivery systems, with incentives for more sustainable resource use*, including delivery of knowledge (training), inputs and/or access to credit. In most cases, these are delivered by the local private operator on the basis of the business model. Having private, public and civil society partners in the PPP increases the chance for success as partners have complementary expertise. If firmly established, the model advanced by the PPP could lead to a systemic change in the sector. This is generally not formalised in contracts.
  - *Increasing returns to human, natural and other capital resources*, through education, restoration and reduced inequality: most projects focus on capacity building, with a focus at gender, bottom of the pyramid or smallholders
  - *Improved / equitable access to markets and share of market value for local producers*: this is an indirect goal for several PPPs, but is too early to know whether it is being achieved
- Addressing *governance failures* or opportunities is indirectly related to the underlying business model, constituting the enabling context for market mechanisms to operate. Examples of governance failures being addressed are less obvious, following are some examples:
  - The *acknowledgement of (informal) user rights* and attention for right enforcement is being addressed by some projects;
  - *Representation of producers in value chain multi-stakeholder platforms*: multi-stakeholder platforms are being established by PPPs in water and food security, in order to negotiate and

decide upon the management of natural resources. Representation of local stakeholders generally takes place through NGOs or farmer cooperatives and is stimulated by multi-stakeholder and learning platforms. If these platforms are institutionalised and do not become dependent on the project (for funding or facilitation) one could speak of a systemic change.

- *Shared management responsibilities* and co-management approaches with local stakeholders, including farmer cooperatives and (local) public actors;
- In almost every PPP *more integrated resource management approaches* are being promoted, and to be able to do so there are initiatives of involving the relevant ministries with the aim to create more policy coherence (typically, ministries of agriculture, environment, water and energy are involved);
- An interesting example of an *enabling legal context* is that of lobby and advocacy for tax exemptions for importing solar devices, which is important to keep the costs low.

#### **4. Particular risks of PPPs in view of IGG effects are related to the monopoly or long-term dependence that might be created by the participating company/ies.**

- Risks regarding noncompliance of the private partner in the project itself are often carefully regulated in the project contract set up. Risks after termination of the contract on the other hand are usually not accounted for by the project, nor discussed in the original project set-up. Risks are especially associated with lack of transparency (not sharing experiences) by the private party, especially after project termination, and changing interests by market parties if variations in (world) market circumstances occur.
- Where large private companies are involved, this has an important added value in terms of the existing network that can be used to reach out to many producers, to disseminate new lessons and practices, the potential for funding, the ‘weight’ to influence other stakeholders. However, in contrast this may lead to a new monopoly or new dependencies, e.g. on inputs delivered by the private partners for more sustainable agricultural practices.<sup>5</sup> Also, private companies might target in the first place producers that are relatively educated and resourced, as their return on training inputs will be best. During the PPP, this risk generally is mitigated by the presence of an NGO, but this relationship may end once the project has stopped.
- It is not obvious that private sector partners in a PPP are willing to share experiences and thus contribute to upscale the approach, because of confidentiality and competition aspects. Their interests do not necessarily match with that of overcoming systemic constraints or transforming a sector. There is often a high level of confidentiality, which seems a constraint for accountability and transparency.
- A related risk is that changing market circumstances might influence the degree of participation and interest of private parties after termination of the project, for instance due to a change in world market prices. Long-term commitments for private parties may therefore be difficult to acquire. In the case of substantially changed market circumstances, a private party might decide to leave the market initially created, which could lead to the collapse of the established new production model, leaving farmers without channels to sell their outputs to.

#### **5. Non-PPP specific risks of the examined projects are related to the environmental and social negative effects associated with large-scale projects, such as the two energy projects.**

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<sup>5</sup> A point in case is the private company in both the 4S and the FOSEK consortium, which has recently substantially increased in size by merging with another major trader. This is a concern for the northern NGOs.

- For the two large-scale projects, assessments have been carried out according to international regulations, but the implementation of mitigating measures and legal compliance during and after project implementation will remain a challenge.
- It is generally recognized that legal compliance with regulations and actions in the environmental and social management plan can be a challenge in countries that do not have a good track record on governance and transparency. This risk will be even greater if the PPP has ended and public or NGO partners are ‘out of the picture’.

**6. There is a number of factors internal to the PPP that form success factors for positive IGG effects, some of which are rather general (reconfirmed from earlier studies), others being more specific for positive IGG effects.**

- General internal success factors that were identified are the following:
  - PPP partners have earlier experience in working together, trust each other and have experienced their shared sustainability ambitions;
  - The project initially keeps the core set of PPP partners limited in order to speed up decision making at initial stages of the PPP;
  - Stakeholder participation in the development phase and then (after approval of the PPP) the inception phase;
  - Establishing a good baseline as one of the first activities, to be able to demonstrate impact at a later stage.
  - Well defined complementarity of roles of PPP partners.
- Specific internal success factors that were identified are the following:
  - A sound business model based on good market studies, and tested new technologies or production models (in the inception phase), which may take much time but should be done careful and with high stakeholder engagement;
  - Having PPP partners with strong local presence, established stakeholder relations and representing beneficiaries (e.g. local NGOs or cooperatives), these partners can also be involved in the PPP during implementation;
  - The PPP partners providing a combination of ‘software’ (e.g. capacity building on operation & maintenance) and ‘hardware’ (infrastructure, concrete investments);
  - A useful role of the Dutch embassy is to establish an enabling context, e.g. by smoothening administrative procedures or addressing national authorities on governance constraints;
  - Having a research institute as a PPP partner has an added value, for different reasons: to advance new concepts in an objective way, to train graduates on new concepts which will then be applied if they get a new job in the administration, to support evidence-based learning and to bring forward innovations and assist in sharing global experiences;
  - To create an equitable governance structure of the PPP, assure that PPP partners can participate on an equal basis (e.g. no dominance by private sector partner).

**7. Some success factors are related to the way the PPP interacts with external factors and stakeholders, most important of which are the localization of interventions, the engagement of local actors and the establishment of a learning platform.**

- Several PPPs have organised an open learning platform to develop or discuss innovative approaches or concepts with a wide set of stakeholders. These platforms are a medium for dialogue, sharing experiences and discussing possible market and governance failures. They can also serve accountability and transparency purposes. The PPP in many cases already represents a respectable ‘weight’ of relevant actors, so that others are more likely to join. Ideally this forum is institutionalised so that it sustains once the PPP has ended.

- In most of these learning platforms the relevant public and civil society agencies are invited that have an interest and responsibility in management of natural resources (such as water, land, forest). This can be instrumental in improving policy coherence between these agencies (which is often absent or of poor quality).
- The participation by public agencies at decentralised levels is useful in order to improve the adaptation of proposed models to local demands and local environmental and social conditions / contexts, which potentially leads to more Green and Inclusive impacts. Decentralised public agencies can be involved as PPP partners from the start (e.g. water project Vietnam) or gradually get involved during PPP implementation (e.g. Colombia coffee or 4S Kenya).

## 5.2 Recommendations

Following are the main recommendations for future design and during execution of PPP projects, directly related to the above conclusions and success factors.

### **Business model**

- Emphasize during the design phase the establishment of a sound business case, with innovations and production models, possibly adapted to local contexts, and allow sufficient time for developing and testing these models;
- Stimulate PPPs that can provide a combination of ‘software’ (e.g. capacity building on operation & maintenance) and ‘hardware’ (infrastructure, concrete investments), which seems most effective, especially in countries where hardware infrastructure is still missing (e.g. on water and energy);
- Make sure that PPPs pay attention to long-term sustainability of their business model after the project itself has ended. It should be described how the market addressed during the project is expected to develop without public support after scheduled project termination, which systemic factors influence this long-term development and how these systemic factors may be addressed by the PPP partners.

### **Partners to be involved and governance system**

- If the main aim is to strengthen an existing market, it is recommended to consider the involvement of a large and established partner, whereas in the case of establishment of a new market as a main aim the need for involvement of an innovative SME should be considered;
- Consider the involvement and roles of research partners in the PPP in line with their multiple expected added values;
- Consider the involvement of decentralised public agencies or local partners, from the beginning or during project implementation, to assure better ownership and adaptation of the proposed interventions to the local context;
- A useful role of the Dutch embassy is to participate in multi-stakeholder events and learning platforms and help establish an enabling context, e.g. by smoothening administrative procedures or addressing national authorities on governance constraints;
- Emphasise the structure of the governance model of the PPP, which should be well thought out in order to be equitable and especially create a balance between the NGO and private sector party. This could be organized by formalizing an important role for third parties in terms of transparency and accountability of the private company to its producer basis. Another model would be that of co-management arrangements, formalized in contracts.

**Risk mitigation**

- Emphasize activities and contractual arrangements during design and/or implementation of the PPP to mitigate the identified risks associated with the involvement of large private sector parties regarding long-term dependencies and market changes;
- Options to do so would be to institutionalise third party verification systems associated with new private sector production models. Also, in the design phase, potential risks for long-term dependencies should be described. The Dutch embassy in respective countries may play a role in long-term risk mitigation;

**Public goods resources**

- Pay attention that interventions in the project account for cost-recovery or financing arrangements for an efficient use of public good resources, for instance through payment for ecosystem services and carbon credits;
- Directly involve in the PPP the different public agencies that have an interest and responsibility with respect to management of natural resources, and undertake activities that can improve mutual collaboration and enhance policy coherence.
- Assure accountability by establishing a multi-stakeholder platform, including the key stakeholders from civil society and local communities, with a defined role (as a third party verification) in monitoring activities.

# Appendices

## Appendix 1: Desk study questionnaire

During the desk study of available documentation the following information will be collected and noted in a systematic way, as a basis for the interviews.

### *Basic information*

- Topic / sector (water, food, energy)
- Country & region
- Budget (public/private)
- PPP partners with short description of their background and core activities, and earlier experiences in project area, topic and IGG aspects
- Project period
- Main objective/s, theory of change and expected results
- Available reports (progress or evaluation)

### *Specific information relevant for IGG linkages*

- References to positive direct IGG effects (see table 1 below)
- References to mitigating measures to avoid negative direct IGG effects
- References to identified indirect (systemic) IGG issues or indirect IGG effects (see table 2 below)
- References to factors explaining direct or indirect IGG effects
- References to future potentials and constraints to achieve (more) direct and indirect IGG effects.

It is advised to thoroughly also read below interview outline, as this will show which (additional) focus of screening the available documentation is useful.

Analysis: Before the interview, of the project a brief fact sheet will be produced summarizing above information, with emphasis on the 2nd part. Relevant gaps of knowledge, possible inconsistencies, as well as priority issues to be addressed in the interview.

Interview outline (in below sequence of steps, but might be combined)

1. Explain the outline of the interview, the difference between direct and indirect effects (checklists 1 and 2), the logical flow of the interview moving from direct and indirect effects to characteristics of the PPP (design and implementation phase ) and internal PPP dynamics and procedures.
2. Check of basic project characteristics and theory of change
  - Quick check of basic characteristics collected from documentation (fact sheet), focus on gaps and inconsistencies
  - Discuss the theory of change of the PPP and the resulting strategy: what are the main elements, is it shared by all the PPP partners, what have been recent changes?
  - Briefly discuss the priority actions and how these relate to the theory of change, and whether these were discussed among PPP partners.

3. Direct effects realized so far (checklist 1, build on information already collected from documentation)
  - What have been direct IGG effects so far achieved?
  - What have been mitigating measures to avoid negative IGG effects?
  - Were these direct effects:
    - foreseen in the PPP design,
    - have they appeared / become clear during PPP implementation,
    - have they become clear as a result of monitoring, self-evaluation and learning?
  
4. Partners and their roles related to direct effects
  - Which PPP partners have earlier experiences on IGG relevant subjects? Were these in the PPP from the beginning or did they join later? Has this been an advantage to address IGG effects?
  - Do these partners play an important role in the PPP? Have they been active?
  - Which partners are not interested to include IGG effects? Which partners show resistance to address direct IGG effects?
  
5. Underlying factors for direct effects in the design phase (could be combined with 9)
  - What factors in PPP design have been important for achieving direct IGG effects and why?
  - The context study done as part of the design
  - The problem analysis at the basis of the PPP
  - The choice of partners involved
  - The partnership agreement
  - The available budget
  - The identified risks
  - Other ....
  
6. Underlying factors for direct effects in the implementation phase (could be combined with 10)
  - What factors in the implementation phase of the PPP do you consider to be important for achieving direct IGG effects and why? Possible factors are e.g.:
  - The role of public agency partner in practice (role and activeness)
  - Knowledge exchange internally
  - Direct involvement or representation of new stakeholders
  - Internal accountability on (agreed) partner responsibilities
  - Internal communication processes
  - Monitoring, evaluation & learning
  - Unforeseen contextual factors or risks identified
  
7. Current status indirect (systemic) effects (checklist 2, build on information already collected from documentation)
  - What are indirect IGG issues that are relevant for the PPP? Are these issues seen as constraints or opportunities? Does the PPP address these issues or see them as a given?
  - If they are being addressed, what are the indirect effects so far?
  - Were these indirect IGG issues:
    - foreseen in the PPP design,
    - have they appeared / become clear during PPP implementation,
    - have they become clear as a result of the need for upscaling, capacity building, institutional strengthening, expansion of the PPP results?
  
8. Partners and their roles related to indirect effects
  - Which PPP partners have relevant experiences or mandate to address indirect IGG issues? In particular, are southern local public institutions involved, and what is their role in relation to indirect IGG issues?

- Have new partners joined the PPP from the beginning or have they joined later? Has this been an advantage to address indirect IGG issues?
- Which partners have less interest to address indirect IGG issues? Which partners experience barriers to address indirect IGG issues?
- Are relatively marginalized stakeholders from the project location and relevant to the PPP represented in the PPP (directly or indirectly), or have they raised their voice to pay attention to IGG issues?
- As above for environmental organizations from the project location.

#### 9. Underlying factors for indirect effects in the design phase

- What factors in PPP design have been important for attention to indirect IGG issues and why?
- Earlier experiences or presence of PPP partners in the project area
- The context study done as part of the design, were indirect IGG issues such as legislative context and local capacities identified?
- The problem analysis at the basis of the PPP, id.
- The choice of partners involved, especially southern partners and stakeholders
- The identified risks
- The ambition for upscaling and expansion of the results
- The need to sustain and maintain the results and build capacity among local partners
- Other ....

#### 10. Underlying factors for indirect effects in the implementation phase

- What factors in the implementation phase of the PPP do you consider to be important for attention to indirect IGG issues and why? Possible factors are e.g.:
- The extent that factors at systemic level (governance and market failures, access to stakeholders) become relevant, e.g. as constraints for upscaling, replication or capacity building
- Internal accountability on (agreed) partner responsibilities
- External accountability and transparency, e.g. by building a local platform or reference group
- The need to assure sustainability of the results
- The involvement of southern government agencies and civil society partners
- Monitoring, evaluation & learning, with external parties
- Unforeseen contextual factors or risks identified

#### 11. Future perspectives

- What are expected future constraints relevant to IGG, e.g. for upscaling?
- Have insight in IGG issues lead to any changes in the set-up of the PPP (theory of change, partner choice, stakeholders involved, internal procedures)? If yes, which?
- What opportunities do you see to achieve greater direct IGG effects in the future? How and by whom?
- What opportunities do you see to address indirect IGG issues and realize indirect effects in the future? How and by whom?

## Appendix 2: Case Study Summary Reports

### 1. Malawi: Water Demand Management to Mitigate Water Shortages

Topic / sector	Water supply and sanitation in Malawi The PPP focuses at water supply and sanitation by the approach of water demand management.	
Country & region	Malawi (1 region)	
Budget	€ 2.6 million, of which almost 49% grant, 25% by Dutch water company, 6% by Dutch NGO and 20% by Malawi water company (cash and in-kind)	
Types of partners	<ul style="list-style-type: none"> <li>• Dutch water company (semi-private)</li> <li>• Dutch NGO with local presence and office (NGO)</li> <li>• Malawi water company (private)</li> <li>• Malawi local government (public)</li> </ul>	
Project phase	April 2013 to April 2019	
Business model	<p>There are serious problems in the availability of water for serving all local communities (32% still has no access to water), while some institutions use much water. Sanitation facilities have a lower coverage (80% has poor access). By reducing non revenue water losses, water will become available for new water connections. The private Malawi water company intends, with the financial help of Dutch government, a private Dutch water company and a Dutch-based NGO, to improve access to water in Malawi. For a viable business model it would be required that BoP pay low fees and larger consumers pay for their mandatory water tariffs, but this is unlikely to happen soon. The Dutch water company provides expert knowledge, but does not have a commercial interest to expand business in Malawi without development aid. Their activities can be seen as consultancy-based hard- and software provision to improve access to water in an effective way. To be able to do so, the collaboration with the Dutch-based NGO is essential.</p>	
<i>Direct IGG effects</i>		
Green / positive:	Inclusive / positive:	Growth / positive:
<ul style="list-style-type: none"> <li>• Reduced water losses / improved efficiency</li> <li>• Introduction of more environmentally friendly sanitation solutions</li> </ul>	<ul style="list-style-type: none"> <li>• Improved access to drinking water for the poor</li> <li>• Improved access to sanitation facilities</li> <li>• Women and children involved</li> </ul>	<ul style="list-style-type: none"> <li>• Access to water and sanitation is a social right</li> <li>• No additional commercial activities foreseen</li> </ul>
Negative IGG effects and mitigation measures:		
<ul style="list-style-type: none"> <li>• none</li> </ul>		
<i>Indirect IGG effects:</i>		
<ul style="list-style-type: none"> <li>• The PPP will lead to more transparency in water use by certain public institutions, some of which is not very efficient. Whether this will lead to any awareness and changes remains to be seen.</li> <li>• The PPP supports the decentralization of water and sanitation functions. It will lead to improved collaboration between the water company (responsible for access to water) and the local government (responsible for access to sanitation).</li> <li>• The local water company is not financially self-sustaining;</li> <li>• By-laws are developed to support water demand management and community led total sanitation strategies (at the regional level, with potential influence at the national level). It is not certain whether other constraints will be addressed (e.g. no payment by institutions or water tariffs).</li> <li>• Greater awareness and transparency on water use by different users. This may eventually lead to</li> </ul>		

communities claiming their water rights (as has been experienced in other countries). However, this is not an objective of the PPP, and may also include some risks.

- By introducing ecosan toilets, awareness is raised on the value of these devices in areas with poor access to water (which is not obvious as reuse is made of human wastes)

#### *Underlying factors – within the PPP*

##### *Partnership characteristics and objectives*

- Having the local government as a partner, as well as the local water company, is essential, because their collaboration in the PPP leads to improved working relations
- The Dutch water company and the Dutch NGO both have long working experiences in Malawi and a good track record. Both are committed to goals of increasing access to water for the poor. Both have experiences in working in PPP constructions.
- The Dutch NGO has the lead in the PPP, which is considered a good thing because they have a strong presence on the ground and good relations with the local communities and authorities.

##### *Stakeholder participation*

- Stakeholders have been involved in the design.
- Communities are able to provide feed-back on the PPP and its results during frequent (monthly and quarterly) meetings with water user groups and sanitation groups

##### *Design / division of risks*

- The Dutch water company and NGO clearly have complementary roles (water, sanitation, hardware, software) and collaborate very well.
- The collaboration between the local government and local water company has been poor, but their collaboration in the PPP leads to significant improvements (in terms of decision-making and management structure, training and field activities within the PPP).

#### *Underlying factors –PPP interaction with outer context*

##### *Learning*

- The wide presence of the Dutch water company and the Dutch NGO in Malawi will assure that experiences are shared with other stakeholders at national level. There are inputs to new national policy on water and sanitation. However, there is no specific learning platform.

##### *Specific attention to systemic constraints*

- There is much attention to capacity building of the water companies and local government, and their mutual collaboration, on issues of water management and sanitation
- There are doubts on the financial viability of the local water company, but this will not be easy to solve in the short-term.

##### *Long-term commitment with region*

- The Dutch water company and NGO both have a strong local presence and office.
- More long-term solutions such as ecosan toilets are also being introduced.

#### *What has been the added value of this PPP to objectives of IGG?*

First of all the PPP 'simply' increases access to water and sanitation in a region where currently the coverage of these rights is low. This would be a conventional development aid approach. However, the added value is the fact that there is explicit attention to improve the capacities of local agencies responsible for water and sanitation, and their mutual working relations. Also, the PPP pays attention to more structural problems like institutions using excessive amounts of water and the financial viability of the water company. There are no commercial interests in the region (apart from the fact that the collaboration between the Dutch water company and the Dutch-based NGO might become a model for addressing water and sanitation in a more integrated and effective way in other poor countries).

## 2. Vietnam: Climate Change and Water Supply in the Mekong Delta

Topic / sector	Water supply and sanitation in Vietnam The PPP focuses at water supply and climate change adaptation.	
Country & region	Vietnam (3 provinces)	
Budget	€ 10 million, of which 44% grant. Both cash and in-kind contributions by Vietnam partners	
Types of partners	<ul style="list-style-type: none"> <li>• Northern / Dutch water company (semi-private)</li> <li>• Three Vietnam water companies (semi-public)</li> <li>• Three provincial government agencies (public)</li> <li>• Northern and southern research institutes</li> </ul>	
Project phase	April 2013 to April 2017.	
Business model	<p>There are serious problems in the source of water, due to salinisation and declining groundwater table in the Mekong delta. The PPP provides short-term solutions by water infrastructure development, including a shift to using surface water ('hardware'), and long-term solutions by a climate adaptation plan ('software').</p> <p>In this project, the Dutch water company provides both consultancy services (climate adaptation plan, capacity building) and hardware (including surface water technology and piped systems). The hardware component, supported by capacity building, is business-as-usual. The second component is more challenging, and will generate a suite of potential follow-up activities. The project leads to perspectives for future investments in line with the climate change adaptation plan, and therefore commercial follow-up activities beyond the project context can be considered likely. It is not clear if there is for the Vietnam water companies a viable business model, as subsidies are not transparent, but water tariff rates are probably too low.</p>	
<i>Direct IGG effects</i>		
Green / positive: <ul style="list-style-type: none"> <li>• Reduced water losses / improved efficiency</li> <li>• Reduced groundwater salinisation</li> <li>• Improved water use efficiency by industries</li> </ul>	Inclusive / positive: <ul style="list-style-type: none"> <li>• Improved access to drinking water for all</li> <li>• More sustainable source of drinking water in future</li> </ul>	Growth / positive: <ul style="list-style-type: none"> <li>• More sustainable source of water for various purposes</li> <li>• Resilience to climate change</li> </ul>
Negative IGG effects and mitigation measures: <ul style="list-style-type: none"> <li>• The risks of the hardware component are covered by standard environmental and social assessments and resulting corporate social responsibility (CSR) plans for water companies</li> <li>• The software component has no risks</li> </ul>		
<i>Indirect IGG effects:</i> <ul style="list-style-type: none"> <li>• Awareness raising to climate change, among public sector and local water companies, as well other stakeholders. The aim is to introduce an integrated approach to climate change adaptation in relation to water resources (multiple use, recycling, multiple water sources, ...).</li> <li>• Increased awareness of how to implement CSR plans made for the water companies (although some sensitive issues remain, such as health and safety)</li> <li>• Industries will be addressed to assess and reduce their water use (but it is too early to know whether this will succeed)</li> <li>• The adoption of the climate change adaptation plans may lead to several systemic changes, such as the shift from the use of groundwater to surface water, water recycling and waste water treatment</li> <li>• There is good potential that local governments will adjust their policies in favour of more efficient water use and climate change adaptation plans.</li> </ul>		

<i>Underlying factors – within the PPP</i>
<p><i>Partnership characteristics and objectives</i></p> <ul style="list-style-type: none"> <li>• Having signed agreements with the three local governments is an advantage, because they are essential for any decision making</li> <li>• The Dutch water company has long working experiences in Vietnam and has a good track record in working with the local water companies</li> <li>• Having the two research institutes on board is an advantage to bring forward the climate change adaptation component in a convincing way.</li> </ul> <p><i>Stakeholder participation</i></p> <ul style="list-style-type: none"> <li>• In Vietnam the local governments represent the people. In this PPP the research institutes are instrumental in providing research findings that focus at inclusion of poor or marginalised people in the climate change adaptation plan.</li> <li>• The development of climate change adaptation plans includes wide stakeholder participation.</li> </ul> <p><i>Design / division of risks</i></p> <ul style="list-style-type: none"> <li>• Most important is without doubt the fact that this PPP combines expertise and funds for ‘hardware’ and ‘software’ activities, which makes the PPP convincing to the Vietnam authorities and makes it possible to integrate and align these two component. The northern partners have experienced that one without the other is much less effective.</li> </ul>
<i>Underlying factors –PPP interaction with outer context</i>
<p><i>Learning</i></p> <ul style="list-style-type: none"> <li>• The climate change adaptation plans are being introduced and discussed during workshops, per province (decentralized). There is high level participation (Dutch embassy, Vietnam authorities).</li> <li>• There are good working relations with a range of other local organizations</li> <li>• There is a joint learning platform (organized bi-annually), with collaboration with another PPP, and open to invited other stakeholders. The platform is facilitated by a northern consultancy.</li> <li>• There is a certain level of transparency and accountability through the joint learning platform, as outsiders are also invited. Farmers can express their opinions through their organizations and close relations with NGOs, as well as the learning platform.</li> </ul> <p><i>Specific attention to systemic constraints</i></p> <ul style="list-style-type: none"> <li>• There is much attention to capacity building of the water companies and local provincial authorities, not only on the hardware but also on climate change adaptation</li> <li>• There are doubts on the financial viability of Vietnam water companies (being heavily subsidised) but this will be difficult to overcome.</li> </ul> <p><i>Long-term commitment with region</i></p> <ul style="list-style-type: none"> <li>• Curricula are being developed in line with the concept of integrated climate change adaptation. Students will soon move into the public sector and bring about change.</li> <li>• The focus at creating a multi-stakeholder platform around the new climate change adaptation plans can help build commitment among various agencies who will have relevant tasks. It may lead to new forms of collaboration between these agencies.</li> </ul>

*What has been the added value of this PPP to objectives of IGG?*

The added value is without doubt the fact that the PPP allows a movement from ‘hardware’ solutions (which are required anyway but have a limited scope given the increased pressure on scarce water resources) to more long-term strategies. The introduction of climate change adaptation plans in collaboration with provincial agencies is considered the most important and challenging part of this PPP, due to its long-term perspectives. The combination of PPP partners and the PPP its approach of combining hardware and software is an important success factor. Risks of the hardware component are mitigated by standard environmental and social assessment procedures and CSR plans for the water companies to adopt. For the Vietnam water companies, developing a financially sustainable business model will remain a challenge.

### 3. Colombia: Integrated Water Management System for a Climate Intelligent Coffee Sector in Colombia

Topic / sector	Integrated water management in Colombia The PPP focuses at integrated water management in 25 river basins, with the aim to stabilise and improve coffee production	
Country & region	Colombia 25 river basins: 25 coffee-growing municipalities in 5 departments (provinces) of Colombia (Antioquia, Caldas, Cauca, Narino, Valle del Cauca)	
Budget	Total € 25 million, with the following contributions: <ul style="list-style-type: none"> <li>• FDW: € 9.5 million</li> <li>• Private company : € 4.5 million</li> <li>• National coffee federation: € 2.5 million</li> <li>• Public agency: € 2.5 million</li> <li>• Research institute: 5% all in kind</li> <li>• The in-kind contribution by project beneficiaries (farmers) is € 4.3 million</li> </ul>	
Types of partners	<ul style="list-style-type: none"> <li>• National coffee federation (non-profit with semi-public character)</li> <li>• Global private company</li> <li>• Colombia public institution</li> <li>• Northern research institution</li> <li>• Southern public research institution</li> </ul>	
Project phase	The project started in July 2013 and will run up to June 2018 (5 years).	
Business model	<p>In coffee production areas in 2012 there were serious floods, while in other years there was drought and diseases, all being triggered by climate change. Together this causes a 30-40% reduction in coffee production, which means a serious loss of income for farmers and reduced security of supply for the coffee traders. Colombia coffee has a special flavor and has a special value for the global coffee trader. The private global coffee trader has two main interests in this PPP. First it wants to stabilize and secure its special brand coffee supply. Second, it has decided to globally work on the water challenge and from this PPP wants to develop an integrated water management approach that can be applied in other regions. The PPP allows to develop such an approach because of the good relations with research institutes and the national coffee federation that has national coverage. Although water is the entry point, the PPP actually aims to develop a financially viable landscape management model, which all partners see as a major challenge and interest.</p>	
<i>Direct IGG effects</i>		
Green / positive:	Inclusive / positive:	Growth / positive:
<ul style="list-style-type: none"> <li>• Reduced water losses / improved water efficiency in coffee processing</li> <li>• Reduced landslides</li> <li>• More sustainable use of natural resources at watershed level</li> </ul>	<ul style="list-style-type: none"> <li>• More climate resilient production system</li> <li>• Improved and stabilised income from coffee</li> <li>• Institutionalized stakeholder platforms to manage watersheds at local level</li> </ul>	<ul style="list-style-type: none"> <li>• Reduced public goods damage by climate change, especially by landslides (estimated at €60m per year)</li> <li>• More diversified and improved revenues from natural resources</li> </ul>
<p>Negative IGG effects and mitigation measures:</p> <ul style="list-style-type: none"> <li>• The national coffee federation is assumed to represent all coffee farmers. While this may be the case on paper, it is not evident whether relatively small, poor or otherwise marginalized coffee producers have an equal voice.</li> <li>• It is also not fully clear to what extent there will be full transparency towards all stakeholders.</li> </ul>		
<i>Indirect IGG effects:</i>		
<ul style="list-style-type: none"> <li>• Multi-stakeholder local water platforms will be installed at watershed level. The aim is to</li> </ul>		

- institutionalize these platforms and assure their long-term viability by becoming independent from project / donor financing.
- Part of the watershed management model is to make use of payment for ecosystem service revenues. Realising this type of revenues as part of an integrated landscape management model will be a breakthrough.
  - The PPP will contribute to create coherence and policy alignment between the different public institutions with an interest in water management. Alignment is both horizontal (between public ministries of energy, agriculture and energy) as well as vertical (local, regional and national authorities). This is indispensable for a sound management model.
  - The PPP has achieved increased access to credit for participating farmers through a rotating fund (managed by a bank) and through the registration of land. The PPP supported the set up of a kadaster with land registration so that farmers can obtain a loan.
  - The PPP supports the decentralization of natural resource management, and introduces an innovative approach by organizing this at the level of a landscape (ecological boundary). This also generates the opportunity of managing upstream-downstream water relations between different interest groups, with potential benefits for different users.
  - Greater awareness and transparency on the dependency on water resources by different users.

*Underlying factors – within the PPP*

*Partnership characteristics and objectives*

- The PPP partners have worked together for some years and fully trust each other.
- One national level public institution is PPP partner (ministry of agriculture). The ministry of Environment now also participates (an MoU was signed), but it would have been better if it was a PPP partner right from the beginning. However, this is not possible according to FDOV guidelines.
- Participation of the northern research institute is important, to enhance evidence-based learning and credibility of new approaches.

*Stakeholder participation*

- Stakeholders have not been fully involved in the design, but are involved in the second phase when global management plans are adjusted and fine-tuned to the local contexts.
- Producers are represented by the national federation coffee committees, while communities are represented through watershed-based water committees. They participate in the local water platforms.

*Design / division of risks*

- During the first year of the PPP, work was dedicated at establishing the governance structure and establishing a baseline. At Board level four ministries are represented (agriculture, environment, energy, trade). This is important in order to improve policy coherence when working on an integrated landscape approach.
- The PPP approach of working at river basin level had already been tested at a smaller scale within Colombia.
- The PPP combines capacity building (of water users and relevant stakeholders) with the availability of funds for bio-engineering investments ('hardware').
- Local governments (municipalities) are involved in the second phase, as the lead agency in the local water platforms, at local and regional levels.

*Underlying factors –PPP interaction with outer context*

*Learning*

- At national and regional scale a learning network has been installed, with learning to take place on the basis of evidence and a strong role of the research institute.
- The global coffee trader brings in knowledge about integrated water management from other parts of the world.

*Specific attention to systemic constraints*

- There is much attention to the improvement of policy coherence around the integrated

<p>management of water resources.</p> <ul style="list-style-type: none"> <li>• Attention for the concept of payment for ecosystem services is one way to develop a viable financial model for integrated water management.</li> </ul> <p><i>Long-term commitment with region</i></p> <ul style="list-style-type: none"> <li>• The aim is to institutionalize and sustain the functioning of both the local water platforms and learning networks.</li> </ul>
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*What has been the added value of this PPP to objectives of IGG?*

The main added value of the PPP is the way an ecosystem / landscape based approach will be linked to a value chain approach (coffee value chain). While many relevant institutions have found this to be a valuable approach, few have actually started to work it out in practice. The strengthening of both horizontal linkages between relevant public sector institutions and stakeholders, as well as vertical linkages between different levels (local, regional and national) are important ingredients of a successful approach. The establishment and capacity building of community-based water committees and local water platforms are another important ingredient. It is not clear to what extent the integration of revenues from payment for ecosystem service is an important component of the business model.

**4. Ghana: Sustainable Maize Programme in Northern Ghana**

Topic / sector	Food Security - improvement of maize production and sales via a farmers' cooperative in which private and public partners participate.	
Country & region	Ghana – Northern Region	
Budget (public/private)	Total € 4.1 million, of which 2 million provided by Dutch government to a Northern NGO, and the rest contributed by the farmers' cooperative (17.3%), which is founded by a large Northern private fertilizer company active in the region (also contributing 17.3%) and a North/Southern agricultural inputs company (17.3%).	
PPP partners	<ol style="list-style-type: none"> <li>1. Northern NGO aiming to promote fair and sustainable international supply chain arrangements in the West African agricultural commodity sectors (public partner)</li> <li>2. North/Southern fertilizer and agricultural inputs provider (private partner)</li> <li>3. Northern large mineral fertilizer company from Norway (private partner)</li> <li>4. Agricultural cooperative set up in 2009 by the Northern and North/Southern (private company)</li> </ol>	
Project phase	The project started in 2014 and will last until 2018. So far, the inception phase of the project in which the project organization was set up has been completed and 2,500 out of targeted 12,000 farmers have been involved in the project.	
Business model	Key private interest in this project is the stabilization and improvement of a food supply chain (maize). Agricultural inputs are sold by the private parties to farmers who are trained to apply better farming practices so that production is more efficient and more sustainable. The resulting outputs are bought by the private parties at a guaranteed price from the farmers and subsequently sold on the market. Main public interest in the project is an increase in food security and better livelihoods of subsistence farmers in Northern Ghana through improved farming methods.	
<i>Direct IGG effects</i>		
Green / positive:	Inclusive / positive:	Growth / positive:
<ul style="list-style-type: none"> <li>• Reduced soil degradation / improved soil fertility</li> </ul>	<ul style="list-style-type: none"> <li>• Improvement of livelihoods of subsistence</li> </ul>	<ul style="list-style-type: none"> <li>• Higher incomes of farmers</li> <li>• Private companies profit</li> </ul>

through more sustainable farming methods	farmers through improved capacities, access to markets and good prices <ul style="list-style-type: none"> <li>• 20% women are targeted</li> <li>• Improved business skills of farmers participating in the cooperative</li> </ul>	through sales of inputs and profit margin on maize bought from farmers and sold at market
<p>Negative IGG effects and mitigation measures:</p> <ul style="list-style-type: none"> <li>• The project might create a long-term dependency of farmers on the inputs of the private parties involved. However, similar projects with other crops in the larger region (cacao) have shown that this so far has not been a major problem.</li> <li>• The project could lead to a monopoly by the private parties involved (concentration of power).</li> </ul>		
<p><i>Indirect IGG effects:</i></p> <ul style="list-style-type: none"> <li>• Capacity building and skills of farmers to produce more maize in a more sustainable way.</li> <li>• Service delivery model to provide farmers \secure inputs needed to improve yields, access to markets and credit supply as well as guaranteed output prices.</li> <li>• Long-term empowerment of the farmers in market- and marketing skills and establishing more market power of the farmers through their organization in a cooperative.</li> <li>• For the private partners: establishment of a more stable market and supply chain (sales of agricultural inputs to farmers with loan model; sales of maize outputs to consumers).</li> </ul>		
<i>Underlying factors – within the PPP</i>		
<p><i>Partnership characteristics and objectives</i></p> <ul style="list-style-type: none"> <li>• Long working relations between the two main private PPP partners, shared sustainability ambitions. The two private partners together founded and supported the development of the farmers' cooperative that is the main project vehicle.</li> <li>• The partnership agreement defines partners' tasks and responsibilities, the division of funds and the conflict resolution procedures. Particular risks taken care of in the agreement are dissolution of one of the partners and differences in approaches or changes of strategy of the partners.</li> <li>• The Dutch embassy contributes to establishing the enabling environment, for instance by smoothening administrative procedures by its contacts with the Ghana government</li> <li>• Gender issues in the project are taken into account ..</li> <li>• Specific attention will be given to include female farmers in the improved maize production and marketing programmes. Business skill training and adequate representation of female farmers in Masara will be key activities to promote gender equality. Access to land for female farmers will be promoted through land mapping and registration initiatives.</li> <li>• A detailed monitoring and evaluation plan has been set up. Transparency is taken into account via this plan and regular reporting obligations to FDOV. Regular (half-yearly) steering team meetings are held in which all stakeholders participate.</li> </ul> <p><i>Stakeholder participation</i></p> <ul style="list-style-type: none"> <li>• Farmers are co-owners and co-governing the cooperative that drives the project.</li> </ul> <p><i>Design / division of risks</i></p> <ul style="list-style-type: none"> <li>• The design is based on an earlier pilot on a smaller scale. The cooperative was already set up in 2008 for this purpose and has been externally evaluated. Similar project design has been applied with another food crop (cacao) in the wider region.</li> <li>• Project risks are that farmers cannot pay back loans provided or that maize prices on the market are lower than anticipated. The former risk is carried by the private project partners, the latter is taken into account by calculating with very conservative maize prices in the business model calculations.</li> </ul>		
<i>Underlying factors –PPP interaction with outer context</i>		
<p><i>Learning</i></p> <ul style="list-style-type: none"> <li>• The project involves learning of agricultural practices as well as in farm management of the</li> </ul>		

farmers participating in the cooperative.

- Private partners as well as the Northern NGO jointly provide capacity building.
- The project model involves training the trainers, i.e. selected farmers are educated as trainers for further farmer groups.

*Specific attention to systemic constraints*

- There are good informal working relations with local authorities, in particular also important because of lacking formal land ownership relations.
- Transparency and accountability are taken care of by bi-annually steering group meetings, in which the Dutch embassy and national authorities are involved next to project partners, including farmers' representatives.
- The PPP objectives are in line with national policies (on food security) and local and national policy makers support the PPP

*Long-term commitment with region*

- All partners are already active for a long time in the region and are committed to sustainable development, also the private partners.

*What has been the added value of this PPP to objectives of IGG?*

The added value of this PPP lies in stabilizing and improving an existing food chain (maize) through capacity building of local farmers in a cooperative of which two private parties are the founders. The PPP improves and stabilizes the supply chain by providing necessary material inputs, by training farmers how to achieve higher outputs and how to manage their farms in a more market oriented way, and by secured buying and marketing of the outputs. In this way, in the case of a successful project, both long-term positive inclusive effects are obtained (improved livelihoods), and green impacts (better soil management). Farmers are trained in sustainable agricultural methods that also generate higher yields as well as in methods to better operate within the market environment (e.g. planning, improved financial skills). Further, a long-term interest of the private parties in these improved market conditions is obtained, setting the basic condition for future continuation of this business model without public support.

**5. Ethiopia and Kenya: Food Security through Improved Resilience of Small Scale Farmers in Ethiopia and Kenya (FOSEK)**

Topic / sector	Food Security – Agriculture (coffee and local food crop)
Country & region	Ethiopia and Kenya
Budget	Total € 9,267,581 (50% by the Dutch government and 50% by the project partners)
Types of partners	<ul style="list-style-type: none"> <li>• Northern NGO</li> <li>• Northern private partner (large international coffee trading organization)</li> <li>• Southern private partners (local coffee traders)</li> <li>• Southern for profit member based organizations</li> <li>• Southern research institution</li> </ul>
Project phase	The PPP started in 2014, the project has conducted the baseline study for intercropping possibilities. Implementation of activities will start in January 2015.
Business model	The business case has the following components: 1) The establishment of nurseries at cooperative level that should become a viable business and new commercial activities of the farmer organizations after 7 years; 2) The buying, collecting, storing, selling and distribution of locally produced food crops; 3) A pilot in Kenya for the establishment of milk cooling plants at farmer

	<p>organizations to collect, buy, store, sell and distribute cooled, locally produced milk for local markets.</p> <p>The business model in this case for the private partners is that the local coffee market in the participating countries is stabilized and supply to the traders is increased through improved productivity by stimulated better farming practices of local farmers. Public interest is that farmers profit from growing a larger variety of crops in various ways, which directly benefits their own nutrition and indirectly benefits from selling excess food crops to the local market and selling improved coffee yields to the coffee traders.</p>
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<i>Direct IGG effects</i>		
<p>Green / positive:</p> <ul style="list-style-type: none"> <li>• More sustainable farming practices (intercropping), with benefits for soil</li> </ul>	<p>Inclusive / positive:</p> <ul style="list-style-type: none"> <li>• Improved nutrition for small scale farmers</li> <li>• Improved yields (food &amp; income) for small scale farmers</li> </ul>	<p>Growth / positive:</p> <ul style="list-style-type: none"> <li>• Improved local food markets</li> <li>• Improved farming practices</li> </ul>
<p>Negative IGG effects and mitigation measures:</p> <ul style="list-style-type: none"> <li>• No market distortion is anticipated as the project focuses on developing a market.</li> <li>• Minimal to no negative environmental or social impacts are expected.</li> <li>• There is a strong and increasing monopoly by the main coffee trader (concentration of power).</li> </ul>		
<p><i>Indirect IGG effects:</i></p> <ul style="list-style-type: none"> <li>• Farmer organizations capacitated to deliver services to their members, based on a financially viable model (self-perpetuating) – increased sustainability and resilience</li> <li>• Improved local markets and commercial opportunities for farmers,</li> <li>• Scaling-up / follow-up activities through the viable business and service delivery model</li> <li>• Increased awareness for local consumers on nutrition</li> </ul>		
<i>Underlying factors – within the PPP</i>		
<p><i>Partnership characteristics and objectives</i></p> <ul style="list-style-type: none"> <li>• Partners had already established relations. The partners are active along different chains in the value chain.</li> <li>• Contacts among the different partners are maintained on a regular (weekly) basis</li> <li>• The engagement of and focus on the farmer organizations within the PPP is expected to lead to self-reliance of small holders. The northern private partner plays a smaller role, involving knowledge sharing and linking the PPP’s activities to its own local program. As such, the interests of the different partners do not seem to conflict.</li> </ul> <p><i>Stakeholder participation</i></p> <ul style="list-style-type: none"> <li>• Farmer organizations have direct contact with the target group</li> <li>• The Kenyan government is involved through the research institution, the Ethiopian government was already participating in previous training programs by (some of) the PPP partners</li> </ul> <p><i>Design / division of risks</i></p> <ul style="list-style-type: none"> <li>• The research on intercropping with engagement of farmers in development of the farmer manual leads to a targeted strategy prior to actual implementation of activities.</li> </ul>		
<i>Underlying factors –PPP interaction with outer context</i>		
<p><i>Learning</i></p> <ul style="list-style-type: none"> <li>• The joint learning platform together with the PPP “Sustainable and Secure Smallholder Systems @scale” aims to disseminate and boost knowledge creation, improve trainings, pose questions etc. External stakeholders (including public sector) are invited in these platforms. The platform is facilitated by the northern NGO.</li> <li>• There is a certain level of transparency and accountability through the joint learning platform, as outsiders are also invited.</li> </ul>		

*Specific attention to systemic constraints*

- There is contact with the Dutch embassies, they are asked to provide support in addressing barriers to local government.

*Long-term commitment with region*

- After the project intervention, the newly developed supply chain is expected to become self-sustaining and the established operations (nurseries and storage & distribution centers) to become self-supporting / commercially viable.
- The farmer organizations will deal with the training and nurseries themselves, which provides a good basis for self-reliance.
- The activities of the private northern partner will depend on its overall corporate strategy; it is not certain how active the company will remain in the region in the future.

*What has been the added value of this PPP to objectives of IGG?*

FOSEK's approach has the potential to improve the coffee value chain by building the capacity of small scale farmers to improve coffee yields and at the same time to develop other farming activities to improve their livelihoods and resilience on a commercially viable basis. Private partners also have a direct interest in improvement of this chain, as the project results in a more stable supply chain with higher yields. The PPP differs from conventional intercropping projects due to the direct contacts between producers and the distributors/coffee company. The better market conditions that are obtained in this way are also in the long-term interest of the private partners after the successful termination of the project, therefore a continuation of private partners' engagement could be expected.

By not only providing training but also developing nurseries and addressing barriers to local market development, the PPP aims to enhance the value chain of coffee and develop one for crops for local consumption. Critical is the fact that farmer organizations are capacitated to deliver services to their members, based on a financially viable model (self-perpetuating), leading to increased sustainability and resilience.

An innovative approach to learning is applied in the form of a joint learning platform, in which private and public parties participate and linkages are sought with similar projects. This is important because of the experimental character and uncertainties involved in the PPP, which may require certain adaptations. There are no noteworthy long-term risks of the PPP approach applied here, beyond loss of direct project money.

**6. Uganda, Kenya, Tanzania: 4S@scale: Creating viable smallholder-based coffee farming systems**

Topic / sector	Agriculture – Integrated farm management systems including biogas. The PPP focuses at coffee producers and the coffee value chain.
Country & region	Uganda, Kenya and Tanzania.
Budget	€ 16.296.530, with following cash contributions: Northern NGO: 32% (these are all expected carbon income and carbon loans that are expected to become available in the coming 5 years, starting this year) Large coffee trader and FDOV: both 34%
Types of partners	<ul style="list-style-type: none"><li>• Northern / Dutch NGO (lead partner)</li><li>• Large international coffee trader (private)</li><li>• Local trade companies (daughters of above) in the three countries (private)</li><li>• Producer-based federation specialized in biogas (Kenya) (NGO)</li></ul> DGIS / FDOV could be considered the northern public partner. There are several other local NGOs involved in the PPP implementation, but

	these are not formal partners.
Project phase	The inception phase ran from July 2013 to May 2014, after which implementation started in Kenya. The PPP was launched in Uganda in July 2014. The PPP will start in Tanzania by July 2015.
Business model	There is soil degradation on coffee farms due to overuse of agro-chemicals, causing low yields. Climate change is another threat. A long-term / sustainable solution requires an integrated approach, which looks beyond coffee production only. The business model for the international coffee trader is that helping farmers to diversify and increase their yields results in a more stable and increased supply of coffee. Increased and more stable supply of coffee is a long-term interest of the private partner. Local traders are involved in the business model as intermediates and daughter companies of the international trader. Diversification of production and the introduction of biogas digesters are part of the equation, with revenues also to be captured from carbon credits. The business model for the coffee trader requires improved coffee yields and producers paying for the services being delivered. Thus, it requires a viable coffee producer farm system. Systemic impacts in terms of market access and governance of the value chain are expected to last beyond the project context in case of a successful project.

*Direct IGG effects*

<p>Green / positive:</p> <ul style="list-style-type: none"> <li>• Reduced soil degradation / improved soil fertility</li> <li>• Biogas replaces timber</li> <li>• Reduced deforestation</li> <li>• Reduced water pollution due to agrochemical use</li> </ul>	<p>Inclusive / positive:</p> <ul style="list-style-type: none"> <li>• More sustainable and diversified (dairy, horticulture) farm system</li> <li>• Benefits for women (being important coffee producers)</li> <li>• Benefits for youth</li> </ul>	<p>Growth / positive:</p> <ul style="list-style-type: none"> <li>• Increased coffee production and quality</li> <li>• Improved viability of coffee trade companies</li> <li>• Improved viability of coffee farm production model</li> </ul>
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Negative IGG effects and mitigation measures:

- The proposed farm production model is being adjusted to be viable for each country and farm system
- The credit system that was designed for purchase of the biogas digester is not yet operational
- There remains some uncertainty on expected carbon credit revenues: In June 2015 a first payment is expected through Gold Standard with a value of € 672,000. In Cambodia and Indonesia carbon credits from biogas programmes have been obtained.
- There is a strong and increasing monopoly by the main coffee trader (concentration of power).

*Indirect IGG effects:*

- Development of a more viable farmer support service delivery model (less dependent on grants)
- Support to decentralization and capacity building of local counties on their potential contribution to sustainable livelihoods
- Improved access to credit facilities for smallholder producers
- Improved market for biogas digesters and sustainable farm production model
- Adoption by coffee producer organizations in Kenya of another organizational legal structure to be able to sign long-term contracts with traders (and thus avoid existing regulations that do not favour long-term relations between traders and producers)
- Opening up the option to make use of carbon credits derived from the benefits of biogas digesters
- The coffee trader is a frontrunner in terms of sustainability but does not claim this position or stimulate other trade companies to adopt similar sustainability measures.

*Underlying factors – within the PPP*

*Partnership characteristics and objectives*

- Long working relations between the two main PPP partners, shared sustainability ambitions

(including the focus at women and youth)

- PPP partners are limited to the core members, thus keeping the PPP manageable in the first place. Working relations with other partners are organized through other agreements or MoUs.
- The PPP governance structure is equal (no dominance by the large trader).
- The Dutch embassy has been very supportive in Uganda (less so in Kenya) which has helped to acquire commitment by authorities.

*Stakeholder participation*

- During a long inception phase the new farm model was tested, with good local participation
- In Kenya, as a result of decentralisation, local counties have to understand their new role; the PPP was able to sign an MoU with one local county and expects that more will follow.

*Design / division of risks*

- The design is based on long experiences in working with coffee farmers, on biogas digesters and projects with a gender focus, forming the basis for the integrated farm production model.
- Complementarity of roles: the coffee traders have large existing networks which are used to upscale the innovations for the integrated farm model
- The expansion of relations with coffee farmers by the trader company (i.e. introduce dairy, biogas digesters) could only take place in a convincing way due to the collaboration with NGOs in the PPP (who apparently are more trusted to represent the farmer interests).
- The private partners in the PPP have difficulties with the rather strict FDOV results framework; this reduces their flexibility while many results cannot be fully predicted.
- The Northern NGO recognizes the risks of the FDOV criteria, especially related to the result-based framework, and has sought ways to share such risks with key partners in the PPP.

*Underlying factors –PPP interaction with outer context*

*Learning*

- There are good working relations with a range of other local organizations
- There is a joint learning platform (organized bi-annually), with collaboration with another PPP, and open to invited other stakeholders. The platform is facilitated by a northern consultancy.
- There is a certain level of transparency and accountability through the joint learning platform, as outsiders are also invited. Farmers can express their opinions through their organizations and close relations with NGOs, as well as the learning platform.

*Specific attention to systemic constraints*

- There are regular contacts with relevant public agencies responsible (agriculture, energy, trade); these contacts are best in Uganda (probably because of high importance of coffee trade).
- The PPP objectives are in line with national policies (on food security) and it is expected that policy makers will support the PPP if results are convincing
- Coffee marketing regulations in Kenya are not enabling for sustainability, are not expected to change easily (however producers have found other ways to avoid this, see above)
- Close collaboration with local counties is a strategy in Kenya, following recent decentralization, leading to signing of an MoU with a county
- To acquire carbon credits, the carbon market working through the clean development mechanism (CDM) does not work well; the PPP has now turned to the Gold Standard

*Long-term commitment with region*

- The focus at creating a multi-stakeholder platform around the new production model is indispensable to build commitment and continue to adapt and learn from experiences. So far the platforms are aimed at national level. Maybe decentralized levels will be more effective.

*What has been the added value of this PPP to objectives of IGG?*

Based on wide experiences by the PPP partners working on coffee production (value chain) and biogas digesters, the new farm production model meets objectives of more sustainable production system (NGO), more secured supply chains (private sector) and implementation of food security policy (governments). There are good relations between the PPP partners because of their essential and complementary roles. The business case for the new farm production model is promising but

needs to be developed in the coming years. To do so, the joint learning platform is essential; it can serve to attract a wider set of stakeholders due to the existing ‘cloud’ of the PPP partners. It may be expected that the PPP will increasingly focus at decentralized levels and collaborate with local authorities, due to the decentralization process and the fact that solutions will need to be localized. Long-term risks of the PPP approach applied here, beyond loss of direct project money in case of project failure, seem minor.

The added value of the PPP lies in the fact that the private party involved has a direct commercial interest in helping farmers achieve high and more stable coffee yields, as this results in a more stable supply of coffee, and build up good relations with farmers as producers through improved service delivery.

### 7. Kenya: Lake Turkana wind power project

Topic / sector	Energy - wind energy project
Country & region	Kenya – Lake Turkana
Budget	Total € 622 million (Equity € 125 million; Debt € 435 million senior debt, € 63 million mezzanine debt) FMO provides €35m in senior debt and up to €8.5m in (partly stand-by) equity through a shareholder. In addition, the Dutch Government provided a €10m grant for the rehabilitation of the access roads to the project site. No contribution by the southern partner/s? No
Types of partners	<ul style="list-style-type: none"> <li>• Northern private project developers</li> <li>• Northern public financial institutions</li> <li>• Northern private financial institutions</li> <li>• Southern private financial institutions</li> <li>• Southern public government institutions (transmission company and power company)</li> </ul> <p>Technically the project is split into wind farm construction and road rehabilitation on one hand (of which the above are partners) and the construction of the transmission line on the other hand. The transmission line is constructed by the Southern national transmission company and financed by a Northern government.</p>
Project phase	The PPP reached financial close in 2014. Implementation of activities will start in 2015.
Business model	The objective of the program is to increase domestic renewable energy generation in Kenya by the construction of a 300 MW wind park, which will operate at commercial rates to generate benefits for the private parties involved. As specified in a 20 year power purchase agreement, the power company will buy electricity generated by the wind turbines at a fixed rate. Construction costs and risks are carried by the private project developers and public equity providers, whereas the infrastructure development (road and transmission line) are carried by public participants. Public interest (for the Kenyan government) is the replacement of expensive imports of fossil power by domestic renewables.

<i>Direct IGG effects</i>		
Green / positive: • Develop and operate renewable energy generation plant	Inclusive / positive: • Temporary employment opportunities in the region	Growth / positive: • Increased domestic energy generation

Negative IGG effects and mitigation measures:

- The construction site area is scarcely populated, but some nomadic tribes in the area are impacted by the wind farm. A nomadic Turkana tribe resides on the proposed wind farm site and has a traditional migratory settlement area, Sirima, just off the C77 road to Loiyangalani. LTWP has extensively studied these potential negative impacts and offers compensation to the tribes: replacement of 176 residential structures (Manyattas) of the affected Sirima Village and 130 extension rooms, which will total to 306 structures for replacement and compensation. The related resettlement/compensation plan for wind farm and road complies with international standards of the IFC. The resettlement and compensation plan for the transmission line complies with national standards.

*Indirect IGG effects:*

- The project is a flagship project as largest renewable energy project in Africa, aiming to demonstrate that such a project can be accomplished. This is for some equity and debt providers an important reason to invest in this project.
- The project spurred improvements of the national grid in Kenya, by leading to a change in grid codes that also can facilitate future renewables projects.
- Spillover effects could follow, including further renewables projects in the region or elsewhere in the country, However, no such effects are explicitly included in the project design.

*Underlying factors – within the PPP*

*Partnership characteristics and objectives*

Involvement of a large number of international donors, necessary because of the size of the project, also made sure that environmental and social impact assessments are up to international standards. The large number of parties involved also led to a long run-up period until the project design became final. *Stakeholder participation*

- The project is situated in a remote area, with little local population. Nevertheless, each village in the area has designated a Community Officer (CLO) that is the main spokesperson for the village's interests. The project developers are in regular contact with the CLOs.
- Substantial participation and interest from the Kenyan government: a 20-year Purchasing Power Agreement (PPA) including a take-or-pay and a letter of support. Involved in the construction of the infrastructure. This cooperation from the Kenyan government was a crucial underlying factor in giving the project the needed commercial context. Local authorities do not seem to be involved (other than the village CLOs).

*Design / division of risks*

- The PPA provides risks for both the generator (the PPP) and the offtaker (Kenyan government). Financial risks are foremost carried by the equity and grant providers and after that the providers of subordinated debt. The project developers are accountable to the equity and debt providers.

*Underlying factors –PPP interaction with outer context*

*Learning*

- There are no learning / scaling up aspects after project completion that are integrated into the project design itself. Through its size (largest wind farm in Africa) the project is aimed to be a signpost for further large-scale renewables projects.

*Specific attention to systemic constraints*

- Environmental and Social Impact Assessments have been carried out and an Environmental and Social Management Plan has been developed, as well as a Resettlement Policy Framework (RPF) for local communities. The technical constraints have been addressed by the construction of the road and transmission line, as well as the development of an interface schedule (when to connect to whom).

*Long-term commitment with region*

- Most financial institutions are already active in the region and some even provide finance for other wind projects in Kenya.
- The initial private project developers have gotten private partners involved in the project that have

experience in the field and region.

- The wind farm has an expected lifetime of at least 20 years. The project developers are exploring options to upscale the wind farm in the future.

*What has been the added value of this PPP to objectives of IGG?*

Inclusiveness is not addressed explicitly by the partnership, and therefore does not play a role in the project other than to mitigate negative inclusiveness effects. This means there are no expected sustainable *Inclusive Growth* effects (unless we consider the temporary local employment opportunities as sustainable inclusive growth). Stakeholders are involved, but mostly to raise awareness and mitigate risks. *Green* growth effects are however assured once the construction is completed and the project is operational, as it is inherent to the wind farm. The financial risks were too high to be covered by private parties alone, therefore the PPP structure has an added value for the private parties involved. For the public parties, direct interests are replacement of fossil imports by domestic renewables and long-term interests are the sign-post effect of the project for future large-scale renewables' generation. Public partners also have seen to it that mitigation of potential negative IGG effects is incorporated in the project design.

### **8. Indonesia: Geothermal Capacity Building Program**

Topic / sector	Energy - geothermal energy project	
Country & region	Indonesia	
Budget	Total € 5,717,261 financed by the Government of the Netherlands. Partners contribute by working at cost price.	
Types of partners	<ul style="list-style-type: none"> <li>• Northern public knowledge institutions (universities)</li> <li>• Northern private knowledge institutions (consultancies)</li> <li>• Southern non-profit member based organization</li> <li>• Southern knowledge institutions (universities)</li> </ul>	
Project phase	The PPP started in end 2014 by detailing the work plan in a conference with all project partners. Implementation of activities will start in 2015.	
Business model	<p>The objective of the program is to increase the capacity of Indonesia's ministries, local government agencies, public and private companies and knowledge institutions in developing, exploring and utilization of geothermal energy sources, and to assess and monitor its impact on the economy and environment.</p> <p>The project has three components:</p> <ol style="list-style-type: none"> <li>4. Development of a database for geothermal data</li> <li>5. Training and course materials</li> <li>6. Awareness raising among local people and local and regional governments on the use of geothermal resources for generating energy in a safe and environmentally friendly manner</li> </ol> <p>Long-term interest of the private parties in this project is to gain knowledge of the Indonesian geothermal market (database, contacts) for future projects in this field. Interest of the participating Indonesian public parties is to gain new knowledge on geothermal as well as market knowledge. Interest of the Northern public donor is, next to capacity building and market development, to contribute to global climate change mitigation by providing renewable energy technology knowledge to the recipient country.</p>	
<i>Direct IGG effects</i>		
Green / positive:	Inclusive / positive:	Growth / positive:
<ul style="list-style-type: none"> <li>• Better knowledge and more</li> </ul>	<ul style="list-style-type: none"> <li>• (Improved education</li> </ul>	<ul style="list-style-type: none"> <li>• Improved market conditions</li> </ul>

capacity to facilitate, develop and operate geothermal energy in Indonesia	opportunities and skilled personnel in geothermal sector)	for geothermal sector
<p>Negative IGG effects and mitigation measures:  There are no direct negative IGG effects from the PPP's activities itself, but there could be negative IGG effects from follow-up activities:</p> <ul style="list-style-type: none"> <li>• Conflict between forest conservation and geothermal exploration can arise: opening up protected forest to geothermal development may harm the forests &amp; biodiversity or could open the door to more economic activities in protected areas. The PPP gives (limited) attention to environmental impact and strategic environmental assessment in the training and education programme.</li> <li>• Local communities are wary of geothermal activities due to a previous disaster of an erupted mud volcano which was caused by drilling. Involvement of local stakeholders will be done to some extent by the PPP in the form of public seminars; there is however no other engagement of local stakeholders in the PPP.</li> </ul>		
<p><i>Indirect IGG effects:</i></p> <ul style="list-style-type: none"> <li>• Scaling-up/follow-up activities (in terms of steps towards exploitation) are not explicitly part of the objectives but are embedded implicitly in the project objective by building knowledge and capacity for geothermal activities. They are also part of the evaluation criteria. Implicitly, the aim is: <ul style="list-style-type: none"> <li>• To develop strategic and long-term collaboration in education and research through dual degree MSc programs and joint PhD research programs.</li> <li>• To develop business to business cases for long-term cooperation between the NL and IND geothermal sectors.</li> <li>• Ultimately, the objective is also to increase investments in geothermal energy resources.</li> </ul> </li> <li>• The PPP has attention for environmental governance aspects. Besides the traditional technical and geoscientific topics in geothermal exploration, it aims to address environmental issues and legislation through attention to strategic environmental assessment in the education and training. The program aims to serve as a platform for south-south cooperation, to maximize learning effects through knowledge dissemination across countries. A previous pilot on this mechanism existed by a partner sharing knowledge in a workshop on geothermal resource exploration in Uganda.</li> </ul>		
<p><i>Underlying factors – within the PPP</i></p>		
<p><i>Partnership characteristics and objectives</i></p> <ul style="list-style-type: none"> <li>• Universities/knowledge institutions play a major role in the PPP, along with consultancies, which goes hand in hand with the PPP's objective of knowledge transfer and capacity building.</li> <li>• There is collaboration with an international NGO actively involved in forest conservation to support the engagement of local communities and governments, as it has a substantive network and has experience in local stakeholder engagement.</li> <li>• Coordination in Indonesia is done by the southern member organization, who has monthly meetings with the northern coordinating partner.</li> </ul> <p><i>Stakeholder participation</i></p> <ul style="list-style-type: none"> <li>• Private companies in Indonesia are indirectly involved through their link with the southern member organization.</li> <li>• Local governments and communities are not engaged other than indirectly by the training and awareness activities of the PPP</li> <li>• The Dutch embassy has a monitoring role. Also, diplomatic contacts between the embassy and the Indonesian counterparts helped in the initial formulation phase of the project plan to break stalemates caused by not listening carefully enough to Indonesian wishes for the project plan (more direct involvement of universities than originally aimed for).</li> </ul> <p><i>Design / division of risks</i></p> <ul style="list-style-type: none"> <li>• The PPP has identified and reflected upon several risks during the inception phase. One is that private companies do not want to share data on underground geothermal resources with the PPP. Partners have talked with several private companies before the proposal and have requested them</li> </ul>		

to sign a Letter of Intent. In case of failure of the project, the database would not be (sufficiently) developed or knowledge would not be (sufficiently) shared. Those risks lie mainly with the recipients.
<i>Underlying factors –PPP interaction with outer context</i>
<p><i>Learning</i></p> <p>The project itself is a learning and education project. The project partners meet every year to discuss progress and to detail the work plan.</p> <p><i>Specific attention to systemic constraints</i></p> <ul style="list-style-type: none"> <li>• There is attention given to potential negative impacts of geothermy in the training and education activities set up. Also, a northern NGO is engaged in looking into these aspects of geothermy. .</li> </ul> <p><i>Long-term commitment with region</i></p> <ul style="list-style-type: none"> <li>• The PPP strategy explicitly discusses follow-up activities and long-term commitment.</li> <li>• The Dutch private partners are aiming to expand their business operations in the region.</li> <li>• The Dutch public partners already have long established commitment with the region.</li> </ul>

*What has been the added value of this PPP to objectives of IGG?*

The project contributes to Green rather than to Inclusive objectives. It is debatable whether the effects of this project are truly IGG effects. Fair and equitable access to energy or poverty alleviation does not seem to be targeted, and the education opportunities do not seem to have a specific target for inclusiveness. Also, the actual generation and distribution of renewable energy is not a direct effect but is the expected follow-up or spillover effect of this project (due to increased capacity & awareness). Still, increased capacity for geothermal energy generation and improving the context for geothermal energy activities can be an important green growth effect, opening up a future market for green growth (geothermal) activities in Indonesia. However, the positive aspects of potential future provision of renewable energy to Indonesia due to this capacity building project will have to be weighed against the possible deforestation caused by actual geothermal projects that might be initiated as a result of the capacity built. For the participating private parties a new market is opened up that needs to be regulated carefully by the Indonesian government.

**9. Uganda, Kenya, Ghana and Tanzania: Sustainable Energy Services for Africa**

Topic / sector	Energy - Sustainable energy sources for communities and households. The projects deal with solar energy mainly.
Country & region	Uganda, Kenya, Ghana and Tanzania.
Budget	For this study, two PPPs were selected with a focus on consumer lighting (there are also PPPs on improved cookstoves and community lighting, these were not selected). For the selected projects, the DGIS grants are € 100-200K per project (total project budgets are up to € 500 K).
Types of partners	For the selected consumer lighting projects, following are the partners: <ul style="list-style-type: none"> <li>• Southern NGOs (in both cases innovative NGOs supporting renewable energy introduction for poor consumers)</li> <li>• Southern public or semi-public partner (in one case from the education sector, in the other case from the tea sector)</li> <li>• Northern private consultancies, bringing in knowledge, supporting market studies and learning initiatives</li> <li>• Northern public partner: the Ministry of Foreign Affairs</li> </ul>
Project phase	The PPPs started in 2014, solar devices sales have started, around 25% of intended target consumers have been reached. The local partners in all cases already have working relations of at least 2 years.
Business model	<ul style="list-style-type: none"> <li>• For the first PPP, the sale of pico solar energy lanterns to poor rural</li> </ul>

	<p>households follows a step-wise market development strategy, starting to create demand via head-teachers and then serving the increasing demand through agents that should gradually become self-supporting;</p> <ul style="list-style-type: none"> <li>• For the second PPP, the sale of micro solar energy devices aims to serve tea producers, and is introduced through the national tea agency, via solar shops and agents that should become self-supporting, supported by a credit system available for the tea producers that want to purchase a package.</li> </ul>	
<i>Direct IGG effects</i>		
<p>Green / positive:</p> <ul style="list-style-type: none"> <li>• Solar energy (pico-/micro-), replaces kerosene lighting mainly</li> </ul>	<p>Inclusive / positive:</p> <ul style="list-style-type: none"> <li>• Focus at accessibility for poor rural households</li> <li>• Reduces long-term costs for households in need of energy</li> <li>• Reduces health risks</li> </ul>	<p>Growth / positive:</p> <ul style="list-style-type: none"> <li>• Enabling better education by light available at night time</li> <li>• Charge mobile phones,</li> <li>• Use for commercial purposes (milk cooling, chicken feeding device)</li> <li>• Off-grid energy access</li> </ul>
<p>Negative IGG effects and mitigation measures:</p> <ul style="list-style-type: none"> <li>• The credit systems for the micro solar package may not be accessible for all those with a demand</li> <li>• Maintenance and replacement system remains to be tested</li> </ul>		
<p><i>Indirect IGG effects:</i></p> <ul style="list-style-type: none"> <li>• Created awareness and a demand for solar energy solutions where there is no national grid</li> <li>• Distribution system for solar light solutions, using local traders</li> <li>• Credit systems developed for buying solar power solutions</li> <li>• Tax exemption and improved standards for imports of solar power is a side effect which emerged from increased awareness on the importance of solar power for off-the-grid rural areas</li> <li>• Awareness raised for local solar energy systems among government and local counties, initially for support to the PPP, later on to facilitate introduction.</li> </ul>		
<i>Underlying factors – within the PPP</i>		
<p><i>Partnership characteristics and objectives</i></p> <ul style="list-style-type: none"> <li>• In the selected PPPs, partners include local (semi-)public sector agencies (from education or tea sector agencies), which is effective to create awareness and demand among poor rural people consumers, and to create demand within an existing network</li> <li>• The local NGOs and southern consultants are specialized in design of systems to serve the poor</li> <li>• The partners state that the communication lines between the PPP partners are short</li> <li>• Interests between private and public parties are well-divided: the northern and southern partners do market development for a green and inclusive solution, with a grant to take care of overhead and field operation costs. Poor consumers benefit by cheap lighting which supports livelihoods.</li> </ul> <p><i>Stakeholder participation</i></p> <ul style="list-style-type: none"> <li>• Use of respected community members (head-teachers)</li> <li>• Involvement of local governments (if these are cooperative), to develop systems that can be locally supported</li> </ul> <p><i>Design / division of risks</i></p> <ul style="list-style-type: none"> <li>• Good market studies were done in the design phase, with support by the northern NGOs, to explore the potentials for the selected solar devices</li> <li>• The distribution of the solar power systems is based on a defined business case and growth model for off grid energy access (see above), i.e. an income model for the traders involved; this works best with an existing sales network. The growth model initially introduces the solar lights for social purposes mainly, more powerful solar systems can be supplied if there is demand for commercial purposes</li> <li>• All lights meet the World Bank Lighting Global Standards for quality assurance, which is important because there are many fragile and poorly performing system n the market</li> <li>• A credit system is included in the design to enable consumers to purchase the solar light system; a</li> </ul>		

<p>pay-as-you-go system (using mobile phones to pay) may also be developed</p> <ul style="list-style-type: none"> <li>• In case of project failure, poor consumers might not get (sufficient) access to solar lighting and no new markets for private partners will arise, but apart from project costs there are no damages.</li> </ul>
<p><i>Underlying factors –PPP interaction with outer context</i></p>
<p><i>Learning</i></p> <ul style="list-style-type: none"> <li>• The joint learning platform (organized quarterly or bi-annually) is effective to share experiences and solve challenges, especially because the approach is innovative and needs to be tested. External stakeholders (including public sector) are invited in these platforms. The platform is facilitated by the northern consultancy.</li> <li>• There is a certain level of transparency and accountability through the joint learning platform, as outsiders are also invited.</li> </ul> <p><i>Specific attention to systemic constraints</i></p> <ul style="list-style-type: none"> <li>• There are regular and good contacts with the public agencies responsible for energy and with county agencies. The local solar energy movement has been influential to assure decisions on VAT exemption of solar systems. Also, national agencies will pay more attention to standards to keep away inferior solar devices that distort the market.</li> <li>• A demand for new green markets is created, by stimulating the demand and developing new distribution channels.</li> </ul> <p><i>Long-term commitment with region</i></p> <ul style="list-style-type: none"> <li>• The focus at partners with a local presence is indispensable to build up and serve local demand, thus develop a new commercial structure</li> <li>• All target groups do not have access to the grid, i.e. there is no competition with energy suppliers.</li> </ul>

*What has been the added value of this PPP to objectives of IGG?*

Through a well-designed, phased approach and the involvement of (semi-) public institutions, the PPP has the potential to open up a new market for (pico or micro-) solar power devices for poor consumers via public-private cooperation. Public participation serves to contribute to awareness raising in a first step of market creation. Once initial markets have been opened, the public partners can step out. Public interest from donor and recipient country point of view is giving poor consumers access to renewable and off-grid electricity, as an alternative to costly grid construction and fossil electricity supply. The Northern partner finances the introduction of the innovative approach and solar package, creating an extra value for new solar devices. Additionally, an innovative approach to learning is applied in this project, in the form of a joint learning platform, in which private and public parties participate and which opens up to new public partners. Long-term risks of the PPP approach applied here, beyond loss of direct project money in case of project failure, seem minor.