



Ministry of Foreign Affairs of the
Netherlands

IOB Study

Public-Private Partnerships in developing countries

A systematic literature review

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Preface

Public-private partnerships (PPPs) are a relatively recent phenomenon in international development cooperation. Current policy documents frequently refer to expectations regarding their potential contributions to global development goals.

In 2000, the Dutch Minister for Development Cooperation and the Minister for Foreign Trade submitted a joint letter to parliament regarding the role of private sector in reducing poverty.¹ In this document hardly any reference was made to Public-Private Partnerships. The roles and articulation of public and private agents were still referred to in rather general terms like 'finding the right balance', 'demarcating responsibilities' and 'right interplay'. Only once, a PPP is mentioned, namely a Worldbank-led initiative for giving policy advice to governments of development countries to involve the private sector in financing and operating infrastructure (the Public-Private Infrastructure Advisory Facility - PPIAF).

In the international debate on the effectiveness of aid taking place within the OECD Development Assistance Committee (DAC), the private sector was until recently hardly invited as a stakeholder to join the discussions. The attention for multi-stakeholder partnerships for pursuing development objectives received a major stimulus at the UN World Summit for Sustainable Development (WSSD), held in Johannesburg (South Africa) in 2002. During the winding up of the debates at the 4th High Level Forum on Aid Effectiveness taking place in Busan (South-Korea) in the period November 29th – December 1th 2011 thorough attention was given to the role of public-private partnerships in development cooperation.

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This growing attention was firmly backed by the Netherlands government. Nowadays PPPs are increasingly considered to be an attractive development instrument and are often being used in the Dutch development programs. However, there are still few diagnostic tools available to determine when and how PPPs represent a preferred institutional arrangement. Moreover, the empirical evidence on the effectiveness and efficiency of PPPs is notably scarce.

The study provides insights in the wide variety of PPP arrangements and the sometimes rather diffuse contractual framework under which PPPs take place. Due attention is given to the motives and rationale for relying on PPPs and the expected outcomes of PPP arrangements. A major conclusion derived from this review is that PPP evaluations focus more on resource sharing but pay little attention to the risk-sharing and revenue distribution dimension of partnerships.

The Policy and Operations Evaluation Department (IOB) of the Netherlands Ministry of Foreign Affairs commissioned a research team from APE (Aarts De Jong Wilms Goudriaan Public Economics bv) to undertake a systematic review of available professional literature

¹ 'In Business against Poverty', Parliamentary Papers, House of Representatives, 2000-2001 session, 27 467, no. 1.

and evaluation reports regarding the performance of PPPs. Main questions guiding the systematic review refer to:

- What can be considered to be a public-private partnership?
- What is the intervention logic of PPPs?
- What results can be expected from PPPs?
- What are critical success factors of PPPs?

The APE-team was composed by Stefanie Bouman, Rafiq Frierson, Maartje Gielen and Peter Wilms. Guidance has been provided by a reference group composed by Natalie den Breugom de Haas and Anno Galema (both Ministry of Foreign Affairs). Comments were received from Renko Campen (independent consultant). Internal supervision and quality assurance has been provided by Max Timmerman and Jiska Gietema of IOB.

The Policy and Operations Evaluation department (IOB) sincerely hopes that this publication will encourage the reflections and debates on the options and opportunities for public-private partnerships in developing cooperation.

Prof. dr. Ruerd Ruben

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Acronyms and abbreviations

3IE	International Initiative for Impact Evaluation
ADB	Asian Development Bank
AfDB	African Development Bank
AVRCD	The World Vegetable Center
CGAP	Consultative Group to Assist the Poor
CGIAR	Consultative Group on International Agricultural Research
CIMMYT	The International Maize and Wheat Improvement Centre
DAC	Development Assistance Committee
DBFMO	Design Build Finance Maintain Operate
DEReC	DAC Evaluation Resource Centre
DFID	Department for International Development (United Kingdom)
Evalnet	DAC network on Development Evaluation
ERR	External Rate of Return
FAO	Food and Agriculture Organization
FLO	Fairtrade Labelling Organisation
GAFSP	Global Agriculture and Food Security Program
GDP	Gross Domestic Product
GNI	Gross National Income
HH	Household
ICARDA	International Center for Agricultural Research in the Dry Areas
ICRAF	The World Agroforestry Centre
ICRISAT	International Crops Research Institute for the Semi-Arid Tropics
ICS	Internal Control System
IDB	Inter-American Development Bank
IFAD	International Fund for Agricultural Development
IFPRI	International Food Policy Research Institute
IITA	International Institute of Tropical Agriculture
IOB	Policy and Operations Evaluation Department
IPM	Integrated Pest Management
IRR	Internal Rate of Return
IRRI	International Rice Research Institute
KIT	Royal Tropical Institute
MDG	Millennium Development Goal
MFA	Ministry of Foreign Affairs
MV	Modern Varieties
NGO	Non-Governmental Organization
NPV	Net Present Value
NRM	Natural Resources Management
OECD	Organisation for Economic Co-operation and Development
OPV	Open Pollinated Varieties
PARC	Pan African Rinderpest Eradication Campaign
PETT	The Peruvian Rural Land Titling Programme
PPIAF	Public-Private Infrastructure Advisory Facility

PPP	Public-Private Partnership
SSA	Sub-Saharan Africa
WB	World Bank
WDR	World Development Report
WFP	World Food Programme
WSSD	World Summit for Sustainable Development

Summary and conclusions

Public-Private Partnerships (PPPs or 3P) are increasingly envisaged as an attractive proposition for involving the private sector in international development cooperation. In practice, however, PPPs include a wide variety of arrangements and are not always uniformly defined. We therefore categorized developmental PPPs according to a set of criteria related to the degree of cooperation in terms of shared goal, joint funding, resource and activity sharing and risk distribution.

Since 2002 the Dutch Ministry of Foreign Affairs has been increasingly using PPPs for the execution of development cooperation programs. In 2011, Dutch government spent € 48.3 million on 54 PPPs mainly in sectors like healthcare, water and sanitation and food security. Moreover, substantial funding is provided to worldwide strategic product development coalitions as well as to thematic multi-donor trustfunds that operate in close alliance with the private sector. Finally, also Dutch non-governmental organizations are engaged in several partnerships with the private sector.

PPPs are generically defined as ‘a form of cooperation between government and business agents – sometimes also involving voluntary organizations (NGOs, trade unions) or knowledge institutes – that agree to work together to reach a common goal or carry out a specific task, while jointly assuming the risks and responsibilities and sharing resources and competences’. While there are many conceptual studies available that provide insights in the principles and potentials of PPPs in international development cooperation, empirical evidence that highlights the (developmental) rationale and the actual outcomes for stakeholders is still scarce.

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This systematic review of the available evidence regarding the development impact of PPPs is based on a careful search and selection process following the guidelines and procedures of the Campbell protocol. From an initial collection of 1.433 studies derived from several sources (i.e. articles from scientific portals and development evaluation studies) finally remained 81 studies that qualified as valid evaluative reports. After a further screening regarding the reporting on PPP results, 47 studies finally remained that provide empirical evidence on PPP effectiveness, including 18 case studies and 29 reviews. We summarize the main findings and conclusions below:

1. **Evaluation studies make difference between various types of PPPs that differ with respect to the degree of sharing resources, responsibilities and risks.**
Most evaluation evidence is available from PPP arrangements that are characterized as joint ventures and management contracts. In addition, many PPPs rely on a combination of various contractual principles. Subsidies and concessions to private partners for the execution of development programs could also qualify as a PPP, since these are usually assigned for outsourcing of activities. Otherwise, grants and revenue subsidies (tax breaks) are considered as specific incentives for enabling private sector involvement in particular sectors that are economically viable (e.g. providing a net benefit to society) but that are financially not yet sufficiently attractive.

2. PPPs are currently used in different sectors, but evidence is mainly available for PPPs in healthcare (insurance), infrastructure (including transport and energy), water supply and agriculture.

Important areas for PPP development are found in sectors where substantial initial capital investments are required and that offer real opportunities for cost recovery through payment of tariffs and fees. Notably few PPP evaluations are registered in the fields of education and environment. PPPs seem to focus on activities that could benefit from production and/or distribution technologies that are widely available from private sector agents. Most evaluative evidence regarding PPPs is available from Africa and Asia, particularly referring to settings of market failure.

3. Many PPP evaluations focus on resource sharing, while little attention is usually given to the risk-sharing and revenue distribution dimension of partnerships.

More than half of the PPP evaluative case studies pay no attention to the distribution of risks between public and private partners. The partnership is usually conceived as a cooperative agreement focusing on common goals and sharing inputs and resources. Clear arrangements for the distribution of revenues and rules for assigning responsibilities for potential losses are commonly absent. Moreover, rules for distribution of public and private shares are defined mechanically or on an ad-hoc base; bidding schemes are hardly used to identify appropriate private partners.

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4. The rationale for relying on PPPs is mostly based on resource mobilization motives rather than for effectiveness reasons.

In theory, PPPs can be considered a preferred option when market and/or institutional failures exist that prevent the delivery of goods and services with a net development impact. In practice, however, most PPPs are motivated for financial reasons in order to mobilize additional resources that enable the execution of large public programs. Few evaluation reports mention overcoming financial market failure and product/market risks as a motive for public engagement. Market failures may be a relevant motive for justifying PPPs in medicine research and agricultural product development where high sunk costs inhibit private start-ups. Government failures can be equally relevant to pursue PPPs if the adequate provision of public goods is at stake.

5. The goals perceived by PPPs are often defined in a very general way and criteria for specific, measurable, attainable, relevant and timely objectives are usually absent.

Many PPP evaluation studies mention perceived goals that are defined at a rather high level of aggregation and that are difficult to assess empirically at the end of the program. Process-type of goals ('better cooperation') are frequently forwarded, while output-oriented goals are scarcely specified. Especially the time dimension is usually overlooked in PPP evaluations. An adequate time frame for evaluation is required, since initially high transaction costs during the start-up phase of PPPs could be compensated by lower costs during implementation.

6. **Reported effects of PPPs are rather positive at output level, but also weak, mixed and negative effects are registered in several occasions.**

In 15 of the 18 reviewed case studies there was reporting on the effect of the PPP on output. The majority (13 out of 15) describes a positive effect, 2 studies find no effect and 1 study registers a negative effect. A similar picture emerges from the review studies. In most reports it remains unclear whether the effect can be attributed to the PPP. Moreover, clients or beneficiaries of PPPs are not always unambiguously defined. No straightforward relationship has been found between the compliance on PPP characteristics and the effect of PPPs on delivering output.

7. **Development outcomes and effectiveness: some but rather weak evidence**

The developmental outcome and impact of PPPs is assessed in half of the available case studies (9 out of 18) and in 7 out of 9 cases positive effects are registered. However, the robustness of these results is rather limited with low scores on the Maryland Scale of Scientific Methods (MSSM). Results were reported in terms of higher education scores, better treatment rates, lower consumer prices and adoption of new production technologies, but no systematic relationship with PPP design features could be proven. PPP projects focusing on privatization of public services (water, electricity) sometimes cause tariff increases that may affect poorer households. Almost no evidence was found regarding the cost-effectiveness and the environmental benefits of PPPs.

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8. **The evidence base on PPP evaluations is still scarce and hardly relies on sound and robust empirical counterfactual analysis.**

The large majority of the PPP evaluations are not based on robust impact analysis. Only one study provides a counterfactual (e.g. situation without PPP intervention). This implies that attribution of effects to particular PPP features is not possible. However, some specific pathways for generating PPP results could be discerned, with most notable outcomes found in activities related to training and professional development, R&D support, knowledge sharing and leverage of technical and managerial expertise, work and participation incentives, and price controls and tariff ceiling measures.

9. **Systematic analysis of PPP performance could provide more insights in the success and failure factors underlying PPP effectiveness.**

The professional literature provides several overviews of factors that influence success or failure of PPPs. Critical success factors refer to (a) standard setting and permanent involvement of public agencies, (b) clear formation requirements (goals, inputs and expectations), (c) sound regulatory framework regarding costs recovery and benefit distribution, (d) adequate partner selection arrangements (based on compatibility, capability, commitment and control), (e) common vision and mutual trustful relationships and (f) transparent negotiation on multiple interests of key participants. The validity of these factors is confirmed from the case studies, but their mutual interaction and relative importance remains subject to debate.

10. Decision-making regarding the reliance on PPPs for development could be supported with a clear framework for selecting and designing PPPs and should provide insights in the rationale and intervention logic of PPPs in any specific situation.

Since PPPs cannot be universally defined and they can include a variety of different organizational features, their selection finally depends in particular on a judgment regarding appropriateness and expected results that can be reached in any particular situation. Therefore, it might be useful to identify key constraints that hinder local development and to outline whether or not PPPs can be considered as an adequate strategy for addressing these constraints. For making such judgments, it is considered particularly important to clearly define PPP eligibility criteria and to compare the PPP option with alternative implementation arrangements.

1 Background

Growing role of private sector

Involving the private sector is a growing priority in Dutch development cooperation. Since 2002 the Dutch Ministry of Foreign Affairs (MFA) has increasingly used Public-Private Partnerships (PPPs) for the execution of aid programs. The PPPs are designed to bring the realization of the Millennium Development Goals (MDG) closer (MFA, 2010).

Dutch spending on developmental PPPs is concentrated in healthcare and water.

Currently the Dutch government is involved in PPPs in several African- (such as Mozambique, Rwanda and Burundi) and Asian developing countries (such as Indonesia and Mongolia). Examples of concrete projects are worldwide coalitions such as the so-called Global Alliance for Vaccines and Immunization (GAVI), partnerships with individual companies like the Dutch energy company Nuon in the Foundation for Rural Energy Services (FRES) in Mali and product development partnerships (PDPs). In 2011, the Dutch government spent € 48,3 million on 54 PPPs. The projects were concentrated in the sectors food security/PSD, water, sanitation & hygiene and healthcare, see Table 1.

Theme	Number of projects	Spending (x € mln.)
Food security/PSD	17	8,7
Water, sanitation & hygiene	15	13,5
Healthcare	13	24,5
Innovative finance	6	0,3
Climate and energy	3	1,3
Total	54	48,3

Source: Tweede Kamer, 2011-2012 32 503 nr. 6

2 Objective

Our main research question...

The main research question of this review is: ‘*what is the evidence for the effectiveness and efficiency of Public-Private Partnerships (PPPs) in international development cooperation as derived from credible and valid evaluative studies?*’

...covers five key issues.

The specific research questions can be divided across five key issues:

1. Precise definition of developmental PPPs

- a. What are the criteria for an intervention to be considered developmental PPPs?

2. Categorization of different types of PPPs according to different intervention strategies

- a. Which types of developmental PPPs can be distinguished?
- b. What is the intervention strategy of developmental PPPs?
- c. Which pathways in developmental PPPs can be distinguished?
- d. What is the relation between different types of PPPs and the intervention strategy?

3. Identification of results of PPPs pathways at outcome and possibly impact level

- a. What are the outputs of PPPs in developing countries?
- b. What are the outcomes PPPs in developing countries?
- c. What are the impacts of PPPs in developing countries?

4. Analysis of the effectiveness of PPP pathways according to relevant evaluative studies

- a. Why did a PPP produced the desired results or not?
- b. Are there general patterns in success or failure factors?

5. Synthesis of the available information of PPP efficiency.

- a. What are the benefits of the PPPs compared to the costs?

3 Definition of key terms

Before answering the research question we define the key terms in our research questions. This entails the definition of PPP, output, outcome, impact and intervention logic.

No broad accepted definition of PPP...

There is no universal accepted definition of Public Private Partnership (PPP). Marin (2009) illustrates this point: “there is no single definition of PPP. It covers a wide range of transactions where the private sector is assigned some responsibility, including investment. It ranges from management contracts with no investment obligations to concessions contracts with significant investment obligations in addition to operational and management obligations” (Marin, 2009).

...but definitions do have common characteristics.

Although definitions vary, they do have some common characteristics. Illustrative for this is the analysis in a forthcoming paper of Da Rosa et al. (2012). Da Rosa et al. (2012) present an extensive overview of 28 PPP definitions which they score along 14 dimensions. They find that most definitions describe that PPPs: have different societal backgrounds (18 out of 28), share objectives, goals and problems (17 out of 28), are for the provision of public goods (14), benefit from complementary resources (14) and have partners which collaborate in an interdependent and interactive way (Da Rosa et al., 2012).

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We use the definition of the Dutch MFA...

Given the context of our review we use the PPP definition from the Dutch Ministry of Foreign Affairs (MFA, 2010): “A form of cooperation between government and business (in many cases also involving NGOs, trade unions and/or knowledge institutions) in which they agree to work together to reach a common goal or carry out a specific task, jointly assuming the risks and responsibility and sharing their resources and competences”.

...and derive five key criteria of developmental PPPs.

Based on the MFA definition, definitions from key developmental institutions (such as OECD, World Bank and IMF) and the analysis of Da Rosa et al. (2012) we derive five key criteria of developmental PPPs, see Box 1. In our systematic review we will score the PPPs in the case studies on these criteria.

Box 1 *Five key criteria of developmental PPPs*

#	Characteristic
1	A cooperation between the public and private sector (also NGO's, trade organizations and knowledge institutes) with a common (development) goal;
2	A clear agreement between the public and private party on the goal(s) of the PPPs;
3	A combination of Public and Private funding
4	A clear agreement between the public and private party on the sharing of resources and tasks;
5	Distribution of risks between the public and the private sector.

Types of developmental PPPs.

Within this framework there are several types of developmental PPPs. On a scale from public to private we distinguish the following types of PPPs (ADB, 2008):²

- Service contract
- Management contract
- Affermage and lease contracts
- Concession
- Build–operate–transfer (BOT) and similar arrangements (including BTO, BOO, DBO, DBFO)
- Joint venture

These types are described in Box 2.

Box 2 *Types of (developmental) Public Private Partnerships (PPPs)*

Form	Description (quoted from ADB, 2008)
Service contract	<p>“The government (public authority) hires a private company or entity to carry out one or more specified tasks or services for a period, typically 1–3 years”.</p> <p>“The government pays the private partner a predetermined fee for the service, which may be based on a one-time fee, unit cost, or other basis”.</p>
Management contract	<p>“A management contract expands the services to be contracted out to include some or all of the management and operation of the public service (i.e., utility, hospital, port authority, etc.). Obligation for service provision remains in the public sector, while daily management control and authority is assigned to the private partner or contractor”.</p> <p>“The private contractor is paid a predetermined rate for labor and other anticipated operating costs. The contractor is paid an additional amount for achieving prespecified targets or the management contractor can be paid a share of profits. The public sector retains the obligation for major capital investment”.</p>
Affermage or Lease contracts	<p>“Under an affermage or a lease contract, the private partner is responsible for the service in its entirety and undertakes obligations relating to quality and service standards. Except for new and replacement investments, which remain the responsibility of the public authority, the operator provides the service at his expense and risk. The duration of the leasing contract is typically for 10 years and may be renewed for up to 20 years”.</p> <p>“Under a lease contract the financial risk for operation and maintenance is borne entirely by the private sector operator. The private sector retains revenue collected from customers and makes a specified lease payment to the contracting authority”.</p> <p>“An affermage allows the private sector to collect revenue from the customers (typically an agreed rate per unit sold), pays the contracting authority an affermage fee, and retains the remaining revenue”.</p>

² In our opinion the ADB handbook on PPP provided the most broad and thorough overview of developmental PPPs.

Form	Description (quoted from ADB, 2008)
Concession	“A concession makes the private sector operator (concessionaire) responsible for the full delivery of services in a specified area, including operation, maintenance, collection, management, and construction and rehabilitation of the system. The operator is responsible for all capital investment. The public sector is responsible for establishing performance standards and ensuring that the concessionaire meets them. A concession contract is typically valid for 25–30 years”. “The concessionaire collects the tariff directly from the system users”.
Build–operate–transfer (BOT) and similar arrangements (including BTO, BOO, DBO, DBFO)	“Under a BOT and similar arrangements a private firm or consortium finances and develops a new infrastructure project or a major component according to performance standards set by the government. The private partner provides the capital required to build the new facility. At the end of the contract, the ownership is transferred to the public sector. Variations on the basic BOT structure are”: “build–transfer–operate (BTO) where the transfer to the public owner takes place at the conclusion of construction rather than at the end of the contract; build–own–operate (BOO) where the developer constructs and operates the facility without transferring ownership to the public sector; design– build–operate (DBO) where the private sector provides design, construction, and operation of the infrastructure project; design–build–finance–operate (DBFO) where the responsibilities for designing, building, financing, and operating are bundled together and transferred to private sector partners”.
Joint venture	“Under a joint venture, the public and private sector partners can either form a new company or assume joint ownership of an existing company through a sale of shares to one or several private investors. Both public and private partners invest in the company and share risks”.

Source: ABD (2008)

Output (immediate results)

We define output as the number of goods or services produced by the PPP. For instance the number of mosquito nets or malaria medicines. These are “the most immediate results of activities” (OECD, 2001).

Outcome (intermediate effects)

We define outcome as the intermediate (short term) effect of the PPP on the community. Examples: since the PPP in water service more people have access to clean drinking water. Often “the time frame is such that outcomes can be achieved within the project life cycle” (OECD, 2001).

Impact (final goal)

We define impact as the causal effect (net effect) of the PPP intervention on the final goal. For instance: less people die of water pollution because of the PPP intervention. The casual effect of PPP should be indicated by counterfactual analysis, therefore a strong counterfactual is needed.

Intervention logic

Intervention logic we describe as all “the activities and expected effects (outputs, results and impacts) of an intervention, as well as the assumptions that explain how the activities will lead to the effects in the context of the intervention” (European Commission, 2006).

4 Research steps

Six research steps...

In our systematic review we followed the guidelines and procedures mentioned in the Campbell protocol for systematic reviews. We followed six research steps to find, select, and analyze relevant studies:

- Step 1: keyword search
- Step 2: quick scan articles on title and abstract
- Step 3: assessing general characteristics of studies
- Step 4: check on quality (6 knock-out criteria)
- Step 5: scoring of remaining case studies on counterfactual
- Step 6: in depth analysis of remaining studies

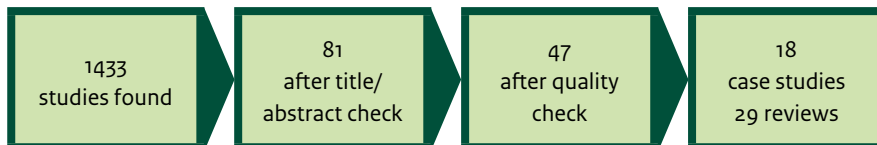
An extensive description of the research steps can be found in Annex 2 (research methodology).

...resulted in 18 case studies and 29 reviews.

The search process resulted in 18 case studies and 29 reviews. In Figure 1 we visualize the number of remaining studies after each selection step.

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Figure 1 Remaining number of studies after each selection step



5 Overview and classification

Majority of reviewed PPPs are in healthcare, infrastructure and agriculture

We reviewed PPP evaluations in a broad number of sectors. Most of them were in healthcare (11), infrastructure (6) and water supply (5). See Table 2.

	Case studies	Reviews (overview studies)	Total
Agriculture	0	4	4
Education	2	0	2
Energy	2	1	3
Environment	1	1	2
Healthcare	6	5	11
Housing (construction)	1	2	3
Infrastructure	3	3	6
Transport	1	2	3
Water	0	5	5
Multiple sectors	0	3	3
Other	2	3	5
Total	18	29	47

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Majority of reviewed PPP were in Asia and Africa

We reviewed evaluations from PPP in various developing countries. Most PPP were situated in Asia (19) and Africa (11). See Table 3.

	Case studies	Reviews (overview studies)	Total
Asia	10	9	19
Asia (various countries/regions)	1	3	4
China	2	0	2
India	2	3	5
Lebanon	1	0	1
Malaysia	0	1	1
Nepal	1	0	1
Pakistan	3	1	4
Yemen	0	1	1

Africa	4	7	11
Africa (various countries/regions)	3	4	7
Ghana	0	1	1
East Africa	0	1	1
Nigeria	1	0	1
Tanzania	0	1	1
Latin America	1	3	4
Latin America (various countries/regions)	0	3	3
Peru	1	0	1
Various continents	3	10	13
Total	18	29	47

Majority of reviewed PPP are joint ventures and management contracts

We reviewed several different types of partnership contracts. Most PPP contracts are joint ventures (11) and management contracts (9). See Table 4.

	Case studies	Reviews (overview studies)	Total
Concession	1	0	1
Build–operate–transfer (BOT) and similar arrangements (including BTO, BOO, DBO, DBFO)	2	1	3
Joint Venture	8	3	11
Lease contract	1	0	1
Management contract	4	5	9
N/A	0	4	4
Various (combinations of above)	2	16	18
Total	18	29	47

#	Key criterion	Yes	No	Total
1	Cooperation between public- and private party	18	0	18
2	Clear agreement on goal	16	2	18
3	Combination of public- and private funding	13	5	18
4	Agreement on sharing of resources and tasks	17	1	18
5	Distribution of risks between the public and the private sector	8	10	18

1. All (in the case studies reviewed) PPP projects fulfill criterion 1 (cooperation between public and private sector). So in each PPP case study there is some form of cooperation between the public and the private sector described. We expected this because we selected the studies on this criterion. A few notable examples: 'The Chad-Cameroon petroleum development and pipeline project', a collaborative venture between an oil consortium and the governments of Chad and Cameroon (Uttinger, 2005); 'Rescue-15', an Emergency Service Medical (EMS) partnership between the Islamabad's Police Department, NGO's and the private sector.
2. 16 out of 18 PPPs in the studies fulfill criterion 2 (clear agreement between public and private party on the goals). For example the Women's Health Initiative (WHI), a PPP where the parties agreed to "improve reproductive and maternal health for woman and girls in India". (Kruesmann and Timmermann, 2009).
3. 13 out of 18 case studies explicitly mention that the PPP goes with a combination of public and private funding (criterion 3). However, the division of the budget (between the public- and private party) is not always mentioned.
4. 17 out of 18 reviewed PPP projects fulfill criterion 4 (clear agreement on sharing of resources and tasks). Notable example is the Lebanese network and telecom PPP concession. The private sector became responsible for building and operating the network and the public sector for regulation (Jamali, 2004).
5. The distribution of risks is addressed in 8 out of 18 of the studied PPP projects. A notable example is presented by Shen et al. (2006) in the article on the partnership between the Hong Kong³ government and private sector (Walt Disney Company) on the development of Disney Land. In this PPP project acquisition-, legal- and policy risks are allocated to the public sector. While the design-, construction-, operation and industrial action risk are allocated to the private sector. Developmental risk, market risk and financial risk are shared between the partners (Shen et al., 2006).

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6.3 Summary table (case studies)

In Annex 4 we present a summary table of the 18 reviewed case studies by sector. For each case study we describe the subsector, region, exact definition of PPP (quote), key characteristics, type and budget. If we couldn't derive a characteristic from a study (because it was not available or relevant) we noted this as "NA". We have written the most important findings in bold.

³ Since 1997 Hong Kong isn't a developing country according to the IMF (IMF, 1998). However, we decided to include this case study in our review because the partnership was set-up in the late 1990s. Thereby Hong Kong is part of China, which is a developing country.

7 Intervention logic

Before looking at the effects of PPPs in terms of output, outcome and impact it is important to consider the so-called intervention logic of PPPs: what is the reason to implement PPP in development countries? What are the goals for PPP and the expected results? We consider the latter questions in this section. In paragraph 7.1 we discuss the rationale of PPP in the reviewed case studies. In paragraph 7.2 we discuss the goals and expected results of PPP in the reviewed case studies.

7.1 Rationale of the PPP

PPPs can be implemented for (a combination of) financial, developmental, efficiency, ideological and political reasons.

The rationale to implement the PPP is described in 12 of the 18 reviewed case studies. These reasons can be grossly divided in: (1) financial reasons (including risk diversification), (2) development reasons (3) efficiency reasons and (4) ideological/political reasons (see Annex 4 for details per case study):

- Financial reasons (including risk diversification, 7 studies): in a substantial amount of the reviewed case studies PPP is implemented because the local government doesn't have enough resources to carry out a task alone: the government of Pakistan decided to implement PPP in education because they did not have the resources to "accomplish the gigantic task of providing quality education and meeting the targets of the Millennium Development Goals" alone (Malik, 2010). The Lebanese government considered PPP in telecom because they wanted to reform public enterprise but lacked financial resources (Jamali, 2004). In their case studies on Chinese subway PPPs De Jong et al. (2010) state that the use of PPP in (large) infrastructure projects has mainly risen because the government has insufficient financial resources: "In many cases local officials believe that only funding from the private sector can fill the immense gap between the limited presence of public resources and rapidly growing sustainable urban infrastructure needs." (de Jong et al., 2010). Risk diversification is also mentioned as a motive to implement PPP. For example the PSOM (Cooperation Emerging Markets) PPP which was implemented to "encourage investment project that would otherwise not have been carried out because of the high product/market risks" (Triodos Facet, 2010).
- Development reasons (3 studies): the realization of (Millennium) development goals or certain international standards is mentioned in 3 of the 18 studies as reason to implement PPP: the government of India implemented ICTD to distribute the benefits of the IT sector in rural regions and make more persons e-literate (Kuriyan and Ree, 2008). In their review on PPPs in tuberculosis research (not in summary table) Dewan et al. (2006) mention that "collaborations between the public and private health sectors, or public-private mix, may be an important solution to the problem that diagnosis, treatment, and reporting practices often do not meet national or international standards for tuberculosis.

- Efficiency reasons (3 studies): in their extensive review on PPPs on East African Export-Oriented Horticulture, Pfisterer et al., (2009) state the rationale of the horticulture PPP can be found in market failure and government failure.
 - Market failure means that private firms fail to innovate and “ensure continuous improvement in product and process development” (Pfisterer et al., 2009) – because this is not profitable for them. This kind of market failure is also addressed by Grace and Duce (2011). In their review on drug development PPP in developing countries (not in summary table). They state that PPP is implemented because “the private parties on their own do not invest enough in diseases that are especially occurring or have a different disease patterns in developing countries, because for these medicine research [Aids, TB and malaria] is needed that is hardly relevant for developed countries” (Grace and Duce, 2011) See also Box 3.
 - Government failure means that the government fails to “secure accountability between decision makers and horticulture industry” (Pfisterer et al., 2009). A PPP can effectively address these failures.
- Ideological/political reasons (3 studies): Kuriyan and Ree (2008) mention that PPPs has gained support in the 1990s “because of the international environment that strongly supported economic liberalization and less state intervention.” Kuriyan and Ree (2008) mention that ICTD-PPPs in India were also enforced because “the state was trying to make visible its attempts to accommodate the rural electorate.” Furthermore Kruesmann and Timmerman (2009) note (in their short review of the Womens Health Initiative, a PPP to “improve reproductive and maternal health for woman and girls in India”) that in India “the government acknowledges that partnerships with the private sector -both the for-profit and non-profit- are important to attain public health goals and to improve the health delivery system” (Kruesmann and Timmerman, 2009)”

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Box 3 *Implement a PPP to increase effectiveness*

“In the past the public sector had the primary responsibility for the provision of household waste management services but it was not very successful. In order to increase effectiveness in the service delivery the Kwara State Government contracted a private company in 2004 and was charged with the responsibility of keeping Ilorin clean, and to formalize the recycling process. Currently, the private company and the Kwara State Waste Management Council (a government agency) are in charge of household waste management services in Ilorin. The Waste Management Council plays a supervisory role, while the private company is in charge of collection of household waste. The challenge of effective and efficient household waste management strategy has become a priority for policymakers in Kwara State. The people who are in support of more private companies argue that if more private companies are involved in waste management services it will lead to competition between the companies, increase effectiveness and consequently improve environmental quality. Before involving more private companies in the provision of household waste management services it is important to have an overview of how Ilorin residents’ perceive the present household waste management services. This is the aim of the study, as well as the examination of some socio-economic factors influencing their perceptions.”

Source: Ezebilu and Animasaun (2012)

7.2 Goals and expected results of PPP

Goals of PPPs are often very general and not SMART formulated

The goal of the PPP is described in almost all reviewed case studies (see Annex 4). However the described goals in the case study evaluations are often very general and not SMART (specific, measurable, attainable, relevant, timely) formulated – especially the dimension “timely” often isn’t fulfilled. Some typical examples:

- The goal of Rescue-15 (an emergency service partnership between the Islamabad Police Department NGO’s and the private sector) was “[to] boost public confidence and to inculcate a spirit of citizen-friendly policing with community participation.” (Ali, 2006). This is an example of a goal that is neither measurable (because it’s not clear how public confidence and a sense of citizen-friendly policing would be measured), nor attainable (because it’s not clear how the goals will be achieved) or timely (because it’s not stated when the goal should be reached).
- The Hong Kong International Theme Parks Limited joint venture aimed to “provide recreational facilities for general public in Hong Kong and contribute to the Hong Kong economy”. The latter goal is neither measurable (because it is not clear how the contribution to the economy will be measured) nor timely (because it is not stated when the goal should be reached).
- The goal of the Lebanese telecom PPP was “setting up an affordable telecommunication network” (Jamali, 2004). This goal is neither specific (what is affordable?) nor measurable or timely.

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Often unclear on what expected results are based

The expected results of PPP are described in 11 of the 18 reviewed case studies. However it’s not always clear on which arguments those expected results are based, see Annex 4.

8 Results of PPP

In this section we present the results of the PPPs in the reviewed studies. In paragraph 8.1 we discuss the output of PPP in the reviewed case studies. In paragraph 8.2 we discuss the outcome and in paragraph 8.3 the impact. Where applicable we complement these findings with the results in the overview studies. In paragraph 8.4 we discuss the pathways/strategies of the PPPs in the reviewed case studies. We end this chapter with a discussion on transaction costs (8.5), risk- (8.6) and profit sharing (8.7).

8.1 Output

Case studies

Most case studies present a positive effect of the PPP on output...

We have defined output as the number of goods or services produced by the PPP. In 15 out of 18 reviewed case studies we were able to derive an effect of PPP on output. The majority of those studies (13 out of 15) describes a positive effect of the PPP on output. 2 studies describe no effect on output and zero studies describe a negative effect.

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...but the evidence is weak and limited.

The majority of studies has a no counterfactual. As we note in Annex 2, in the ideal situation the study should compare the situation with PPP with the situation that would have happened without PPP. So the outcome of PPP in a region should be compared with a comparable region without PPP ('a robust comparable control group while controlling for external factors'), MSSM level 5. In only 1 study the effect of the PPP intervention is estimated with the use of a counterfactual on MSSM level 3 (output before/after and control group). The remaining counterfactuals are on level 2 (output before/after) and 1 (only output at 1 point in time), see Table 6.

Effect on output	Total	MSSM level (see box A-3 for description)					
		1	2	3	4	5	NA
+ (positive effect in general)	13	4	8	1	-	-	-
+/- (mixed effect)	-	-	-	-	-	-	-
- (negative effect in general)	-	-	-	-	-	-	-
0 (no effect in general)	2	2	-	-	-	-	-
NA (not available/applicable)	3	1					2
Total	18	7	8	1	-	-	2

Only one study presents a positive effect on output with a counterfactual on MSSM level 3.

The one study with a counterfactual on MSSM level 3 is about the provision of primary education through PPP in Pakistan. This resulted in the so-called “Promoting Low-Cost Private Schooling in Rural Sindh” (PPRS) program: “Goal of the PPRS program was to take advantage of the local knowledge and underutilized resources within [rural] communities to provide viable, appropriate, and affordable education” (Barrera-Osorio et al., 2011). Within the PPRS program private entrepreneurs could start their own school and receive a per-child fee from the government. The government selected these entrepreneurs within a random sample of 100 villages “chosen from a sample of 163 qualifying [villages]” (Barrera-Osorio et al., 2011). The remaining 63 villages remained in the control group. Barrera-Osorio et al. (2011) estimate the effect on school enrolment while controlling for child- and household characteristics and district fixed effects. They find that the intervention had a significant positive effect on school enrolment, (see also Box 4): “enrolment increases by 51 percentage points in treated villages”. Thereby girls have a 4-5 points greater increase than boys (Barrera-Osorio et al., 2011).⁴

Box 4 *Evaluation methodology of PPRS program*

“In order to identify the causal impact of the intervention, the qualifying localities were randomly assigned to the control and two treatment groups, thereby ensuring that receipt of a school is uncorrelated with village characteristics that may influence the efficacy of the program. Insofar as randomization has established statistically indistinguishable groups across the control and treatment villages, any differences between them can be attributed to the intervention. The participating villages were chosen according both to their need as well as the ability of the entrepreneur to secure an adequate facility for conducting classes and qualifying teachers to lead them.

A baseline survey was conducted in all qualifying villages in February, 2009. Following the survey, the villages were randomly assigned to the two treatments and one control group. The schools were then established in the summer of 2009. Because the new school term normally commences in spring, the students received an abbreviated term their first year. In anticipation of conducting the follow-up survey, a census was conducted of treatment and control villages in June 2010. In both the baseline survey and the census, socio-demographic information was collected. The content of these two surveys was slightly different, however. While they both included questions on the age, gender and enrollment status of all children ages 5-9 in the household, the census also collected information about children ages 10-15. The follow-up survey will include numeric and literacy tests for all children between the ages of 5 and 10 in a randomly chosen sample of households from each village. In addition, reported enrollment will be verified through school surveys. This will allow us to establish the effectiveness of the intervention in increasing enrollment and test scores.”

Source: Barrera-Osorio et al., (2011)

⁴ Despite the success of the program, in 2012 100 schools were closed because they were within “within the radius of 1.5km of government schools. Now all these are declared in close proximity of government schools” (Dawn, 2012).

8 case studies present positive effect on output with a counterfactual on MSSM level 2.

- Utzinger (2005) finds that after implementation of the Chad/Cameroon PPP on petroleum development and pipeline project malaria rates amongst project workers in Chad decreased.
- Ali et al. (2006) find that since the implementation of Rescue-15 the number of calls requiring medical services has increased.
- According to Newell (2004) the implementation of a public private partnership for control of tuberculosis in Nepal has led to 1328 patients registered patients with tuberculosis: “210 (15.8%) of these were referrals from private practitioners, the remainder being self-referrals to DOTS [direct observation of treatment] centers” (Newell, 2004).
- Jamali (2004) find that after the implementation of the Lebanon telecom PPP the number of cellular subscribers and international coverage increased. However it should be noted that this PPP was not a success in qualitative terms. There was little regulatory oversight and poor communication between the partners: “neither the public nor the private sector approached the new project in a spirit of true partnership. There was suspicion from the start in public circles about the inclination of the new operators to openly share and disclose information” (Jamali, 2004).
- Triple value (2009) reports that after implementation of the so-called Sustainable Trade Agreement (“Initiatief Duurzame Handel, IDH”) partnership: (a) cacao productivity increased and quality improved, (b) a code of conduct was implemented for the improvement of labor standards in natural stone production and (c) an increase of RTRS (Round Table of Responsible Soy) members by 42.
- Triodos Facet (2010) reports that after implementation of the Programme for Cooperation with Emerging Markets (PSOM) “205 projects are complemented since the start of the program [...] 275 are ongoing and 176 have stopped, 120 of which prematurely”. (Triodos Facet, 2010).
- Bompert et al. (2011) report ASAQ Winthrop (a malaria medicine developed by a PPP) “was registered in 30 sub-Saharan African countries and in India, with over 80 million treatments distributed in 21 countries. 6 million treatments in 2008, 25 million in 2009, over 45 million in 2010” (Bompert et al., 2011).
- Malik (2010) finds that after implementation of the Punjab Education Foundation (PEF, a government organization in Pakistan that sponsors PPPs in education) the number of schools and students rose, see Box 5.

Box 5 *Punjabi Education Foundation*

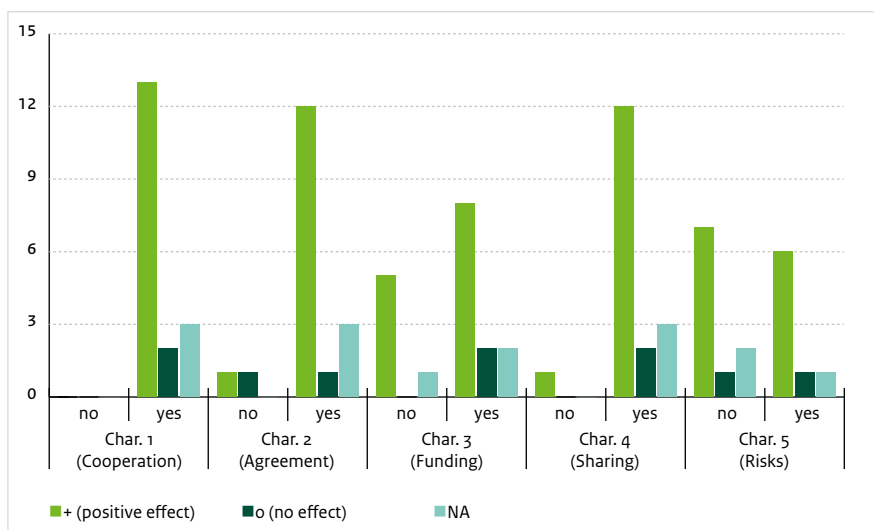
“The PEF [Punjabi Education Foundation] was established through the Punjab Education Foundation Act of 1991 by the Punjab Assembly. This legislation stipulated that the PEF would advance loans and grants to private entrepreneurs for the construction of schools as a way of promoting accessibility to education. Even after the passage of the Punjab Education Foundation Act of 2004, the PEF’s mission remained broadly the same: support the efforts of private schools to provide education to the poor”.

“There was a sharp rise in the number of schools and a meteoric rise in the number of students between 2005 and 2008. For starters, there was an increase of 720.5% in the number of students in 2006 compared to 2005. The increases continued every year: 264.6% in 2007, 75.4% in 2008, and 17.7% in 2009. By 2008 the PEF, through the FAS program, supported 1,337 schools with 529,210 students. In Pakistan, more than 40% of students drop out of school by the time they reach Grade 4, but in FAS partner schools the dropout rate is zero.”

Source: Malik (2010).

Is there a relationship between the output of PPPs and the design of PPPs? We address this question in Figure 3. In this figure we present the relationship between the output and the key PPP characteristics. The figure shows no relationship between the key PPP characteristics and the effect of the PPP on output.

Figure 3 *Relationship between PPP design and output (n=18)*



Source: reviewed case studies

Reviews

Positive effects of PPP on output are reflected in the reviews (overview studies)...

The positive findings in the case studies are reflected in the reviews, see Table 7 (in Annex 5 we present a table per review).

Effect on output	
+ (positive effect in general)	8
+/- (mixed effect)	3
- (negative effect in general)	1
0 (no effect in general)	1
NA (not available/applicable)	16
Total	29

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Some notable examples of reviews that find a positive effect of PPP on output:

- De Pinho Campos et al. (2011) studied the effect of product development (PD) PPPs for disease control. They conclude that PD PPPs “led” to the creation of drugs or vaccines in low and middle-income countries.
- Dewan et al. (2006) looked at PPP in tuberculosis treatment. They find that in nine (75%) of the 12 public-private mix projects, observed treatment met or exceeded the Indian tuberculosis programme target of 85% treatment success. However: “in two projects where treatment outcomes of public sector administered and private provider administered directly observed treatment were compared, no significant differences were found” (Dewan et al. 2006).

...but also some PPPs with weak, mixed or negative effects...

Finally, there are some PPPs with a weak or sometimes even negative effect on output. An example of a PPP with a weak effect on output is the so-called WSSD (World Summit on Sustainable Development) partnership, horticulture PPP in various African country, where the output mostly consists of “explorative studies en business plans”, see Box 6.

Box 6 *The weak output of the African horticulture partnership*

“The [WSSD] partnership aims to be a vehicle to address those bottlenecks in and around the export horticulture chain in both flowers and vegetables & fruits that could only be tackled in a public-private partnership. The objective of the WSSD partnership is twofold. First, market access to the European market is aimed at through capacity building to comply with food safety regulations. Second, strengthening structures and awareness is aimed at to contribute to sustainable development, not only economic but also social and ecological”.

“The activities undertaken by the partners resulted in a variety of project outputs such as products and services. One obvious criterion is the extent to which the project objectives have been achieved. The finalized projects under review largely met their original objectives. For ongoing projects some first outputs were identified”... “When examining the results it demonstrated that most outputs are results of explorative studies such as business plans, reports or frameworks. Almost all projects plan to implement these outputs in project extension phases.”

Source: Pfisterer et al. (2009)

...and it's not always clear if the effect is due to PPP

Thereby it isn't always clear if the positive effect of output is caused by the PPP or by another reason - for instance a substantial increase in government spending. Tann (2012) looked at water privatization in Malaysia and found that there was an increase in pipe length and water production after implementation of the PPP. However Tann (2012) notes: “Based on the evidence, it is not clear if increases in production capacity and pipe length were due to PPI given that these corresponded with significant increases in government financing. Moreover, large improvements were made by public and corporatized states in production capacity while increases in pipe length were related to water distribution which remained in the public sector for all states except Selangor (public-private) after 2005 and Johor (private)” (Tann, 2012).

8.2 Outcome

Case studies

Most case studies present a positive effect of the PPP on outcome, but evidence is weak.

We have defined outcome as the intermediate (short term) effect of the PPP on the community: 9 of the 18 reviewed case studies describe an effect of the PPP on outcome. In 7 of those 18 studies the result on outcome is positive. However – as we noted when discussing the effect on output – the MSSM score in these studies is low: none of the studies have a counterfactual on MSSM level 4 or higher. See Table 8.

Effect on outcome	Total	MSSM level (see box A-3 for description)					
		1	2	3	4	5	NA
+ (positive effect in general)	7	1	5	1	-	-	-
+/- (mixed effect)	1	1	-	-	-	-	-
- (negative effect in general)	1	1	-	-	-	-	-
0 (no effect in general)	-	-	-	-	-	-	-
NA (not available/applicable)	9	-	-	-	-	-	9
Total	18	3	5	1	-	-	9

5 case studies present positive effect on outcome with a counterfactual on MSSM level 2

- Malik (2010) finds that after implementation of the Punjab Education Foundation (PEF, a government organization that sponsors PPPs in education) dropout rates decreased and test scores increased.
- Ali et al. (2006) find that since the implementation of Rescue-15 the mean response time became approximately 10 minutes. This is close to international standards.
- Newell (2004) notes that the establishment the public private partnership for control of tuberculosis has led to an increase in case notification and treatment success rates (>90%): “more than exceeding international targets” (Newell, 2004).
- Triodos Facet (2010) finds the establishment of the PSOM/PSI PPP generated 81 direct jobs. In 17 projects new products were launched in the recipient country and in 23 projects a new technology for producing existing products was developed.
- Bompert et al. (2011) find that ASAQ Winthrop (a new anti-malarian combination implemented by a PPP) led to a decrease of the prices of so-called ACT’s (Artesunate-based Combination Therapy, malaria drugs), see Box 7.

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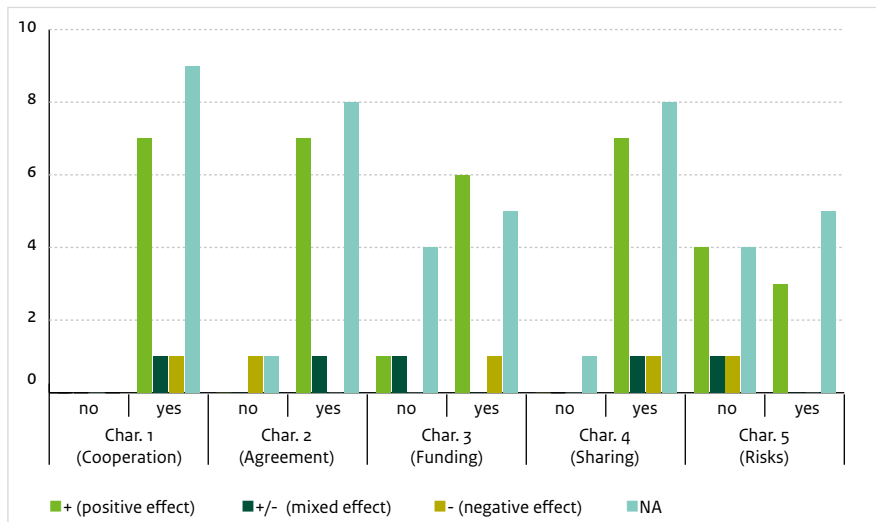
Box 7 *ASAQ Winthrop led to price reduction of ATC’s*

“[The] partnership was initiated in 2004 between the Drugs for Neglected Diseases initiative (DNDi) and sanofi-aventis [a private firm] to develop together a fixed-dose combination of artesunate and amodiaquine, one of the forms of ACT recommended by the WHO, which at that time only existed as a non-fixed combination of the two drugs”.

“The availability of a new medicine does not imply access in the field. As such, the partnership made two bold commitments. First, the product would receive no patent protection. Second, the partners set a target price of one USD per treatment for adults and 0.5 USD cents for children. Before ASAQ Winthrop’s introduction to the marketplace, the price for most ACTs in public markets was approximately 2.50 USD for an adult treatment. After ASAQ Winthrop’s introduction, the global reference price for ACTs on public markets decreased to approximately 1 USD”

Is there a relationship between the outcome of PPPs and the design of PPPs? We address this question in Figure 4. In this we figure present the relationship between the output and the key PPP characteristics. The figure shows no relationship between the key PPP characteristics and the effect of the PPP on output.

Figure 4 Relationship between key PPP design and outcome (n=18)



Source: reviewed case studies

Reviews

Few reviews describe effects of PPP on outcome

The evidence of the effects of PPP on outcome is also limited in the reviews. We could derive an effect of PPP on outcome from 7 reviews, see Table 9 (for details we refer to Annex 5).

Table 9 Effect of PPP intervention on outcome (reviews)	
Effect on outcome (average effect over all reviewed studies)	reviews
+ (positive effect in general)	5
+/- (mixed effect)	2
- (negative effect in general)	-
0 (no effect in general)	1
NA (not available/applicable)	21
Total	29

Some reviews discuss PPP projects which had a negative effect on outcome. Most notable example in the literature is the Bolivia water concession: a PPP implemented in 1999 to improve water provision and services for the population of Cochabamba (Bolivia). See Box 8.

Box 8 *The failure of the Bolivia water concession*

“Various factors led to the failure of the concession soon after water service management was privatized. In an area where two-thirds of the population live[s] below the poverty line, tariff increases led to extraordinarily high and unaffordable water prices and clashes with the community, including street protests. The protests grew so violent that President Banzer placed Bolivia under martial law for 90 days. The contract was ultimately terminated and responsibility for water services was turned over to a coalition of protesters, which also took over SEMAPA’s US\$35 million debt.

Analysis: Private investment seeks projects that can be self-financing in the long term, however, project feasibility is primarily dependent on local conditions and political risks. Concessions are not a suggested feasible project structure [according to a figure called the project feasibility map].”

Source: Vives et al. (2006)

8.3 Impact

One study about the impact of PPP

We defined impact as the net-effect of an intervention. To estimate the net-effect a control group is needed, therefore the counterfactual should at least be at MSSM level 3. Therefore only Barrera-Osorio et al. (2011) present an effect of PPP on impact: “The intervention has had a large impact on enrollment, suggesting that the previously low enrollment rate – ranging between 23.74% and 29.35% across the three groups according to the baseline, or 31.13% in the census for control villages – was being driven largely by supply constraints rather than a lack of demand.”

8.4 PPP pathways

Half of studies present a PPP pathway

In the analyzed studies each PPP had a certain developmental goal. For each study we checked through which pathway the PPP fulfilled its goal. We were able to derive the following PPP pathways from 8 out of 18 case studies (details are presented in Annex 4): Training/professional development, Monetary rewards, Public participation, Knowledge sharing standards, Political agenda setting, R&D support, price control/tariff ceiling and no profit-no loss prices, see Box 9.

Box 9 *No profit – no loss prices*

“ASAQ Winthrop [a malaria medicine developed by a PPP] was made available through a tiered-pricing policy that includes ‘no profit - no loss’ prices for ASAQ Winthrop in the public sector, while the same drug is sold in the private sector under a different brand name at market prices. The profit margins made through sales in the private sector ensure that the mechanisms that enable very low ‘no profit - no loss’ prices in the public sector can be sustained over the long-term”

Source: Bompert et al. (2011)

8.5 Transaction costs

High transaction costs in startup phase can be compensated by lower operational costs in implementation phase

In their synthesis review on horticulture PPPs in Africa Pfisterer et al. (2009) mention that high transaction costs can occur because of complex negotiations between the partners when starting the project. However these high ‘start up costs’ can be compensated in the implementation phase: “[the transaction costs in the startup phase] could be outweighed by less costs for the actors involved in the implementation phase and the internal efficiency gains due to shared goals and a steeper learning curve of a large number of partners, especially for focal organizations in Kenya” (Pfisterer et al., 2009).

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8.6 Risk sharing

Few of the reviewed studies discuss the notion on risk sharing in developmental PPPs:

- Lobina et al. (2003) notes that “PPPs are in theory expected to unleash the efficiencies of the private sector and deliver social and environmental benefits subject to the effective allocation of operating and political risks to the parties best placed to minimize and manage such risks. It is generally assumed that private operators are ablest at dealing with operating risks while public bodies should preferably retain the political risks involved with PPPs”.
- Shen et al. (2006) concludes that [the] allocation of site acquisition risks, inexperienced private partner risk and legal and policy risks to the public sector is appropriate. Also, allocation of the design and construction risks, operation risks and industrial action risks to the private sector, and sharing of development risks, market risks, financial risks and force majeure between the two parties is important.”
- Phlix et al. (2011) mention that “the main risks of the UAFC Joint Programme are appropriately identified, well documented and managed. This is being done for the UAFC Joint Programme as a whole and for its components and country programmes separately”. Bompert (2011) notes that the risks of ASAQ are shared through a Risk Management Plan.

8.7 Profit sharing

Unequal profit sharing can threaten partnership strength

Pfisterer et al. (2009) note that cost and benefits aren't always equally shared between partners. This can have consequences for the strength of the partnership: "major inequalities in the distribution of gains and losses between partners can threaten the strength of the partnership – unless these inequalities have been anticipated. This was the case in Kenya, where the focal partners were expected to have higher gains of the partnership compared to the partners supporting the implementation" (Pfisterer et al., 2009).

9 Success and failure factors

Government involvement, a sound regulatory framework and a common vision

In our opinion Jamali (2004) presents the most comprehensive overview of critical success factors of PPPs. These factors are explicit applicable to PPPs and therefore highly relevant. We present these factors in Box 10.

Box 10 *Critical success factors of PPPs*

Factor	Explanation
Permanent government involvement	“The public sector should continue to set standards and monitor product safety, efficacy and quality and establish systems whereby citizens have adequate access to the products and services they need” (Jamali, 2004).
A sound regulatory framework	“Regulation provides assurance to the private partner that the regulatory system includes protection from expropriation, arbitration of commercial disputes, respect for contract agreements, and legitimate recovery of costs and profit proportional to the risks undertaken” (Jamali, 2004).
Fulfillment of key formation requirements	Jamali (2004) refers to Samii et al. (2002) when addressing key formation requirements of effective PPPs. These requirements include “ resource dependency, commitment symmetry, common goal symmetry, intensive communication, alignment of cooperation learning capability, and converging working cultures ” Finally Jamali (2004) refers to Kanter (1994) “who emphasizes individual excellence, importance, interdependence, investment, information, integration, institutionalization, and integrity as the key ingredients of effective collaboration” (Jamali, 2004).
Four C’s in partner selection	The “four C’s of compatibility, capability, commitment and control as critical for successful pre-selection of alliance partners (Hagen, 2002). Particularly important are the notions of compatibility, which entails identifying complementary strengths and weaknesses and commitment as reflected in the formalized commitment of necessary time energy and resources”
A common vision and trusty relationship between partners	Some of the traditional constraints in the way of a successful realization of a PPP [...] the hold-up problem caused by a change in the position of partners; [...] reductionist measures instilling competitive norms instead of cooperative ones; and cultural differences between private and public partners (Nijkamp et al., 2002; Scharle, 2002).

Factor	Explanation
Ensure that the multiple interests of key participants are skillfully negotiated and packaged.	“Partnerships appear to be most justified where: traditional ways of working independently have a limited impact on a problem; the specific desired goals can be agreed on by potential collaborators ; there is relevant complementary expertise in both sectors; the long-term interests of each sector are fulfilled ; and the contributions of expertise of the different sectors are reasonably balanced (Linder, 1999).

Source: Jamali (2004)

We found some notable examples of success and failure factors in our reviewed studies.

- Malik (2010) finds that the Punjab Education Foundation (PEF, a government organization that sponsors PPPs in education) the “overall governance and management [were] critical to the successful design and implementation of PPP programs. Despite the early successes, program growth ground to a halt in 2008 as a result of abrupt changes in the governance and management of the PEF, and as a result of a changeover in the national government.” (=success factor 1 and 2)
- Aziz et al. (2011) investigated success- and failure factors of housing PPP in Malaysia. They therefore did a literature review and surveyed 184 public agencies. Aziz et al. (2011) assessed factors which had a positive effect when they existed and negative effect when absent. Aziz et al. find that “action against errant developers” is the most important factor in predicting PPP success (=success factor 2). Thereby the absence of “a clear and robust agreement” is the factor which has the highest negative effect when absence (=success factor 6). Other important factors are “reputable developer, consistent communication, developer’s profit-sharing accountability and developer’s social accountability” (Aziz et al., 2011) (=success factor 2 and 3).
- Triodos Facet (2010) mentions: “the main reason for failure of projects was problems with one (or more) of the partners in the projects. Weak financial performance, wrong expectations, miscommunication etc. could be avoided if the partners have already worked together and know each other (Triodos Facet, 2010)” (=success factor 4, 5 and 6).
- Galilea and Medda (2012) did an empirical analysis on success factors of transport PPPs. They predicted PPP success (which means a project is “under construction, operational or concluded”) using a database of 856 PPP transport countries across 72 countries.⁵ Galilea and Medda (2012) predict PPP success by a log linear model and control for region, past experience with PPP, total investment value of the project, number of multilateral lenders in countries, GDP growth and the countries corruption index. Galilea and Medda (2012) find that the following factors have a significant positive effect on PPP success: (i) A country’s past experience in PPP agreements; (ii) A country’s macroeconomic performance (GDP growth and current account) (iii) The corruption index: corruption has a negative effect on the success of PPPs (=success factor 2). This effect is especially large in

⁵ “In [the sample of Galilea and Medda] 804 of the 856 projects were in this status (94%)” (Galilea and Medda, 2012).

Africa, the Caribbean and Latin America. Shortcoming of the analysis of Galilea and Medda (2012) is their definition of success. This implies it is not clear whether the success factors also have a positive effect on output, outcome and impact.

- Finally, in their synthesis review about horticulture PPPs in Africa Pfisterer et al. (2009) conclude that partnership performance is grossly based on (a) context factors and (b) partnership design factors.
 - Context factors are:
 - (i) “The willingness of (semi) governmental organizations to start the partnership, (ii) “the experience/tradition of the country with PPP and, (iii) “the right moment to start with PPP” (Pfisterer et al., 2009).
 - Partnership design factors entail:
 - (i) “The possibility to build the partnership on an existing structure”. (ii) Time and capacity to steer participatory processes by the government [in the case of the Dutch horticulture PPP the Dutch Embassy, EKN]”, (iii) “Level of commitment by individuals”, (iv) “Time and capacity for active participation by partners” and (v) “The level of ownership” (Pfisterer et al., 2009).” (=success factor 4).

10 Answers on research questions

1. Precise definition of developmental PPPs

a. What are the criteria for an intervention to be considered developmental PPPs?

There is no universal accepted definition of Public Private Partnership (PPP). Based on definitions from the Dutch MFA, key developmental institutions (such as OECD, World Bank and IMF) and the analysis of Da Rosa et al. (2012) we derive five key criteria of developmental PPPs:

- A cooperation between the public and private sector (also NGO's, trade organizations and knowledge institutes with a common (development) goal;
- A clear agreement between the public and private party on the goal(s) of the PPPs;
- A combination of public and private funding;
- A clear agreement between the public and private party on the sharing of resources and tasks;
- Distribution of risks between the public and the private sector.

2. Categorization of different types of PPPs according to different intervention strategies

a. Which types of developmental PPPs can be distinguished?

On a scale from public to private we can distinguish the following types of PPPs (ADB, 2008):

- Service contract;
- Management contract;
- Affermage and lease contracts;
- Concession;
- Build–operate–transfer (BOT) and similar arrangements (including BTO, BOO, DBO, DBFO);
- Joint venture.

b. What is the intervention strategy of developmental PPPs?

We operationalized the intervention strategy as the five key criteria of developmental PPPs. We find that most PPPs are implemented for financial reasons. The majority of studies fulfills key criteria 1 through 4 of developmental PPPs. Exception is the distribution of risks which is addressed in 8 out of 18 case studies.

c. Which pathways in developmental PPPs can be distinguished?

We were able to derive the following PPP pathways from 8 out of 18 case studies: Training/professional development, Monetary rewards, Public participation, Knowledge sharing standards, Political agenda setting, R&D support, price control/tariff ceiling and no profit-no loss prices.

d. What is the relation between different types of PPPs and the intervention strategy?

We were not able to derive a relationship between the different types of PPPs and the intervention strategy.

3. Identification of results of PPPs pathways at outcome and possibly impact level

What are (a) the outputs, (b) outcomes and (c) impacts of PPPs in developing countries?

The evidence on the effects of developmental PPPs on output, outcome and impact is limited. Relatively many articles are about the process of PPP and not about the actual results – in quantitative terms – of the PPP. This reflects the fact that PPP in developing countries is a relatively young instrument.

- We were able to derive an effect of PPP on output in 15 out of 18 reviewed case studies. The majority of those studies (13 out of 18) describe a positive effect of the PPP on output, 2 studies describe no effect on output and zero studies describe a negative effect. The counterfactual in most studies is weak in terms of the MSSM. This means the positive effect on output might also have arisen in the situation without PPP.
- We were able to derive an effect of PPP on outcome in 9 out of 18 reviewed case studies. 7 out of those 9 studies describe a positive effect of the PPP on outcome, 1 study describes a mixed effect on outcome and the final study finds no effect. The counterfactual in most studies is weak in terms of the MSSM. So the positive effect on outcome might also have arisen in the situation without PPP.
- We found a positive effect of PPP on impact in 1 case study. The other case studies did not present the effect of the PPP on impact.

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4. Analysis of the effectiveness of PPP pathways according to relevant evaluative studies

(a) Why did a PPPs produced the desired results or not?

(b) Are there general patterns in success or failure factors?

Jamali (2004) presents the most comprehensive overview of success factors for PPPs.

- Permanent government involvement
- A sound regulatory framework
- Fulfillment of key formation requirements
- Four C's in partner selection (compatibility, capability, commitment and control)
- A common vision and trusty relationship between partners
- Ensure that the multiple interests of key participants are
- Skillfully negotiated and packaged.

We find that most PPPs in the case studies succeed or failed because of the above success factors.

5. Synthesis of the available information of PPP efficiency.

a. What are the benefits of the PPPs compared to the costs?

Given the limited evidence we are not able to indicate the benefits of PPPs compared to the costs. Further research is needed to answer this question.

11 Outlook: Evaluating Public-Private Partnerships

Since several years, Public-Private Partnerships (PPPs) are increasingly used in international cooperation as a device for executing development aid programs. Voluntary, multi-stakeholder partnerships for sustainable development were an important outcome of the UN World Summit for Sustainable Development (WSSD), held in Johannesburg (South Africa) in 2002. Most PPPs were initially used for a broad range of development activities focusing on public service provision (e.g. utilities and infrastructure; social services) but gradually expanded their operations towards private business promotion. Actually PPPs are sometimes also considered as instruments for peace building and for the promotion of social cohesion (Abramov, 2010). This paragraph reflects on lessons learned and provides an outlook for evaluation of PPPs in the near future.

PPPs are commonly defined as ‘a form of cooperation between government and business agents – sometimes also involving voluntary organizations (NGOs, trade unions) or knowledge institutes – that agree to work together to reach a common goal or carry out a specific task, while jointly assuming the risks and responsibilities and sharing resources and competences’ (MFA, 2010). These are structured institutional or contractual arrangements of long-term cooperation between public and private agents for joint production of goods and/or services based on sharing risks, costs, knowledge and resources’ (van Ham & Koppenjan, 2001).

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Overall, PPPs seem to unite at least two dimensions. The first dimension refers to finance and defines the arrangements for engaging public and private actors financially in PPPs. The second dimension is organizational and defines the roles and responsibilities for dovetailing public and private actors in a single coordinated executive framework. Both dimensions interact tightly in such a way that the mobilization of resources should satisfy both the individual objectives of each agent and provides sufficient incentives for enhancing their durable cooperation.

Contradictory evidence from Western PPPs

Many early studies regarding PPP performance are based on experiences in Western countries and are strongly linked to privatization programs in the 1990's. Evaluation designs used for these studies have most often been weak, and the data mostly flawed. It is therefore little wonder that evaluations thus far clearly point to contradictory assessments of their performance (Hodge & Grave, 2011). Despite growing interest in PPPs, the evidence base on results is still sparse and successful partnerships have been elusive.

At the positive end, estimates of efficiencies to be gained through PPPs include a 17 percent cost savings in an analysis of 29 British infrastructure business cases, and a 10 to 20 percent cost reduction in school construction in Australia (Shepherd, 2000; Nisar, 2007). Perceived savings in these business cases are mainly attributable to the calculus of risk transfers from the public to the private sector. Pollitt (2005) gives a careful “pass mark” to PPPs, observing them successful for prisons and roads but of limited value in hospitals and school projects.

Based on a sample of 10 major PPP evaluations undertaken, good value for money was achieved in eight of the 10 cases. Several other studies report PPPs as being delivered on-time and on-budget far more often than traditional infrastructure provision arrangements.

From a more critical side, Blanc-Brude et al. (2006) conducted a careful regression analysis across EU countries and found that PPPs were 24% more expensive than expectations from traditional procurement and registered about the same magnitude of traditional project cost-over-runs. Fitzgerald (2004) argued that the size of costs savings claimed for Australian PPPs was largely dependent on the discount rate used (with a lower discount rate suggesting a cost increase of 6 percent rather than the 9 percent cost saving estimated using the higher discount rate). Hodge (2005) therefore concluded that public agencies need a careful judgment before entering into PPPs. Vining and Boardman (2008) judged only one half of the Canadian PPPs reviewed as successful, and in a similar vein Jupe (2009) viewed PPPs as an 'imperfect solution' for transport in the UK.

Evaluation of PPPs in Development Cooperation

Since PPPs can be envisaged as a specific way for producing output and generating impact by combining different types of resources (e.g. finance, resources, expertise, networks, R&D, etc.) from various cooperating agents, it is important to evaluate PPPs against the background of perceived performance indicators. Most important commonly agreed evaluation criteria include:

- Relevance: (ex-post) contribution of PPPs to envisaged development goals;
- Effectiveness: PPPs focusing on most-limiting factors (binding constraints) and selection of activities where PPPs can make the difference;
- Efficiency: realizing provision at low unit costs (per client) and avoiding market distortions;
- Sustainability: contributing to long-term performance, and guaranteeing ownership and governance of PPPs;
- Coherence: consistency of PPPs with other policies (trade, competition) and optimizing complementarities between aid modalities.

This systematic review of PPPs only focused attention on the available empirical evidence on the relevance, effectiveness and efficiency of PPPs in international development cooperation as derived from credible and valid evaluative studies. It was based on a selection of evidence-based assessments that are published by evaluation agencies and research institutions that satisfy the minimum quality criteria for independent evaluation.

One of the most striking outcomes of the systematic review is that the evidence on PPP performance is still rather sparse. Robust empirical analyses regarding the net effect of PPPs (including both before-and-after analysis and compared to a counterfactual of either public or private program execution) are virtually absent. This can be partly explained by the wide range of cooperative arrangements that are included under the PPP umbrella, but is also due to the inherent complexities for assessing net effects of such multi-agency arrangements.

In this final section, we further elaborate the analytical foundations for evaluating developmental PPPs by outlining a number of key methodological principles that enable an adequate assessment of the fundamental features of PPPs. We therefore discuss three issues:

- **When** is engagement in PPPs justified?
- **Why** is engagement in PPPs proposed?
- **How** is engagement in PPPs assessed

When to engage in PPPs?

PPPs are envisaged as suitable arrangements for promoting development goals under conditions where market and/or institutional failures are constraining the provision of public goods and services (particularly physical and social infrastructure). They involve a clearly defined activity that is co-financed with the private sector, which shares the associated risks and rewards with the public sector. In addition, PPPs are forwarded in situations where high contextual risks may inhibit the engagement of the private sector in investments or market exchange. In this setting, the intention with PPP is that risks could be shared with the party best able to manage them, and that this transfer of risk is priced into any PPP contract. Finally, PPPs can be used to foster innovations in such a way that start-up costs are shared and some public insurance is provided to account for possible failure. In all cases, PPPs are considered as a strategy for guaranteeing earlier project delivery and on-budget project management.

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The appreciation whether these conditions actually exist is by no way easy in the context of international development cooperation. In practice, many PPPs are started by donors to overcome financial and fiscal constraints or to control management complexities. The engagement of the public (donor) sector is then mainly foreseen to reduce interest charges for privately-made sunk cost investments with a relatively long gestation period (like e.g. in drug development). Moreover, the incentive structure of private partners may favor the timely execution of projects, but also requires thorough supervision on quality compliance by the PPP unit. PPPs that were least effective are usually located in countries where indicators of government effectiveness are relatively weak as well (PPIAF and World Bank, 2007). On the other end, private partners may face information constraints regarding potential demand that public agents can more easily overcome.

Identifying the existence of market failures in developing countries requires a careful appraisal. Whereas private firms consider the risk-adjusted net present value of future cash flows to evaluate profitability, the public sector uses an opportunity cost and risk-adjusted net present value of future public benefit to evaluate projects. These different appraisal procedures could lead to another appreciation of the feasibility of projects and relevance of potential investments. The PPP framework is designed to bridge these differences, by focusing on overcoming key constraints that limit local development. The appraisal procedures become even more complicated when the government of the developing country needs to be taken into account. It remains unclear to what extent PPPs (initiated by Western actors) involve these local government actors and/or market actors in developing countries.

It should, however, be carefully prevented that PPPs lead to new market failures or substantially change the level playing field for other private agents. It has been argued that PPPs will only be able to achieve efficiency improvements if the state can achieve competitive tension in the PPP procurement process and real risks are transferred to the private partners. This implies that governments need to approach the market with a well-defined PPP proposition through an open bidding process (World Bank Institute, 2012). Where this is not the case, bids may be incomparable or deliberately low and remaining uncertainties are usually arranged in post-bid negotiations of PPP contracts.

On the other end, some more recent PPPs tend to start from a private initiative that search for public co-funding. These so-called Private Sector Initiative (PSI) projects aim to foster private sector activities to promote economic growth in emerging markets with high risk investment opportunities, taking advantage of the ability of the public sector to leverage financing. Private sector involvement is expected to create sustainable employment, spur innovation, improve access to new markets, and/or stimulate trade. Most commonly applied PSI funding mechanism to support innovation and commercial upgrading help to offset some of the initial investment costs for enhancing the competitiveness and performance of the private sector. Careful attention needs to be given to the real additionality of such PSI programs that may not disturb the existing competitive relationships in the home market. Moreover, different financial tools - ranging from guarantees to loans - may be applied to safeguard these interests.

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Why engaging in PPPs? towards a PPP Theory

The rationale for close cooperation between the public and private parties is usually based on principal agency theory that leads to a number of propositions for combining the comparative advantages of the private sector and the public sector. PPPs become an interesting option when independent (or even competing) actors may act as potential partners who - although fundamentally different in nature - collaborate in realizing a joint project, when circumstances are conducive to it, and - indeed because they are different in nature - share the risks involved.

There is a rationale for closer cooperation between the public and the private agents, especially when:

- (a) the public sector wants to leverage its limited resources by using taxpayers money as a catalyst for attracting private funding (more projects can thus be completed and the provision of services increases as a result);
- (b) the public sector wants to avail itself of the skills of the private sector, which could provide better management in a number of situations; and
- (c) the private and the public sectors wish to limit their exposure to the risks involved in large-scale projects (of public interest) by allocating these risks - depending on who is best able to bear them - among themselves or to a third party.

There are particular situations where the partnership may benefit if the private firm shares some of the risks with the public sector, for example when a company is at an early stage of

development and therefore does not have easy access to financial markets (i.e. the risk premium is too high), or when some of the risks involved cannot be insured or adequately diversified by the private firm (e.g. for macroeconomic shocks or for a liquidity risk caused by a credit crunch).

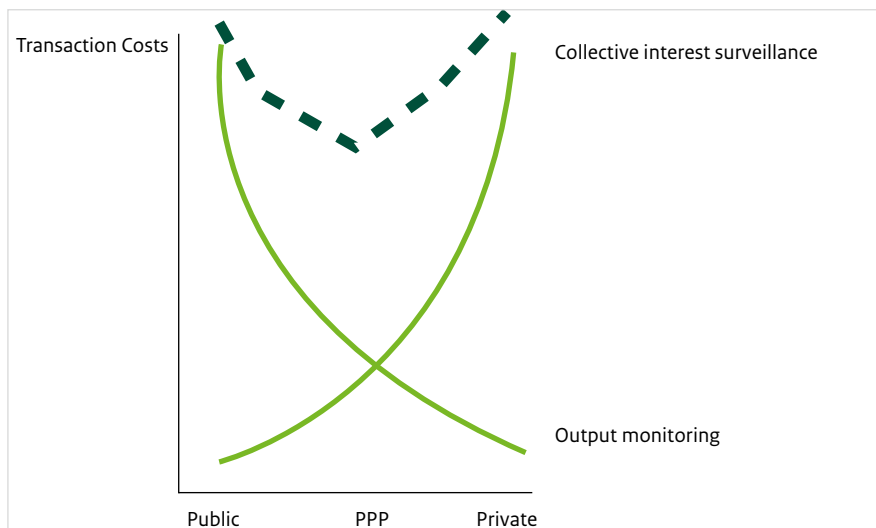
While providing scope for deriving substantial benefits from cooperation, including for sharing risks more efficiently, PPPs also add a new type of risks: those associated with the contractual arrangement (as opposed to those associated with the project) which are often ignored but typically borne by the principal (the taxpayers). Delegating responsibility to the private sector (through a contract) adds a set of compliance risks distinct from those associated with the project.

In particular, in situations where incentives cannot be perfect, they could lead to moral hazard issues on the part of the private agent. This conflict of incentives between partners implies that the public principal will try to reduce these moral hazard issues as best it can, for example by using auditing services to find out which PPP outputs are effectively delivered.

It is considered helpful to clearly recognize the comparative advantages as well as the differences in incentives between public and private execution of a particular program before deciding whether a PPP construction can be considered as the optimum contract choice. Whereas private partners tend to be more capable in providing incentives to maintain productivity (compared to their public counterparts), the public sector is usually better equipped to account for collective externalities (see Figure 5). PPPs may become a preferred option to balance these mixed motives in a cost-effective manner. The counterfactual could be proven by measurement against the proxies of fully public (or private) execution (the so-called Public Sector Comparison or PSC) or through benchmarking.

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Figure 5 PPP Transaction costs



How to engage in PPPs?

The cooperation between public and private agents in a PPP framework asks for clearly specified contractual terms. Key conditions for such a contract include (de Palma et al., 2009):

- Fully specified and enforceable contract between the state and private parties;
- Stable terms of contract over time;
- Measurable output indicators and service delivery that can be monitored;
- Credible punishment in case cheating is proven;
- Clear definition of residual value.

The contractual terms for a PPP arrangements thus require an explicit definition of the mutual contributions (inputs), the generated output and the distribution of the risks and the rights on the residual value of the program. The absence of conscious and systematic attempts to manage and arrange negotiation processes at the start of PPPs may result in contractual arrangements that are largely '*incomplete*' with respect to risk allocation, lifetime costs distribution and rights to residue value allocation (Nisar, 2007). These conditions apply in a western context and are maybe even more important for PPPs in international development cooperation.

It should be recognized that PPPs can also create substantial implicit liabilities for governments when guarantees cost more than scheduled. If governments engage in PPPs, the different types of (internal and external) risks involved need to be specified in a quantitative manner, and expectations regarding value streams over the lifetime of the program should to be made explicit. Without such a full assessment, final judgments about 'value for money' will be virtually impossible. Many PPPs in the field of international development cooperation fail to specify these contractual conditions and the related enforcement mechanisms.

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Annexes

Annex 1 About IOB

Objectives

The remit of the Policy and Operations Evaluation Department (IOB) is to increase insight into the implementation and effects of Dutch foreign policy. IOB meets the need for the independent evaluation of policy and operations in all the policy fields of the Homogenous Budget for International Cooperation (HGIS). IOB also advises on the planning and implementation of evaluations that are the responsibility of policy departments of the Ministry of Foreign Affairs and embassies of the Kingdom of the Netherlands.

Its evaluations enable the Minister of Foreign Affairs and the Minister for Development Cooperation to account to parliament for policy and the allocation of resources. In addition, the evaluations aim to derive lessons for the future. To this end, efforts are made to incorporate the findings of evaluations of the Ministry of Foreign Affairs' policy cycle. Evaluation reports are used to provide targeted feedback, with a view to improving the formulation and implementation of policy. Insight into the outcomes of implemented policies allows policymakers to devise measures that are more effective and focused.

Organisation and quality assurance

IOB has a staff of experienced evaluators and its own budget. When carrying out evaluations it calls on assistance from external experts with specialised knowledge of the topic under investigation. To monitor the quality of its evaluations IOB sets up a reference group for each evaluation, which includes not only external experts but also interested parties from within the ministry and other stakeholders. In addition, an Advisory Panel of four independent experts provides feedback and advice on the usefulness and use made of evaluations. The panel's reports are made publicly available and also address topics requested by the ministry or selected by the panel.

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Programming of evaluations

IOB consults with the policy departments to draw up a ministry-wide evaluation programme. This rolling multi-annual programme is adjusted annually and included in the Explanatory Memorandum to the ministry's budget. IOB bears final responsibility for the programming of evaluations in development cooperation and advises on the programming of foreign policy evaluations. The themes for evaluation are arrived at in response to requests from parliament and from the ministry, or are selected because they are issues of societal concern. IOB actively coordinates its evaluation programming with that of other donors and development organisations.

Approach and methodology

Initially IOB's activities took the form of separate project evaluations for the Minister for Development Cooperation. Since 1985, evaluations have become more comprehensive, covering sectors, themes and countries. Moreover, since then, IOB's reports have been submitted to parliament, thus entering the public domain. The review of foreign policy and a reorganisation of the Ministry of Foreign Affairs in 1996 resulted in IOB's remit being extended to cover the entire foreign policy of the Dutch government. In recent years it has

extended its partnerships with similar departments in other countries, for instance through joint evaluations and evaluative activities undertaken under the auspices of the OECD-DAC Network on Development Evaluation.

IOB has continuously expanded its methodological repertoire. More emphasis is now given to robust impact evaluations implemented through an approach in which both quantitative and qualitative methods are applied. IOB also undertakes policy reviews as a type of evaluation. Finally, it conducts systematic reviews of available evaluative and research material relating to priority policy areas.

Annex 2 research methodology

Step 1: keyword search

We started searching for scientific studies which were published between 2000 and 2013. We searched for these studies between September 24th and October 19th 2012. In Box A-1 we present the keywords we used to find relevant studies.

Box A-1 *Keywords used for finding relevant articles*

Keyword (Boolean operators)
"Public Private Partnership*" AND Devel* AND Impact
"Public Private Partnership*" AND Devel* AND Eval*
"Public Private Partnership*" AND Devel* AND Eff*
PPP* AND Devel* AND Impact
PPP* AND Devel* AND Eval*
PPP* AND Devel* AND Eff*
"Public Private Partnership* in devel*"
"PPP* in devel*"
"Public Private Partnership*" AND Transition* AND Impact
"Public Private Partnership*" AND Transition* AND Eval*
"Public private partnership*" AND Transition* AND Eff*

We used the databases ScienceDirect, Sirius and Web of Science to find scientific studies published in peer reviewed scientific journals, working papers and dissertations. We also searched in several developmental evaluation portals (such as Seach4Dec and Eldis) and concluded our search by checking websites from developmental institutions (such as ADB, AfDB and World Bank). In Table A-1 we present an overview of all used sources.

Step 2: quick scan articles on titles and abstract

Our keyword search resulted in 1294 articles published between 2000 and 2013. We first screened these studies on title and abstract and excluded articles that were not relevant for our review, see Table A-1.

Table A-1 Number of articles collected and remaining after check for relevance title/abstract

Source	Articles ^a	Title/abstract
KEYWORD SEARCH		
1) Scientific literature		
ScienceDirect	308	26
Sirius (excl. ScienceDirect)	59	4
Web of Science (excl. ScienceDirect and Sirius)	667	14
2) Developmental evaluation portals		
Research in Agricultural and Applied Economics	11	1
DAC Evaluation Resource centre	13641 ^b	1
Seach4Dec	4	0
3ie	7	1
Eldis	149	2
3) Developmental institutions		
Asian Development Bank	42	1
African Development Bank	0	0
European Bank for Reconstruction and Devel.	6	0
Inter-American Development Bank	15	1
International Finance Cooperation	26	0
Kreditanstalt für Wiederaufbau	0	0
Worldbank	2062 ^b	0
Subtotal articles keyword search	1294	51
OTHER SOURCES		
4) MFA, proposal phase		
MFA: PSD Evaluation	96	12
MFA: Evaluation reports of Dutch PPPs	21	6
Collected during proposal phase	15	8
Received from experts	7	4
Subtotal articles other sources	139	30
Total number of articles	1433	81

^a Excluding duplicate articles

^b This is the total number of hits (including duplicate hits/articles)

Besides the keyword search we also obtained 139 articles through so-called 'other sources': we received 117 articles directly from the Dutch MFA of which 96 articles MFA used in the PSD evaluation and 21 reports of Dutch PPPs. Thereby we collected 15 articles during the proposal phase of the systematic literature review. Finally we received 7 articles from experts on PPP.

This brings the total amount of articles to 1433. Of those articles 81 remained after quick scanning them for relevance on title and abstract. The studies were mainly excluded for the following reasons⁶:

- Approximately 70% of the 1433 studies were excluded because they clearly didn't have anything to do with Public-Private-Partnerships at all. For instance studies about "Purchasing Power Parities", "pre-pump pulse" and "precise point positioning" etc.
- Approximately 35% of the 1433 studies were excluded because they weren't about developing countries. For instance studies about Public-Private-Partnerships in Switzerland, Australia or Japan.
- Finally a substantial amount of the 1433 studies (circa 35%) were excluded because they weren't an evaluation of Public-Private-Partnerships. For instance a study about "the role of financial advisors in PPP" and "a typology of strategic behavior in PPPs".

Step 3: assessing general characteristics of studies

In step 3 we filled in a list of general characteristics for the remaining studies, such as the year, country, and type of study. For the full list of characteristics we refer to the coding sheet in Annex 3.

Step 4: check on quality (6 knock-out criteria)

We checked the remaining 81 articles on quality. A study which scored insufficient on one of the six criteria in Box A-2 was excluded from our review. If we had doubt about one of the scores the study was included in our review. The six knock-out criteria are derived from a checklist of 20 quality criteria MFA used to assess the quality of PSD evaluations. From this checklist we only used the six knock-out criteria because these criteria could be applied to all (scientific) articles, while most of the other criteria were only applicable to policy evaluations. In Box A-2 we present the six knock-out criteria.

Box A-2 Quality criteria (knock-out)

#	Quality criteria
1	Operationalization of result indicators through indicators ^a
2	The solidity and transparency of data collection, analyzing and processing.
3	The extent to which conclusions can be drawn from the findings.
4	Justification of the representativeness of the sample or case study selection. ^b
5	Independence of sources.
6	Independence of researchers.

^a We have only applied this criterion to case studies.

^b In case of a literature review the score is based on the representativeness (selection) of the underlying studies.

⁶ The total sum is more than 100% because some studies were excluded for multiple reasons.

After our quality check 47 studies remained⁷, of which 18 case studies and 29 reviews, see Table A-2. The list of selected studies can be found in the references.

Table A-2 *Number of articles remaining after check on title/abstract and quality*

	Title/abstract	Sufficient quality
Case study (empirical study of 1 or multiple PPPs)	29	18
Reviews (overview studies/more general studies of effects/ aspects of PPP)	52	29
Total	81	47

Step 5: scoring of remaining case studies on counterfactual

The casual effect of PPP should be indicated by counterfactual analysis. Therefore we scored the 18 remaining case studies on the strength of the counterfactual.⁸ In the ideal situation the study should compare the situation with PPP with the situation that would have happened without PPP. So the outcome of PPP in a region should be compared with a comparable region without PPP ('a robust comparable control group') to indicate the casual effect of the instrument PPP. The latter is the highest level of strength of the counterfactual on the so-called Maryland Scale of Scientific Methods (MSSM). The MSSM is a five-point scale that is used to measure the strength of scientific evidence for a certain intervention. The MSSM rates from 1 to 5, where 5 is the highest level of strength, see Box A-3 (Klein Haarhuis et al., 2005).

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Box A-3 *MSSM levels and description*

Level	Description
Level 1	A correlation between PPP and the outcome variable at a certain point in time
Level 2	A score on the outcome variable before and after implementation of PPP – without a comparable control group (a region without PPP)
Level 3	A score on the outcome variable before and after implementation of PPP measured in an experimental (the region where PPP is implemented) and comparable control group (a comparable region without PPP)
Level 4	A score on the outcome variable before and after implementation of the PPP measured in an experimental and comparable control group – controlling for other factors
Level 5	A score on the outcome variable before and after the implementation of PPP, measured in an experimental and comparable control group – where the PPP was random assigned to experimental and control regions

Source: Klein Haarhuis e.a. (2005)

⁷ The number of studies that survived the quality check is relatively high. This can be explained by the fact that a substantial amount (approximately 80%) of all studies was published in (peer reviewed) scientific journals with similar quality standards.

⁸ Reviews were not scored on the counterfactual because the MSSM is only applicable to case studies (empirical evaluation studies of one or multiple PPP projects).

We find that most case studies scored low on the MSSM. None of the studies had a counterfactual above level 3, see Table A-3.

Table A-3 *Number of case studies by MSSM*

	Title/abstract
Level 1	6
Level 2	9
Level 3	1
Not applicable	2
Total	18

Step 6: in depth analysis of studies

We concluded the systematic review with an in depth analysis of the remaining 47 studies. For each study we collected information on a number of characteristics, such as the results of PPP (output, outcome and impact), the intervention logic and the pathway/strategy to PPP. For the full list of characteristics we refer to our coding sheet in Annex 3.

Annex 3 coding sheet systematic review

Screen the study on relevance for the review

<p>a. Is the study published between 2000 and 2013?</p> <p>b. Is the study about an evaluation of PPP in a development country?</p> <p>c. Does the study contain the following three terms in the title or abstract?</p> <ul style="list-style-type: none"> - Public-Private Partnership(s)/PPP(s) - Eval* OR Imp* OR Effect* OR Emp* OR Evid* - Devel* (or the name of a developing region, such as Tanzania, Ghana etc.)
<ul style="list-style-type: none"> • Yes → the study is included in the review • No → the study is excluded from the review

Note the following characteristics of the study

Author(s)	
Year	
Research question	
Type of study	<ul style="list-style-type: none"> • Casestudy (empirical study of 1 project) • Multiple casestudies (empirical study of multiple projects) • Literature review • Other (survey, position paper, theoretical literature etc.)
Sector	
Country/region	

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Screen the studies on quality criteria (all criteria are rated as sufficient/insufficient or doubtful). Studies which score insufficient on *one* of these criteria (marked) are excluded from the review.

Quality criteria	
Operationalization of result indicators through indicators – <i>This criterion is only scored for case studies</i>	<ul style="list-style-type: none"> • Sufficient • Insufficient → excluded
The solidity and transparency of data collection, analyzing and processing	<ul style="list-style-type: none"> • Sufficient • Insufficient → excluded
The extent to which conclusions can be drawn from the findings	<ul style="list-style-type: none"> • Sufficient • Insufficient → excluded
Justification of the representativeness of the sample or case study selection <i>In case of a literature review: check the study on the representativeness of the underlying selected studies</i>	<ul style="list-style-type: none"> • Sufficient • Insufficient → excluded
Independence of sources	<ul style="list-style-type: none"> • Sufficient • Insufficient → excluded
Independence of researchers	<ul style="list-style-type: none"> • Sufficient • Insufficient →excluded

In case of a case study

Check the study on counterfactual (MSSM)

MSSM	<ul style="list-style-type: none"> • 1: A correlation between PPP and the outcome variable at a certain point in time • 2: A score on the outcome variable before and after implementation of PPP – without a comparable control group (a region without PPP) • 3: A score on the outcome variable before and after implementation of PPP measured in an experimental (the region where PPP is implemented) and comparable control group (a comparable region without PPP) • 4: A score on the outcome variable before and after implementation of the PPP measured in an experimental and comparable control group – controlling for other factors • 5: A score on the outcome variable before and after the implementation of PPP, measured in an experimental and comparable control group - were the PPP was random assigned to experimental and control regions
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Note the following characteristics of the study

Characteristics of PPP	
Research question	
Study area	
Evaluation period	
Goal(s) of PPPs	
Precise definition of PPP	
Financial size of PPP	
Type of PPP	<ul style="list-style-type: none"> • Service contract → excluded, no PPS • Management contract • Concession • Lease/Affermage • BOT (or variant like DBFMO) • Joint venture
Conclusion	
Intervention logic	
Description of PPP	
Reason for PPP	
Expectation of PPP	
Possible alternatives for PPP	
Results	
Output	
Outcome	
Impact	

EHEC criteria	
Efficiency	
Effectiveness	
Sustainability	
Coherence	
Relevance	
Turnover	
Sharing of risk	
Sharing of ownership	
Sharing of knowledge	
Pathways	

In case of a review

Note the following characteristics of the study

Characteristics of PPP	
Research question	
Study area	
Evaluation period	
Type of PPP	<ul style="list-style-type: none"> • Service contract → excluded, no PPS • Management contract • Concession • Lease/Affermage • BOT (or variant like DBFMO) • Joint venture
Goal(s) of PPP	
Conclusion	
Results	
Output	
Outcome	
Impact	

Annex 4 summary tables case studies

Table A-4 Definition and type of PPP (case studies)

Study (author and year)	Subsector	Region	Exact definition of PPP (quote)	Description of PPP	Key char. (see Table 5)	Type	Financial size
Education							
Malik (2010)	Education	Pakistan	NA	Evaluation of the Punjab Education Foundation (PEF). A government organization that sponsors PPPs in education: "PEF supports the efforts of private schools to provide education for the poor".	1,2,3,4	Management contract	3,100 million Pakistan Rupees in 2009
Barrera-Osorio et al. (2011)	Primary schools	Pakistan	NA	Private entrepreneurs can start their own schools and get a fee from the government for each student. The private entrepreneurs are responsible for the establishment and management of the schools.	1,2,3,4	Affermage (However private party responsible for establishment of the school)	NA (total budget of PPP is not mentioned in study)
Energy							
Utzinger et al. (2005)	Petroleum development	Chad Cameroon	NA	The Chad-Cameroon petroleum development and pipeline project is a "a collaborative venture between the consortium and the governments of Chad and Cameroon."	1,2,3,4,5	Concession	3,7 billion

Study (author and year)	Subsector	Region	Exact definition of PPP (quote)	Description of PPP	Key char. (see Table 5)	Type	Financial size
Chowdhury et al. (2009)	Power/electricity	China, Indonesia, India, Pakistan	"A collaboration with stakeholders from private side and one or two bodies from public side such as Central Government, State Government and/or government owned agency, where the public sector has a profound role and can influence financial structuring."	Collaboration of government and power producers to set up independent power producers (IPP).	1, 2, 3, 4, 5	China and India: BOT Indonesia and Pakistan: BOO	Total project costs in US dollar: Million China: 616 Indonesia: 2700 India: 2900 Pakistan: 1833
Environment							
Ezeilo and Animasaun (2012)	Waste Management	Nigeria	NA	Public Private Partnership (PPP) in Household Waste Management in Ilorin (South-West Nigeria). The private company and the Kwara State Waste Management Council (a government agency) are in charge of household waste management services in Ilorin.	1, 2, 4	Management contract	NA
Healthcare							
Ali et al. (2006)	Emergency Medical Services (EMS)	Pakistan	NA	Partnership between the Islamabad's Police Department, NGO's and the private sector. This resulted in the Emergency Medical Service (EMS) called "Rescue-15"	1, 2, 3, 4	Joint venture	NA

Study/author and year	Subsector	Region	Exact definition of PPP (quote)	Description of PPP	Key char. (see Table 5)	Type	Financial size
Kruesmann and Timmermann (2009)	Health sector	India	"By partnership the study means to describe a situation where parties involved, e.g., business, government or NGO share cost and/or investment in the production and/or provision of telecommunications services."	The Women Health Initiative (WHI): a so-called trilateral partnership between Karl Storz (private party), the Deutsche Gesellschaft für Technische Zusammenarbeit (public party) and the United Nations University.	1,2,3,4	Joint venture	NA
Phlix et al. (2011)	Female condoms	Nigeria, Cameroon	NA	Evaluation of the Universal Access to Female Condom (U AFC) program. The program was initiated by four organizations in the Netherlands: the Netherlands Ministry of Foreign Affairs, Oxfam Novib, i+ solutions and Rutgers WPF. Aim of the program was to provide female condoms.	1,2,3,4,5	Joint venture	Nigeria EUR 2,828,487. Cameroon EUR 2,126,880
Newell (2004)	Tuberculosis control	Nepal	NA	"A local working group developed a PPP for control of TB, which included diagnosis by private practitioners, direct observation of treatment and tracing of patients who missed appointments by NGOs, and provision of training and drugs by the Nepal National TB Programme (NTP)."	1,2,4	Joint venture	NA

Study (author and year)	Subsector	Region	Exact definition of PPP (quote)	Description of PPP	Key char. (see table 5)	Type	Financial size
Oyediran (2002)	Malaria malarone	Kenya and Uganda	NA	The Malarone (medicine against malaria) Donation Programme (MDP) was initiated as a pilot project in April 1999 and ended in September 2001. "The foundations of MDP were shaped through consultations involving Glaxo Wellcome, international malaria experts, and various institutions, including WHO and the United Kingdom Department for International Development (DFID)."	1,2,4	Joint venture	NA
Bompart (2011)	Health care/malaria	30 sub-Saharan countries and India.	NA	Partnership (initiated in 2004) between the Drugs for Neglected Disease initiative (DNDi) and sanofi-aventis. DNDi is founded by (mainly) public partners. Sanofi-aventis is a private company.	1,2,3,4,5	Joint venture (two sided product development partnership)	NA
Housing and construction							
Shen et al. (2006)	Construction	Hong Kong	NA	Partnership between Hong Kong government and private sector (Walt Disney Company) on the development of Disney Land. This resulted in a joint venture company: Hong Kong International Theme Parks Limited.	1,2,3,4,5	Joint venture	NA

Study (author and year)	Subsector	Region	Exact definition of PPP (quote)	Description of PPP	Key char. (see Table 5)	Type	Financial size
Infrastructure							
Jamali (2004)	Telecom	Lebanon	"A PPP is an institutionalized form of cooperation of public and private actors, which, on the basis of their own indigenous objectives, work together towards a joint target. PPPs rather imply a sort of collaboration to pursue common goals, while leveraging joint resources and capitalizing on the respective competences and strengths of the public and private partners."	The Lebanese government awarded two "GSM communication concessions to private companies". The private sector would be "responsible for building and operating the network and the public sector would be responsible for regulation."	1, 4, 5	Concession (under a BOT contract)	NA
Kuriyan and Ree (2008)	ICTD (ICT for development)	India	NA	Partnership between Indian Government and IT sector to set-up so-called ICTD telecenters (kiosk were the local community can use computers). The study reviews four ICTD PPP projects. One in Kerala and three in Andhra Pradesh (AP)	1, 3, 4	Lease contract (however the private party was responsible for establishment of the kiosk and purchasing inventory)	NA

Study (author and year)	Subsector	Region	Exact definition of PPP (quote)	Description of PPP	Key char. (see Table 5)	Type	Financial size
Chowdhury (2002)	Telecommunication	Peru, Bangladesh (Business NGO-PPP)		FITEL (Fondo de Inversión en Telecomunicaciones): "a Public-Private Partnership between public authority and private Telecommunications". Note: the study also evaluates a so-called Business NGO Partnership in Bangladesh. But this is not relevant for our review.	1,2,3,4	Concession	Peru: US dollar 3.727.379 installment costs, 998.465 for operating and maintaining.
Other							
Triple value (2009)	Cacao, Soja and Natural stone	Cacao: Ivoorkust, Ghana, Nigeria, Indonesia, Cameroon, India. Natural stone: China, India and Turkije Soja: Brazil, Argentine, Paraguay, Peru, Uruguay, China, India	NA	Evaluation of the so-called Sustainable Trade Agreement ("Initiatief Duurzame Handel, IDH"). This is a partnership between private sector, NGO's and local governments.	1,2	Management contract	Cacao: € 12 mln. Soja: € 650.000 Natural stone: € 460.000

Study (author and year)	Subsector	Region	Exact definition of PPP (quote)	Description of PPP	Key char. (see Table 5)	Type	Financial size
Triodos Facet (2010)	Poverty reduction	Ethiopia, Ghana, Indonesia, Mozambique, Surinam, Vietnam	NA	<p>"The Programme for Cooperation with Emerging Markets (PSOM) was established by the Dutch Minister for Development Cooperation at the end of 1998. In 2008 PSOM came to an end and in 2009 a new, but similar programme was set up: the Private Sector Investment Programme (PSI). The programmes are implemented by the Agentschap NL, the agency of the Ministry of Economic Affairs for International business and cooperation, which is within the remit of the Minister for Development Cooperation."</p>	1,2,3,4,5	Joint venture	391 million subsidy. The subsidy equals 50/60% of the total project costs.
Transport							
de Jong et. al (2010)	Public transport (subways)	China	"There is general agreement that PPP projects involve private parties in the design, construction, maintenance and operation of a public infrastructure on the basis of long-term contracts or arrangements."	PPP projects on subway development in seven metropolitan areas in China. Varying from BOT to joint ventures.	1,2,3,4,5	Various (BOT, BDOT and joint ventures)	100,53 billion (total)

Table A-5 Intervention logic (case studies)

Study (author and year)	Rationale (why PPP)	Type of failure	Goal of PPP	Expected results
Education				
Malik (2010)	<p>Financial reasons, development reasons</p> <p>"The Government of Pakistan alone cannot accomplish the gigantic task of providing quality education and meeting the targets of the Millennium Development Goals (MDGs) and Education for All (EFA). That is why the government now supports the use of public private partnerships (PPPs) in its efforts to improve the equity and quality of the educational system"</p>	<p>Government failure:</p> <p>The Government of Pakistan alone cannot accomplish the gigantic task of providing quality education and meeting the targets of the Millennium Development Goals (MDGs) and Education for All (EFA).</p>	<p>"Affordable quality education for the underprivileged"</p> <p>"PEF Supports the efforts of private schools to provide education to the poor".</p> <p>Specific goals for projects:</p> <ul style="list-style-type: none"> - The CPDP (Continuous Professional Development Program) aims to improve student learning outcomes in low-tuition private schools by providing effective mentoring to teachers. - TICCS (Teaching in Clusters by Subject Specialists): education by visits of subject specialists. - The EVS (Education Voucher Scheme) aims to promote freedom of choice, efficiency, equity, and social cohesion. 	NA
Barrera-Osorio et al. (2011)	NA	NA	<p>"By giving to local private entrepreneurs responsibility for operating these schools, coupled with appropriate incentives and oversight from the government, the PPRS program seeks to take advantage of the local knowledge and underutilized resources within these communities to provide viable, appropriate, and affordable education in these remote, and previously neglected, areas."</p>	<p>It is hoped that the structure of the subsidy, a function of the number of children enrolled, introduces a strong incentive for the school operator to undertake investments and actions to attract children to school.</p>
Energy				
Uttinger (2005)	NA	<p>Market failure:</p> <p>"The high costs associated with oilfield developments and transportation, paired with political instability, hindered its earlier extraction".</p>	<p>"the project was seen as a unique opportunity for Chad to escape its extreme poverty. Second, there was a need for project implementation in an environmentally and socially sound manner, to avoid negative impacts apparent in other petro states in the developing world"</p>	NA

Study (author and year)	Rationale (why PPP)	Type of failure	Goal of PPP	Expected results
Chowdhury et al. (2009)	<p>Financial reasons</p> <p>"Attracting foreign funds for infrastructure project development is one of the critical issues for developing countries. Domestic commercial banks are reluctant to contribute heavily to the capitalization of large projects. The domestic capital market is not strong and unstable too. Therefore, the reality is, most of the funding generates from international financial institutions, private offshore banks and export credit agencies. Government has to seek forward to these institutions where it has strong tie and good relationship to mobilize finance with ease. The collaboration with the government protects the companies against commercial and political risks of not being paid while operating abroad."</p>	NA	Provide developing countries with power	NA
Environment				
Ezebedo and Animasaun (2012)	<p>Financial reasons</p> <p>In the past the public sector had the primary responsibility for the provision of household waste management services but it was not very successful. In order to increase effectiveness in the service delivery the Kware State Government contracted a private company in 2004 and was charged with the responsibility of keeping Iloring clean, and to formalize the recycling process.</p>	<p>Government failure:</p> <p>The government was not able to successfully fulfill the responsibilities of household waste management services.</p>	<p>An improvement of the household waste management in Ilorin (compared to the situation in which just the public sector had the primary responsibility for the provision of household waste management services).</p>	<p>"It was expected that the PPP intervention will be more successful than the previous situation in where the public sector was responsible for household waste management".</p>
Healthcare				

Study (author and year)	Rationale (why PPP)	Type of failure	Goal of PPP	Expected results
Ali et al. (2006)	NA	NA	"The main idea was to boost public confidence and to inculcate a spirit of citizen-friendly policing with community participation. "	"It was meant to win citizens confidence and to improve the tarnished public image of the police."
Kruessmann and Timmermann (2009)	<p>Development reasons, political reasons</p> <p>"Public private partnerships suggest one possibility for effective action [to address complex problems such as illegal abortions, poor infrastructure, inadequate emergency transport systems etc]. In recent years these partnerships have come to be seen as viable options for improving health care. In India, the government acknowledges that partnerships with the private sector -both the for-profit and non-profit- are important to attain public health goals and to improve the health delivery system."</p>	NA	"The goal of the Women's Health Initiative (WHI) is to improve reproductive and maternal health for woman and girls in India. The projects principal objective was to train selected doctors in endoscopic methods of diagnoses and therapy at six Endoscopy Training Centres (ETCs) established for the project at existing Indian hospitals (four public and two private). This straightforward objects was augmented to a new standard of innovation through a focus on 'self-learning', guided by transparent and independent assessment, and coupled with explicit consideration of the United Nations Global Compact (UNGC) initiative."	NA

Study (author and year)	Rationale (why PPP)	Type of failure	Goal of PPP	Expected results
Phelix et al. (2011)	<p>Financial reasons, political reasons</p> <p>“In order to obtain the program goals a public-private approach is necessary to be sure the female condom gets the attention it deserves by putting it on the political agenda and ensuring funding”.</p>	<p>Market failure:</p> <p>Only the Female Health Company (FHC) has introduced female condoms on the global market. Companies wishing to enter the market with variations of the female condom are facing challenges to marketing their products on a large scale for several reasons. As a consequence, potential (larger) competitors have come to the conclusion that investing in female condoms is not commercially viable. Therefore, to date, the monopoly position for FHC continues to exist.</p>	<p>“The Universal Access to Female Condoms Joint Programme aims to make female condoms accessible, affordable and available for all”.</p>	<p>The establishment of an active international platform with more than 50 organizations and at least six donor agencies supporting and participating in the platform; The development, distribution and use of the advocacy toolkit; The inclusion of the female condom in gender and health policies by one additional UN agency and three donor agencies; The guaranteed financial commitments of at least three other donor agencies (other than Hewlett Foundation, DANIDA and DGIS) to the UAFC Joint Programme, for a total amount of EUR 17.8 million.</p>
Newell (2004)	<p>Efficiency reasons</p> <p>Normally tbc treatment is for 50% provided by private practitioners concentrated in the urban centres. These patients are unregistered and therefore hard to monitor these patients. A ppp can be the solution to this problem</p>	<p>Market failure:</p> <p>“In urban areas, 50% of patients with TB are estimated to be managed in the private sector (14) (almost all licenced private practitioners are concentrated in the urban centres); these patients are unregistered. The quality of care for TB patients provided by private practitioners generally is very poor (15), leading to delayed cure, increased numbers of chronic transmitters, and drug resistance, and hence to an increasing incidence of TB”</p>	<p>“Avoid poor or incomplete treatment, which can lead to relapse, increased transmission, and drug-resistant TB, WHO and the International Union Against Tuberculosis and Lung Disease advocate use of the DOTs strategy. A key component of this strategy is direct observation of treatment (DOT); that is, the patient should be directly observed as he or she swallows each dose of anti- TB treatment for at least the first two months of treatment by a person responsible to the health services.”</p>	<p>- higher cure rates - higher treatment completion rates - less people diagnosed with tbc</p>

Study (author and year)	Rationale (why PPP)	Type of failure	Goal of PPP	Expected results
Oyediran (2002)	Financial reasons "The complex production process makes the drug expensive to manufacture and its price is beyond the reach of most individuals and health care providers in countries where malaria is endemic."	Market failure: "Glaxo Wellcome undertook not to encourage or commercially promote the therapeutic use of Malarone in areas of endemicity outside the donation programme and not to sell the drug at a discounted price in countries where the disease was endemic, since its high price was considered a major barrier to inappropriate use".	-help reduce the global burden of malaria -avoid premature widespread and inappropriate use of Malarone so to minimize the development of resistance that might make the drug ineffective for future malaria control.	NA
Bompart (2011)	NA	NA	"In December 2004, DNDI and sanofi-aventis decided to join forces to form a public-private partnership with the objective of developing a non-patented fixed-dose combination of artesunate and amodiaquine that would be made available at prices lower than those available at the time , i.e. less than US\$1 for an adult treatment and less than US\$0.50 for a child's treatment in the nonprofit public sector".	It was expected that the new combination (at that time existed only as a non-fixed combination of the two drugs) would be needed to provide effective treatment against malaria.
Housing and construction				
Shen et al. (2006)	NA	NA	"Provide recreational facilities for general public in Hong Kong and contribute to the Hong Kong economy ".	"The government anticipated that the park will generate substantial long-term economic returns to the territory and is a key strategic infrastructure component of a renewed and reinvigorated motivation to strengthen and consolidate Hong Kong's position as a must-see tourism destination"
Infrastructure				

Study (author and year)	Rationales (why PPP)	Type of failure	Goal of PPP	Expected results
Jamali (2004)	<p>Financial reasons</p> <p>"The Lebanese economy has traditionally been dominated by the private sector. After nearly two decades of civil unrest, the performance of the public sector deteriorated due to physical damage, lack of government supervision, and scarcity of resources. The government considered restructuring and reforming public enterprises, which required significant financial resources that were lacking. Considering the cumulative negative effects of operational, financial, institutional, and environmental problems, PPPs were proposed as a possible solution to leverage needed technical and managerial expertise, secure capital injections and greater efficiency."</p>	<p>Government failure:</p> <p>Restructuring and reforming public enterprises required significant financial resources that were not available in the public sector.</p>	<p>Setting up an affordable telecommunication network.</p> <p>See also rationale</p>	<p>An affordable GSM service, which will result in many subscribers</p>
Kuriyan and Ree (2008)	<p>Ideological reasons, political reasons</p> <p>- "First, PPPs in general gained support in the 1990s in an international environment that strongly supported economic liberalization and less state intervention."</p> <p>- "Second, India's much acclaimed success in the IT industry prompted the state to distribute the benefits of ICTs more broadly through ICT and Development".</p>	<p>Government failure:</p> <p>"Private sector firms, multilateral organizations, and state officials themselves claim that PPP models are becoming the norm for ICTD projects in response to stretched development budgets, the public sector's inefficiency as the sole provider of services for the poor, and the loss of state power in a liberalizing global economy (Cerny, 1995; McMichael, 1996)".</p>	<p>Kerala: "The government initiated the Akshaya project in 2002 to establish over 5000 networked multi-purpose community technology centers, thus eventually providing education and governance services through ICT access to the entire population. It also aimed to make at least one person in each of 650,000 families in the state e-literate through an e-literacy or basic computer training course subsidized by the government"</p> <p>AP (3 projects): "...all three AP projects share the goals of efficient and transparent delivery of services..."</p>	<p>The PPP would stimulate economic and social development of India.</p> <p>See also goal.</p>

Study (author and year)	Rationale (why PPP)	Type of failure	Goal of PPP	Expected results
Chowdhury (2002)	<p>Efficiency reasons</p> <p>Peru wanted to design a policy which maximized efficiency by ensuring a competitive environment but at the same time provides universal service. Therefore they implemented FITEL, a fund which would subsidize private telecom companies to provide universal access. These subsidies are allocated through an auction.</p>	<p>Government failure:</p> <p>“According to the Population and Housing Census of 1993, around 6 million inhabitants in Peru live in more than 70,000 rural settlements that are characterized by lack of basic infrastructure services such as electricity, water and sewage”</p>	<p>“The primary objective of the fund is to provide access for rural people to public telecommunications services where the private sector acts as a telecommunications provider. The target of the authority is to install at least one public phone for each village.”</p>	<p>“To have an idea of the impact and benefit of the project, it can be mentioned that the execution of this project will considerably decrease the distance to the nearest telephone for the communities, and will increase the proportion of the population with telephone access in that zone from 48 percent to 88 percent.”</p>
Other				
Triple value (2009)	NA	NA	<ul style="list-style-type: none"> - More sustainable production of cacao, soja and natural stone. - Reduction of poverty in developing countries. - Improve environmental quality and biodiversity. - Improve sustainable trade in value chains. 	<p>Cacao: more certified and trained farmers. Production of certified cacao. Increase of productivity and quality.</p> <p>Natural stone (2009): implementation of code of conduct. Improvement of labour conditions. Implementation of health supplies for migrants.</p> <p>Soja: doubling of participating producers in program (members). Increase the number of involved countries (supply and demand). Increase of members from 45 to 122.</p>
Triodos Facet (2010)	<p>Developmental reasons, Risk diversification</p> <p>“To contribute to poverty reduction by stimulating sustainable investments in innovative business in selected developing countries. The intention is to encourage investment project that would not otherwise have been carried out because of the high product/market risks.</p>	NA	<p>“The objective of PSOM (Cooperation Emerging Markets) is to motivate Dutch companies to invest in innovative pilot projects or in lasting trade relationships in developing countries.”</p>	NA

Study (author and year)	Rationale (why PPP)	Type of failure	Goal of PPP	Expected results
<p>Transport</p> <p>de Jong et. al (2010)</p>	<p>Financial reasons, risk diversification</p> <ul style="list-style-type: none"> -1st subway line in Chongqing: "The Chongqing government chose PPP due to fiscal pressures and the wish to transfer project risks to a private player." -1st subway line in Harbin: "Since the Harbin government needed to collect 38.4 billion Yuan for the subway line alone, it had to rely on private finance and an extensive transfer of risks to private players." -Extension of the 4th subway line in Shenzhen: "A Build-Develop-Operate-Transfer (BDOT) procurement model is being used in which private players subsidise both the construction and operations from profits obtained in real estate management, freeing the government from the duty to subsidise public transport." -3rd subway line in Shanghai: NA (all parties in this PPP are public owned) -Olympic Games subway lateral in Beijing: NA -4th subway line in Beijing: "Fiscal pressures drove the Beijing government to embrace the idea of setting up a joint venture structure, the main advantage of which is that long-term subsidies to the subway operator will not be necessary (Chai, 2006)." -5th subway line in Beijing: NA 	<p>Government failure:</p> <p>Due to fiscal pressures and the wish to transfer project risks the government involved a private party.</p>	<p>-1st subway line in Chongqing: "For the subway line, the main objective was to create an intermodal network by connecting two bridges"</p> <p>-1st subway line in Harbin: "The main drivers behind the investment scheme were to combat Harbin's growing congestion problems, to attempt to apply some innovative financial constructions and to develop seamless transfer between different transport modes"</p> <p>-Extension of the 4th subway line in Shenzhen: "rapid increases in car traffic in the city (with 800 extra cars on the road each day leading to a doubling of car ownership every 2–3 years) and the goal of traffic congestion mitigation"</p> <p>-3rd subway line in Shanghai: NA (all parties in PPP are public owned)</p> <p>-Olympic Games subway lateral in Beijing: "Building the 8th subway line ahead of schedule as an Olympic subway lateral was justified by the expected increase of traffic demand during the Olympic Games and the desire to improve the accessibility of the Olympic Area by building links to other existing subway lines."</p> <p>-4th subway line in Beijing: NA</p> <p>-5th subway line in Beijing: "The main motivation of this project was the need for a direct and fast North-South link through Central Beijing to relieve congestion and also absorb a certain amount of passengers during the Olympic Games in 2008"</p>	<p>NA</p>

Table A-6 Results of PPP (case studies)*

Study	Main PPP pathway	Output (Immediate results/production)	Outcome (Intermediate results /short term effect on community)	Impact (Net-effect)	MSSM
Education					
Malik (2010)	<p>Professional development</p> <p>"The Board of Directors formulated the strategy of the PEF, adopting a flexible approach. The foundation would help provide better education to the poor through the private sector by offering teacher training and professional development for private schools in less affluent areas, and by providing financial assistance to schoolchildren through vouchers given to households in the slum areas."</p> <p>Monetary rewards</p> <p>"The PEF would also grant monetary rewards and financial assistance to schools with good track records, and would make a special effort to encourage the enrollment of female students."</p>	<p>+</p> <p>- "A sharp rise in the number of schools and a meteoric rise in the number of students between 2005 and 2008. For starters, there was an increase of 720.5% in the number of students in 2006 compared to 2005. The increases continued every year: 264.6% in 2007, 75.4% in 2008, and 17.7% in 2009. By 2008 the PEF, through the FAS program, supported 1,337 schools with 529,210 students".</p> <p>- "The PEF trained 86,027 teachers from 2005 to 2009, including 17,205 male teachers (20%) and 68,822 female teachers (80%)."</p> <p>- "The Teaching in Clusters by Subject Specialists (TICSS) program improved the academic performance of the students, raising the mean grade point average from 33% to 55% within the 3 years of the programs operation.</p> <p>- "In 2006 1053 students were benefiting from the education voucher scheme, in 2009 this number was raised to 15000."</p>	<p>+</p> <p>-In Pakistan, more than 40% of students drop out of school by the time they reach Grade 4, but in FAS partner schools the dropout rate is zero.</p> <p>-a continuous improvement in the percentage of students scoring more than 90% in the QATs from about 1% in 2006 to over 17% in 2009, and</p> <p>- a continuous decrease in the percentage of students scoring under 40% from over 21% in 2006 to just over 4% in 2009.</p> <p>"- The EYS has also had the effect of significantly reducing child labor." [Note: significantly is a rather strong term because there is no control group].</p>	NA	2

*Legend: + (in general positive effect) - (in general negative effect), o (in general no effect)

Study	Main PPP pathway	Output (Immediate results/ 'production')	Outcome (Intermediate results /short term effect on community)	Impact (Net-effect)	MSSM
Barrera-Osorio et al. (2011)	NA	+ "Interested entrepreneurs were asked to apply to the program by submitting proposals to set up and operate primary schools in rural communities within these districts."	+ "The intervention has had a large impact on enrollment , suggesting that the previously low enrollment rate - ranging between 23.74% and 29.35% across the three groups according to the baseline, or 31.13% in the census for control villages - was being driven largely by supply constraints rather than a lack of demand. "	+ (idem outcome) "The intervention has had a large impact on enrollment , suggesting that the previously low enrollment rate - ranging between 23.74% and 29.35% across the three groups according to the baseline, or 31.13% in the census for control villages - was being driven largely by supply constraints rather than a lack of demand. "	3

Study	Main PPP pathway	Output (Immediate results/'production')	Outcome (Intermediate results /short term effect on community)	Impact (Net-effect)	MSSM
Energy Utzinger (2005)	<p>Close monitoring of health impact</p> <p>The strategy is described in the so-called Environment Management Plan (EMP): Plan 80-81: "The project operators quarterly reports demonstrate that grand efforts have been made to avoid or mitigate potential negative health impacts among workers since the beginning of project implementation in October 2000."</p> <p>"measures include workers onsite safety training sessions, provision of special working cloths (e.g. safety shoes) and other personal protective gears (e.g. hearing protection), prompt access to consultation and medical treatment provided by well-trained and adequately equipped on-site medical teams."</p> <p>"Mitigation measures to avoid exacerbating the spread of HIV/AIDS and other STIs that already exist in the project areas, include information, communication and education campaigns for project workers, the ready availability of condoms"</p> <p>"Prevention or mitigation of malaria is facilitated through the implementation of the operators generic malaria control programme"</p>	<p>+</p> <p>"malaria incidence rates among project workers are several-fold lower than those observed among inhabitants of the region." +/-: "the number of diagnosed STIs per 1000 project workers was consistently higher in Cameroon than in Chad" +/-: "while the proportion of STIs diagnosed among project workers in Chad shows a decreasing trend from January to March 2003 onwards, the opposite has been observed in Cameroon from June -September 2002 to June-September 2003."</p>	NA	NA	2
Chowdhury et al. (2009)	NA	+	<p>The PPP power projects resulted in power distribution to the country. The PPP produced the following percentage of power (in terms of the total electricity production in the country): 0.33% (China), 5% (Indonesia), 2.6% (India) and 9.4% (Pakistan)</p>	NA	1

Study	Main PPP pathway	Output (Immediate results/ 'production')	Outcome (Intermediate results /short term effect on community)	Impact (Net-effect)	MSSM
Environment					
Ezebilo and Animasaun (2012)	NA	NA	+/- "Twenty-three percent of the respondents were of the opinion that the public-private partnership had improved house-hold waste management services, whereas 77% said it had not improved the services. "Based on the respondents' opinion regarding the public-private sector partnership, the partnership has not been able to improve the household waste management services in Ilorin. p784".	NA	1
Healthcare					
Ali et al. (2006)	NA	+ "An incremental trend in calls requiring medical services"	+ "The mean response time of Rescue-15 vehicles was approximately 10 min. Close to international standards"	NA	2
Kruessmann and Timmermann (2009)	NA	NA (Evaluation focuses on process, role of different parties etc.)The process itself can be seen as a success: "partners were engaged and remained connected and committed, ETCs were established, equipment was supplied, training was undertaken, and procedures were carried out while striving for transparent, open and accountable process."	NA	NA	NA

Study	Main PPP pathway	Output (Immediate results/ 'production')	Outcome (Intermediate results /short term effect on community)	Impact (Net-effect)	MSSM
Phelix et al. (2011)	<p>Threefold strategy: R&D support, large scale programs, political agenda setting</p> <p>"To realize its goals, the UAFC Joint Programme has a threefold strategy based on</p> <ul style="list-style-type: none"> - Supporting research and development on female condoms and their actual manufacturing; - Supporting two large-scale country programmes in Nigeria and Cameroon, including a comprehensive package of activities to increase the demand for female condoms, to ensure a steady supply of the commodity and to ensure that the (promotion and availability of) female condoms (as well as training and IEC activities) are included in regular service provision within on-going national programmes; - National advocacy in the UAFC Joint Programme countries (Nigeria and Cameroon) and international advocacy to ensure that the female condom gets the attention it deserves by putting it on the political agenda and ensuring funding." 	<p>+</p> <ul style="list-style-type: none"> - The UAFC Joint Programme has been successful in negotiating the FC2 price with the Female Health Company so as to obtain a price of USD 0,35 per unit, during the lifetime of the UAFC Joint Programme. - The UAFC Joint Programme has successfully supported three female condom manufacturers in order to obtain the WHO approval for three new female condom types, which results in more condom types available. 	<p>+</p> <ul style="list-style-type: none"> - More women who use a female condom. - The UAFC Joint Programme has become a legitimate and credible advocate for the female condom. This has resulted in increased attention for the female condom at international level and in the two programme countries. 	NA	1

Study	Main PPP pathway	Output (Immediate results/ 'production')	Outcome (Intermediate results /short term effect on community)	Impact (Net-effect)	MSSM
Newell (2004)	<p>Knowledge sharing, standards</p> <p>"Set up a DOTS (directly observed of treatment) committee to foster greater understanding of TB and control of TB among community representatives ". Distribute tailor-made case management guideline booklets to private practitioners to make them aware of acceptable diagnostic criteria, drug regimens, and principles of case management "</p> <p>Identify suitable providers of free sputum-smear microscopy and make private practitioners aware that their patients can use them "</p> <p>Identify suitable providers of directly observed treatment (DOT) and make private practitioners aware that they can refer patients to them."</p> <p>Identify appropriate groups to be responsible for late-patient tracing and ensure that DOT providers are aware they can use them "</p> <p>"Provide free anti tuberculosis drugs to a limited number of appropriate nongovernmental organizations and private organizations but not to individual private practitioners " Identify a chest specialist prepared to accept free referral of complicated cases" Advise all private practitioners of the services available to them".</p>	<p>+</p> <p>In the first 36 months after implementation, 1328 patients with TB were registered in the public private partnership; 210 (15.8%) of these were referrals from private practitioners, the remainder being self-referrals to DOTS centres.</p>	<p>+</p> <p>"The establishment of the public private partnership increased case notification of sputum-positive patients in the study area from a pre-implementation level of 54 per 100 000 to 102 per 100 000 post-implementation, a rate that has remained steady over the three years of the public private partnership. Over the first three years, treatment success rates were >90%, and <1% of patients defaulted, more than exceeding international targets."</p>	NA	2
Oyediran (2002)	NA	<p>+</p> <p>"Of the 161079 patients clinically diagnosed at the pilot sites as having malaria, 1101 (0.68%) met all the conditions for participation and received directly observed treatment with Malarone. MDP had a positive effect at the pilot sites by improving the diagnosis and management of malaria."</p>	NA	NA	1

Study	Main PPP pathway	Output (Immediate results/ production)	Outcome (Intermediate results /short term effect on community)	Impact (Net-effect)	MSSM
Bompert (2011)	NA	+ "ASAQ Winthrop was registered in 30 sub-saharan African countries and in India, with over 80 million treatments distributed in 21 countries. 6 million treatments in 2008, 25 million in 2009, over 45 million in 2010".	+ "Before ASAQ Winthrop's introduction to the marketplace, the price for most ACTs in public markets was approximately 2.50 USD for an adult treatment. After ASAQ Winthrop's introduction, the global reference price for ACTs on public markets decreased to approximately 1 USD"	NA	2
Housing and construction					
Shen et al. (2006)	NA	NA study is about project risks	NA: study only assesses project risks	NA: study only assesses project risks	NA
Infrastructure					
Jamali (2004)	NA	+ "By all quantitative measures, the PPP experience has been a success. The cellular market peaked at 759,300 subscribers in June 2001, an increase from 267,350 in July 1997" "The Lebanese mobile segment has indeed reached high penetration levels even by regional standards. Lebanon had in 2002 a ratio of cellular subscribers per capita higher than Egypt, Morocco, Jordan, Saudi Arabia and Oman" The operators have also increased their international coverage. Roaming arrangements have reached 67 countries and more than 75 operators for Ceilis and 80 live networks in 55 countries for Libancell."	NA	NA	2

Study	Main PPP pathway	Output (Immediate results/ production)	Outcome (Intermediate results/short term effect on community)	Impact (Net-effect)	MSSM
Kuriyan and Ree (2008)	<p>Interventionalist strategy (Kerala)</p> <p>Close government involvement with PPP. "In Kerala the state sees the telecenters as development interventions and remains committed to its tradition of promoting social welfare" ... "It subsidizes an e-literacy training phase to make computer education accessible and affordable for all. It assists entrepreneurs to repay their loans; it does this partially by paying entrepreneurs for each household whose member attends the e-literacy training."</p> <p>Outsourcing strategy (AP)</p> <p>Less state involvement in PPP In AP the state "does not make concerted effort to target poor users or to emphasize social goals".</p>	<p>0</p> <p>Financial benefits for entrepreneurs in ICTD projects are minimal. A non-random sample of entrepreneurs indicates that the mean profit is positive in Eseva (\$134 a month) and Akshaya (\$5 a month) but negative in RSDPs (-\$22 a month) and Rajiv (-\$36 a month).</p>	<p>-</p> <p>Results indicate that the middle class instead of the poor is mostly benefiting from the telecenters:</p> <p>"Most telecenter users in Kerala and AP are men with secondary school education or higher who earn well over \$262/year, 19 the average per capita income for rural India. Following (Kashyap & Raut, 2007), the majority can be characterized as middle or high income, not just by their wealth but also by their lifestyles and aspirations."</p> <p>"The telecenter projects, the most prominent face of ICTD in Kerala and AP, are not (yet) delivering any form of ICTD to the poorest. Nevertheless, our research shows that the attempt to portray a new form of government is beginning to influence at least some segments of the rural population."</p>	NA	1

Study	Main PPP pathway	Output (Immediate results/ 'production')	Outcome (Intermediate results /short term effect on community)	Impact (Net-effect)	MSSM
Chowdhury et al. (2009)	<p>Contractual obligations</p> <p>"To ensure universal access, Peru has followed a two-pronged policy. First contractual obligation with the operators to install and maintain public phones in all localities with more than 500 inhabitants by the end of 1999. "</p> <p>Allocating funds through auctions</p> <p>"Second, the setting up of a development fund named FITEI was invited to finance the operation of telecom services in places where private operators do not provide services. The fund is allocated by an auction. "</p>	<p>+</p> <p>Extra telephone lines and public telephones. Note: some projects still in implementation phase.</p>	<p>NA</p> <p>Survey under households to check users opinion on criteria of universal service access:</p> <p>"About half of the surveyed households consider the present service provided under the FITEI project is better than average (good) and the overwhelming majority consider that the service is not poor".</p>	NA	1
Other					
Triple value (2009)	<p>Standards, labels and knowledge platforms</p> <p>Cacao: set up a standard for durable production, sharing knowledge between farmers and training farmers.</p> <p>Natural stone: introduction of a so-called international sustainable stone label, creating and stimulating the supply of durable produced natural stone, creating demand for durable produced natural stone on Dutch market.</p> <p>Soja: create a platform for sharing knowledge on soja production, create a code of conduct for the soja sector, expansion of the RTRS (Round Table on Responsible Soy)</p>	<p>+</p> <p>Cacao 2009: 1824 farmers certified, 2800 farmers trained, productivity increase of 25 percent. Quality improved.</p> <p>Natural stone 2009: code of conduct implemented. Improvement of labor standards. Policy proposal on education of migrant children.</p> <p>Soja: increase of RTRS by 42 members. RTRS principles for responsible soy is enforced by all members of the RTRS.</p>	<p>NA</p> <p>Evaluation is a quickscan.</p>	NA	2

Study	Main PPP pathway	Output (Immediate results/ 'production')	Outcome (Intermediate results/short term effect on community)	Impact (Net-effect)	MSSM
Triodos Facet (2010)	NA	+ "Since 1999, a total of 656 PSOM/PSI projects were approved in 56 countries. Of these projects, 205 have been completed, 275 are ongoing and 176 have stopped, 120 of which prematurely. Most of the applicants are Dutch, male and the owner of a small or medium-sized business".	+ "The average PSOM/PSI project generates 81 direct jobs (n= 197), which is considerably higher than the proposed average of 55 direct jobs (n=55), but lower than the average found in 2005, which was 147 jobs/project. - For 52 of the -sample of- 60 completed projects the type of innovation could be mentioned. In 17 projects, the innovation can best be described as the launch of a new product in the recipient country, in 23 cases a new technology was used to produce an existing product and in four cases a combination of a new technology and a new product was found. In eight cases a different type of innovation was proposed."	NA	2

Study	Main PPP pathway	Output (Immediate results/'production')	Outcome (Intermediate results /short term effect on community)	Impact (Net-effect)	MSSM
Transport de Jong et. al (2010)	NA	<p>0</p> <ul style="list-style-type: none"> -1st subway line in Chongqing: "...Apart from this cost increase, the partnership so far appears quite successful." -1st subway line in Harbin: NA -Extension of the 4th subway line in Shenzhen: "Although the schedule indicated that construction activities were to take place from 2004 to 2008 and be completed at the end of this time, large-scale construction had not yet even begun in 2009. To date, MTR has earned profits from the development of real estate but has not yet put this money into subway construction, which has been postponed time and again. As such, the project cannot be regarded as a success story" -3rd subway line in Shanghai: "Shanghai's 3rd subway line can generally be regarded as a solid, innovative project, where time schedules were met and the quality of construction and operation tasks have been largely sufficient. Precise information on costs could not be obtained however." -Olympic Games subway lateral in Beijing: "This BT project can be considered successful according to many criteria. Quality evaluation, eventual project costs and time schedule, all were favourable" -4th subway line in Beijing: "It is still premature to speak of success or failure in this project, but construction costs, schedule and quality have received positive appraisals to date" -5th subway line in Beijing: "The end result is that the project was completed on time, construction and service quality are above standard and that public funding (partly derived from public loans) rather than private finance paid for this project." 	NA	NA	1

Annex 5 summary table reviews (overview studies)

Table A-7 Summary table reviews*

Study (author and year)	Subsector	Region	Topic (title)	Output	Outcome	Impact
Spratt and Collins (2012)	Agri-infrastructure	region: Africa: 24.7% of the studies Asia: 30.8% of the studies Europe: 12.1% of the studies LAC: 32.4%	<p>"Development Finance Institutions (DFI) and Infrastructure: A Systematic Review of Evidence for Development-Additionally"</p> <p>Spratt and Collins looked at the effect of DFI on so-called:</p> <p>Financial additionality ("does DFI engagement crowd out (i.e. reduce) or create additional (i.e. increase) private investment in infrastructure projects?")</p> <p>Demonstration additionality ("What influence does DFI engagement have on the probability of subsequent private sector funded projects in the same jurisdiction?")</p> <p>Design and policy additionality ("What influence does DFI engagement have on infrastructure project design and the policy context within which projects occur?").</p>	NA	<p>+/-</p> <p>Financial additionally: +: 18 cases 0: 10 cases Not possible: 8 cases</p> <p>Demonstration additionally: Positive: 5 Negative or failed attempt: 1</p> <p>Design additionally: Growth: 14 cases Poverty reduction: 6 cases Failed: 6 cases</p> <p>Policy additionally: Improved legal framework: 4 cases Failed, no room for improvement: 1</p>	NA

*Legend: + (in general positive effect) - (in general negative effect), 0 (in general no effect)

Study (author and year)	Subsector	Region	Topic (title)	Output	Outcome	Impact
Hartwich and Tola (2007)	Agriculture	Latin America	"Public private partnerships for agricultural innovation: concepts and experiences from 124 cases in Latin America"	NA	+ The perception of partners with regard to the benefits of the PPs was extremely positive . This indicates that partnerships for agricultural innovation in Latin America serve the purpose. Although, there is empirical evidence that public research and private firms involved in agricultural production, processing and marketing products have not been able to form viable partnerships that profit from the maximum positive benefits of synergy and joint learning that partnerships can generate.	NA
Poulton and Macartney (2012)	Agriculture	Africa	Public Private Partnerships in Agricultural value chains in Africa	NA	NA	NA

Study (author and year)	Subsector	Region	Topic (title)	Output	Outcome	Impact
Pfisterer et al. (2009)	Agriculture (horticulture)	East Africa	Review of the WSSD partnership: the set-up of a decision making platform (project committee (PC) which entails public, private and civic organizations in the country of concern and the Netherlands and b) projects in cooperation of several actors"	+/- "The finalized projects under review largely met their original objectives."... "For ongoing projects some first outputs were identified". "When examining the results it demonstrated that most outputs are results of explorative studies such as business plans, reports or frameworks . Almost all projects plan to implement these outputs in project extension phases."	NA Too early in process to draw conclusions.	NA
Energy						
United Nations (2011)	Power sector	Sub-Saharan Africa	Challenges, trends and best practices in PPPs in Africa's energy sector	+ The private sector helps meet investment needs in the energy sector. Without private investments the power infrastructure needed cannot be realized.	NA	NA
Environment						
Lund-Thomsen (2007)	Leather Tannery pollution control	Pakistan	Impact of Public-Private Partnerships in the Global South	+ Improved sanitary conditions in the city.	+ Improved working conditions.	

Study (author and year)	Subsector	Region	Topic (title)	Output	Outcome	Impact
Healthcare						
Dewan et al. (2006)	Health sector	India	Literature review on improving tuberculosis control through public-private collaboration in India.	+ "In nine (75%) of 12 public-private mix projects with available data on treatment outcome, private provider administered directly observed treatment met or exceeded the Indian tuberculosis programme target of 85% treatment success".	+ "Higher case notification rates"	
Buse and Harmer (2006)	Health	Several o.a. Mozambique	Practice and potential of "highly effective" health partnerships.	NA	NA	NA
De Pinho Campos et. al (2011)	Health (drug development)	Various, review was not restricted to a specific region or country	Systematic review of public private partnerships for public health	+ "ppps involve research & development activities leading to the creation of drugs or vaccines in low and middle-income countries."	NA	NA
Itika et al. (2011)	Health sector	Tanzania	"Successes and constraints for improving public private partnerships in Tanzania"	NA, study is about success factors	NA	NA
Singh and Prakash (2010)	Health service delivery	India	"PPPs in health service delivery"	NA	NA	NA

Study (author and year)	Subsector	Region	Topic (title)	Output	Outcome	Impact
Housing (construction)						
Sengupta (2005)	Housing delivery	India	"Government intervention and public private partnerships in housing delivery in Kolkata";	+ "Private sector companies invest in housing due to the PPP". At least 10-15% of the total construction in each project is LIG/MIG (low-middle income group) houses. p10.	+ "It is observed that a PPP has generally become more affordable owing to government stipulations regarding minimum size and sale price for LIG units".	NA
Abdul Aziz and Kassim (2010)	Housing	Malaysia	Success and failure factors of housing PPPs in Malaysia	NA	NA	NA
Infrastructure						
Gia and Fugelness (2010)	Infrastructure (small piped water schemes)	African countries: Benin, Burkina Faso, Mali, Mauritania, Niger, Rwanda, Senegal	Review of PPPs for small piped water schemes seven African countries.	NA, the study focuses on challenges of PPP.	NA	NA

Study (author and year)	Subsector	Region	Topic (title)	Output	Outcome	Impact
Franceys and Weitz (2003)	Infrastructure	Asia (10 countries)	Public private partnership in infrastructure for the poor	<p>+</p> <p>The review summarizes the findings of 20 PPPs in water supply and solid waste management.</p> <p>Bangladesh: “the design and introduction of modified rickshaw-wans for house-to-house waste collection”.</p> <p>2nd project in Bangladesh: a water tank with handpump was constructed.</p> <p>India: Construction of toilet blocks to provide sanitation in low-income areas complete with soap, showers and storage.</p> <p>Pakistan: “building trunk sewers to collect the waste from the community-built street sewers”.</p> <p>Malaysia: NA</p> <p>Vanuatu: “24-hour water supply and a structured fixed tariff system”.</p>	<p>+</p> <p>Bangladesh: “higher revenue from the compost which is sold to a private company.</p> <p>Bangladesh 2nd project: “local people need less time to get water”.</p> <p>... “less people taking water from illegal water points”.</p> <p>India: “people make use of the toilets; they say that they prefer paying 1 dollar for a toilet instead of 150 dollar for a doctor” ... less illness for the users of the toilets, they say that productivity at work has gone up.</p> <p>Pakistan: “no changes in behavior.”</p> <p>Malaysia: “more people were served water by distribution pipelines directly to their houses”.</p> <p>Vanuatu: N/A.</p>	

Study (author and year)	Subsector	Region	Topic (title)	Output	Outcome	Impact
Kateja (2012)	Infrastructure	BRIC (Brazil, Russia, India and China)	PPPs in the infrastructure sector in BRIC countries	Philippines: Expansion of coverage of water supply to 95 per cent for the East zone and 98 per cent for the West zone by 2021 , with provision of 24-hour water supply to all connections by mid2000 and a guaranteed minimum pressure for all connections by 2007 NA Study addresses positive effect of infrastructure on economic growth but does not consider effect of partnership on output, outcome and impact.	Philippines: increased water consumption per household". NA	NA
Other						
Druce (2009)	Product development		Product development: "the government contracts with the private sector to share funds, expertise and time for R&D for drug development for neglected diseases in developing countries"	+ "During the timeframe of the Dutch grant to the eight PDPs, the MOFA-funded PDPs developed four new neglected disease treatments and four diagnostic products . Clinical trials were started and concluded, some products were dropped from portfolios, and a substantial amount of discovery work, focused on breakthrough technologies, was undertaken."	NA	NA "there is not yet sufficient evidence that PDPs can deliver breakthrough innovations. Also, while receiving regulatory approval shows potential for impact, product uptake is a better indicator of actual health impact."

Study (author and year)	Subsector	Region	Topic (title)	Output	Outcome	Impact
Soplop et al. (2009)	Corporate Social Responsibility (CSR)	Nicaragua, Guatemala and Indonesia	PPPs in social responsibility (CSR)	0 Nicaragua: "Workers, in the banana industry report few positive changes because of the company's activities" Guatemala: " Under the leadership of the World Bank, several major business associations have expanded on the traditional concept of CSR in Guatemala. " Indonesia: "CSR initiatives in Indonesia have also evolved over the last several years, and the country has the most formal state engagement with CSR of the case study countries. In 2007, the Indonesia House of Representatives passed a law making CSR mandatory for companies operating in any business field related to natural resources and imposing sanctions on noncompliant firms."	NA	NA

Study (author and year)	Subsector	Region	Topic (title)	Output	Outcome	Impact
Kirkemann and Appelquist (2008)	Poverty reduction, economic growth, social development	Bangladesh, China, Egypt, Ghana, India, Indonesia, Kenya, Pakistan, Regional Africa, South Africa, Vietnam	PPP Program to engage companies and organizations in promoting CSR.	NA	NA	NA
Transport						
Gallea and Medda (2010)	Transport	Worldwide	Analysis on political and economic context on success of PPP in transport	NA (study is about success factors)	NA	NA
Marin (2009)	Water sector	Various developing countries	Various	NA	NA	NA
Water						
Public Private Partnership Review Mission (2009)	Urban water supply	Yemen	PPP on urban water supply in Yemen.	- 4 out of 10 PPP goals are partly achieved.	NA	NA

Study (author and year)	Subsector	Region	Topic (title)	Output	Outcome	Impact
Vives et al. (2006)	Water and sanitation	(1) Guinea (2) Bolivia (3) Santa Cruz, Bolivia (4) Argentina (5) Argentina (6) Peru (7) Chengdu, China (8) Cartagena, Colombia (9) Tamil Nadu, India (10) Paraguay	"Financial Structuring of Infrastructure Projects in Public-Private Partnerships: An Application to Water Projects"	+/- (1) service improved, connection rates rose from 38 percent in 1989 to 47 percent in 1996 , and labor productivity also rose. Water quality increased, consumer service improved and metering levels rose dramatically. (2) Various factors led to the failure of the concession soon after water service management was privatized.. (3) The tariff pricing structure incorporates three forms of progressive cross-subsidization to deal with the demographics of the area covered by the utility. The first includes a low-cost tariff for residential consumers with a cap on water output. The second form differentiates between industrial/commercial users and residential users. The difference in user fees is 45 percent less for the residential user. Finally, the third includes an increasing block tariff structure that is adjusted based on development of the region. The revenue stream of the Santa Cruz cooperative, SAGUAPAC, has embraced the consumer affordability limit of 5 percent of household income. At 4.5 percent of household income, willingness to pay has been high.	NA	NA

Study (author and year)	Subsector	Region	Topic (title)	Output	Outcome	Impact
				<p>(4) the changes cut the average water bill by three-quarters per household in poor neighborhoods</p> <p>(5) The legislation and the unwillingness of the government to allow for tariff increases left without any effect the presumed foreign exchange risk and inflation risk mitigant that the project thought it had when it included tariffs denominated in US dollars</p> <p>(6) NA</p> <p>(7) NA</p> <p>(8) by 2004 coverage had reached 95 percent in water and 74 percent in sanitation; production capacity rose from 1.6 cubic meters per second to 3.1 million cubic meters per second; the number of employees decreased from 1300 to 272; the share of metered connections went from 30 to 99 percent; and water is now available 24 hours a day compared to only 7 hours a day in 1994. However, unpaid bills remain a problem. The tariff structure is still based on a cross-subsidization scheme that can be easily manipulated by high- and the middle-income residents.</p>		

Study (author and year)	Subsector	Region	Topic (title)	Output	Outcome	Impact
Tann (2012)	Water infrastructure	Malaysia in general, Selangor-specific	Water privatization in Malaysia	<p>(9) NA</p> <p>(10) The response from the communities that have received service has been overwhelmingly positive thanks to the rapid progress from concept to construction, all without up-front cash contributions from the communities</p> <p>+ (Selangor)</p> <p>- 17,3% expansion of the water production capacity in Selangor (2001 - 2006) (at the same time public expenditures increased with 7,560%)</p> <p>- In 2001–05 the federal government provided RM500 million to replace old pipes and install new meters in Selangor; Pipe length increased by an average of 20% nationally between 2005 and 2008, driven by above-average and large increases in Melaka (public, 57%), Terengganu (corporatized, 56%), Johor (private, 39%), and especially Selangor (public-private, 76%)</p>	NA	NA

Study (author and year)	Subsector	Region	Topic (title)	Output	Outcome	Impact
Fiesta and Haffnerb (2007)	Water sector	Ghana	"PPP policies, practices and problems in Ghana's urban water supply"	<p>However, data from Selangor's private concessionaire indicate a more modest 6% (2005–08) and 13.8% (2005–10) increase in pipe length (Subramaniam, 2010). Based on the evidence, it is not clear if increases in production capacity and pipe length were due to PPI given that these corresponded with significant increases in government financing. Moreover, large improvements were made by public and corporatized states in production capacity while increases in pipe length were related to water distribution which remained in the public sector for all states except Selangor (public–private) after 2005 and Johor (private).</p>	<p>0</p> <p>The PPP options considered (lease contract / affermage contract) did not serve the poor in substantially better ways.</p> <p>"Within Ghana and internationally, more (comparative) research is required to highlight the conditions of 'success stories' in PPP from which lessons can be learnt for the design and implementation of policies at country, district and community levels".</p>	NA

Study (author and year)	Subsector	Region	Topic (title)	Output	Outcome	Impact
Lobina and Hall (2003)	Water supply systems	Latin America	Problems with private water concessions: a review of experience	NA	NA	NA
Various sectors						
Rao (2009)	power, transport and water	Bhutan, India, Indonesia, Pakistan, Philippines, People's republic of China (PRC), Vietnam, Sri Lanka, Thailand	Public Private partnerships in infrastructure development	NA (study focusses on process of PPP implementation and success factors)	NA	NA
Farlam (2005)	Transport, prison, telecommunication, water and sanitation, power, eco-tourism	Africa	Evaluation of PPP in Africa: Build and operate the N4 toll road from Witbank, South Africa, to Maputo, Mozambique. Finance, rehabilitate, operate and upgrade the Port of Maputo. The design and construction of 11 maximum security prisons. Promotion of rural access to telephones, internet and postal services. Oversee, manage and implement the provision of water and sanitation services within the BODC municipal boundary. Provide water and electricity in Gabon. Power purchasing agreement. Management of 11 restaurants, two shops and three picnic sites in the Kruger National Park.	+/- 504 KM of improved road, reducing overloading of heavy vehicles. They plan to increase the total throughput to 20 million tonnes by year 18 of the concession. Reduction of prison space shortage. The Ugandan government effectively allowed competition to drive the telecom market within a clearly-defined regulatory framework and the government provided subsidy to support the increase of coverage. Siza oversaw, managed and implemented the provision of water and sanitation services within the wealthier BODC municipal boundary. The quality of the service has improved with regards to water loss, water purity, total number of leaks, the number of faulty meters and the number of maintenance	+/- Local communities have gained through discounts, training and job creation. The concession has increased efficiency and handling volume at the Maputo harbour. The number of subscribers has grown at an exponential rate from a very low base - in 1998 there were only two subscribers per 1,000 people in Uganda; by 2003, this had increased to 32 per 1,000 inhabitants. There has been a public outcry and hot parliamentary debates about the program, with evidence of corrupt payments to government officials. The staff was unhappy about the new conditions of service which	NA

Study (author and year)	Subsector	Region	Topic (title)	Output	Outcome	Impact
Stuart et al (2011)	Various: Education, youth development, housing and community development, behavioral, mental and community health, arts and culture.	Various	Review of partnership capacity and effectiveness	actions carried out. The multi-utility service provision has allowed cost reduction through sharing of resources. 7. An increase in the costs of electricity. 8. A significant increase in SANpark's profit, the upgrading of restaurants and shops, and an eventual improvement in service and quality. NA (study focusses on success factors of partnerships).	emphasised improved performance and strict control of stock. NA	NA

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Public-private partnerships (PPP's) are a relatively recent phenomenon in international development cooperation. Current policy documents frequently refer to expectations regarding their potential contributions to global development goals. The growing international attention was firmly backed by the Netherlands government. However, there are still few diagnostic tools available to determine when and how PPP's represent a preferred institutional

arrangement. Moreover, the empirical evidence on the effectiveness and efficiency of PPP's is notably scarce.

This IOB study provides insights in the variety of PPP arrangements. A major conclusion derived from this review is that PPP evaluations focus on resource sharing but pay little attention to the risk-sharing and revenue distribution dimension of partnerships.

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