

# **Theory-Based Evaluation of Public-Private Partnership Projects and Programmes**

*Mehmet Uzunkaya, PhD*  
*Elsa de Morais Sarmiento*

# Purpose

- To discuss theory-based evaluation (TBE) of PPP projects/programs
- To draw attention to the need to go beyond the question of *whether or not* the project/program worked but also the *how* and *why* questions.
- To make an exercise of developing an intervention logical framework using TBE principles
- To expand the toolbox of the evaluator

# Theory-Based Evaluations

## The Seminal Works

- Chen (1990): “*Theory-driven evaluations*”.
- Weiss (1995): “*Nothing as practical as good theory: Exploring theory-based evaluation for comprehensive community initiatives for children and families*”.

# Alternative Labels Since Then...

- *“theory-driven, theory-oriented, theory-anchored, theory-of-change, intervention theory, outcomes hierarchies, program theory and program logic” (Rogers, 2007)*

# Chen (1990)

- Theory, which played an important role in research, had been thus far neglected in program evaluation.
- Most of the evaluation studies lacked a sound theory development
- Such evaluations focused mainly on the overall input-output relations of a program, neglecting the “transformational processes in the middle”.

# Chen (1990)

In this way,

- A gross assessment of whether or not the program worked can be made.
- But, the underlying causal mechanisms cannot be fully understood.

# Chen (1990)

- Therefore, classical evaluation approaches do not focus on the *how* and *why* questions.
- The *how* and *why* questions enlighten the cause-effect relations in the micro stages of a program.
- For better program evaluation, program theory should be incorporated into evaluation processes.

# Chen (1990)

- Theory-driven perspective as an expansion of the contributions made by the traditional approaches.
- Theory-driven evaluation concept uses program theory to configure the underlying explicit and implicit assumptions of a program.



# Weiss (1995)

- Supports the idea of basing evaluation on explicit or implicit theories about *how* and *why* a program will (or will not) work.
- Surfacing those theories and laying them out in as fine detail as possible is then what the evaluation should focus.

# Weiss (1995)

- The evaluator, then, assesses,
  - the extent to which the explicit or implicit theories hold,
  - where they hold or break down, and
  - whether empirical evidence is supportive or not.

# Weiss (1995)

- In this way, the program is broken down into a series of micro-steps.
- The micro-steps collectively serve to the achievement of program goals.

# Weiss (1995)

- Examining the theory in as fine detail as possible and looking at the extent to which they hold, the evaluator will be able to see the linkages;
  - that properly work and
  - those that are problematic.

# Limitations of TBEs

- *Theorizing*
- *Measurement*
- *Testing Theories*
- *Interpretation*

# Public-Private Partnerships (PPPs)

- An alternative way of infrastructure service provision, making use of private finance, expertise and efficiency and combining public and private sector strengths.
- The philosophy underlying PPPs is quite appealing.

# Public-Private Partnerships (PPPs)

- The relative complexity of processes and widely differing objectives and capabilities on public and private sides make the method a challenging endeavor.
- Not a few of PPP arrangements in developing countries have yielded sub-optimal results
- Even the developed world has experienced unsatisfactory PPP arrangements

# Public-Private Partnerships (PPPs)

- Unsatisfactory PPPs sometimes cast doubt on the rationale of using this method in infrastructure
- Failures highlight the importance of their careful evaluation, ex-ante and ex-post.



# Synthesis

## The Intervention Log-Frame

- We construct a “PPP theory” that will constitute the basis for an intervention logical framework on evaluation of PPPs
- Among others, the two most important elements of the “PPP Theory” are:
  - The project finance theory and
  - The theory of public investment in relation to PPPs

# The Theory of Project Finance

- The theoretical underpinnings of PPPs are strongly connected to the project finance concept.
- Project finance is basically characterized by the presence of a non-recourse (or limited recourse) debt financing which is to be serviced solely by the cash flows of the project itself.

# The Theory of Project Finance

- The project is represented by a special purpose entity (project company) established along with the start of the project, in turn isolating the parent company from the project risks.
- Projects are generally highly leveraged

# The Theory of Project Finance

Project financing offers solutions to,

- The underinvestment problem of Myers (1977)
- The asymmetric information problem
- The agency costs of Jensen and Meckling (1976)

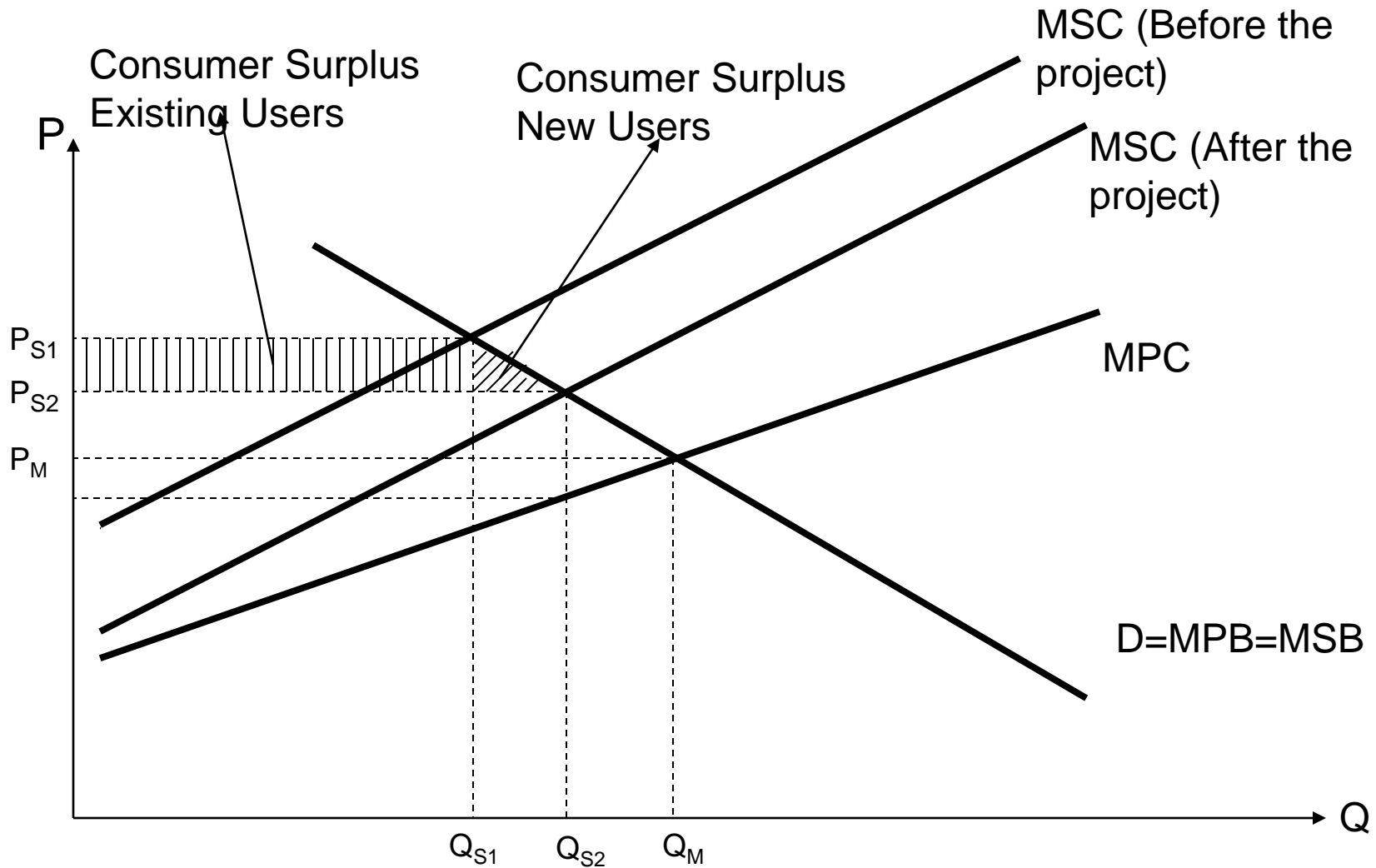
# The Theory of Public Investment in Relation to PPPs

- PPPs are generally used in public infrastructure projects
- While the private partner is interested in *incremental* financial returns, the public side is interested in *incremental* economic returns (*including social and environmental*).

# The Theory of Public Investment in Relation to PPPs

- Financial returns are measured by market prices
  - The intersection between marginal private cost and marginal private benefit curves
- Economic returns are measured by economic prices (shadow prices)
  - The intersection between marginal social cost and marginal social benefit curves

# The Theory of Public Investment in Relation to PPPs



# Synthesis

## The Normative Intervention Logical Framework

- The framework includes inputs, activities, outputs, outcomes and impacts as the hierarchical steps that in combination bring the ultimate results of a PPP project or a program.
- The theory of project finance and the theory of public investment in relation to PPPs help define each of these steps and causal connections among them.



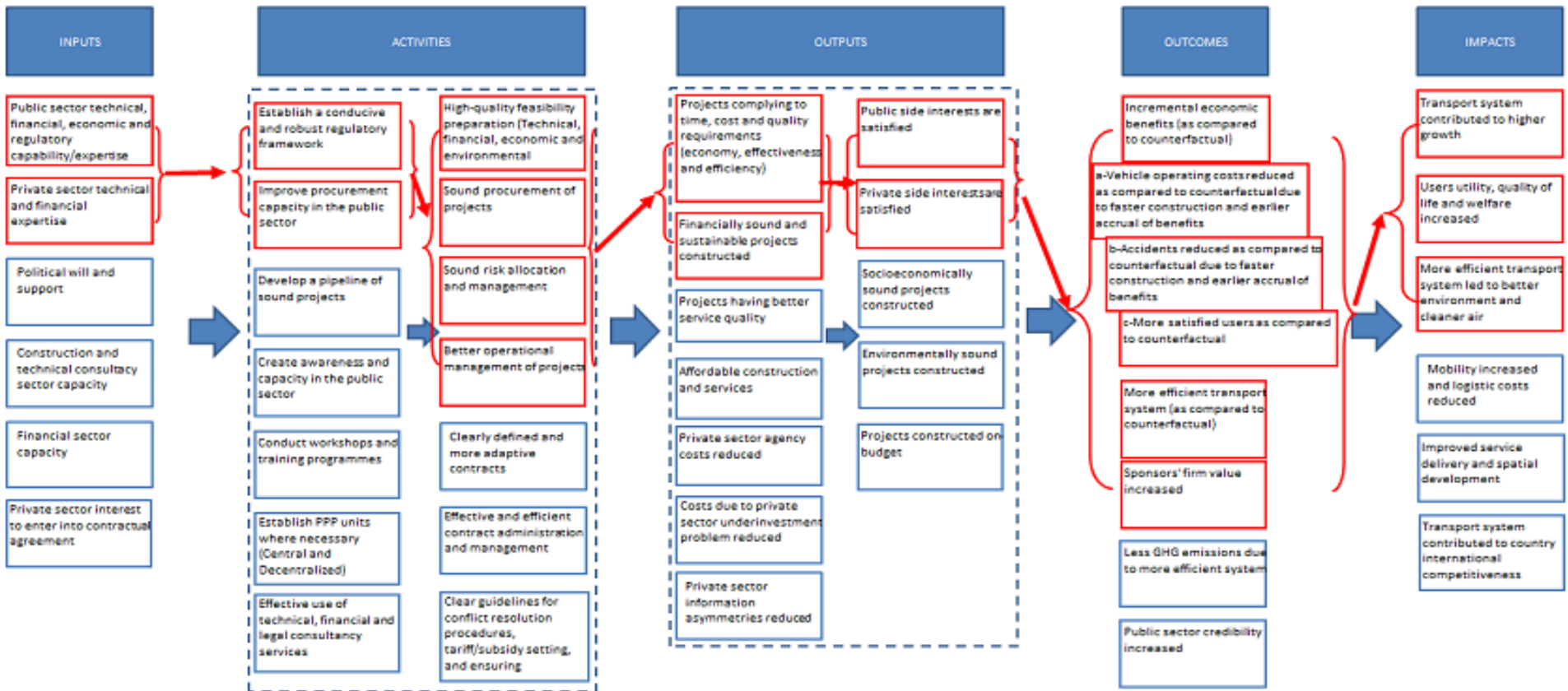
# The DAC Criteria

To accommodate the DAC criteria, some example questions are provided under each criterion.

- Relevance
- Efficiency
- Effectiveness
- Impact
- Sustainability

# The Normative Intervention Logical Framework

INTERVENTION LOGIC FOR A PPP PROGRAM IN TRANSPORT SECTOR



RELEVANCE

EFFICIENCY

EFFECTIVENESS

IMPACT

SUSTAINABILITY

**Assumptions:**

- 1-Political support is objective, not interventive
- 2-Creating capacity in the public sector leads to sound project management
- 3-Flexible contracts facilitate better project management
- 4-Project financing reduces agency costs and asymmetric information and solves the underinvestment problem.
- 5-The counterfactual is direct public administration subcontracting

**External Factors:**

- 1-Global financial situation
- 2-Global economic growth
- 3-Global interest rates

# The Normative Intervention Logical Framework (Cont'd)

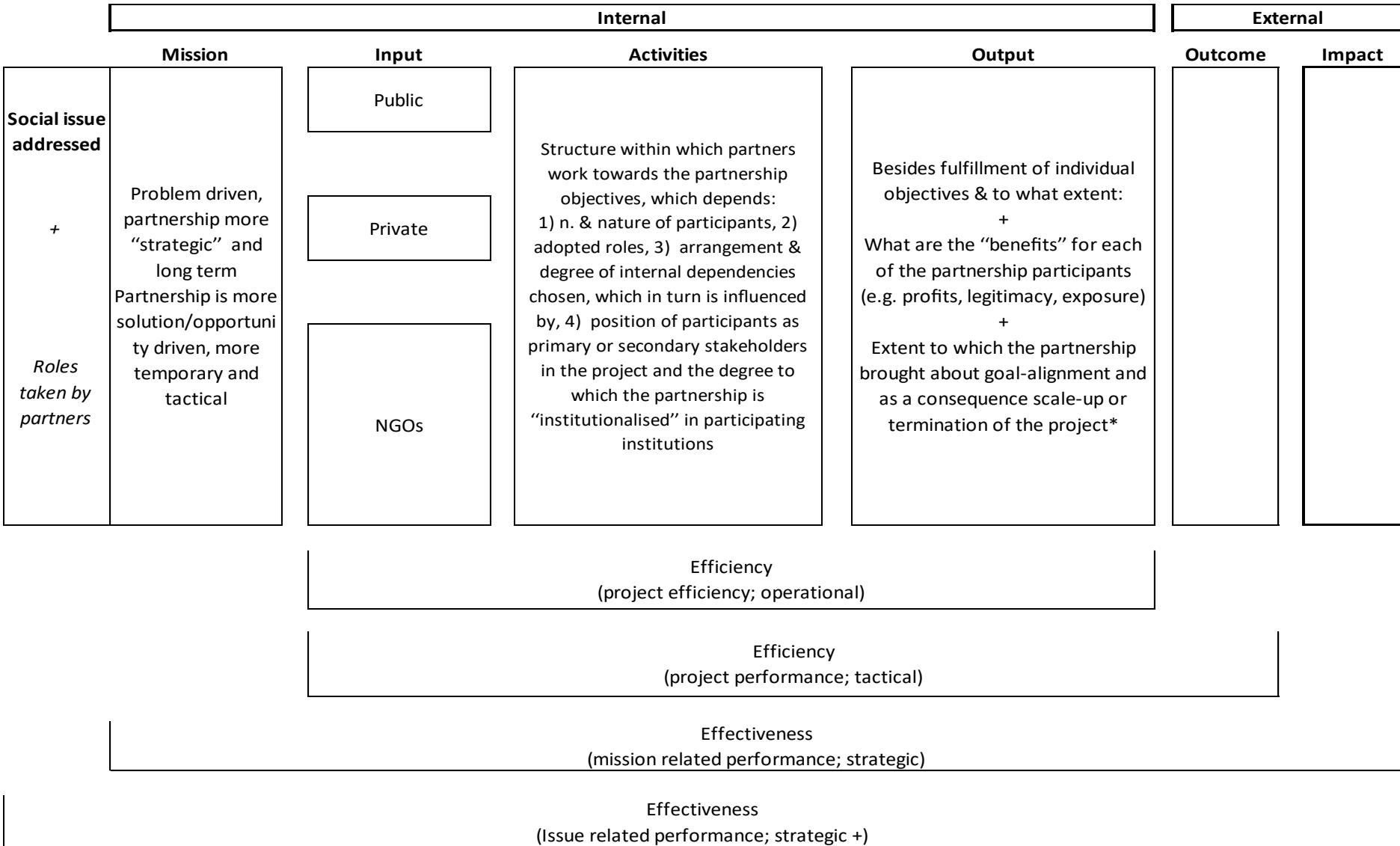
THE DAC CRITERIA	THE DAC CRITERIA (CONT'D)
<p><b>1-RELEVANCE</b> (To assess the relevance criterion the evaluator first constructs a "normative intervention logical framework" for the program or project in question)                      -Whether the intervention logic of the program evaluated is consistent with the "normative intervention logic"                      -Are there lacking elements in the evaluated program's logic with reference to the "normative intervention logic"                      -Whether the evaluated logic's objectives consistent with sectoral policies?</p> <p><b>2-EFFECTIVENESS</b>                      -Were objectives of the evaluated logic achieved? (e.g. Reduced VOCs, accidents, happier users, increased firm value, more efficient system, reduced GHGs)</p> <p><b>3-EFFICIENCY</b>                      -Were the achieved objectives cost efficient? In other words, whether the PPP program achieved value-for-money as compared to the counterfactual                      -Value of faster construction and earlier start of operations as compared to counterfactual                      -Value of additional time savings as compared to counterfactual                      -Value of additional accident reduction as compared to counterfactual                      -Value of vehicle operating cost (VOC) savings as compared to counterfactual</p>	<p><b>4-IMPACT</b>                      -What are the real changes, (positive, negative, intended, unintended, direct, indirect) as a result of the PPP project/program?                      -Whether the PPP project/program has decreasing effects on logistic costs                      -Whether the PPP project/program contributes to increased mobility                      -Whether the PPP project/program contributes to growth and international competitiveness                      -Whether the PPP project/program contributes to increased service delivery and spatial development                      -Whether the PPP project/program contributes to cleaner air and better environment; what are the environmental effect?                      -Whether the PPP project/program contributes to increased quality of life and welfare</p> <p><b>5-SUSTAINABILITY</b>                      -Whether the system is financially sustainable                      -Whether the system is economically sustainable                      -Whether the system is socially sustainable                      -Whether user charges are affordable                      -Whether the special purpose vehicle's (SPV) financial situation is sustainable</p>

BENCHMARK DEFINITIONS
<p><b>ACTIVITIES</b>  <b>Pipeline of Sound Projects:</b> A list of projects that have been tested for pre-feasibility and prioritized based on their respective net benefits and contributions to the collective transport system.  <b>High-Quality Feasibility:</b> A report that includes objective and scientific analysis of a PPP project from technical, legal, financial, economic, environmental and political perspectives, an assessment of incremental benefits, costs and their distribution among key stakeholders; analysis of uncertainties, risks and their allocations among parties involved.  <b>Sound Procurement:</b> Procurement that is consistent with the needs of the procuring authority and with the approved feasibility of a PPP project.  <b>Sound Risk Allocation and Management:</b> Allocation of risks among stakeholders of a PPP project such that each party is responsible for the risk that it is best able to manage.  <b>Conducive and Robust Regulatory Framework:</b> A legal framework that clearly defines mandates, responsibilities and accountabilities in PPP project and program implementation; includes necessary procedures to ensure economy, effectiveness and efficiency; embraces clear guidelines for contract administration, conflict resolution, tariffs, subsidies, affordability and termination.  <b>Adaptive Contract:</b> A PPP contract that is able to accommodate changes in variables that critically affect the feasibility of a PPP project during its economic life without compromising the overall feasibility, interests of key stakeholders and fair competition conditions at the procurement stage.</p> <p><b>OUTPUTS</b>  <b>Economic, Effective and Efficient Project:</b> Projects constructed on time (also entering into the operational stage faster as compared to the counterfactual-direct public administration subcontracting- as a result of the incentives that engage private sector to do so) and on budget and are able to function according to the intended purpose with an optimal cost-benefit balance.  <b>Better Service Quality:</b> Better provision of services as a results of private sector efficiency and competence.  <b>Affordable Construction and Services:</b> Cost of construction and services that are reasonably priced and commensurate with the level of provision they offer.  <b>Financially Sound and Sustainable Projects:</b> Projects having current and future cash inflow generation capacity and ability that are reasonably greater than cash outflows at a margin commensurate with international standards.  <b>Reduced Agency Costs:</b> Reduced conflicts of interest between shareholders of a sponsor and the management, as a result of the establishment of a separate special purpose vehicle (SPV) in PPPs (and thus increased value of the firm).  <b>Reduced Underinvestment Problem:</b> Sponsors not forgoing low-risk projects so as to maximize the wealth of shareholders at the cost of debt holders, as a result of the establishment of a separate special purpose vehicle (SPV) in PPPs (and thus increased value of the firm).  <b>Reduced Asymmetric Information:</b> Reduced differences in information between sponsors and creditors as a result of the establishment of a separate special purpose vehicle (SPV) in PPPs.  <b>Socioeconomically Sound Project:</b> Projects having present value of social and economic benefits outweigh the present value of social and economic costs.  <b>Environmentally Sound Project:</b> Projects having negative environmental externalities eliminated, minimized or reasonably compensated for.  <b>On-budget Construction:</b> Ex-post construction costs being in line with expected costs.  <b>Public Side Interests:</b> Interests spanning through general public welfare.  <b>Private Side Interests:</b> Interests of the sponsors and creditors.</p> <p><b>OUTCOMES</b>  <b>Incremental Economic Benefits:</b> Economic benefits net of economic costs (such as time savings, vehicle operating cost savings, accident avoidance) generated by the project throughout its useful life.  <b>Efficient Transport System:</b> A transport system in which alternative modes operate in harmony with each other at their financial and economic optimal  <b>Increased Firm Value of Sponsors:</b> Increased share price of a sponsor as a result of reduced agency costs, elimination of underinvestment problem and asymmetric information.  <b>Increased Public Sector Credibility:</b> Sense of success among citizens about public administrations due to increased satisfaction of users as a result of faster construction of project; and affordable and high-quality services.</p> <p><b>IMPACTS</b>  <b>Increased Mobility:</b> More efficient and comfortable movement of people and goods as a results of the PPP project's (or PPP programme's) incremental contributions to the system.  <b>Reduced Logistics Costs:</b> Reduced cost of logistic services as a result of a more efficient transport system due to the PPP project's (or PPP programme's) incremental contributions to the system.  <b>Growth-supporting Transport System:</b> A transport system facilitating economic operations and thus contributing to value added in the economy.  <b>Competitiveness-supporting Transport system:</b> A more efficient transport system as compared to competitors, facilitating economic operations and thus contributing to increased competitiveness.</p>

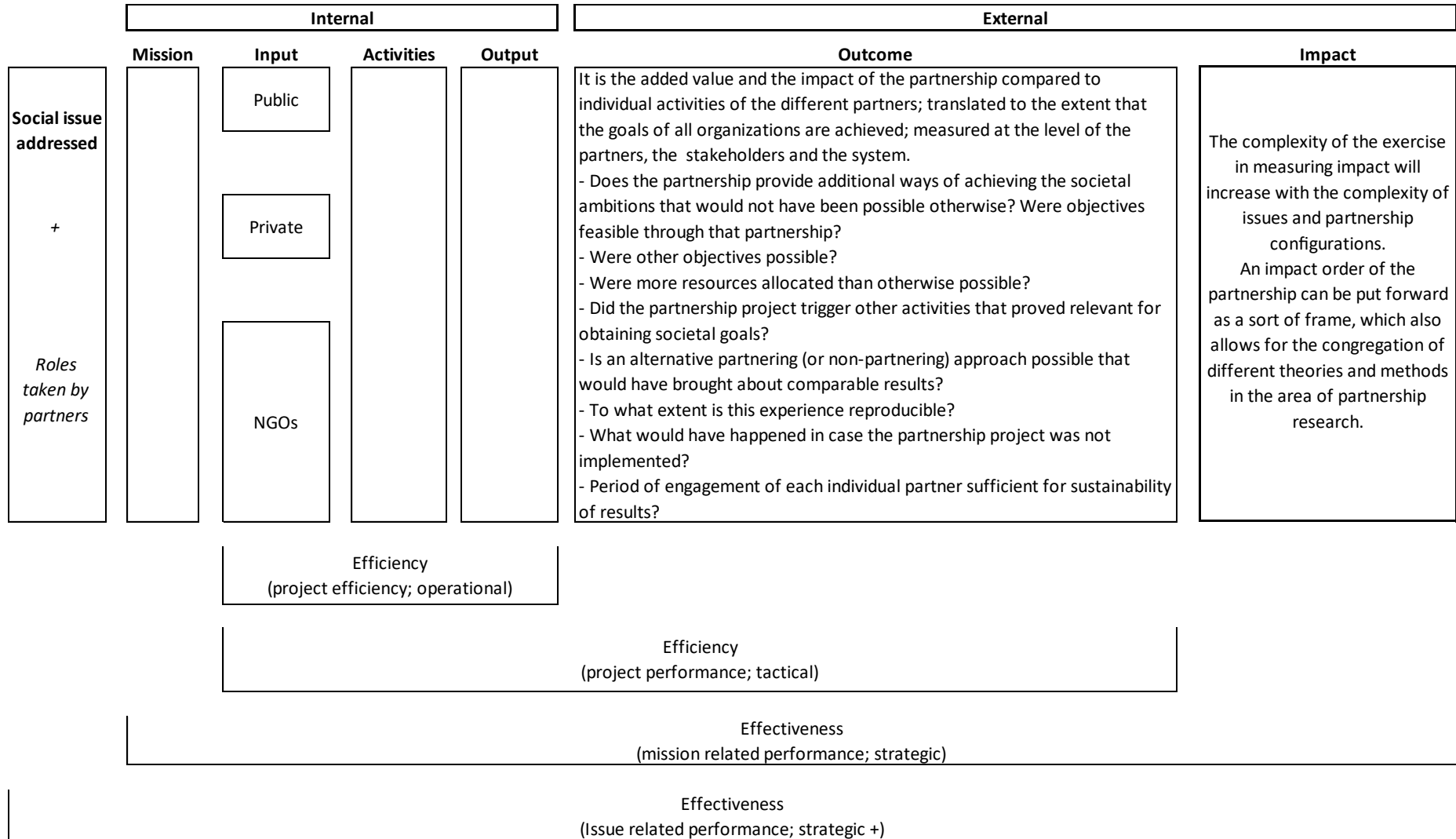
# Assumptions and Benchmark Definitions

- Assumptions:
  - **E.g, The counterfactual is direct public administration subcontracting**
- Benchmark definitions of achievements to minimize measurement errors to the extent possible

# In search of a common framework for assessing impacts



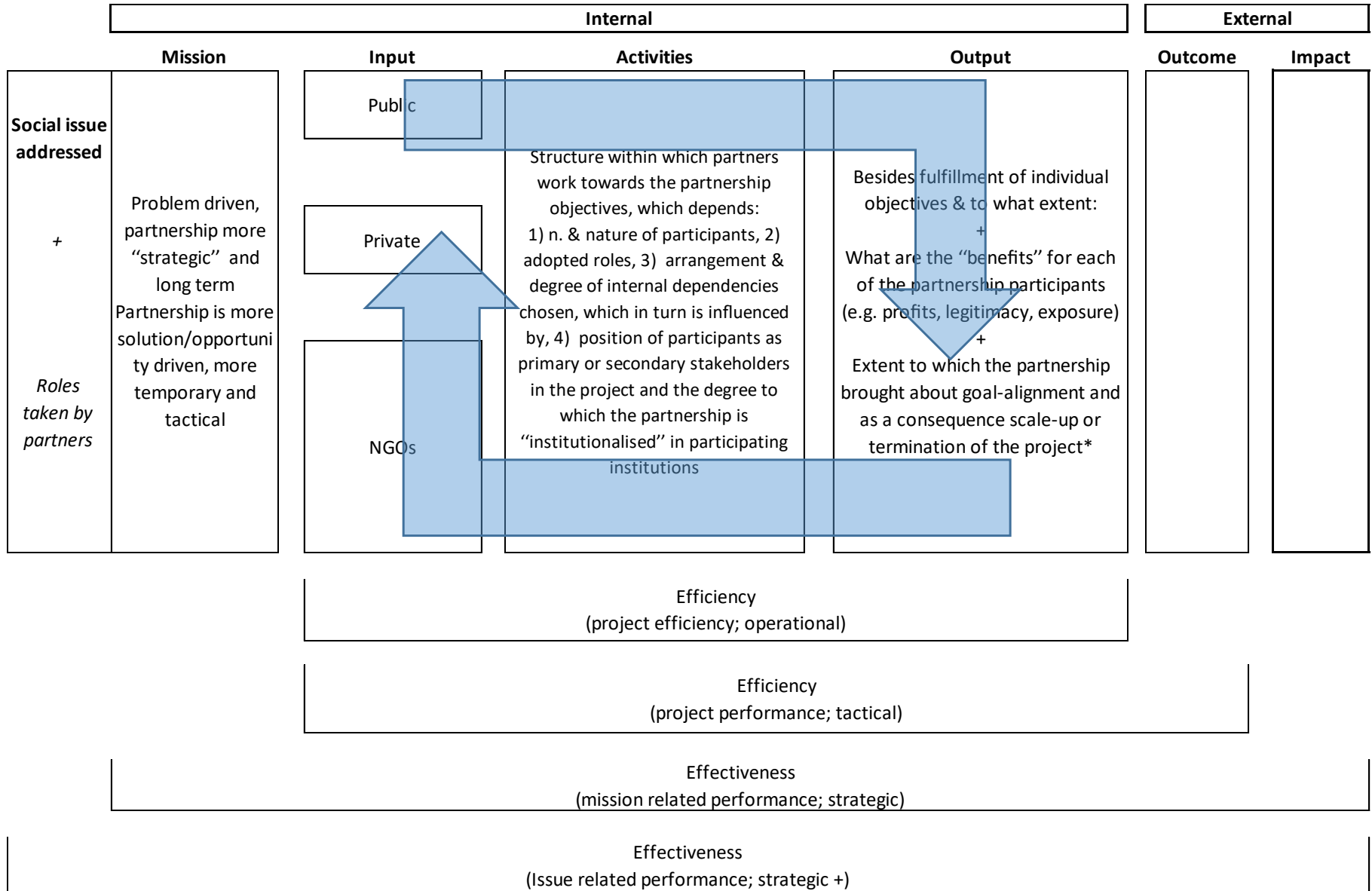
# In search of a common framework for assessing impacts



# Impact assessment

	Impact loops	Benchmark of success	Results chain	Nature of influence	Possible control group
1st	<b>Individual (of a given partner)</b>	A benchmark of success is project operational efficiency attributable to changed inputs and activities	Changed input and activities (e.g. new ways of doing things, greater employee engagement and changed mindsets)	Mindsets and employee engagement	Other employees/stakeholders that are not involved as a control group or benchmark
2nd	<b>Organisation/ partner</b>	Project performance: tactical (effects of internal value added between inputs and outputs, capturing in addition to the operational level effects (1st) the tactical level of project performance effects and the interaction between them)	Changed output (and possibly outcomes)	Tactical efficiency creates greater project performance by enhanced legitimacy of the project, inside and outside the organization, through institutionalization, realistic contracts and the creation and implementation of a number of successful partnership management tools to stimulate learning	Comparison between successful and less successful partnerships initiated by the same organization
3rd	<b>Partnership</b>	Mission-related performance	Changed outcome (by capturing the VA in the context and time of the partnership according to its mission from inputs to outcomes, including the interaction effects across the stages)	Synergistic and shared value creation from the participants based on mission related performance (for 2 or more organisations) Standard setting	Control groups can be found by comparable partnerships (e.g. within the same government subsidy program), by the same partnership over time or by organisations with the same mission
4th	<b>Society/issue</b>	Issue-related performance (overall VA captured by the partnership) Ex: level of innovation achieved by the partnership	Changed systemic impact (long term) It includes all the stages from input to impact and the full extent o the partnerships contribution to the (social) issue. These are the most complex to assess, because of a larger number of levels of analysis, but also due to the size of interaction effects in systemic and societal change	Filling institutional gaps Creation of new governance structures Contribution to a social good	Searched under a comparable context either in the same combination of country/sector/supply chain in which directly and indirectly involved stakeholders are affected by the partnership Alternatively, taking a longitudinal perspective and compare “before and after” issues of partnerships (ex degree tow which the partnership prevented a societal issue from proliferating)

# 2nd level impact in the Logical framework





# Impact assessment: detail

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# Related useful studies

Impact order	Kolk, Vock, Van Dolen 1st order	Dentoni, Bitzer, Pascucci 1st–2nd order	Márquez, Reficco, Gutiérrez 2nd–3rd order	Stadtler 3rd order
Level(s) of analysis	Micro	Micro-meso	meso	Micro-meso-macro (target group)
Method	3 case studies; interviews	Grounded theory; 4 longitudinal case studies; interviews	2 longitudinal case studies; triangulation	Conceptual; 1 case study; interviews
Nature of partnership	Public–private; private-nonprofit	Not specified or tripartite	Same sector—Cross-sector partnership; heterogeneous portfolios	Tripartite; sustainable development
Impact through (unit of analysis)	Employees	NGO-firm interaction; change from negative to pro-active strategy	Portfolio composition of firm	Stakeholder engagement and target group
Impact measure (driving force)	Employee engagement; improved CSR strategies; Opportunity driven	Co-creation of dynamic capabilities; problem-driven; learning; receptiveness to stakeholders and wicked problems	Success in implementing BOP strategies through partnerships; opportunity driven	Broad evaluation conception; longer term effects on society; problem and opportunity driven
Ultimate impact chain	Indirect: employee engagement will probably stimulate output and outcome of partnership through changed business model	Indirect: sense-making, experience over time; decreasing effect on wicked problems in longer run	Direct: commercial development of BOP market	Direct and indirect via target groups (education)
Mechanism/critical success factor	Trickle up/down effects (and feedback loops)	SILC (Sensing, Interacting, Learning Changing) mechanism; capabilities change over time	Scale effects; mainstreaming cross-sector-same sector transition	Stakeholder costs and benefits; ripple effects
Counterfactual	Different sectors; no intra-company control groups	Over time change created by partnership; nature of problem addressed; experience level	Comparison same-cross-sector partnerships	Indirect and longer term effects

# Limitations and Further Research

- “All models are wrong, but some are useful” (*George E.P. Box*)
- The issue of complexity
- The issue of linearity

# Final remarks

- These discussions illustrate the challenges that lie ahead in merging the areas of partnership research and impact assessment.
- Researchers have tried to complement each other, rather than enter into a productive conversation as to issues of theoretical or methodological disagreement. Words, concepts, and definitions are often embraced with limited reference to each other.
- This is a typical sign of a field in a build-up phase. Research in this area is clearly open to improvements.
- However, TBE is a promising approach that could fit into the complexities of PPP projects/programs.
- It is a good candidate to expand the available toolbox of evaluators.

# Final remarks

- Most studies do not empirically cover the ultimate impacts of the partnership. In general, they take a learning perspective, through employee engagement, issue sense-making or education (1<sup>st</sup> level of impacts).
- In this rich field, rapidly growing in sophistication, there is a need for partnership research to pay greater attention to the monitoring, reporting, and evaluation of outcomes and impacts. This is necessary to inform and support the legitimacy and credibility of partnerships as an effective and efficient approach to solving complex social and environmental issues.
- The “PPP Theory” and the framework can help see the big picture and establish these cause-effect channels.
- Moreover, the “PPP Theory” and the normative intervention logical framework can be adopted for other PPP sectors.

Thank you.

[mehmetuzunkaya76@gmail.com](mailto:mehmetuzunkaya76@gmail.com)

[elsa.sarmiento@gmail.com](mailto:elsa.sarmiento@gmail.com)