

# TOOLS AND METHODS FOR ASSESSING THE *EFFICIENCY* OF AID INTERVENTIONS

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Bundesministerium für wirtschaftliche Zusammenarbeit und Entwicklung

Institute for **Development Strategy** 

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### **OVERVIEW**



# **EFFICIENCY! ... EFFICIENCY?**





#### **DEFINITIONS (1/2)**



"Efficiency is a measure of how economically resources/inputs (funds, expertise, time, etc.) are converted to results"

*Glossary of the OECD Development Assistance Committee* 

"Efficiency measures the **outputs** -- qualitative and quantitative -in relation to the **inputs**. It is an economic term which signifies that the aid uses the least costly resources possible in order to achieve the desired **results**. This generally requires comparing alternative approaches to achieving the same **outputs**, to see whether the most efficient process has been adopted. [...]"

DAC Criteria for Evaluating Development Assistance



#### Welfare economics:

Efficiency defined in terms of generalized costs and benefits.

Welfare effects expressed by total discounted net benefits

# **STUDY SCOPE: EFFICIENCY CONCEPTS COVERED**

Introduction
Motivation
Examples
Next steps

#### **Basic concepts (examples)**

Efficiency described as	Production Efficiency (input/output)	Allocation Efficiency (input/outcome)
ratio	<ul><li>Unit cost</li><li>Cost per person reached</li></ul>	<ul><li>Benefit-Cost ratio</li><li>Cost-Effectiveness ratio</li></ul>
net quantity	<ul><li>Financial profit</li><li>Net present value</li></ul>	<ul><li>Net present benefit</li><li>Aggregated utility</li></ul>

# **STUDY SCOPE: EFFICIENCY CONCEPTS COVERED**



#### **Special cases**

	Fixed results	Variable results
Fixed inputs	N/A	Yield maximization
Variable inputs	Cost minimization	General efficiency analysis

#### **PURPOSES OF EFFICIENCY ANALYSIS**



(by selecting those interventions with highest allocation efficiency)

Introduction

### **OVERVIEW**



# A COMPELLING CONCEPT ... EFFICIENCY AS RATIONALE FOR DECISION-MAKING



How can I maximize welfare impact?



Decision-making rules (welfare economics):

- 1. Implement all interventions with positive net benefits (if there are no constraints)
- 2. Select alternatives that produce the greatest positive net benefit (if there are budget, capacity, political or other constraints that make further selection of interventions than in rule 1 necessary)

# A COMPELLING CONCEPT ... WITH LIMITATIONS (1/2)

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# A COMPELLING CONCEPT ... WITH LIMITATIONS (2/2)

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Next steps



# THERE IS A GAP BETWEEN EXPECTATION AND DELIVERY OF EFFICIENCY ANALYSIS



Motivation

# HIGH EXPECTATIONS OF EFFICIENCY ANALYSIS

#### Efficiency (analysis) is ...

#### ... a standard evaluation criterion



... prescribed in most evaluations and appraisals

#### Terms of Reference

#### ... prescribed in National Budget Codes



Executive Order 12866 (The White House, 1993) Allgemeine Verwaltungsvorschriften VV-BHO §7, H 05 01 (BMF, 2001)

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Motivation



Assessment "N/A" not shown. Source: Are Sida Evaluations Good Enough? An Assessment of 34 Evaluation Reports Kim Forss, Evert Vedung, Stein Erik Kruse, Agnes Mwaiselage, Anna Nilsdotter Sida Studies in Evaluation 2008:1 Motivation

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#### Table 6. Results assessments in evaluation reports

	1	2	3	4	5	6	N/A	Total
Is there an accurate as- sessment of efficiency?	7	5	10	4	2	1	5	34
Is there an accurate as- sessment of effectiveness?	2	4	3	9	12	0	3	34
Is there an accurate as- sessment of impact?	6	5	3	9	4	3	4	34
Is there an accurate as- sessment of sustainability?	4	5	4	11	4	1	5	34
Is there an accurate as- sessment of relevance?	4	2	2	8	11	3	4	136

Key to ratings: 1 – very poor (or not done at all), 2 – significant problems, 3 – not quite adequate, 4 – minimally adequate, 5 – adequate, 6 – excellent, NA – not applicable, the question was irrelevant to that evaluation, or the issue could not be assessed because of a lack of information.

Source: The authors' assessment of 34 evaluation reports

#### Copied from:

*Are Sida Evaluations Good Enough? An Assessment of 34 Evaluation Reports* Kim Forss, Evert Vedung, Stein Erik Kruse, Agnes Mwaiselage, Anna Nilsdotter Sida Studies in Evaluation 2008:1

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Assessment of 25 UNDP country-level evaluations by the Swedish Agency for Development Evaluation:

- How was the efficiency criterion dealt with?
  - 20%: good or fair
  - 40%: poor or very poor
  - 40%: missing altogether
- "Overall, the sample reports do not provide accurate assessments regarding efficiency. This is an area that needs attention as most terms of reference require information in this regard."

Assessment 34 project, programme and policy evaluations and organisational assessments conducted by Sida's department for evaluation:

- How was the efficiency criterion dealt with?
  - 20%: minimally adequate or better
  - 65%: not quite adequate, significant problems, or very poor
  - 15%: missing

• "[...] most of the TOR in our sample included such questions. [about efficiency]. In most of the reports, however, the assessment of efficiency was technically quite weak."

Assessment of 59 Global and Regional Partnership Program evaluations by the World Bank Independent Evaluation Group:

- How was the efficiency criterion dealt with?
  - 15%: modest or substantial
  - 36%: mentioned but not analyzed in any meaningful way
  - 49%: not analyzed at all

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FIGURE 2.1 Percentage of Bank Investment Projects with Estimates of the ERR in the Appraisal Document, by Year of Project Approval



FIGURE 2.2 Percentage of Bank Investment Projects with Estimates of the ERR in the Final Completion Report, by Year of Project Closing



#### Copied from: Cost-Benefit Analysis in World Bank Projects, IEG, World Bank, 2010

Economic Analysis is mandatory for all World Bank investment projects, but:

- Frequency of Cost-Benefit Analysis in project appraisals (in all projects) decreased from about 70% in the 1970s to about 30% in the early 2000s and in recent years
- Acceptable or good economic analysis in appraisal documents has declined from 70% in a 1990 assessment to 54% in a similar assessment conducted in 2008

Source: Assessment of the use of Cost-Benefit Analysis in World Bank Projects by IEG

Efficiency analysis is a standard evaluation criterion at the European Commission, but:

- 27% of reports (161 out of 604) had a substantial section or chapter on efficiency
- Of 23 cases in which a Cost-Effectiveness Analysis was conducted, 11 fulfilled basic quality criteria

Source: Analysis of the use of Cost-Effectiveness Analysis in 604 evaluation reports and impact assessments commissioned by the European Commission

#### **OVERVIEW**



Level 2 (compare interventions)

> Cost-Benefit Analysis (CBA)

Cost-Effectiveness Analysis (CEA)

Cost-Utility Analysis (CUA)

Effects Method (Méthode des Effets)

Statistical Frontier and Development Envelope Analysis (SFA, DEA)

Multi-Attribute Decision-Making (MADM): Intuitive Scoring Models, Decision/Utility Theory Level 1 (improve one intervention)

Benchmarking of unit costs

Benchmarking of other partial efficiency indicators

**Financial Analysis** 

Follow the Money

Stakeholder-driven approaches

Comparative ratings by stakeholders: Effectiveness rating and cost analysis, Efficiency rating Level 0 (describe efficiency)

Expert judgement by evaluator

Specific empirical evaluation questions

 $\checkmark$ 

Well-known

Little-known

**Level 2** (compare interventions)

**Example 1:** 

**Cost-Benefit Analysis** 

Level 1 (improve one intervention)

Benchmarking of unit costs

Benchmarking of other partial efficiency indicators

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Well-known

(CBA) Cost-⊑necuveness

Analysis (CEA)

Cost-Utility Analysis (CUA)

Effects Method (Méthode des Effets)

Statistical Frontier and Development Envelope Analysis (SFA, DEA)

Multi-Attribute Decision-Making (MADM): Intuitive Scoring Models, Decision/Utility Theory

Little-known

#### **EXAMPLE 1: COST-BENEFIT ANALYSIS (CBA)**



Cost-Benefit Analysis: Analytic Power						
What is the method's analysis level?		Level 2 (assesses the efficiency of an aid intervention in a way that it can be compared with alternatives or benchmarks)				
To what degree unambiguously	e is the method clearly and y defined?	Clear and established analysis procedures exist				
How independ of a specific ev	ent is the analysis result from the choice saluator under ceteris paribus conditions? (i	Results obtained by different evaluators are expected to be very similar (if key assumptions are predefined) or may vary somewhat (if key assumptions are made by evaluator)				
How participatory is the method?		Stakeholder input is restricted to data gathering along established analysis criteria				
	Cost-Benefit Analys	sis: Analysis Require	ements			
		Qualitative	Numerical	Financial	Monetarisable	
Dete	Input-level (minimum requirement)				Х	
Data	Output-level (minimum requirement)					
Outcome-level (minimum requirement)					Х	
Time	Overall analysis time needed for evaluator	Several weeks to many weeks				
Time	Overall time requirements for stakeholders	A few hours or less per stakeholder involved in the assessment				
Skills	Special skills needed Advanced economic analysis					

# **EXAMPLE: COST-BENEFIT ANALYSIS (CBA)**

- What to pay keep in mind: understanding the method's capacity and limitations
  - Degree of coverage of benefits and costs
  - Monetarization of benefits and costs (e.g., quality of assumptions made, shadow prices and other methods)
  - Taking time (e.g., discount rates) and chance into account
  - Net present value versus benefit-cost-ratios and rates of return
- Good practice suggestions
  - Standardized and clearly/understandably stated assumptions
  - Sensitivity analysis
  - Results in terms of net present values (versus benefit-cost-ratios and rates of return)
  - o Distributional effects explicitly included

Examples

(compare interventions)

Cost-Benefit Analysis (CBA)

Level 2

Cost-Effectiveness Analysis (CEA)

Cost-Utility Analysis (CUA)

Effects Method (Méthode des Effets)

Statistical Frontier and Development Envelope Analysis (SFA, DEA)

Multi-Attribute Decision-Making (MADM): Intuitive Scoring Models, Decision/Utility Theory Level 1 (improve one intervention)

Benchmarking of unit costs

Benchmarking of other partial efficiency indicators

**Financial Analysis** 

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Stakeholder-driven approaches

Comparative ratings by stakeholders: Effectiveness rating and cost analysis, Efficiency rating Level 0 (describe efficiency)

Example 2: Expert judgement by evaluator

Specific empirical evaluation questions

Little-known

Well-known

#### **EXAMPLE 2: EXPERT JUDGMENT BY EVALUATOR**



Expert Judgement: Analytic Power						
What is the method's analysis level?		Level 0 (describes and provides an opinion on some efficiency- related aspects of an aid intervention)				
To what degree is the method clearly and unambiguously defined?		There is little or no established guidance				
How independent is the analysis result from the choice of a specific evaluator under ceteris paribus conditions?		Diffe	rent evaluators car	n come to entir	ely different o	conclusions
How participatory is the method?		The a invol	analysis can be con vement	ducted withou	t any significa	ant stakeholder
	Expert Judgemer	nt: An	alysis Requiremer	nts		
			Qualitative	Numerical	Financial	Monetarisable
Data	Input-level (minimum requirement)		Х			
	Output-level (minimum requirement)		Х			
	Outcome-level (minimum requirement)		Х			
	Overall analysis time needed for evaluator		About a day or less			
Time	Overall time requirements for stakeholders	None (The analysis can be conducted without any signific stakeholder involvement)				any significant
Skills	Special skills needed		Deep thematic expertise and long-term evaluation experience			

# **EXAMPLE: EXPERT JUDGMENT BY EVALUATOR**

#### • What to keep in mind:

- o Little or no methodological guidance
- Assessments of different evaluators are not comparable (each judges against his/her own benchmarks)
- Often provided without supporting facts or rationale

#### Good practice suggestions

- Develop good practice criteria, for example (Averch, 2004):
  - *Coherence*, i.e. the judgment cannot contradict itself;
  - *Calibration,* i.e. the judgment predicts events with the right statistical probability;
  - *Resolution*, i.e. the judgment is as unambiguous as possible; and
  - *Reliability,* i.e. another judgment by the same expert would come to the same predictions if based on the same facts.
- Series of assessments by the same evaluator
- Make rationale and data behind the judgment transparent

Examples

Well-known

Level 2 (compare interventions)

Cost-Benefit Analysis (CBA)

Cost-Effectiveness Analysis (CEA)

Cost-Utility Analysis (CUA)

Effects Method (Méthode des Effets)

Statistical Frontier and Development Envelop Analysis (SFA, DE

Multi-Attribute Decisio Making (MADM): Intuitive Scoring Models, Decision/Utility Theory Level 1 (improve one intervention)

Benchmarking of unit costs

Benchmarking of other partial efficiency indicators

**Financial Analysis** 

Follow the Money

Stakeholder-driven approaches

Example 3: Comparative ratings by stakeholders: Effectiveness rating and cost analysis Level 0 (describe efficiency)

Expert judgement by evaluator

Specific empirical evaluation questions

Little-known

#### EXAMPLE: STAKEHOLDER RATING OF EFFECTIVENESS + COST ANALYSIS BY EVALU



Analytic Power							
What is the method's analysis level?			Level 1 (identifies efficiency improvement potential within an aid intervention)				
To what degree is the method clearly and unambiguously defined?			There is little or no established guidance				
How independent is the analysis result from the choice of a specific evaluator under ceteris paribus conditions?			a Results obtained by different evaluators may vary somewhat (if the same set of rating question is used)				
How participatory is the method?			Stakeholder input is restricted to data gathering along established analysis criteria				
Analysis Requirement							
		(	Qualitative	Numerical	Financial	Monetarisab le	
Data	Input-level (minimum requirement)				Х		
	Output-level (minimum requirement)		Х				
	Outcome-level (minimum requirement)		Х				
Overall analysis time needed for evaluator		Several days					
lime	Overall time requirements for stakeholders	A few hours or less per stakeholder involved in the assessment					
Skills	Special skills needed	-					

#### STAKEHOLDER RATING OF EFFECTIVENESS + COST ANALYSIS BY EVALUATOR

	InWEnt p	World Bank	
Example:	International	Other	Short-term
Evaluation of a regional	Leadership	capacity	training
capacity development program	Training	development	projects
	(N=12)	(N=71)	(N=351)
The course resulted in substantial positive changes to the way I perform key or primary functions of my work	25%	39%	63%
The course resulted in small positive changes to the way I perform key or primary functions of my work	33%	28%	22%
The course resulted in positive changes to the way I perform non-key or secondary functions of my work	33%	17%	8%
The course resulted in little or no change to my work	8%	15%	8%
The course resulted in negative changes to the way I do my work	0%	0%	0%
Cost range per participant (thousand Euro)	70 - 85	1 - 5	N/A

Source: *Evaluation of the InWEnt programme: "Water Sector Reform in the MENA Region",* Dr. M.A. Palenberg, Institute for Development Strategy, 2009

# EXAMPLE: STAKEHOLDER RATING OF EFFECTIVENESS + COST ANALYSIS BY EVALUATOR



#### Questions that need to be addressed:

- (Good practice, standardized survey schemes)
- Can stakeholders provide reliable comparative assessments?
  - Each participant only on "his/her" intervention, or
  - Each participant on both interventions?
- Interpretation of results in absence of dominance

#### **Good practice suggestions:**

- Participatory survey development
- Enable stakeholders to assess alternatives

Level 2 (compare interventions)

Cost-Benefit Analysis (CBA)

Cost-Effectiveness Analysis (CEA)

Cost-Utility Analysis (CUA)

Effects Method (Méthode des Effets)

Statistical Frontier and Development Envelope

Example 4: Multi-Attribute Decision-Making (MADM): Intuitive Scoring Models, Decision/Utility Theory Level 1 (improve one intervention)

Benchmarking of unit costs

Benchmarking of other partial efficiency indicators

**Financial Analysis** 

Follow the Money

Stakeholder-driven approaches

Comparative ratings by stakeholders: Effectiveness rating and cost analysis, Efficiency rating Level 0 (describe efficiency)

Expert judgement by evaluator

Specific empirical evaluation questions

Little-kno

Well-known

## EXAMPLE: METHODS FOR MULTI-ATTRIBUTE DECISION-MAKING (MADM)

[...] But the generally accepted notion appears to be that decision making on projects involves two, and only two, wholly distinct activities: ascertaining the rate of return and, then, applying feel, instinct, "seat-of-the-pants" judgment, and the like. In actual fact, these latter categories have been left to control a very large portion of the decision-making process. [...]

Albert O. Hirschman in "Development Projects Observed"

[...] To get over this, my Way is, to divide half a Sheet of Paper by a Line into two Columns, writing over the one *Pro, and over the other Con. Then during three or four* Days Consideration I put down under the different Heads short Hints of the different Motives that at different Times occur to me for or against the Measure. When I have thus got them all together in one View, I endeavour to estimate their respective Weights; and where I find two, one on each side, that seem equal, I strike them both out: If I find a Reason pro equal to some two Reasons con, I strike out the three. If I judge some two Reasons con equal to some three Reasons pro, I strike out the five; and thus proceeding I find at length where the Ballance lies; and if after a Day or two of farther Consideration nothing new that is of Importance occurs on either side, I come to a Determination accordingly. [...]

Examples

(Benjamin W. Franklin in a letter to Joseph Priestley, 1772)

#### **EXAMPLE 4: METHODS FOR MULTI-ATTRIBUTE DECISION-MAKING**



MADM methods: Analytic Power							
What is the me	thod's analysis level?	Level 2 (assesses the efficiency of an aid intervention in a way that it can be compared with alternatives or benchmarks)					
To what degree unambiguously	e is the method clearly and v defined?	Clear and established analysis procedures exist					
How independe	ent is the analysis result from the choice aluator under ceteris paribus conditions?	Different evaluators (different decision-makers) can come to entirely different conclusions					
How participat	ory is the method?	Stakeholder input is restricted to data gathering along established analysis criteria (apart from the decision-maker)					
	MADM method	ds: Analysis Requirements					
		Qualitative	Numerical	Financial	Monetarisable		
Data	Input-level (minimum requirement)	х					
Data	Output-level (minimum requirement)						
	Outcome-level (minimum requirement)	Х					
Overall analysis time needed for evaluator		About a day or less to several days (for intuitive scoring models) Many weeks (for scientific decision analysis)					
	Overall time requirements for stakeholders	A few hours or less per stakeholder involved in the assessment					
Skills	Special skills needed	Decision theory and utility theory (for scientific decision analys					

### EXAMPLE: METHODS FOR MULTI-ATTRIBUTE DECISION-MAKING (MADM)

#### • To keep in mind:

- Very little known
- Owned by decision-maker, hence very different from evaluator- or stakeholder-driven approaches
- Subjective weights of decision-maker enter the assessment
- Complex methodology (for scientific version)

### • Good practice

- Use as complement to other methods in decision-making situations
- Make decision-tree structure and strengths of preferences transparent

Examples

### **OVERVIEW**



#### GENERAL STUDY RECOMMENDATIONS

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Improve application of existing methodology

Further develop promising methodology

> Develop realistic expectations of efficiency analysis

Only apply efficiency analysis when efficient

- Increase application of several little-known but useful methods
- Improve capacity (skills) needed for efficiency analysis
- Conduct comparative, horizontal assessments in addition to/instead of stand-alone assessments
- Develop methodological guidance
- Develop standards and benchmarks
- Explore participative versions of some methods
- Address uncertainties about reliability of untested methods
- Limit efficiency analysis to what methods can handle
- For example: separate goalposts for Level 1 / Level 2 Analyses
  - Level 1 + 2 only for projects and simple programs
  - Only Level 1 for aggregated aid modalities
- Efficiency analysis itself also produces costs and benefits: only apply efficiency analysis if analysis benefits justify analysis costs.
- For example: don't conduct Level 2 Analysis for extremely successful or extremely weak interventions

### **NEXT STEPS**



# **OECD EvalNet Work Group:**

- Create a "Efficiency" Task Team with interested members
- Suggested work packages:
  - Guidance for evaluators, evaluation units and policy-makers
  - Gather implementation experience with several methods and produce implementation manuals
  - Research the reliability of selected methods

# Thank you for your interest!



*Link to the main study report:* <u>www.AidEfficiency.org</u>

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