How can Impact be Measured?

Mapping the Coordinates with GPS, “Ligne électrique de Muhura”, Rwanda

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Danish Energy Management

Topics

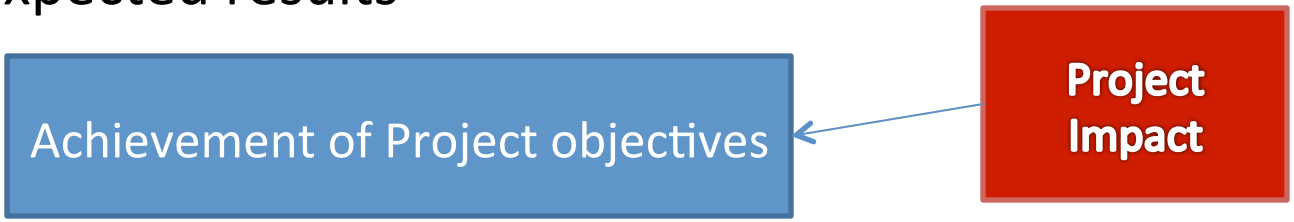
- What are we measuring?
- How to define what we are measuring accurately?
- SMART indicators
- How do we measure impact?
- Examples of impact indicators

Monitoring of energy projects

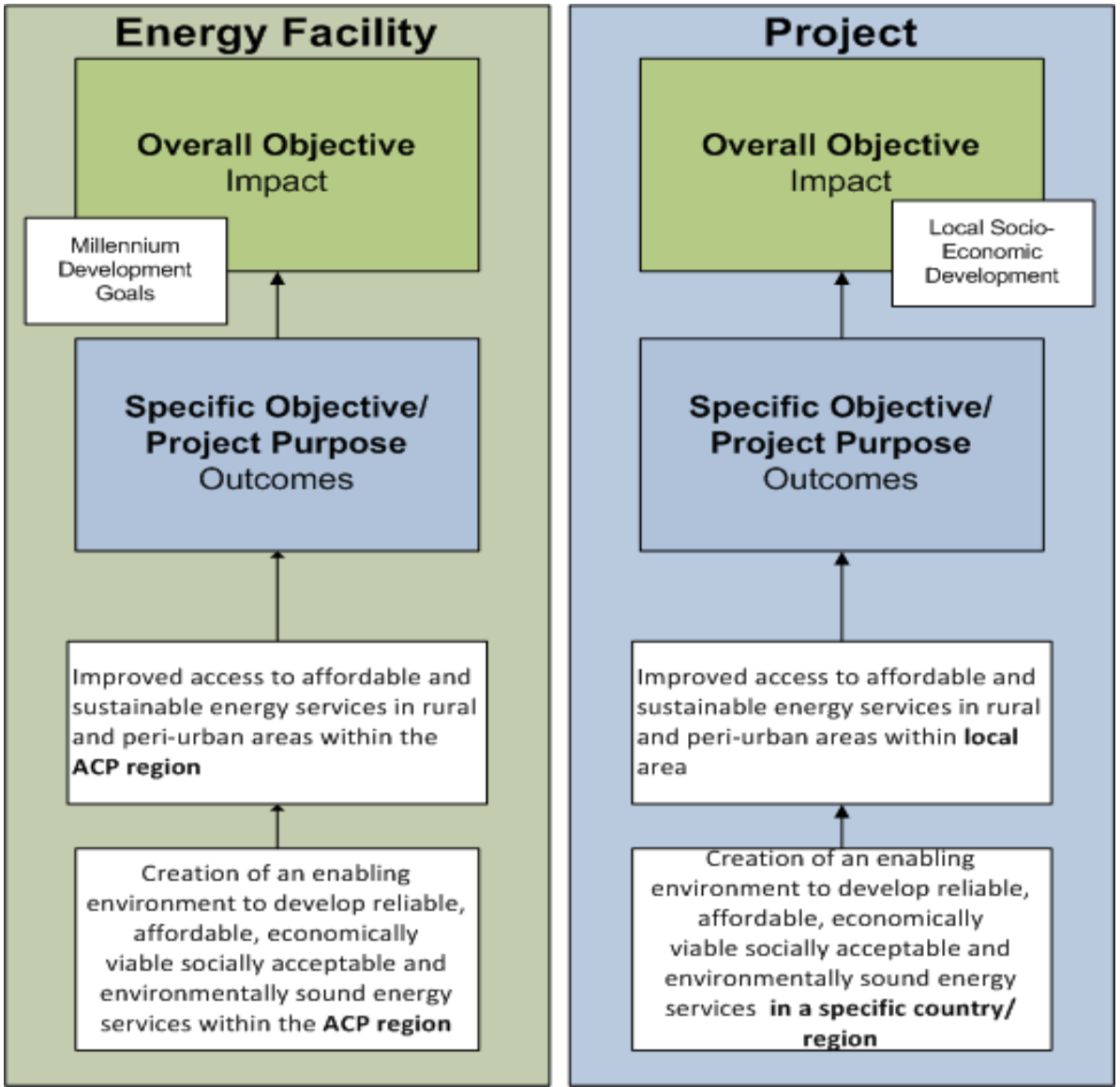
- 2 reasons to monitor project performance:

I. Measure how the different projects contribute to the general objectives of the Energy Facility

II. Measure if the project is achieving its objectives and reaching expected results



Differences in Scope of Measurement



Good indicators to measure performance?

- How can we measure ”soft” issues such as livelihood/ welfare, access to energy, governance ?
- Levels of indicators and their inter-relationship
- Where do you get information from – outside sources / baseline study?
- Set **baseline value** of the Indicator – how is it set?
- Set **feasible** **targets** for each Indicator
  - Targets at project end
  - Yearly targets , which may not be a linear function of the end target, but takes into account start-up time, are useful.

SMART Indicators

- SMART indicators
  - Specific
  - Measurable
  - Available at an acceptable cost
  - Relevant with regard to the objective concerned
  - Time bound

Useful indicators are the ones that are used

An Example

- Background

A project which aims to reduce wood consumption and enhance sustainable economic development through the introduction of energy efficient stoves and 4 forms of renewable energy in households and social institutions in a rural area.

- Overall Objective

To contribute to improved access to sustainable energy services in order to reduce climate change and improve the livelihood of rural communities

- OO Indicators
  - At least 12,000 new beneficiaries with access to non-grid electricity (at least 93.000 kW/ year)
  - Number of new jobs created in the area (based on access to energy) - 4 per new business (see below) and 15 per association.
- Project Specific Objective

To increase access to modern, affordable and sustainable energy services for rural poor using four kinds of local sources of renewable energy and promote efficient energy production, transformation and productive use.

- SO Indicators
  - At least 12,000 new beneficiaries with access to non-grid electricity (at least 93.000 kW/ year)
  - At least 25 new enterprises and 1 energy association established in the area as a result of access to energy services

Parameters for Setting Goals

- Define the **quantity**: *25 new enterprises*
- Define the **target group**: *…beneficiaries in the project area…*
- Define the **quality**: *... At least 93.000 kW/ year...*
- Define the **place**:*... in the project area...*
- Define the **timing**: *... within the project period ...*

Difficulties when Defining Indicators

- The project overall strategy and objectives is not clearly defined so it is hard to know what to measure
- High level indicators to which the impact of the activity is not traceable
- Indicator of activity versus indicator of result, e.g.
  - Number of training workshops held (activity)
  - Skills gained by participants (result)
- No baseline or target – where are we leaving from and going to? How do we know when we have reached there?
- Too many and too costly

Examples of imprecise indicators

Objective	Indicator	Problem
Improve access to modern and affordable energy services	# of HHs using modern and affordable energy saving stoves and energy saving cooking methods/techniques	When is the objective achieved?? What is the target and what is the baseline? When is it ”modern” and ”affordable”? How does the number respond to the needs?
	Level of appreciation of project initiatives by local authorities in order to improve the socio-economic conditions of the population	How can this be measured as it is not defined clearly?
	% of people who have access to energy services, before and after the action.	No target has been set Positive that it is foreseen to compare Is it clear what ”energy services” are?

Challenges in Measuring **Impact** of the Project

- Attributing socio-economic change to project activities (assumption: cause and effect link can be drawn)
- The scale of the intervention is sometimes too small to have an impact on a larger socio-economic level
- So what should we be aiming to measure?

"A plausible association"

*i.e. 'reasonable person, knowing what has occurred in the program and that the intended outcomes actually occurred, agrees that the program contributed to those outcomes'**

*Hendricks, M 1996, 'Performance monitoring: how to measure effectively the results of our efforts', paper presented at the American Evaluation Association Annual Conference, Atlanta, 6 November.

What are the Elements of Impact for the EF?

- Premise of the EF is to improve access to energy services *as a means* to reducing poverty
- The elements of the overall objective are primarily to achieve the MDGs on poverty alleviation *sustainably*
  - Includes improving:
    - *social factors:* health, education
    - *economic factors:* income and income generating opportunities
    - *environmental factors:* reduction of carbon dioxide production, use of renewable energy

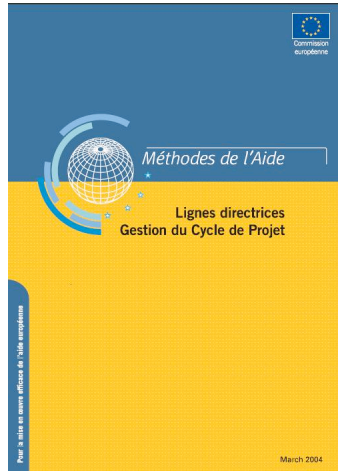
Improved health	
Prevalence of respiratory diseases	Percentage change in the occurence of respiratory diseases reported by local health professionals, health clinics or other health institutions
Maternal mortality ratio	Proportion reduction of women who die during child birth or within 42 days after termination of pregnancy (UN definition)
Improved education	
School completion rate	Percentage increase of pupils completing primary/ secondary education having passed final examinations
Primary-secondary school transition rate	The increase in percentage of the school pupils transitioning from primary to secondary school
Economic Conditions	
Change in household income before and after project intervention	The percentage change in available household income before and after the project intervention
Improved employment opportunities	
Jobs created as a result of the increased access to energy and the ensuing economic growth	Ratio of jobs created to beneficiary population in the project area
Environmental Conditions	
CO2 emissions from energy production and use	Amount of CO2 emissions saved from reduction of consumption of fuels or change in technology
Annual rate of deforestation attributed to energy use	Annual rate of deforestation attributed to energy use

Indicators – Summing Up

- Measuring impact is a challenge so we have to come up with indicators which are *measurable* and can *indicate* progress
- Monitoring impact is important
  - to find out whether project is achieving its goal
  - to demonstrate project successes
  - to maintain focus on the intended effect and not just the day-to-day
  - allowing the projects to adapt

SEE ANNEX 3 of the "Reporting Guide"
http://www.energyfacilitymonitoring.eu/index.php/en/publications/project-templates-and-guidance

Useful Links

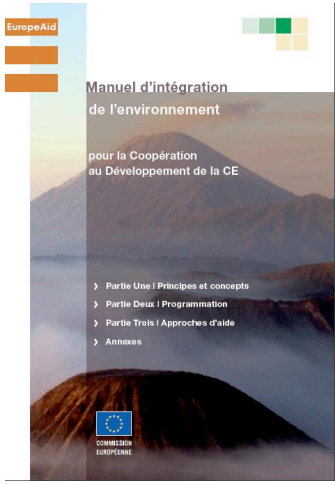


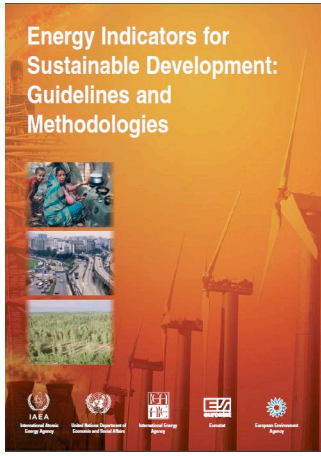
- EU Energy Facility Thematic Fiche on indicators:

  http://energyfacilitymonitoring.eu/images/stories/publications/thematic_fiche_1.0.pdf
- Project Cycle Management Guidelines (PCM Guide)
  - http://ec.europa.eu/europeaid/multimedia/publications/documents/tools/europeaid_adm_pcm_guidelines_2004_en.pdf [en]
  - http://ec.europa.eu/europeaid/multimedia/publications/documents/tools/europeaid_adm_pcm_guidelines_2004_fr.pdf [fr]
- Official list of MDG indicators - http://mdgs.un.org/unsd/mdg/Host.aspx?Content=Indicators/OfficialList.htm on http://mdgs.un.org/unsd/mdg/Home.aspx
- Energy Services for the Millennium Development Goals - The UN Millennium Project: http://www.unmillenniumproject.org/documents/MP_Energy_Low_Res.pdf
- Indicators incorporating gender and energy sensitivity: http://www.undp.org/energy/genenergykit/engender3_3.htm
- capacity4dev website http://capacity4dev.ec.europa.eu/ Monitori activities: see "Guidelines on technical Cooperation", Chapter 6, "M evaluation and quality assurance".

capacity4dev.eu

- "Indicators of sustainable development: Guidelines and Methodologies" A source of indicators in several areas including the environment: http://www.un.org/esa/sustdev/publications/indisd-mg2001.pdf. Page 226-252: Indicators in the field of energy.
- "Environmental Integration Handbook for EC Development Co-operation". Annex 10: Indicators (environmental)
  - http://ec.europa.eu/europeaid/multimedia/publications/documents/thematic/europeaid-%20environmental-handbook_en.pdf[en]
  - http://ec.europa.eu/europeaid/multimedia/publications/documents/thematic/europeaid-%20environmental-handbook_fr.pdf[fr]
- "Energy indicators for sustainable development" http://www-pub.iaea.org/MTCD/publications/PDF/Pub1222_web.pdf





Thank you

Asante

Zikomo

Mahadsanid

Waybale Nyo

Murakoze

Yaqhanyelay