

# Assessing the impact of renewable energy electrification on ecodevelopment in Southern Mediterranean Countries rural areas: Defining appropriate indicators

## General approach

Over the past years, the development of various electrification projects in rural and peri-urban areas in the Southern Mediterranean Countries (SMC) has allowed for a better understanding of the multiple positive effects such projects can have in a given region: stimulation of the local economic fabric; improvement in the quality of life; improvement in education and health levels; slowing the rate of rural depopulation, etc. Identify and quantify these impacts are of the utmost importance in order to better direct future electrification projects.

Under the framework of the MEDRES project, a first set of general indicators has been selected. A methodology will now be developed to assess associated impacts with the use of “before” and “after” studies. Due to time constraints, this methodology will -in some cases- be tested on projects that have already been completed. In these cases, pre-existing data will be used.

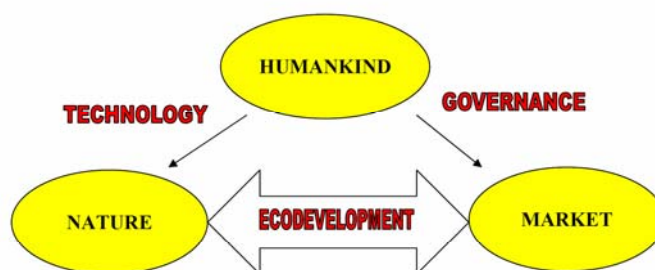
The objective is not to assess the project’s implementation. The projects themselves will be considered as an entry data and the “before-after” field studies of the MEDRES project will focus on their results and impacts. However, the conclusions of these studies shall highlight key aspects of the projects and how they were implemented.

### Proposed work plan until June 2008 (end of the next reporting period)

- Step 1:** Define a range of impacts to evaluate and general indicators proposed
- Step 2:** Identify the “before” and “after” study sites and available project information in close cooperation with the person in charge of field study
- Step 3:** Hold an indicator workshop on January 22<sup>nd</sup>, 2008 (Marrakech) to define operational indicators, measurement methods and field studies planning
- Step 4:** Propose a methodology for the field study (deliverable 4.2)
- Step 5:** Visit the four Mediterranean countries where are conducted the field studies
- Step 6:** Revise methodology (final version of D4.2)

## Identification of impacts and selection of indicators

In order to understand the impact of renewable energies, and especially those producing electricity, their contribution to ecodevelopment within a pre-defined area has to be assessed. The ecodevelopment concept has been chosen since it covers the three pillars of sustainability as outlined in the Brundtland Report: 1) nature preservation; 2) economic efficiency; and 3) social well-being. Moreover, it presumes a qualitative approach to development where there is an evolution towards “better” which does not necessarily mean “more”. The term ecodevelopment also implies “co-development” where the local population is included in the development process such that a project is designed to be a collective process where success is defined by how it empowers all in the community.



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(Source HELIO International)

The impacts of the project on local ecodevelopment will thus be assessed according to the following categories:

- Ecological viability
- Social viability
- Economic viability
- Technical viability
- Civic viability

This methodological framework has been developed with reference to the importance of the selected impacts in achieving the Millennium Development Goals (MDGs). Four priority impacts for each type of viability have been identified. There are thus twenty indicators to be calculated prior (“before”) the project launch, then again once the project is completed (“after”).

The indicators allow defining a baseline from which is measured progression towards or regression from energy-related sustainability. By concentrating on feasible, policy-relevant, energy-related indicators at the intersection of economic, social, technological, civic and environmental sustainability this tool can deliver a usable set of goals and measurements to both citizens and decision-makers.

Each indicator must therefore be:

- clearly definable, simple to understand, and easily communicated to citizens and decision-makers;
- be relevant to actual or anticipated policies;
- reflect an important aspect of the social, economic, environmental, or technological elements of the energy system;
- measure something of obvious value to observers and decision-makers; and,
- have durability and long-term relevance.

The underlying metric, i.e., the actual measurement or statistic used, must be generally available for most, if not all, countries. This combines measurability, data availability, and achievability; data collection and vector calculation must be do-able. Therefore:

- if calculation is required to derive an indicator, it must be simple to do;
- improvement in an indicator's measurement is indicative of genuine progress toward an energy system that sustains and improves human health and well being; and,
- the indicator set as a whole is indicative of a country's and the world's progress towards energy-related sustainability.

*However important the indicators are, they are only statistics and merely give one part of the story. The most interesting contribution of the reports comes from the qualitative personal assessment given by the observer-reporters in each country.*

## Next step : A workshop about indicators

### Workshop Objectives

- Present the global approach (ADEME) and the selected country sites (Algeria, Egypt, Morocco, Tunisia)
- Select a set of indicators and prepare questionnaires (validation with the local stakeholders)
- Plan site visits, scope out provisional study plan and identify needs for the good realisation of the assessment

### Pre-workshop

- Gather as many elements as possible regarding the selected project (see table below)<sup>1</sup>
- Identify the socio-economic, cultural context of the region and the site to be studied taking into account existing dynamics, e.g. rural exodus, poverty, settlement, development of productive activities in addition to agriculture, development of regional exchanges, etc.
- Identify national objectives beyond MDGs

### Characterisation of the project: Preliminary data to be collected

- **Material aspects:** selected technology and reason of that choice, technology maintenance system, financing, limitations put on end-use, batteries recycling, etc.
- **Economical aspects:** how was the project financed?
- **Institutional aspects:** which stakeholders are involved and how are they involved, e.g. via financing, training, support to association creation, etc.
- **Social aspects:** price setting, services provided, electrified population, type of service management, information campaigns and meetings, is the project seen as a temporary measure while waiting for an access to national grid?, etc.
- **Objectives:** qualitative and quantitative

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<sup>1</sup> For the projects which haven't started this data can be re-evaluated so that deviation from the anticipated can be accounted for.