

# Impact monitoring in Renewable Energy Projects

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## 1. Introduction

Each project/programme has the task of monitoring and verifying the impacts of its activities. Therefore **INTEGRATION environment & energy** has developed specialized packages for "**Impact monitoring in RE projects**" and offers its services to projects and programmes. With these impact monitoring services INTEGRATION responds to an increasing demand from donors as well as from project managers and team leaders.

The product provides the structure as well as the implementation features of impact monitoring (IM) accompanying the project. It includes flexible components: analysis of the village situation (survey of village representatives at the beginning and end of the project), analysis of household conditions (household survey at the beginning and end of the project<sup>1</sup>), annual household data survey, monitoring reports as well as a yearly photo documentation.

INTEGRATION offers three different work packages in total:

- A) complete implementation by an INTEGRATION team (package 1)
- B) joint implementation of INTEGRATION and local team members (package 2)
- C) training and preparation of local teams for IA (package 3)

These can be independently implemented according to the demands or as prerequisites in the project/programme impact monitoring strategy.

## 2. Benefits of impact monitoring

The goal of impact monitoring is to observe social and economic changes within the target group over the duration of the project/programme, to record trends and to make qualitative and quantitative judgements about these changes concerning the living conditions of the target group.

The impact monitoring results can be used as the basis for decisions, to improve the achievement of a project/programme's objectives, to provide a stimulus for project management, to alter project approaches and to identify additional necessary measures.

Furthermore impact monitoring offers RE projects support in the fulfilment of political goals.

### 2.1. Development of political framework conditions of RE project

Access to improved provision of energy through RE projects also offers the possibility to improve socio-economic living conditions apart from technology and knowledge transfer. This can be achieved in a variety of ways: through achievable income and time-savings, possibilities for productive use; labour savings and improvement of education.

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<sup>1</sup> The data are analysed with SPSS (Statistical Package for Social Science).

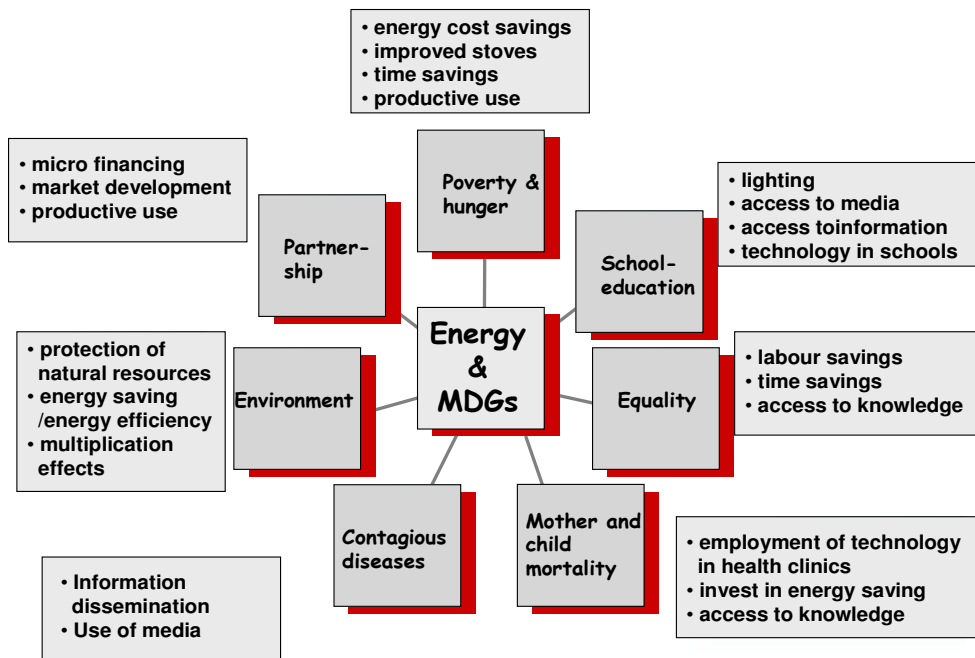
Thereby RE projects achieve an important contribution to poverty minimisation, as stated in the UN Millennium Declaration and formulated in the Action Programme 2015 of the German Federal Government.

Moreover RE projects follow the principle of sustainable development, as expressed in different chapters of Agenda 21. This means for example “to support successful economic growth in the partner countries, to make more prosperity possible, to distribute chances evenly between rich and poor, north and south, men and women, to use natural resources for the good of the people today, so that they also remain for future generations.“ (GTZ home page, 16.01.2007)

With the help of impact monitoring, quantitative and qualitative contributions to the Millennium Development Goals (MDG) and to the framework conditions for RE projects can be demonstrated and verified.

## 2.2. Energy and the Millennium Development Goals

Improved access to energy can contribute to meet the MDGs in various ways, as the following figure shows:



A reliable and affordable energy supply is not yet considered to be a basic need<sup>2</sup> (in all countries) but energy proves to be of utmost importance and necessary for the satisfaction of basic needs, for example, nutrition, education or health. However, it still seems problematic to demonstrate a causal link between a reliable and affordable energy supply and improved living conditions and therefore to prove a contribution to the MDGs.

<sup>2</sup> However, investigations show that some end users would definitely designate energy supply as so called basic needs (refer to the example of Indonesia: World Bank/Marge 2003: Impacts of Rural Electrification on Poverty and Gender in Indonesia. EnPoGen. Volume 1: Facts, Findings and Recommendations. Washington)

The product “Impact monitoring in RE projects” with its components offers to demonstrate possibilities with cause and effect relationships and therefore to determine the contribution of a RE project to the MDGs.

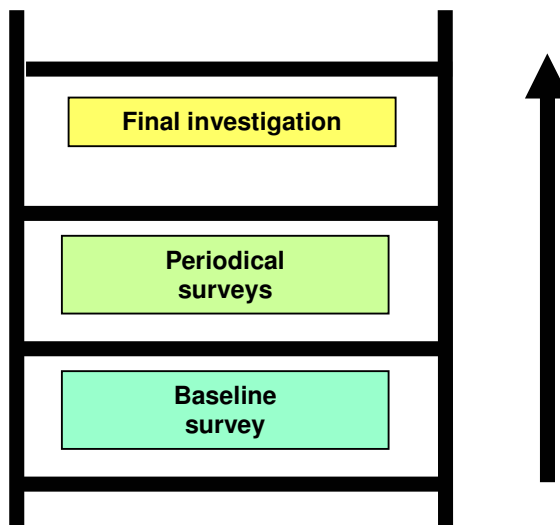
### 3. Structure & components of impact monitoring

The implementation of impact monitoring with focus on the aspects described above, demands the development of more manageable procedures and methods. For continuous observations and to verify the impacts INTEGRATION has developed impact monitoring which combines quantitative procedures with qualitative features and which can be flexibly adapted to the respective project / programme requirements.

#### 3.1. Baseline survey, periodical surveys and final investigation

To be able to demonstrate changes in the project plan, firstly the situation at the beginning and the end of the project must be documented. Further regular observations should be undertaken over the period of the project.

This happens with help of a baseline survey at the beginning and a final investigation at the end of the project as well as periodical surveys in between. The baseline survey (BLS) is an instrument, which can be exploited for the formation and measurement of impact monitoring indicators also. In this context not only is the data collection important, but above all continuous observation, analysis and discussion to recognise not only positive but also negative changes early enough and to be able to influence them through corresponding project measures, which may lead to necessary changes and/or adaptation of project activities and objectives.



Carrying out a baseline survey delivers data for a comparison between the pre and post situations and therefore, aside from the use for impact monitoring, it is an additional basis for the legitimization of RE projects.

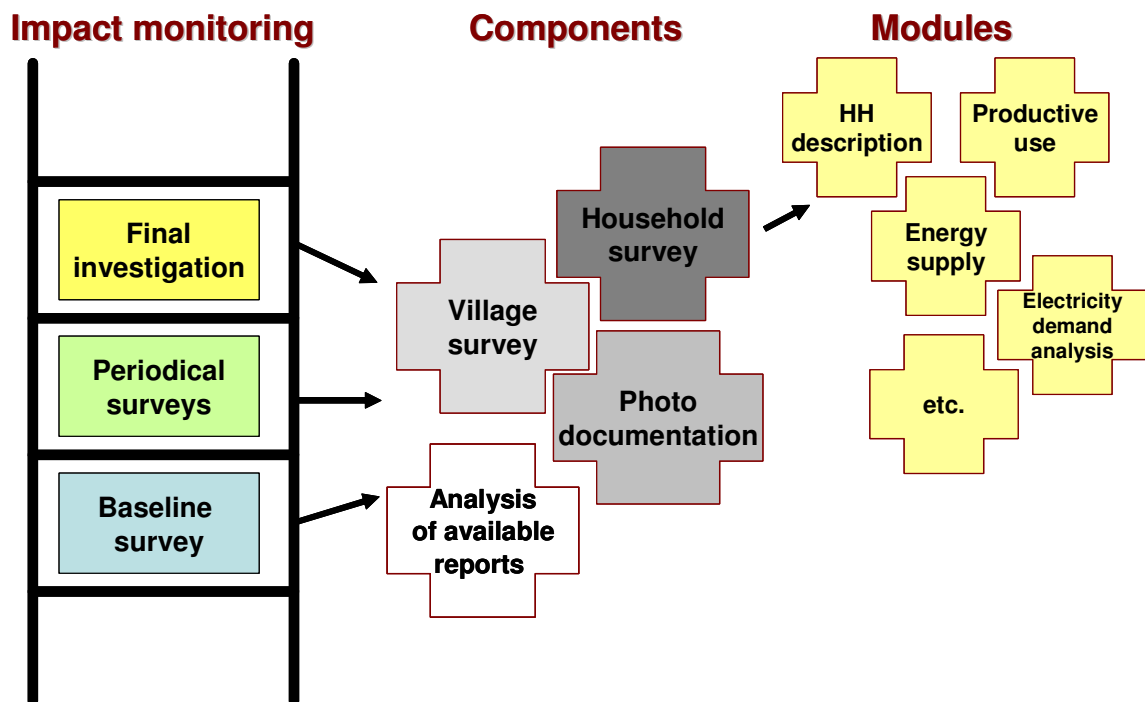
Moreover the up-to-date data collected allows the project management to individually adapt the project concept. BLS examines the “basis” on which a project is established. If the previous assumptions and information prove to be misleading (e.g. concerning income or outreach), the project management has a solid basis to adapt/change planned activities.

Periodical investigations show to what extent project measures actually “impact” the project environment; and also vice versa: whether the project environment demonstrates an impact on the project (for example changed social structures through migration, health problems etc.) and whether the project management should possibly react to the changed conditions.

The final investigation then shows ideally not only the activities implemented and the results achieved, but provides the proof, if the project has reached the required impacts.

### 3.2. Components of impact monitoring

The baseline survey, periodical surveys and the final investigation rely on a variety of methods that consist of different components. Quantitative and qualitative approaches are adopted. These approaches make the interpretation of statistical data with a qualitative interpretation possible, which is above all required for the analyses of social impacts.



The combinations of village and household surveys have been proven adequate for the implementation of impact monitoring; the optional photo documentation complements the analysis.

#### 3.2.1. Village surveys

The village survey<sup>3</sup> prepares for the household survey, since it makes the current quantitative and qualitative data of the village available. It also serves in information collection of the household and project environment in addition to the preparation of household surveys (e.g. issues concerning the social structure in the village, organisational preparation). Furthermore this information is necessary to be able to interpret the household data. The interview is undertaken by means of a discussion guide/checklist

<sup>3</sup> Questionnaires are also possible on other administrative levels such as communal, district levels, etc.

at the beginning of the survey with an official representative of the village. The guide includes the topics on social infrastructure, drinking water, energy supply, etc. Additionally the possibility of a village tour and the use of further methods (e.g. transect walks or mappings) can be selected.

### 3.2.2. Household survey

The household survey is based on a questionnaire with open and closed questions. This makes the survey of quantitative data on the socio-economic situation of the households possible over the whole project period. The results of the household survey are interpreted and analysed in the form of a report. The household survey is carried out together with the village survey. It contains further qualitative information on the living conditions of the households, which are essential for adequate interpretation of the data collected and impact monitoring.

For household surveys the complete questionnaire develops from single modules<sup>4</sup>, which can be combined both in complete form as well as individually according to the demands. This flexible approach makes it possible to interview households from various villages, for example electrified or non-electrified.

In general all household surveys are always divided into three income categories (poor, middle, rich).

### 3.2.3. Photo documentation

The photo documentation serves as a visual summary of the existing status of the villages and households and the changes that occur during the project. The documentation follows a guide/checklist (e.g. houses, infrastructure, and energy use) on village information. The photographs also serve as the visualisation of the socio-economic changes in the project area.

## 4. Short description: Impact monitoring packages

The components of impact monitoring can be arranged individually and according to the demand of the specific RE project. The packages presented below refer to the components, which can be selected individually or as a complete package according to the requirements of the project/programme and the capabilities of its community development workers.

INTEGRATION offers to arrange impact monitoring in such a way so that the individual components can be carried out independently from the project through INTEGRATION or with the assistance of training in cooperation with selected project workers.

There are three possible packages available. Comprehensive information about each individual or the whole packages can be provided on request.

Components	Package A		Package B		Package C	
	INT	Project	INT	Project	INT	Project
Preparation & training	X		X	X	X	X
Village survey	X		(x)	X		X
Household survey	X		(x)	X		X
Photo documenta-	X			X		X

<sup>4</sup>The modules can also be developed and adapted for project/programmes with other fields of emphasis.

tion						
Data entry	X	(x)		X		X
Data analyses	X		X			X
Report	X		X			X

## 5. Tasks to be performed in advance by the project

The data collection for impact monitoring is a cross cutting task and agreement about the needs and aims of the monitoring concept, which should exist within the project/programme in advance. Generally projects can provide only limited resources (staff/budget) for monitoring, which is why INTEGRATION offers to carry out representative surveys and to train the local community workers in preparation and implementation of impact monitoring in their project/programme.<sup>5</sup> Close cooperation of the INTEGRATION team with project staff and community development workers is therefore important for the success of the project.

## 6. Contact

Further Information and a comprehensive paper with descriptions of the individual packages can be obtained from the author during the conference or via email as stated below.

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