

Oral presentation Topic: 4. Field Experience

TRAINING OF COMPANY ABILITIES TO INTEGRATE SOCIAL ASPECTS IN PV-PROJECTS FOR RURAL ELECTRIFICATION

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The extension of rural electrification with decentralised renewable energy systems in developing countries is growing with a ten-plus percentage. A stronger growth is limited due to a number of problems in the non-technical surrounding. One major reason is the lack of adaptation of the RE technology to existing local social, cultural and socio-economic structures. Relevant actors in rural electrification with PV (Hybrid)systems lack a number of competencies, e.g.:

- Analysis of user's needs regarding energy needs
- Analysis of income and socio-economic structures to avoid financing models with high risk
- Construction and application of training of end users to avoid inadequate operation of the systems
- Build-up an efficient infrastructure for maintenance, service and sale to support long-term operation

The integration of new energy technologies in rural areas can – as other technologies – only succeed if the cultural and socio-economic conditions are considered from the beginning of a project. Only by considering the economic situation and the integration of the energy technology in the daily life of the users from the beginning long-term sustainable electrification programs are possible.

Knowledge for the fulfilment of socio-economic and cultural assessment is existing among specialists and has to be transferred to companies who integrate these knowledge into their project work. To provide companies with this knowledge a "train the trainer" -concept was elaborated. Social scientists and field experts developed training units in which the experiences from rural electrification of the last decade are summarised. Social dynamics and their consequences for rural electrification projects are taught in order to create awareness. Practical applications are enhanced with the training on analysis techniques, exploitation of social analysis results, communication and promotion skills.

From a process model which reflects the steps of a project for rural electrification the needed project task concerning social and socio-economic influencing factors are deducted. The target groups for the training courses are the planners and technicians of the implementing companies at all steps of the process. The concept aims at a most cost-effective approach by training those who are involved in the projects anyway. A modular training concept is developed which allows tailor made training courses for the companies and their staff depending on where in the process they are active.

Some of the training objectives are

- to learn to assess the energy service needs not only on the basis of the energy consumption but also in the wider range of a socio-economic approach,
- to assess the local context and the use of this information for the conception of the project design,
- to select appropriate local people for a partnership in installation and O&M work and provided with adequate training methods to assure reliable knowledge transfer.
- Approved guidelines for promotion and introduction in the use of the PV-systems as well as establishing a trustful customer relationship with the end user are imparted.
- approaches and tools for monitoring and follow-up evaluations to assess the technical, social and financial success of the project

The didactical methodology of the training courses follows an interactive approach to assure a successful transformation learned information into the daily business life of companies. This methodology integrates multimedia presentations with group work on case examples and problem solving. In this oral presentation the details of the train the trainer concept, training contents and training applications will be presented.

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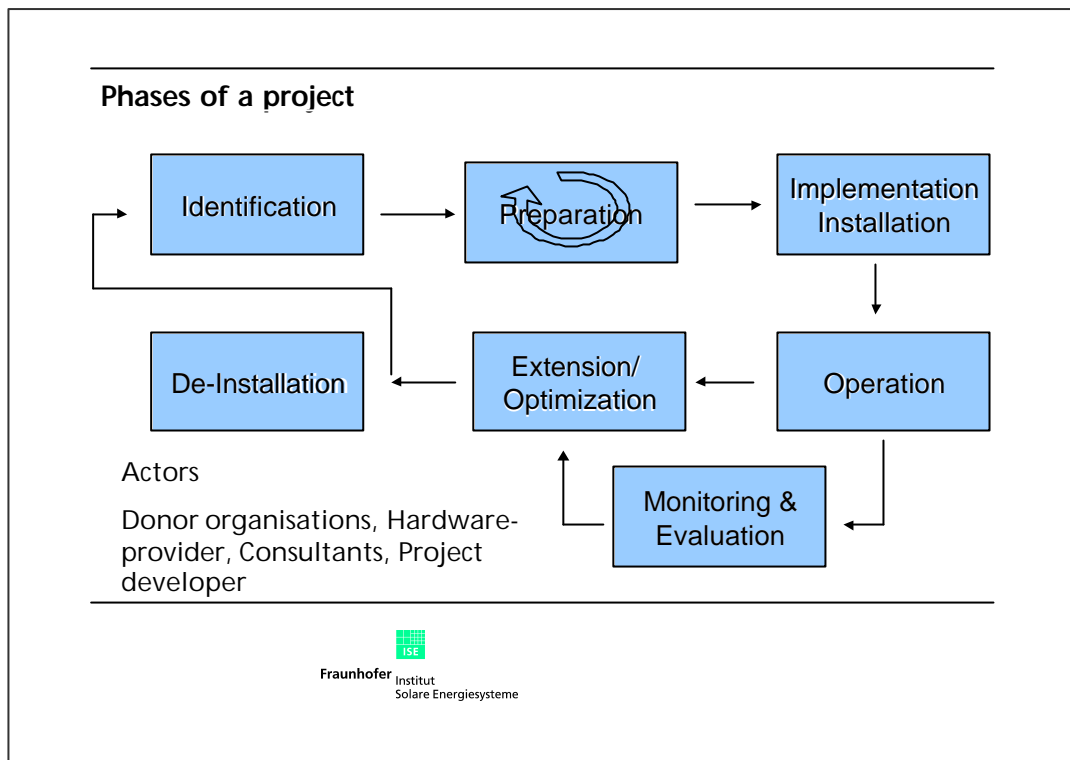


Figure 1: The process-cycle-model with its different phases. This model reflects the steps of a project for rural electrification and was used to deduce needed project tasks concerning social and socio-economic influencing factors.

Topic	Phase	Learning Target
Awareness of socio-technical and socio-economic integration	All phases	<ul style="list-style-type: none"> ➤ Understanding the process-cycle-model ➤ Awareness of non technical aspects in the field of rural electrification ➤ Integration of soft (social) and hard (technical) facts to one conception
Communication & project management	project identification	<ul style="list-style-type: none"> ➤ Organisation of reliable communication structures ➤ Communication between the end-users and other stakeholders ➤ Integration of communication as a formal part of project management
Analysis and assessment of regional and local context	Project design	<ul style="list-style-type: none"> ➤ Analysis of energy needs ➤ Survey of social and socio-economic data ➤ Transfer of local cultural information into a code of practice
Construction of a financial concept	Projects design	<ul style="list-style-type: none"> ➤ The design of transparent payment schemes that will be accepted by the users ➤ The match of payment schemes with organisation for operation ➤ Awareness of organisational problems concerning regular payments
Promotion/Introduction concept	Implementation & operation	<ul style="list-style-type: none"> ➤ Improvement of promotional activities ➤ Planning of promotion strategies ➤ Optimal communication policy
Monitoring and Evaluation	Monitoring & Evaluation	<ul style="list-style-type: none"> ➤ Monitoring & evaluation of the projects' progress and results ➤ Consideration of critical non-technical parameters ➤ The application of monitoring and evaluation results for optimisation
Training for end user & local technicians	Extension of project and system	<ul style="list-style-type: none"> ➤ Practice of pedagogical methods ➤ Development of training conception ➤ Handling of cultural problems

Figure 2: This table shows the training contents, the related phases of the process-cycle-model and the main learning targets of each training module.