



Contributing to poverty Alleviation through Regional Energy Planning in Indonesia

Contributing to poverty Alleviation through Regional Energy Planning in Indonesia (CAREPI)

Deliverable No. 6: Identification of energy-related
needs and priorities of poor communities

Summary report

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Acknowledgement/Preface

This report is deliverable No. 6 of the COOPENER 'Contributing to poverty Alleviation through Regional Energy Planning in Indonesia(CAREPI)'. The CAREPI project aims to develop institutional and technical capacity in selected regions in Indonesia for conducting energy policy analysis and providing improved energy services to poor communities, in order to alleviate poverty and contribute to sustainable development. The Terms of References for the regional technical team presented in this report can be used as a guideline for the establishment of technical teams in the other regions not covered by CAREPI.

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Abstract

This report presents an overview of the background that led to the establishment of the regional technical teams in the four regions selected by the CAREPI project. It also provides a description of the tasks and responsibilities of the technical team. These terms of reference can be used as a guideline for the establishment of similar teams in other regions in Indonesia.

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1. Introduction

The CAREPI project aims to contribute to the process of decentralisation and regional autonomy which started some 10 years ago in Indonesia and is still ongoing. This process has resulted in a shift of almost all powers and responsibilities from the central government to the local government, including responsibilities for energy sector development. This means that regional governments are now responsible for formulating their own energy policies.

In the CAREPI project the regional teams are developing a regional energy outlook; an energy plan for the region that covers the whole energy sector and presents the most appropriate regional energy strategy for meeting projected future energy demand. Within the regional energy plan special emphasis lies on energy-poor communities, those communities in the region who have no access to grid electricity or other forms of modern energy and still rely to a large degree on traditional biomass for meeting their energy needs.

Work Package 2 of the CAREPI project aims to assess the energy-related needs and priorities of those poor communities and to identify measures by which these problems can be addressed. A report describing in detail the methodology and results of WP2 has been produced by the teams in the four target regions. This document presents a brief summary of the work carried out by the regional teams on work package 2.

2. General Approach

The general approach adopted by the regional teams to develop pro-poor energy strategies consisted of the following steps:

1. Selection of a suitable target location based on a list of criteria such as income level, representative for the whole region, current energy consumption, accessibility of the community, demand for energy services and local authority commitment. Ideally, a number of different locations with different characteristics should have been included in the analysis but due to budget constraints this was not feasible.
2. Develop questionnaire and conduct workshops/interviews with community members. Two levels of intervention with the selected community were planned in advance: community meetings to present CAREPI project, and workshops with community representatives and other stakeholders, including local government, to determine the needs and priorities.
3. Assess the current and future energy problems of the community; a participatory needs assessment process was applied which basically involved asking people within the community and other stakeholders what they want in terms of energy services.
4. Identify potential measures that could address these problems. Through in-depth interviews with local government, local energy providers, local NGOs and based on the knowledge of the CAREPI team of the local situation, various options have been identified and analysed in detail for addressing the identified energy problems.
5. Develop the most appropriate strategy that addresses the energy needs of the poor people

6. Present and discuss proposed energy strategy with all stakeholders and incorporate the comments received in the final strategy.

3. Selected target locations

Based on a set of criteria the following villages/communities have been selected in the regions for conducting a needs assessment:

- West Nusa Tenggara: Teres Genit village was selected because it is not connected to the grid and is classified as a 'poor' community. Teres Genit is located in the northern part of the Lombok island and can be reached by four wheel vehicle or motorcycle. Teres Genit consists of three sub-villages with in total 510 households. The average income is approximately Rp 350 000 per month (€25) which is below the poverty line. Most community members work in the agriculture sector.
- North Sumatra: Sitardas village was selected because it is a less developed area which is difficult to reach during times with high rainfall because the road then becomes inaccessible and the village becomes isolated. The village consists of 121 households with an average of 5 household members. Most villagers are fisherman or work at palm oil and coconut plantations. Monthly income is in the range of Rp 500 000 to Rp 3 000 000 (€ 36-214).
- Yogyakarta: Karangmojo sub-district was chosen because of the low income, the current energy consumption, the available potential of renewable energy sources and the social background of the community. Karangmojo sub-district is divided into 9 villages which are all characterized as a traditional village because of the low education level, agricultural production mainly for own use and the limited level of communication with other villages. In total some 52,000 people live in these nine villages. Medical and educational facilities are limited.
- Central Java: Sokawera village was selected because of the low average income and the local potential of renewable energy sources. Sokawera village comprises some 1770 households with an average income of around Rp 25 000 (€1.7) per day. Agriculture is the main economic sector (44% of GDP), folled by trade(16%), service(13%) and industry(8%).

4. Identified energy-related problems

Through a participatory needs assessment process, the CAREPI team was able to identify the main energy-related problems of the target communities which are summarised below:

- West Nusa Tenggara: key problems identified include 1) no access to electricity for consumptive and productive uses such as wood working, manufacturing of agricultural products and rice milling; 3) no access to gas for cooking; and 4) insufficient access to petroleum products needed for transportation.
- North Sumatra: main problems identified are: 1) non-availability of electricity; In the district three new power plants are planned to be built which could provide electricity to

Sitardas village but very unclear if and when these plants will be built and if the grid will be extended to Sitardas; 2) unreliable and insufficient supply of kerosene and petrol.

- Yogyakarta: 1) reduction of subsidy on kerosene and other oil products has had a significant impact on energy expenditures. Due to higher energy prices people were forced to reduce the use of kerosene and shift to firewood for cooking. It also affected irrigation which was done by a hydraulic pump operated by a generator. However, due to the higher diesel price irrigation is no longer always possible leading to reduced agricultural yield and income for the farmer.
- Central Java: 1) parts of the Sokawera village do not have access to electricity; 2) removal of subsidies on fuels has increased energy prices which in turn resulted in lower income and higher energy expenses.

5. Proposed pro-poor energy strategy

The strategies developed for improving the energy provision to the selected communities are based on the energy needs assessment, the stakeholder analysis, interviews with local policy makers and energy suppliers and on the local availability of energy resources. The specific programme developed for each target community is summarised below:

1. Sokawera village, Central Java: The programme consists of three components:
 - a. Biogas energy package for cooking purposes; this programme involves the installation of a small biogas digester based on animal waste of 2-4 cows for those families who own cows.
 - b. Biodiesel energy package for those households who do not own cows to replace kerosene for cooking and lighting;
 - c. Development of micro-hydro power plant for the production of electricity

A detailed financial analysis of these programmes is presented in the report on WP2

2. Teres Genit village, Lombok: because of the availability of local rivers, the construction of a micro hydro plant for the provision of electricity for lighting and for productive uses such as rice, coffee and corn processing, knitting and woodworking was proposed to address the identified energy needs in this village. The pro poor energy strategy also includes the installation of biogas digester at household level to replace kerosene for cooking.
3. Sitardas village, North Sumatra: energy strategy is based on the local energy resources and includes the installation of solar home systems (75 Wp) to provide electricity for lighting and to replace kerosene by LPG (national programme currently implemented in Indonesia).
4. Karangmojo village, Yogyakarta: proposed pro poor energy programme comprises 1) the installation of biogas digesters for cooking purposes for those households who own cattle; 2) larger biogas digesters based on animal waste of some 5-10 cattle for small industry level; and 3) production of biodiesel at small scale from jatropha to replace diesel for water pumping and kerosene for cooking.