Creating Jobs: Capacity Building for Local Resource-Based Road Works in Selected Districts in Aceh and Nias

UNDP/ILO Project INS/51/071/D01/11 - Implementation period March 2006 to September 2010
Budget US$ 11.7 million – Financed by the Multi-Donor Fund for Aceh and North-Sumatra
Partner Agency UNDP, Implementing Agency ILO

Achievements and Challenges
June 2010
Project Description

The Project was formulated in response to the devastating tsunami of December 2004 and the major earthquake of March 2005 that caused a tremendous loss of lives and livelihood opportunities and resulted in extensive and major damage to roads and other infrastructure. To facilitate aid delivery and economic recovery, the rehabilitation and improvement of the rural road infrastructure, using employment-intensive approaches, was given high priority. Prior to the tsunami and the earthquake, many roads in the road network were already in a poor condition due to a lack of maintenance.

In this context, an integrated project was formulated that sought to contribute to economic recovery by improving road connectivity, providing local employment opportunities, building skills among the workers and contractors involved in road works, and strengthen local capacities in the use of employment-intensive local resource-based (LRB) road construction and maintenance methods and approaches. The specific objective of the project is:

*District governments and small scale contractors adopt and undertake LRB road works thereby providing access to socio-economic centers and creating job opportunities for rural people*

The following key outputs of the Project were formulated:

1. Capacities of district governments and small local contractors in undertaking road works is satisfactory
2. Techniques, standards, systems and strategies for local resource-based road works are refined to conditions in Aceh and Nias
3. Community participation in rural road development and maintenance is strengthened

Following an initial demonstration project\(^1\), Phase I of the Project (US$ 6.42 million) was implemented from March 2006 to March 2008 and covered the districts Aceh Besar, Pidie, Bireuen, Nias and Nias-Selatan. The Project included a major, demand-driven, capacity building component strongly focused on the active involvement of communities, with a special emphasis on women. To sustain the Project’s impact with regards to the capacity of district governments and small contractors to adopt and undertake LRB road works\(^2\), a phase II extension was endorsed. An additional budget of USD 5.38 million was allocated and the implementation period was extended to September 2010\(^3\). Activities in Aceh Besar were discontinued and minor irrigation works in Aceh Jaya, Aceh Barat and Nagan Raya were included.

Achievements

Based on the progress till June 2010, it is already clear that the targets for physical works, training & capacity building and employment creation will be achieved – and even exceeded. The expected end of phase II achievements for works, training and employment creation are summarized in table 1.

**Road works and connectivity:** Improving road connectivity, with the aim of contributing to local economic development, is an important objective of the Project. In the prioritization and selection of the roads a model has been used that included local community priorities, road network connectivity considerations and indicators related to: i) the population that would benefit from the road; ii) isolation factors, and; iii) local economic development potentials. Over 95% of the 164 km of road works\(^4\) that have been implemented were completed to specified quality and standards. Maintenance works involved 96 km of (off-carriageway) routine maintenance work, implemented through community contracting, and 81 km of (on-carriageway) routine and periodic maintenance work.

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\(^1\) Financed by OCHA/UNDP and implemented from January 2005 - February 2006 in Aceh Besar and selected areas in Nias Islands.

\(^2\) With an emphasis on strengthening contracting systems, improving the supervision of construction works, improving the quality of the rehabilitated roads and the development of maintenance procedures and practices for rural roads.

\(^3\) An implementation period from April 2008 to December 2009 was originally foreseen. Due to delays in processing the approval, phase II only started officially in October 2008. Therefore a no-cost time extension till September 2010 was endorsed.

\(^4\) About 90% of the rehabilitated district roads are paved and the remaining roads (farm roads) are unpaved.
Employment creation: As of June 2010 about 370,000 work-days of short-term employment opportunities were reportedly generated. Methods and techniques were developed and applied to promote the involvement of women in road works. This has resulted in a remarkable increase in women’s participation in the workforce. Whereas women only constituted 7-15% of the workforce at the start of the Project, this figure has increased to around 28% during phase II of the Project, i.e. close to the target set for women participation (30%).

About 7,500 work-days of employment were created through community-based routine maintenance activities. Women constituted about 53% of the maintenance workforce. A study undertaken by the Project in 2008 indicated that the applied LRB work methods are very effective in optimizing employment opportunities (for local people), while maintaining quality standards.

Training of PW and contractors’ staff: An estimated 34,200 trainee-days of on-the-job and classroom training were delivered to staff of contractors and district PW offices. The training covered the various aspects of the planning, implementation, supervision and quality control of road rehabilitation and maintenance works, using LRB work methods and appropriate intermediate technologies. Training of Trainers (TOT) was also provided to selected PW officials.

Table 1: Expected End of Project Outputs for Road Works, Employment Creation and Training
(Based on information of progress as of June 2010)

<table>
<thead>
<tr>
<th>Activity</th>
<th>Unit</th>
<th>Target</th>
<th>Progress</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Jun-10</td>
</tr>
<tr>
<td>1 Road rehabilitation works*</td>
<td>km</td>
<td>155.7</td>
<td>163.9</td>
</tr>
<tr>
<td>2 Road maintenance works*</td>
<td>km</td>
<td>177.3</td>
<td>177.3</td>
</tr>
<tr>
<td>4 Irrigation canal rehabilitation works</td>
<td>km</td>
<td>0.85</td>
<td>0.85</td>
</tr>
<tr>
<td>5 Irrigation canal maintenance works</td>
<td>km</td>
<td>2.18</td>
<td>2.18</td>
</tr>
<tr>
<td>6 Short-term employment creation</td>
<td>work-days</td>
<td>430,000</td>
<td>370,000</td>
</tr>
<tr>
<td>7 Training contractors and their staff</td>
<td>no</td>
<td>250</td>
<td>341</td>
</tr>
<tr>
<td>8 Training Public Works staff</td>
<td>no</td>
<td>100</td>
<td>178</td>
</tr>
<tr>
<td>9 Training PNPM facilitators on maintenance</td>
<td>no</td>
<td>50</td>
<td>74</td>
</tr>
<tr>
<td>10 Training community maintenance supervisors**</td>
<td>no</td>
<td>50</td>
<td>56</td>
</tr>
</tbody>
</table>

* Progress includes on-going works on limited numbers of road links  ** Information from Nias and Nias Selatan still to include

Training of PNPM facilitators and community maintenance supervisors: Apart from the training of PNPM facilitators (20% women) on community-based maintenance, coaching support was provided to 367 PNPM facilitators (18% women) in conducting training to communities on planning and implementing LRB routine road maintenance. In addition to the training to community maintenance supervisors (50% women), training was also provided to 530 village maintenance workers (with 28% women).

Performance of small-scale contractors: The set indicators related to the performance of the small contractors were achieved. A contractor tracer study of May 2010 indicated that the local contractors benefited substantially from training on (pre-) tendering, the preparation of work plans, setting out, construction techniques and supervision provided by the Project. This is reflected in the increased competitiveness of the contractors in bidding and in an increase in their business.

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5 Routine maintenance activities were implemented through 30 community-based maintenance groups (of which 18 women groups)
6 These relate to the number of contractors who received more than one contract, the number of tenders submitted for each contract, the number of contractors using LRB approaches, the number of contracts completed within time and budget and the decrease in the percentage of non-responsive bids prepared by contractors
Community participation: Targets set for training, employment creation and the formation of women groups for construction/maintenance works were achieved and indicators related to community consultations and beneficiary satisfaction (regarding road selection and the quality of the works) were also met.

Community-based routine maintenance: A community-based routine maintenance model was developed and tested. It demonstrated its feasibility and showed the viability of engaging communities in routine maintenance – including potentials for involving women. The partnership between the Project and PNPM in developing the model and associated capacity strengthening activities for PNPM and PW staff and community stakeholders have already yielded promising results and received positive feedback from the stakeholders.

Technical manuals and reports: Manuals and specifications have been produced for the application of LRB methods and techniques in the construction and maintenance of district and village roads. Guidelines were also prepared for curriculum development and for promoting women’s involvement (gender toolkit). Technical reports were prepared on labour productivity norms, on the use of force account in the implementation of works, and on the application of emulsion bitumen (cold mix).

Findings from Evaluations and Impact Studies

Conducted evaluations\(^7\) mention the relevance of the Project vis-à-vis Government and MDFANS priorities. The evaluation concluded that expected results have been largely achieved, that the Project is well targeted and that it has delivered high quality outputs in a timely, efficient and cost-effective way. The effectiveness and relevance of the applied capacity building and training approaches and the appropriateness and (cost-) effectiveness of the introduced employment-intensive LRB technologies and work methods are recognized and appreciated.

According to the evaluations the Project has also successfully addressed gender and environmental issues, introduced transparent cost-estimation and contracting procedures and has demonstrated the viability of the developed and tested community-based routine maintenance model. The phase II mid-term evaluation recommended a phase III extension of the Project aiming at institutionalizing and integrating the project’s best practices within the government system, in particular regarding capacity building, the maintenance of created infrastructure assets and the continued application of LRB approaches and work methods.

A beneficiary satisfaction/impact study that was conducted in May-June 2010 indicated that the provided improved rural roads access has resulted in a reduced isolation of the benefiting communities, increased local economic activity, reduced transportation costs and travel time, improved access to social and economic (infrastructure) facilities and services and increased local business opportunities.

Challenges

Without maintenance of the created assets, rehabilitated and (re-) constructed roads will quickly fall in disrepair and this will negatively affect the scope for sustainable local economic development and poverty alleviation.

To preserve and sustain the asset value of previous capital investments, the availability of adequate technical and managerial maintenance capacities and operational tools for planning, budgeting, programming, implementation and monitoring at District and Provincial level is of critical importance.

\(^7\) These included the mid-term (July 2007) and final (March 2008) evaluation of phase I, the mid-term evaluation of phase II (December 2009), the MDF portfolio review (May 2009), the MDF social sustainability review (October 2008) and a project performance review by the EC (November 2008).
Considering the prevailing maintenance budget constraints, available scarce resources need to be allocated and utilized in the most efficient and effective way. Apart from political commitments, this will require functional resource prioritization models and budget allocation- and programming systems to ensure an optimum return (i.e. value for money) to investments in maintenance. At operational level different implementation modalities and systems can be considered. The Project has already demonstrated the viability of the LRB community-based off-carriageway routine maintenance model – and its comparative advantage in local employment creation – but further work will be required to fine-tune and integrate the model within the government system and mainstream the approach.

Although the relevance and the performance of the Project are much appreciated by the different stakeholders, there are sustainability concerns, in particular regarding capacities needed for the maintenance of the created assets, the continuation of introduced technologies, the adaptation of LRB work methods and the training approach that was introduced by the Project.

The limited time-frame for implementation, within an environment characterized by low institutional and technical capacities, and the specific design modalities of the Project, limited the scope for integrating demonstrated approaches and modalities structurally within the existing government’s institutional framework. Given the post-disaster context in which phase I was designed, the emphasis given to the delivery of the outputs was fully justified.

Following the recommendations of the mid-term evaluation of phase II, much emphasis was given to technical capacity building activities and the demonstration of good technical practices (including procurement practices – advantages of particular elements of the procurement system applied by the Project were also recognized by PW) but the Project was not equipped or designed to address institutional sustainability issues. In hindsight it can be concluded that the targets set regarding sustainability were too ambitious.

**Recommended Follow-up**

To address the maintenance challenges outlined in the above chapter, the Public Works office in Banda Aceh has already requested technical assistance and advisory services from the ILO, in particular regarding the development and application of operational systems and models for programming and implementing (routine) maintenance of the provincial and district road network.

PNPM has also indicated its interest to continue and further develop the collaboration with the ILO for the application of the tested community-based routine maintenance model.

The Aceh Government, Bappeda and Public Works have also expressed their interest in continued technical assistance and advisory services from the ILO in further promoting and mainstreaming the successfully demonstrated employment-intensive LRB work methods, the introduced technologies, and capacity building approaches within the government system – not only for roads but also in sectors like irrigation, forestry, fisheries and water & soil conservation.

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8 The project was implemented off-budget and off-treasury and was bound to follow ILO (procurement) rules and regulations that were not compliant with the government procedures and regulations. In addition, the inputs and resources available to the project were not well tailored to address institutional and sustainability issues in the course of its implementation.