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# THE USE OF SELF HELP FOR LOW VOLUME ROAD CONSTRUCTION CASE STUDY: INDONESIA

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## Objectives of the case study

Based on field experience in Eastern Indonesia, this case study looks at various aspects of self help initiatives in road construction including pre-conditions, supporting measures, sustainability and costs; and offers some reflections on the potentials and limitations of self help approaches in developing countries. Finally, it provides some recommendations for implementing self-help road projects for low volume roads.

## 1. BACKGROUND

The island of Flores is part of the East Indonesian Province of Nusa Tenggara Timur (NTT), one of the poorest and least developed regions of Indonesia. Isolation is a major development constraint for all islands of NTT. In Manggarai district (West Flores), only half of the population have access to the road network. Many villages have made efforts to construct local access roads in 'gotong-royong', the Indonesian tradition for voluntary communal self-help labour. Given the difficult topographical conditions, these efforts often failed because villagers had neither the necessary skills in road construction nor the proper tools.

## 2. SELF-HELP SUPPORT IN FLORES

Since 1985, INTERCOOPERATION has assisted the Catholic Church of Manggarai in constructing district roads using low-cost, labour-based methods. In 1994, the project started an additional component with the goal of supporting traditional self-help efforts of the communities in building village roads and motorable tracks. The key measures were the training and follow-up of local foremen and surveyors and technical and financial assistance for difficult road sections that were beyond the villagers' capacity.

After four years of intervention, the following results were obtained:

- Communities correctly surveyed and constructed 85km of village access roads in self-help labour. In addition, many previously built alignments were made passable so that the total length of project-influenced roads increased to 250km.
- The need for proper road surveying and construction has been recognised by communities and local leaders, taking satisfaction in the better quality of roads completed.
- Village access roads do generate traffic. Trucks carry cash crops to the local markets, construction materials and consumer goods to the villages and passenger traffic is on the rise.
- The total costs of these roads (including project costs and the value of self-help labour) amount to little more than US\$3,000 per kilometre, about a quarter of the costs of project-built earth roads.

- On request of four neighbouring districts, the project has started to expand services to those areas. As a result, improved road surveying and construction has been seen in those districts as well.

### 3. PRE-CONDITIONS FOR SELF-HELP INITIATIVES

Village internal factors:

- Road access is a definite need for the evacuation of cash crops and to make use of trading opportunities. Feelings of backwardness and isolation further contribute to the need for access.
- Communities are able and willing to provide self-help labour. Commitment is promoted by established self-help traditions, a high degree of social homogeneity and support from local leaders.
- There are technically and socially feasible opportunities for road projects.

Village external factors:

- A basic transport system (network of main roads and vehicles) is in place.
- Self-help efforts are supported by government attitudes and policies.
- External agencies leave ownership of projects to the communities concerned.
- **Self-help achievements are often 'invisible':** Self-help achievements are often unrecorded, 'invisible' and less glamorous than conventional projects and are therefore underestimated.
- **The option of self-help:** In the face of a general lack of public funds, contribution of self-help labour for the construction and maintenance of local access roads can be a viable option. It is born out of necessity and, in many circumstances, the only option left.
- **External support affects the commitment of communities:** External support is motivating and has a good impact on communities' readiness to commit self-help labour.
- **Support to self-help initiatives is within the range of low-budget NGOs:** As observed in Flores, support to road construction can be implemented at extremely low project costs, if local communities are ready to contribute self-help labour. Therefore support to self-help initiatives is an activity within the range of low-budget development cooperation NGOs.
- **Self-help and road maintenance:** Local access roads, built under self-help schemes and considered important for the local economy, stand a good chance of being maintained by the villagers, as long as they feel that responsibility will not be taken over by an external agency.
- **Chances of sustainability:** Communities will not discard technology and skills which proved useful to them. Once they have experienced the advantages of correct road surveying and construction, there is little likelihood that they will return to earlier, incorrect methods.

- **A step towards empowerment:** A community's experience of completing a local access road successfully can be an important step towards empowerment, enhancing an attitude of self-reliance when facing further challenges in local development.
- **Self-help undermining factors:** Paid work, incentives and the prospect of generous external support may undermine the willingness to commit self-help labour.

#### **4. TARGETING THE TRANSPORT NEEDS OF THE RURAL POOR: POLICIES, STRATEGIES AND ECONOMICS**

There have been statements in recent literature regarding rural poverty and the lack of infrastructure, the need to increase the social sustainability of transport and the call for policy reform (e.g. World Bank, 1994). Among the strategies foreseen to accomplish these challenges, mobilisation of local communities and the promotion of self-help schemes play an important part. It has been stated that community self-help arrangements, which offer smaller-scale infrastructure can provide effective and affordable service in many areas and may offer the only feasible approach until the more formal supply systems expand their networks sufficiently.

Various principles of economics and rational planning should be observed when tackling the enormous task of providing transport infrastructure for poor and remote rural areas:

- The crucial distinction between 'need for access' and 'need for mobility' has been gaining importance in literature on transport economics. The objective of people in isolated places is access, i.e. a transport connection which is passable.
- Providing access for remote communities in a situation of limited resources stresses the need to develop low-cost roads.
- The idea behind 'phased development' is to begin with minimal standards in order to achieve significant savings on initial construction costs. At a later point in time - parallel to traffic increase - progressive improvements can be made.
- Community participation through self-help labour is in tune with the principle of 'efficient response to effective demand'. By favouring projects which promise a strong commitment of self-help labour, one automatically selects situations where demand is really 'effective'.
- A rational planning approach should progressively invest in projects that give the highest return. It optimises investments by providing both a reasonable level of access and mobility for people living along main roads, without neglecting people living at a distance from the existing road network.

#### **5. POTENTIAL AND LIMITS OF SELF-HELP APPROACHES**

- Potential for self-help schemes is likely to be found in poor countries where it is impossible for governments to meet major needs for motorised access in the foreseeable future.
- The extent of self-help achievements in road development is likely to be modest almost everywhere, if measured against the existing road network. It would, however, be misleading to compare achievements of self-help labour with conventional road construction.

- Self-help initiatives will normally be prevalent in particularly suitable regions and their number will vary with the kind and degree of available external support. The significance of past achievements - and potential ones in the future - in selected regions, should be assessed in local terms only.
- Statements which are not based on field surveys are speculative, whether they support or deny potential in a given region. The self-help-promoting effect of external support is crucial and should be considered when assessing the communities' commitment and the potential of self-help activities.

## 6. RECOMMENDATIONS FOR ROAD PROJECTS

In principle, low-cost, labour-intensive road projects are in a good position to support self-help initiatives. If pre-conditions are judged to be favourable, supporting measures should be considered, e.g.:

- Training of project staff suited to the village-needs, e.g. participatory road planning, surveying, design and construction of ultra-low-cost structures.
- Appropriate low-cost solutions to frequent infrastructure problems should be developed and disseminated.
- Villages in the vicinity of a project should be offered supporting measures such as:
  - include village representatives in project-internal training relevant to the local situation;
  - provide technical advice to the villages' own road projects, checking and correcting planned alignments;
  - supply or lend tools, if necessary.

If pre-conditions for self-help support are deemed to be sufficient in a given country or region, the best option might be setting up projects designed for the promotion of self-help in road construction. The preparation of such projects should include field surveys to identify communities where self-help initiatives are likely to take hold. The following principles should be observed:

- The project only reacts to requests for support.
- It assists the communities in discussing the purpose and possible alternatives of roads, needed inputs, feasibility, etc.
- Project activities only start after a community has proven its willingness and capability to provide voluntary labour.
- The community decides on the pace of implementation.

**Source: Winkelmann, P. (1999). Self Help for Road Construction: when it Applies – how can it be encouraged and supported. INTERCOOPERATION, Swiss Organisation for Development and Cooperation. Switzerland: Bern.**