

SOCIAL BENEFITS OF RURAL TRANSPORT

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Objectives of the paper

Abstract

It is clear that rural transport plays an important part in rural development; it provides the means by which local communities can access the opportunities and necessities which can enhance their livelihoods. Thus transport connects the rural community with markets and farm input suppliers, education and employment opportunities, health and welfare facilities. Transport also supports family and community development by providing the necessary access to gatherings (social or political) outside of the locality. Through these mechanisms, improved transport can contribute not only to an improved rural economy, but also to a higher degree of social well-being within both individual families and the community.

No hard-and-fast distinctions can always be drawn between the social benefits and the economic benefits of rural transport. Often these go hand-in-hand; an improved economy is, after all, likely to be of great social benefit to any community, because it will bring in its wake improvements in, for example, education and health care facilities. Conversely, social benefits such as improved water supply, or improved access to basic health care and midwives, lead to economic benefits because they may result in less illness and mortality in the community, which makes for greater productivity.

Because social impacts are likely to be a key benefit (or dis-benefit to some stakeholders) of rural transport development, it is evident that account of these effects must be included in an assessment of any proposed transport intervention.

Key issues

- A Social Impact Analysis (SIA) should be an integral part of the project development cycle of a rural transport scheme.
- SIA will highlight the effects of the scheme in relation to particular social development objectives, which are likely to include:
 - responding to the perceived needs of those affected by the scheme (or programme or policy);
 - reaching poor and disadvantaged groups;
 - recognising the roles and needs of women (as well as men);
 - encouraging participation of all stake-holders in the development process.
- Even though valuation (in monetary terms) of social benefits may not always be possible, they must still be included in project evaluation.

Key topic areas

- Social Impact Analysis in the project development cycle.
- Evaluating social benefits, and their comparison with other project benefits

1 INTRODUCTION

'At the heart of the social development approach is an understanding that the behaviour of each of us is determined not just by economic rationalism. Each person's response to the development challenge is also shaped by the society, culture and historical moment in which he or she lives. In analysing society and culture we recognise that the behaviour of individuals is determined by structures and networks of social relationships and obligation - and by shared knowledge and values. It is only by a process of shared respect between 'indigenous' knowledge and values and technical skills can sustainability be achieved', (DFID, 1993).

Most development goals have strong social development elements. These include:

- Poverty reduction strategies
- Promoting the status of women in society
- Promoting human development (e.g. through better health and education)
- Promoting good government, particularly through the encouragement of participatory process.

Other development goals like economic reform and addressing environmental concerns may also have a social development content. Economic reform provides the framework for poverty alleviation and greater resource allocation to health and education programmes. In addressing environmental issues, the outcome may be better community management of natural resources, and hence a more sustainable livelihood.

In the context of rural transport development, the positive social dimensions of change involve:

- better access to basic social needs (food, water, health, education, security, justice, enfranchisement and human rights)
- better access to the means for poor people to enhance their productive capacity (markets, suppliers, employment, health and education).

Transport development can also have negative effects on the social well-being of communities, or individuals within the community. For example, during road construction there may be disruption and inconvenience. After completion there may be an increased risk of accidents due to higher exposure to traffic.

The role of social analysis in a rural transport analysis is to identify all of the potential social impacts, and what the relative incidence of the impacts are on the various stakeholders. The social development advisor would be particularly focussing on the effects on the 'socially excluded' (e.g. the very poor) and those with 'less voice' in the community (e.g. women and children). In the case where social dis-benefits are apparent, then the analysis also involves an assessment of how these effects can be minimised, and/or whether proposals for mitigation or compensation are acceptable to the affected community.

This paper looks at the way in which a Social Impact Analysis might be applied to rural transport development, and the way in which this analysis is included in the overall project development cycle. It is based upon practice within DFID, but this is

typical of the requirements of most donors who expect a social appraisal annex to any project submission.

2 SOCIAL IMPACT ANALYSIS (SIA)

It is recommended that SIA is seen as an integral part of the general project development cycle. During project identification SIA will screen out those projects which are subject to indirect, limited or neutral social effects, and which consequently would not necessitate detailed further social appraisal.

In understanding the social implications of a project, DFID has identified a suitable checklist of questions which guide the analyst. These are:

- Which populations are intended to benefit from the project? In defining the target population, it should become clear how project benefits are expected to flow, and what constraints might impede the benefits reaching the target beneficiaries.
- Does the target population need the project? Many projects are identified with little or no reference to the supposed beneficiaries. If the project has a low priority amongst the target population, then its justification is questionable.
- Are other, perhaps more needy, members of the population excluded, and how could they be included? Transport projects may rarely be 'poverty focussed' but their social benefits could possibly be increased, or the beneficiary population extended (to the socially excluded), by marginal changes in project design.
- Will any group be negatively affected, and what mitigating design changes could be effected?
- Will women benefit as well as men? This requires a thorough understanding of women's roles in the community, and the expected impacts of the project on men and women, as well as on different groups of women.
- What level of participation by the target population in planning and implementation is possible and appropriate? This partly relates to whether the target population need the project. It is also evident that projects can be more effective when designed and administered at the local level with active community participation.
- Is the project technically and culturally appropriate? Project design must relate to existing land tenure rights, divisions of labour and society, cultural traditions, etc.
- Does the project require that the beneficiaries must change their behaviour, and is this feasible? Strategies to optimise 'take-up' (demonstrations, trials, incentives, training, etc.) should be designed at an early stage, if behavioural change is a necessary condition for success.
- Is the project affordable to the beneficiaries? There are likely to be differential impacts on different groups within the community, with some inequity in the distribution of costs and access to benefits.
- Are social issues adequately reflected in judgements on project viability? Social impacts are usually difficult or impossible to value, for inclusion in conventional cost-benefit analysis. The danger of a purely economic analysis is that it may 'miss' the distributional impact on beneficiaries, where perhaps only the affluent may benefit from a high-return project.

In using this general checklist, the analyst develops a social appraisal, which can be used as evidence in the overall project appraisal. In the case of DFID, this analysis is

presented as an annex (the Social Appraisal Annex) to the Project Submission. The latter also includes a brief summary of the annex. This will confirm that the main social issues have been identified, and that comprehensive answers to the above questions have been provided (based, where possible, on field experience). The summary will also confirm the social objectives, their reflection in project design and their consistency with economic, technical and environmental objectives. A means for evaluating progress towards achieving these objectives will be written into the project framework. This may be achieved through monitoring a set of social indicators which reflect the nature of the project as well as participant's own criteria for judging progress.

3 THE SOCIAL IMPACT OF RURAL TRANSPORT

The main effect of rural transport development is to bring the market to rural populations. It will also facilitate access to education and health facilities. However, by making goods more easily available it may cut down on the comparative advantage achieved if villagers trade solely amongst one another. It should be borne in mind that greater involvement in the cash economy is not necessarily uniformly beneficial to rural livelihoods.

3.1 Education

Attendance levels at schools are affected by the lack of access to schools – both for pupils and teachers. Teachers are not attracted because of the remoteness and associated difficulties of many poor areas. A study of Zambia (Hine et al, 1998) found “examples.... where the construction of a road bridge enabled school children to get to school all through the year where previously this was not the case [due to the wet season]”.

The difficulty of collecting water and wood also affected girls disproportionately, as women bear most of the responsibility for these activities in many societies studied. Collecting basic needs can take up to 25% of every day, and this will often take priority over girls' education.

3.2 Health

A study in Kenya (Airey and Cundill, 1998) showed that health provision was an overriding concern for groups of all income levels. The study area was a 50km road linking two regional centres, one of which had a good hospital. Analysis of the purpose of people's use of the road showed a robust correlation between income and journey frequency, except in the case of health. The pattern seemed to be that once lower-income groups began to use the hospital, they did not use it any less (during the economic downturn which occurred during the second part of the study). Instead, they devoted larger proportions of their income to it.

Better roads also increase the ease of use of mobile health centres. Many rural populations are extremely scattered, and if one health centre was provided for a district it would still be many miles from many villages. Mobile health centres can get round this problem.

3.3 Access

Access to basic facilities can often be made easier by improving paths or water crossings which already exist, where these are close to the rural population. Intermediate means of transport (IMT) such as bicycles and carts, which can be used on rural paths, are often a useful means to eliminate the length of travelling time for all basic needs. However, Dawson and Barwell (1993) have highlighted *'the limited availability of IMTs (especially to women) and their technical unsuitability for collection of water from many natural sources. Using IMTs can reduce the burden of firewood collection, but there is a significant risk that this will exacerbate deforestation by encouraging increased consumption'*.

Transport planning in this area should take into account the possible benefits of locating the sources of basic needs nearer to the people benefiting from it. Community schemes for woodlots have proved successful in this regard, and have also increased sustainability by preventing overuse of resources. Provision of running water and grinding mills are other examples of this. The need for an integrated approach to development cannot be stressed highly enough.

3.4 Empowerment

Most research supports the decentralisation of development, including both planning responsibility and implementation. As an example in the latter context, using labour-based construction methods for road development has many advantages. *'Labour-based methods are now thoroughly proven to be technically effective for the construction of rural roads and of small structures, and for routine maintenance'* (Dawson and Barwell, 1993). This can provide a useful cash supplement to the income of local employees (many of whose regular activities may be outside the cash economy). However, it does involve training (in the necessary technical skills and knowledge for such simple measures as constructing steps and handrails on steep paths) the local populations over a long period of time (typically several years) to enable them to take a full part.

'A community-oriented approach has a number of strengths. It gives communities the opportunity to exercise control over the supply of, and develop a sense of ownership about, those resources to which they need access. By acquiring the skills necessary to establish and manage their own facilities, local communities can significantly reduce their level of dependence on governments whose resources are, in many cases, becoming increasingly stretched. Recent research in Zambia found a strong positive correlation between high levels of community participation in rural water programmes and the long-term maintenance of the well equipment.' (Dawson and Barwell, 1993)

Nâhem's study in Laos indicated that the people in various villages were willing to pay amounts relating to their overall wealth to finance a communally-built road. She used a method known as Contingent Valuation to assess villagers' own financial valuation of the worth of an access road. A project which took this "pricing" strategy into account will have more chance of being maintained effectively by means of local labour.

3.5 Improved access to markets and towns

At one time development plans assumed that the only activity of the rural poor was agriculture, and development was therefore to consist solely of trying to improve agricultural performance, including access to local markets by motorised transport. These plans failed to appreciate the diversity of economic activities of the rural poor. The majority supplement their agricultural income with such activities as basket-making, cash crops, piece-work, fish-trading and other activities. All these benefit from easier access to local towns and cities. The Ellis (1997) study of Kenya showed that families living closer to the main road made more use of the road and were better-off on average than those who did not live near the road.

Urban access tends also to lead to more opportunities for paid work, greater diversity of purchases of consumer goods (necessities as well as luxuries) and thus more involvement in the cash economy. This will inevitably have a cultural as well as an economic effect on rural villages, perhaps raising economic expectations. Increased involvement in the cash economy may also improve access to credit, which is a useful tool for encouraging small enterprise.

Provision of regular motorised transport enables quicker transport of more goods to urban markets, with marginal savings on transport costs. The Kenya study (Airey and Cundill, 1998) showed that the road improvement led to greater competition and falling fares on privately-provided bus/goods transport services. In the Zambia study (Hine et al, 1998), passenger travel was negligible due to the extreme remoteness of the region and the poor road system. Of more concern was the ability of a regular goods transport service to take large quantities of goods to be sold in towns.

3.6 Increased production

By providing better access to markets, the opportunity exists for increasing farm production. Many villagers in the area covered by the Zambia study (Hine et al, 1998) grew cotton on a small cash-crop basis for Lonrho. Lonrho operates transport to dozens of small producers to pick up cotton and take it to central depots for processing. This transport was also the main route for the farmers to obtain inputs such as seeds and fertilisers. Lonrho estimated that production of cotton in the southern province of Zambia could be increased up to threefold if feeder roads were improved, to allow more cotton, seeds and fertilisers to be transported in larger vehicles.

Nâhem's analysis indicated increases in growing of cash crops and more reliance on outside trade would occur after the building of a road to Laotian villages. Poor transport on poor roads often led to goods being destroyed on the way to markets. However, other factors such as no more available farmland, or lack of storage facilities, are also relevant to increasing production. In Laos, "ninety percent found the possibility of increasing the household's income as being the most important reason for wanting a better road. Other important reasons mentioned were better accessibility to schools and he health service.

4 DISTRIBUTION OF SOCIAL BENEFITS

Many surveys have indicated that while improvements in transport improved the condition of the poor, the very poor were unlikely to be affected. The very poor are the groups who, essentially, often do not have a sufficient standard of living to take advantage of transport improvements. In Zambia these were the families who owned little livestock and little land, who could not grow more cotton, and therefore could not take advantage of reduced marginal transport costs (Hine et al, 1998). In Kenya, the equivalent groups could not afford bus fares very often and did not own bicycles (Airey and Cundill, 1998). Transport improvements did not have an equalising effect. One exception to this rule, that of health care, has been referred to already. One problem with econometric methods is that they may easily miss this kind of variation within populations.

4.1 Women and transport

Development studies show that families with a female rather than a male head tend to be poorer. In many such cultures women have the responsibility not only for family care, which leads to them travelling more for the purpose of their children's health care, but for fetching water and firewood. Men work away or tend the farmland. A study of Tanzania (Dawson and Barwell, 1993) showed that women in that rural society undertake 75% of all transport tasks.

Airey and Cundill (1998) found in Kenya that motorised transport on the new main road between Thuchi and Nkubu seemed to cause a sharp rise in the number of journeys undertaken by men. In particular, men were more likely to make more personal or business trips to the nearest town as a result of the availability of good roads.

Women are also less likely to be able to take advantage of rural transport improvements (such as better public transport services) as they are less likely to possess their own independent source of income. Women's subjugation is a common feature of rural societies in the developing world. It is important for planners to ensure that transport improvements take into account the needs of women and their social responsibilities, so as to avoid the benefits of any programme being enjoyed only by men, even where male heads of families might try to ensure that this happens.

4.2 Other groups

The effects on the young are largely associated with improved access to education opportunities and making healthcare more readily available. Effects on the old are often more pronounced as elders command considerable respect and economic power within traditional rural societies. They therefore stand to benefit from social improvements as much as those of working age, most often due to control and rights over livestock.

5 EVALUATING SOCIAL BENEFITS

Social benefits are usually difficult to value in monetary terms, and hence difficult to include in a traditional cost-benefit analysis. It has been established that, where local people live at subsistence level with few modern technologies, large-scale development programmes either miss the people they are intended for, or cause immense disruption to the communities they were intended to serve. The development of the Amazon rainforest area is probably the best example of this kind of disruption.

Such low-level impacts may not show up on a standard economic balance-sheet. Indeed, investment in them may not pay back in the short term. On the other hand, the human imperative of reducing poverty, and improving social benefits to people, is very likely to have the long-term effect of increasing productivity levels amongst the rural population. Social investment would be justified even if the people affected never contributed to the cash economy.

Alternatively, it is possible to measure social benefits by surveys of social indicators. Such surveys may not be able to produce exact figures in the same way as a balance sheet, but they are nevertheless of use for evaluation. Indicators which can be measured include: the number of families in acute poverty (defined as the inability to meet even their basic needs); the number of hours spent on transporting water and firewood from source to home; the number of livestock owned; the number of children regularly attending school; infant mortality and disease rates.

Nâhem uses econometric calculations to indicate a financial level of social (i.e. community-wide) benefit in her study of Laos. She groups what has been referred to here as social benefits under the heading of “human capital” and found that, although educational level had increased as a result of road-building, this did not lead to greater wealth or productivity.

One common approach to quantifying social benefits (particularly benefits from improved access to education and health facilities) is to use a sample case as guidance for assessing similar benefits from other roads improvements in similar areas or regions in the same country. Such estimates can be considered together with the usual transport cost savings estimated separately. However, care must be taken to ensure that there is no double-counting of benefits in the process. In a comparative study of villages in Bhutan (World Bank, 1999), benefits from education were estimated from increased school enrolment levels (due to improved access), using estimates of the incremental life earnings of the children who would have otherwise remained unskilled. Health benefits were assessed based on reduced sick days away from work, lost net income, and other health savings from better access to health centres. Such an approach may involve considerable field data collection and analysis (Lebo and Schelling, 2000).

6 CONCLUSION

Social analysis is an important component of all rural development programmes. *'An understanding of society is essential in helping people meet their social needs - food, water, shelter, health, knowledge and skills - and physical and emotional security.*

How people define such needs and the priority and value they give to them varies tremendously, not only from one country to another, but between different groups of people. A starting point for establishing appropriate and sustainable social services should be an analysis of how individuals, families and communities organise themselves in society to meet their needs as they define them.' (ODA, 1993).

Rural transport needs are integral to this process. By its nature of providing access to the outside world, transport development has a substantial impact on the livelihoods of the rural community. Its development must therefore be guided by the social needs of the communities which it serves.

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