Case studies

1.1 Introduction

These case studies have been collected as part of a project to bring issues of social exclusion in the practical development of infrastructure in low-income countries into the core of project planning and design. They have been used to influence and illustrate the guidelines that have been produced as part of the research.

The case studies are being set out here to provide a resource for engineers and the trainers of engineers. They can either be used as a supplement to the training notes produced under the project or used separately to provide illustrations of the overlap between gender issues and the development of infrastructure.

One of the problems in collating the case studies has been the lack of *engineering* issues. There are many case studies of the importance in considering the needs of men and women in the development of infrastructure, but these have come from gender studies rather than mainstream civil engineering. This leads to the impression that gender issues lie outside of the core of project development and design, forming a specialist area requiring specific expertise. In contrast, many engineering examples do not bring out social issues explicitly, so there is a gap between "gender" knowledge and "engineering" knowledge that these case studies and associated books and booklets aim to bridge.

1.2 The studies

The case studies have been kept short, to make them accessible and useful as part of larger initiatives. They have been edited slightly to bring out the engineering issues, rather than other aspects, such as politics or rights based actions. A comment is provided to expand on some the lessons that can be drawn from the case study.

The studies are grouped according to sectors:

- water resources;
- water supply
- sanitation
- solid waste
- transport
- irrigation
- construction
- management and organization
- emergencies
- hygiene activities

Within each section, the case studies are grouped according to the project cycle (planning, feasibility, design, construction, operation and maintenance, evaluation).

1.3 Other project outputs

- For a short introduction on infrastructure and its impact on people, see *Building with the Community (WEDC 2002)*
- For guidelines on how on engineers can include gender issues in their work see *Infrastructure for All (WEDC 2002).*
- To train engineers and technicians to meet the needs of men and women see *Developing Engineers and Technicians* (WEDC 2002)
- Website: http://www.lboro.ac.uk/wedc/projects/msgender/index.htm

1.4 Referencing

The case studies have been provided by a wide ranging group of people over several years. Some are personal observations or have been extracted form published or unpublished reports. Attempts have been made to identify the originator of these extracts, but this has not always been possible. If you know the original source of a case study, please contact Brian Reed (details below), in order that credit can be given.

1.5 New Case studies

If you have examples of engineering issues that have a gender or social exclusion aspects, that you think would be useful additions to these case studies, please contact Brian Reed (details below).

1.6 Acknowledgements

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TRANSPORT

Case study 1

Cockles or canals?

1.1 Background

In fishing villages along the Pacific Coast of Colombia the gathering of cockles (Shellfish, locally called "piangua") is one of the major sources of women's income. Their livelihood is threatened by the Esteros Project, which involves the construction of some four thousand kilometres of canals to link the tidal creek system between Buenaventura and Tumaco. Preparations are already under way for dredging and excavation, although this will be necessary only in shallow stretches that, it is estimated, occupy less than 10 per cent of the total canal alignment. As part of an environmental impact study (which is legally required in Colombia) by the National Colombian Institute for Environmental Management (INDERENA), a special survey was made of the environmental impact of dredging and excavation on the mangroves and their associated cockles, and the piangua fishery. Socio-economic data were obtained through interviewing the local population, village leaders and women's groups; several case studies were carried out.

1.2 Action

Although it was not possible to quantify the effects of the canal alignment on other natural resources, the research team concluded that the destruction of the *Rhizophora* (mangrove) forest would have an effect on the productivity of estuarine organisms that depend on that habitat during part of their life cycle. More severe, however, would be the impact on the income of the women in the fishing village of Salahonda. The researchers found that the piangua catch declined significantly after dredging and excavation had begun. Before the works, catches varied between 300 and 500 cockles a day, while the study indicated daily catches of 150 to 350. In interviews, the women confirmed that there had been a decline in catches. Completion of the canal works and the consequent loss of suitable piangua habitat would result in a net loss of 4.1 million Colombian pesos a year of potential income for local people.

How to limit the damage done by the canal? It was decided that only limited areas would be dredged and excavated. At the same time, local communities would benefit from the canal works because of the better accessibility to markets and lower transport costs. Finally, women's groups were set up in the project area and provided with better canoes and small outboard engines to enable the women to reach less accessible piangua areas.

Source: Netherlands Directorate General for Development Co-operation.(THE INVISIBLE WATER MANAGERS IWOMEN & ENVIRONMENT in THE THIRD WORLD Eartscan 1988)

1.3 Comment

In a cost benefit survey, one group may benefit whilst another group bears the cost. Check that the benefits are used to compensate those who would otherwise lose out.

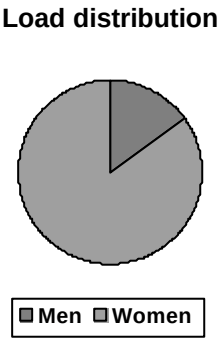
Case study 2

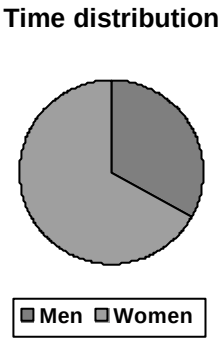
Transport patterns

2.1 Background

In rural travel and transport in Tanzania, women are responsible for 85 per cent of the load carried and 67 per cent of the total time spent on travel and transport.

- Carrying water: 26 per cent of the time and 36 per cent of the total loads over distances up to 8km
- Carrying wood:15 per cent of the time and 35 per cent of the total loads over distances up to 15km
- Carrying shopping: 6 per cent of the time and 18 per cent of the total loads





Besides the quantity of the load, the time taken in transporting it is a key factor for women.

2.2 Comment

The case study illustrates that travel and transport are central issues in women's lives. Although individual trips may be relatively short and each one has a minor economic impact, the sum total is significant and the physical burden is distributed unequally.

Ref: Runyaro, G and Mwankusye, J (1997) Rural Travel and Transport in Tanzania, ARC 97,Tanzanian Road Association L8: PL:lit:n/p