

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 from 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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EMERGENCIES

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Case study 1

Risks to men in conflict situations

1.1 Background

In conflict situations it is often the men who are most vulnerable. A clear example of this is the case of Sebrinica in the former Yugoslavia. In the conflicts in this area the men were more often killed. The women often suffered rape and other abuse.

1.2 Comment

The dangers during conflicts can be different for men and women, with men sometimes being more at risk.

From: Bobby Lambert

Case study 2

Preserving of family structures

2.1 Background

A Red Cross housing programme and refugee camp established in Croatia in 1993 set out to explicitly include some of the more developmental aspects of relief in its programming. This included identifying the needs and capacities of diverse groupings of disaster survivors

2.2 Action

Family structure is one of the greatest resources for survival, yet it is the one that is often destroyed in refugee situations. When the settlements were being built, it was clear that there were several types of family structure. For example, in some families the father was present and family structure was intact. In others, where the fathers were absent, a larger group of women and children from the same village wished to stay together. The project therefore attempted to adapt buildings to accommodate variations in family houses to accommodate single families with 5 to 8 people, and larger houses accommodating up to 20 people. The project particularly tried to avoid mass accommodation. This fact was one of the aspects which refugees appreciated most, as they said, “*we can go behind our own door and lock it*”. However, the total amount of space per inhabitant was kept low at 3 to 5sq.m.

2.3 Comment

Housing should not just meet people’s physical needs for shelter, but their social requirements as well. This is a social issue that requires an engineering response.

Developmental Relief Margareta Wahlstrom IFRC Geneva - 1997

Case study 3

Cyclone shelters

3.1 Background

Bangladesh experienced a cyclone in May 1997 and there is currently a Federation-supported programme providing food and shelter assistance to the affected population.

3.2 Action

Local culture means there are very clear gender differences, which bring up a number of gender issues in disaster management. These include:

- The need for separate space for men and women in cyclone shelters to ensure women will use them during a cyclone.
- The need for health-workers of both sexes to ensure healthcare is truly accessible.
- An awareness of men's predominance in household decision making and women's responsibilities for property, mean that women often do not move to shelters until the last warnings are heard.

3.3 Comments

Men and women may react in different ways in an emergency

Dealing with diversity - Teresa Hanley British Red Cross - 1997

Case study 4
Vulnerability of men in
emergencies

4.1 Background

Many young Sudanese men walked long distances to West Ethiopia to avoid conscription into the army. When they arrived they were in very bad health. They were given food but morbidity and mortality rates remained high, as they did not know how to prepare food, as women normally were responsible for cooking.

4.2 Action

A teaching programme was implemented using the small number of female refugees to teach the men how to cook so they could eat.

4.3 Comment

Men and women have different strengths and weaknesses as a result of their gender roles and hence gender analysis can benefit both men and women.

Walker, B (1994)

Case study 5

Participation in emergencies

5.1 Background

In the emergency setting it has often been said that there is no time to consider the community issues that would be considered in a development situation, let alone more specific issues such as the needs of women or minorities. Things are so chaotic and unstructured that all efforts have to be put into the provision of basic needs for everyone rather than obtaining views on individual groups' needs. The people are also often traumatised and may not be interested to be involved.

5.2 Action

In many ways these things are true, but it has also been suggested that it is not difficult to consider women's issues right from the beginning of the emergency, it just takes the will to do so. The displaced people are often asked at the beginning of the emergency to help in the construction works, so a call is given out to ask for people with specialist skills to identify themselves. Representatives of any existing women's or minority groups in the population can also be asked to come forward and offer their skills and experience. If any come forward then they can be consulted when it comes to deciding where tap-stands should be located or issues relating to sanitation.

5.3 Comment

Often the mechanisms exist to make contact with people with particular skills and experience. Leaders of community groups have skills that engineers should be making use of. Involving them in decision making just takes the will to do so.

Lila Pieters

Case study 6
Women invisible to project
planners

6.1 Background

Aloka Mitra explained that the Women's co-ordinating Council of West Bengal set out to improve the health situation in five selected villages while assisting in relief work following flooding in 1978. When the relief team visited the selected villages, they were welcomed by the men but there was not one woman in sight. Asked why this was, the men replied that women were cooking at this time of day (morning).

6.2 Action

When meetings were held in the afternoon the women were able to attend and their participation was excellent. 'It takes a great deal of time to involve women in development, but their priority is always the health of their children and clean water always comes first on their list of requirements, other developments come later'.

6.3 Comment

- It takes a great deal of time and energy to involve women in development.
- Women should not remain 'invisible' to engineers and planners.
- Meetings should be arranged at times that are convenient to all participants.

From: Bingham, A (1984) Conference Report, Women 'Invisible' to World Planners, World Water, Nov 1984

Case study 7

Inaccurate information exchange

7.1 Background

It is often very difficult to obtain accurate information in development and relief. It has been noted that one of the causes of cultural and social change among the Dinka people in Sudan has been the influx of relief agencies into their area. *'Under normal circumstances when family prestige prompted kin to help one another, a Dinka person would try not to appear helpless. But as the people become poorer and poorer, while external assistance is in operation, they resort to stigmatised behaviour such as begging, doing odd jobs or lying about their actual conditions'*.

7.2 Action

The result of these stage-managed changes in attitude and behaviour, to appear poor to the relief workers, is the behaviour's slow movement into the general culture of the people. The final result is a growing disempowerment of the people of south Sudan through a gradual loss of cultural patterns that they have used in the past to deal with crises. *'As the entire society loses power, women are more than ever pushed to the bottom. Due to the power structure and gender relations, women's opinions about the needs of society rarely make their way into the baseline information generated by the aid agencies; thus relief policies are based on biased cultural data'*.

There are also discrepancies between the perceived outcomes of a programme. There was a programme in a Dinka area to survey health conditions. *'The agency staff rated their programmes as success stories on the basis of the temporary improvement in some children's nutritional status, the number of people seen in the clinic every day and the number of women trained to handle drugs'*. The majority of women who attended the clinic on the other hand, thought that the health services were a big joke because women never got the chance even to explain their medical problems, much less receive any treatment.

Area commanders sent notes to the local clinical staff demanding drugs and guards and male health workers harassed women at the clinic so much that many of them were heard asking, *"why don't they just call it SPLA (army) hospital then?"*

7.3 Comment

- Interventions by external agents can alter society responses and distort information-gathering results.

From: Jok, M J (1996) Information Exchange in the Disaster Zone, Disasters, 20, 3 pp212-213

Case study 8

Attitudes to food during a famine

8.1 Quotes

'As managers of food distribution, women tend first to cut down their own food consumption in times of shortage in order to preserve more for other family members, thus putting the-m-selves at risk before their families'. (female perspective)

Mary B. Anderson and Peter J. Woodrow. Reducing Vulnerability to Drought and Famine: Development approaches to Relief. Disasters Vol. 15, No 1, March 1991.

'The name *Mvuje* (a type of a local dish) came because the women controlled the food. They would hide food from the men. The men had to cook and eat whenever they found food because the women would take it away from them. All during these famines more men than women would starve because of this'. (male perspective)

Mzee Abdullah of Bahi, quoted by Gregory H. Maddox, Famine Impoverishment and the creation of a labour reserve in Central Tanzania. Disasters Vol. 15, No 1, March 1991.

'Women had to hide food if their children were to survive. During a famine a woman would have to ask a man to marry her. If the woman had a child strapped to her back, the man would ask, "What will you do to feed that child?" If the woman wanted to marry she had to take the child to the river and drown it'. (female perspective)

Bibi Salima, quoted by Gregory H. Maddox. Famine Impoverishment and the creation of a labour reserve in Central Tanzania. Disasters Vol. 15, No 1, March 1991.

'In some societies it is the tradition that the men eat first and the women eat what is left over, or female heads of households may be the last to receive their food allocations. This may explain the higher rates of malnutrition among women in the camps. Women are also more nutritionally vulnerable because of the cycle of pregnancy and lactation increases their vitamin and mineral requirements and body stores are reduced considerably over time. For example in one camp in the Horn of Africa, a survey revealed that nearly 40 per cent of lactating women had scurvy (vitamin C deficiency) as compared to 14 per cent among the males in the population'.

Angela Berry, Food for Thought, Refugees, September 1988, p 35

8.2 Comment

- Men and women may have different perceptions, so surveys should include both male and female respondents.
- In times of crisis, societies may become polarised and distrustful of members of the opposite sex.

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- In times of crisis, gender differences may lead to more powerful individuals taking advantage of the more vulnerable.

Case study 9

Refugee camp planning

9.1 Background

Inappropriate design of infrastructure in emergencies can increase the dangers to vulnerable groups in society.

'The poor design of camps also contributes to protection problems for women. Communal latrines may be at some distance from the living quarters, thereby increasing the potential for attacks on women, especially at night. Most camps are poorly lit, if at all'

9.2 Comment

The design specification is not limited to simple technical issues, such as making sure latrines are structurally sound and easy to maintain. The engineer has a responsibility to ensure that the design does not cause problems for the users. Involving users in the design process may help identify potential risks before they become a problem.

Ref: Forbes Martin, S (1992)

Case study 10

The design of washing facilities

10.1 Background

On a UK NGO WATSAN training course, a question was raised over whether provision was ever made for private washing facilities during emergencies for women to deal with their menstruation needs. After an initial period of quiet the response was '*we don't normally talk about that subject*'.

10.2 Action

Menstruation occurs in half the world's population for about half of their life. It does not stop because of an emergency. Women have to deal with menstruation as normal but without their usual locations to provide privacy and facilities for washing their menstrual cloths. It is a subject that is unmentionable in most cultures but WATSAN engineers should be aware of the subject and the difficulties it brings. Water and sanitation provision is for both men and women - it should not just be tailored just for adult men. If doctors responded in the same way as noted above and did not tackle embarrassing issues or those of the opposite sex then the outcry would be intense.

Clothes washing methods vary between different cultures. Some may wash in buckets and others near a spring. Women should be consulted about the way they wash clothes so that appropriate facilities can be designed.

10.3 Comment

Washing facilities must be designed with the needs and preferences of the end user in mind.

From: Observation & Lila Pieters

Case study 11

Use of water supply systems

11.1 Background

The engineers who had set up the water system for a camp for Burmese refugees in Bangladesh were confused that the water tanks and systems set up in the camps did not seem to be used. No one was using them, but the water levels in the tanks were going down on a daily basis.

11.2 Action

One night the engineers stayed up, hiding themselves away, and what they saw was that the women of the camp were collecting water in the night by darkness so as not to be seen. The women were living in *Purdah* - a custom in South Asia where Muslim women wear clothes that cover their whole body, head and face and avoid going out. When they do go out in public they must be accompanied. They do not receive male guests. The Oxfam engineers therefore changed the hours of availability of water to suit the women's cultural practises, ensuring that the tanks were full when they were needed.

11.3 Comment

End user's personal and cultural practices should be considered in the design of water supply systems.

From: Gary Campbell, seconded to Oxfam from VSO, 1992

Case study 12

Location of water points

12.1 Background

In the camps for Burmese refugees in Bangladesh it was noted that refugee women were being regularly harassed by the security forces at the water collection points, and regular sexual abuse of refugee women by the security forces was also reported.

12.2 Action

The Oxfam engineers moved the tap-stands to areas where the women would be less at risk.

12.3 Comment

Designers should be aware of the risks that users of their systems may face. Sometimes a design change can reduce the dangers. Involving users them at the planning stage may help the engineer identify a potential problem and provide a solution before anybody is hurt.

from: Wahra, Gawher Nayeem, 'Women refugees in Bangladesh' in: Bridget Walker (Ed.) (1994) Women and emergencies, p47-48, Oxfam, Oxford, U.K.

Case study 13

Excuses for not considering gender

13.1 Background

A social team member was working for an NGO in an emergency setting. During this period she undertook a study of the WATSAN needs of the people of the camp and wrote a comprehensive report on the subject. However, as soon as she left the organisation the report was scrapped, her views and findings being discarded as feminist or similar.

13.2 Action

In the emergency setting it has often been said that there is no time to consider the community issues that would be considered in a development situation, let alone those of gender. Things are so chaotic and unstructured that all efforts have to be put into the provision of basic needs for everyone rather than obtaining views of individual groups. The people are also often traumatised and may not be interested to be involved.

These comments are in many ways true, but this is an example of where the required information had been collected and fed to the technical and administrative team but still it was disregarded.

13.3 Comment

- For gender to be considered seriously attitudes of staff have to change and awareness levels raised.
- Social data is important in an emergency situation and can be collected

From: Lila Pieters

Case study 14
Vulnerability in earthquakes

14.1 Background

It was observed in a recent earthquake that all of the people who died were women, children and old men. No young men died in the earthquake. The men have to travel and work in other areas, so the majority of the young men were outside the area in the first place. The young men who were around went outside quickly whereas the women tried to take their children before they moved outside their houses. As a result they were the main victims along with their children.

14.2 Comment

Women and men often have different priorities and may react in different ways during and emergency.