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# Travelling together: improving the access of people with disability to road infrastructure in Papua New Guinea

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## ABSTRACT

Despite the fact that an estimated 10 to 15 per cent of the population, or 520,000 people, are living with a disability in PNG, people with disability are often excluded from community development activities. Road infrastructure is a recognised approach to poverty reduction in developing countries, through improving community access to essential services, social networks and economic opportunities.

Community participation in identifying needs and design is crucial for sustainable, effective and efficient road infrastructure development, which should connect people and places appropriately, and benefit the poorest groups. People with disability are among the poorest groups of society, but there is very little evidence about the most effective ways to involve them in road infrastructure planning.

This paper discusses the situation of people with disability in Papua New Guinea in relation to access to road infrastructure and road safety. It presents key findings from a participatory research project into this issue, and makes policy recommendations for donors and implementing agencies.

## About this research project

This research project is coordinated by the Nossal Institute for Global Health and the Faculty of Architecture, Building and Planning (University of Melbourne) in partnership with Divine Word University, CBM Australia, the PNG Assembly for Disabled Persons and Cardno. This project is funded by AusAID through the Australian Development Research Awards Scheme (ADRAS). It is a three-year project being implemented in 2010-13.

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# Introduction

This paper discusses the situation of people with disability in Papua New Guinea in relation to access to road infrastructure and road safety. It presents key findings from a participatory research project into this issue, and makes policy recommendations for donors and implementing agencies.

## Summary of key issues

- People with disability in Papua New Guinea (PNG) make up approximately 15 per cent of the population. As in most contexts, people with disability are often amongst the poorest and most vulnerable members of the community.
- Access to roads is an important facilitator for accessing basic services and promoting economic development. As people with disability are more likely to be poor, it is particularly important to consider whether and how they benefit from road developments.
- In many situations, physical and other access barriers severely limit the ability of people with disability to use roads and thus access services. In other cases they must use roads even though they feel unsafe due to vehicles travelling at high speeds and lack of safe areas for pedestrian travel.
- Road traffic accidents are a growing cause of death and disability in PNG, despite being one of the most easily preventable health risks. Improvements to roads tend to focus on the needs of vehicle traffic and can actually worsen access by people with disability, due to increases in vehicle numbers and higher vehicle speeds.
- Key barriers to using roads safely include a lack of marked crossings, speed, and other signs, or marked bus stops; open drains; poorly maintained, narrow or absent footpaths along roads and bridges; and potholed or flooded roads.
- Addressing many of these barriers during road design and construction would be simple and low-cost. Other measures would save road maintenance costs in the long term. Such improvements would also help improve road access for all road users, and reduce road accidents and subsequent health care costs.
- International donors are a significant source of funding for road infrastructure in PNG. Donors, as well as government road agencies, managing contractors and other stakeholders, need to ensure that such projects benefit all road users. Road infrastructure projects should specifically consult with and include people with disability, and incorporate basic accessibility standards. Budgets need to be sufficient to allow for features such as footpaths and crossings, and agencies should build staff awareness and capacity on the needs of people with disability. This should be done with the close participation and involvement of people with disability, who are the experts on their own needs.

## Roads: a tool for development or source of danger?

Road development is a recognised tool for addressing poverty and promoting development outcomes in developing countries, including PNG. Road infrastructure has the potential to improve access to essential services, social networks and economic opportunities. For example, road and bridge developments in PNG have been shown to lead to positive changes in income and travel time to schools and health clinics for those living in nearby villages. However, such infrastructure projects do not benefit all people equally. There has been little research as to whether the benefits of road developments are equitably distributed and enjoyed by people with disability and whether they experience negative outcomes.

People with disability make up approximately 15 per cent of the population in PNG. They are often amongst the poorest and most vulnerable members of any community. People living in poverty are more likely to develop impairments, for example due to lack of health care access, vulnerable living conditions, or poor nutrition. Individuals with impairments will often face discrimination and stigma, limiting their economic opportunities and causing or exacerbating poverty. They are likely to have reduced access to services including education, employment and health care, and can be excluded from community development activities.

Given the marginalisation and poverty faced by people with disability, it is particularly important that development efforts reach and benefit them. Road developments are no exception. It is also important to note that while they are essential for economic and social development, roads are also dangerous. The World Health Organization (WHO) Global Burden of Disease project has found that road traffic accidents are the second most common cause of death and disability in developing countries such as PNG. Yet they are also one of the most easily preventable health risk factors. Therefore, it is important to ensure that roads are safe for all road users, including people with disability. However, roads and road infrastructure in PNG are often largely inaccessible to and dangerous for people with disability, including those with physical, mobility, hearing and vision impairments.

### ***Dangerous road crossings***

*'Raymond' is a 15 year old boy who is hearing impaired. He lives in a village near Lae and feels safe walking along the local road. However, the nearby stores are located on the national highway, at a dangerous intersection where it is difficult to see traffic coming. The road has been upgraded and traffic travels at high speed. There are no stop signs, traffic lights or crossings at the intersection, despite it being an area where many people cross. Raymond is afraid to walk on the road to the stores alone as he might not be able to hear the traffic and feels he could be hit by a car. When his mother sends him to buy things at the stores, he tries to take friends along so that he can cross the road with them.*

## Road usage by people with disability

The primary means of transportation in PNG is walking, and people with disability typically use roads either as pedestrians or via local buses. Yet roads are commonly designed for the needs of vehicle traffic rather than pedestrians. They often lack basic features such as crossings, speed signs and footpaths. While this has impacts for all road

users, particularly pedestrians, the consequences for people with disability are often more acute.

Construction or restoration of roads in their local areas generally does improve the ability of people with disability to access services such as schools, health clinics, stores, employment opportunities and visiting family and friends. However, poorly designed and/or inaccessible road infrastructure puts people with disability in danger of being hit by vehicles when they use roads, particularly if they are pedestrians. People with mobility impairments often cannot safely traverse fast-moving traffic to cross roads yet villages are often located along major highways, particularly in rural areas. Bridges and roads without footpaths or with inaccessible footpaths can force wheelchair users and others to travel on the road. People with vision and/or hearing impairments can find it difficult to cross and navigate roads. Those with intellectual impairments may find it confusing or difficult to negotiate busy traffic or find safe places to cross. Meanwhile, there is little awareness by drivers of vehicles that people with disability use roads, so they are unlikely to consider their needs.

#### ***Potholes and rain cause hazards for wheelchair user***

*'Grace' is a woman aged in her 40s who uses a wheelchair due to her paraplegia. She lives in the Goroka town area and uses the road often, including to go to the store and the market and to use the post office. However, the road is difficult for her to access when it rains, as her wheelchair can't navigate the potholes on the road. On one occasion she was using the road to get to a meeting, and overbalanced and fell out of her wheelchair.*

*Grace lives with her young daughter; her husband left her after she acquired her disability. Grace's daughter helps by fetching things from the store when her mother can't get there. She is of school age however she isn't attending school – Grace can't afford the school fees. Grace weaves and sells billums (bags) to support herself and her daughter although in bad weather she can't reach the market to sell them. Sometimes her daughter takes them and sells them for her; however this means she is without her daughter's help at home.*

For some people with disability, the lack of accessibility is so severe that it prevents them from using roads as they are simply not navigable. Others avoid busy roads with fast-moving traffic due to concerns about their safety, or travel only at certain times of the day or when others can accompany them. This limits their access to basic services such as education, health care and livelihood opportunities. It can also exacerbate isolation and stigma faced by people with disability.

The most common barriers to PWD using road infrastructure safely include:

- Absent or narrow, badly maintained or obstructed footpaths. This can force pedestrians to travel on roads or road verges. Wheelchair users or others with mobility impairments may be unable to navigate steep, rough or overgrown paths.
- Lack of marked crossings at logical crossing sites (near bus stops, schools, markets or shops), combined with high traffic speeds and few speed reduction signs in busy areas. People with mobility and vision impairments can find it difficult to safely navigate road crossings, while those with hearing impairments miss aural cues such as traffic noise or horns.

- Narrow bridges with limited pedestrian space or poor access to footpaths. This can force pedestrians to travel on the road itself in the path of traffic, particularly wheelchair users or others who cannot navigate steps up to footpaths.
- Deep open drains along the sides of roads. These make it difficult for people with disability to cross roads, and form a particular hazard for those with visual impairments.
- Poor road drainage and maintenance, including large potholes in roads or water pooled over footpaths and roads. This can force pedestrians to travel on the roads, but can also mean traffic must swerve to avoid potholes, endangering pedestrians as well as drivers.
- Lack of marked bus stops and amenities such as seats or shelters, as well as buses with high steps that are not accessible to many people with mobility impairments. A lack of signs showing destinations is a problem for people with hearing impairments, who are unable to hear announcements by drivers.
- A lack of public awareness of pedestrian needs including the needs of people with disability. Drivers of vehicle traffic often assume that all pedestrians can quickly move out of the way of fast-moving vehicles, not recognising that people with disability may move more slowly or not be able to see or hear traffic. For people whose disability that are less visible, including those with hearing or intellectual impairments, this is a particular issue.

Conversely, features such as footpaths, street lights and bus stops make roads easier for people with disability to use. They generally feel safer and more comfortable on quiet, well-maintained roads. Roads that are used by other pedestrians are perceived as safer, as others can assist people with disability to cross safely.

#### ***Difficult to walk to church along the highway***

*'Florence' is a 55-year-old from Kavieng who is recognised as a community leader and 'wise woman'. She has a visual impairment related to diabetes, which means she often now stays at home whereas she previously worked.*

*Florence used to live near the beach, but her house was washed away by a king tide. She now lives one kilometre inland, and has to walk this distance back to get to the church she attends. The route she walks is along a highway. The road is steep and has no footpath, and the roadside is often obstructed by bushes unless the community has cleared it. There is also no crossing or signs to indicate where people cross the road. Her grandson acts as a guide for her to enable her to attend church.*

A major implication of poor accessibility is that the poverty reduction impacts of road construction and improvement projects may fail to reach people with disability. Worse still, such projects may actually further harm the ability of people with disability to access basic services due to increases in vehicle traffic travelling at high speeds.

## Road decision-makers: unaware of access issues for people with disability

Despite the serious impacts of poor road design on access for people with disability, and the multiple barriers that they face in accessing roads, road decision-makers such as engineers and works managers do not seem to have a good understanding of these issues. A key reason for this is most likely that people with disability are rarely involved in consultation processes around road design and construction. Due to factors such as social isolation, marginalisation, transport difficulties or communication barriers, people with disability are often excluded from general community consultation processes. In any case, while consultation with affected communities is supposed to take place, for reasons including cost-cutting, such processes are often limited to informing people about upcoming road developments rather than genuinely consulting about their needs.

Typically, specific consultations with people with disability, which might help to overcome issues such as communication barriers or stigmatisation, are not held. Therefore there is no systematic way for their specific needs to be identified and understood, let alone integrated into road infrastructure planning processes. However, research in other countries has shown that community participation can improve accountability and transparency of road infrastructure planning structures.

*“Frankly, people with disabilities are never considered [in road decisions].”  
Road decision-maker, Kavieng, PNG.*

Perhaps unsurprisingly, given the lack of awareness or consultation, road decision-makers largely do not consider that people with disability may be road users or incorporate their needs into design and construction processes. Cost is also a factor: features such as footpaths or ramps can be perceived as too expensive and left out of road developments.

This research revealed road decision-makers also lacked data or information about accidents along the roads they had responsibility for. Given that road traffic accidents are a major and increasing cause of death and injury in PNG, this is particularly concerning. Road decision-makers did not consider information about accidents important to the process of planning and implementing road construction or upgrades. This means that specific safety concerns, which could improve road safety for both people with disability and other road users, were not integrated into road improvement processes.

## Opportunities for change

The inaccessibility of road infrastructure for people with disability, and the danger faced by them in navigating and using roads, is clearly a concern for a range of stakeholders including road decision-makers and agencies, donors, managing contractors, communities and, of course, people with disability themselves. However, there are many opportunities to address these issues through improved practices and knowledge.

Often these are simple and low-cost solutions, and will benefit all road users as well as people with disability, particularly children, the elderly, pregnant women and those who have temporary impairments.

Features that would improve road access and road safety for people with disability are often cheap and simple to incorporate into road projects. Examples of these include speed signs, marked crossings, marked bus stops and amenities, and covered drains. Others, such as improved drainage, would reduce road maintenance costs in the long term. Money would also be saved in health care costs, due to a likely reduction in road accidents.

Although road decision-makers have little specific knowledge about how people with disability use roads, once the issue is discussed with them they are generally receptive to including the needs of people with disability in future planning, and recognise this as a gap in current planning and consultation processes.

There exist a range of cheap and replicable tools for consulting with people with disability on road usage, that have been trialled in PNG and for which a protocol has been developed. These include focus groups; ‘moveabouts’ or access audits of sections of the road; and photo elicitation and poster-making about key aspects of the road that were liked or disliked. These can be easily implemented by people with disability themselves and produce specific, relevant information about how people with disability use roads and how their needs differ to other road users.

The situation of road access for people with disability in PNG is likely to be similar in many other developing countries. These lessons could be applied to road construction in other contexts.

*“No one considers needs of people with disability, but I have come to realize that it is best to plan ahead because disability might happen to you, your loved ones, your wantoks and so forth.” Road decision-maker, Goroka, PNG.*

# Recommendations

The following recommendations are made to policy-makers, road decision-makers and other stakeholders in road infrastructure projects as strategies to improve understanding and practice around road accessibility for people with disability.

- **Create awareness of road safety and disability issues:** Government road decision-makers, managing contractors and other agencies involved in road construction and maintenance need to explicitly involve people with disability and consider their needs, as well as more general road safety issues, when constructing and maintaining roads. This includes the needs of people with various impairments, including hearing and vision impairments, mobility impairments, intellectual impairments and psychosocial impairments (mental health issues).
- **Develop mandatory guidelines for consultation and road access:** Donors that fund road infrastructure projects and road safety projects should make consultation with people with disability, and incorporation of basic access standards and features, a requirement of funding. They should also ensure that project budgets are sufficient to cover these measures. People with disability are the experts on their own needs and local situations and conditions, but their views and opinions are often overlooked unless there is specific consultation with them. In addition to input from people with disability, documents such as the *AusAID Accessibility Design Guide* and national legislation can provide specific technical guidance on improving access.
- **Evaluate the impact:** When evaluating the development impact of road projects, the impacts of these projects on people with disability and other vulnerable road users need to be specifically considered. Ideally this should be done using participatory tools and methods. Without such evaluation, the true development impact of such projects may be overstated and possible negative consequences overlooked.
- **Build capacity and awareness:** Government road agencies, donors and managing contractors should build staff awareness of the needs of people with disability as road users, and of appropriate consultation methods. Look for opportunities to involve Disabled People's Organisations and people with disability as trainers. Not only are they the experts on disability in their communities, but they can help to break down stigma and misunderstanding about people with disability.

# Where do the findings in this paper come from?

This working paper presents findings from the research project Travelling Together: Disability Inclusive Road Development in Papua New Guinea. Travelling Together is a three year (May 2010 to April 2013) project funded by AusAID under the Australian Development Research Awards Scheme (ADRAS). It addresses issues of access to road infrastructure in PNG by people with disability.

The research has been implemented by project partners including the Faculty of Architecture, Building and Planning at the University of Melbourne; the CBM Australia – Nossal Institute Partnership for Disability Inclusive Development; the PNG Assembly of Disabled Persons; Cardno Emerging Markets; and Divine Word University, PNG.

The project has used a qualitative methodology to answer the following questions:

1. What are the barriers and facilitators for people with disability accessing roads in rural and urban PNG?
2. What are the outcomes of rural and urban road projects on the lives of people with disability and their families?
3. How have people with disability participated in rural and urban road planning?
4. What are the recommended approaches in disability-inclusive consultation and participation in road planning and development in PNG?

The project utilised four data collection tools which were implemented in five urban and rural locations throughout PNG. The first was structured interviews with road decision-makers, discussing processes for planning and implementing road construction or improvement, the interviewees' awareness of traffic accidents and injuries along the road, and interviewees' awareness of road use by people with disability. The other three tools were implemented with mixed groups of 8 to 12 people with disability. They took part in focus group discussions about how they used roads and particular issues or problems they faced with using a specific road. They conducted an audit of a small section of the road, known as a 'moveabout'; then photographed important aspects of the road and associated infrastructure, which were used to make posters illustrating what they liked and disliked about the road. The research involved 48 participants, including both adults and children and those with vision, hearing, physical and intellectual impairments.

As well as providing evidence regarding road infrastructure needs for people with disability, the project is developing guidelines to promote disability-inclusive road consultation, planning and implementation for use by a variety of stakeholders. It is also building the capacity of people with disability and their organisations to utilise the research findings in advocating for road accessibility at both local and national levels.

A key project principle has been that people with disability are partners in the research and participate fully in every phase of the project, including planning, design, data

collection and analysis, and dissemination of findings. The PNG Assembly of Disabled Persons (PNGADP), which is the peak national disabled people's organisation in PNG, is a research partner and the project research coordinator in PNG is the PNGADP Chairperson. All data collectors were people with disability resident in the areas studied.

In addition to this participatory research approach, the project also emphasises capacity-building, particularly for people with disability and their families and has sought to facilitate inclusion of all groups within the research process and to ensure the project activities and its outputs are accessible.

### Further reading

The full literature review, findings report, protocol and project information sheet for the Travelling Together project can be found on the project website:

[http://ni.unimelb.edu.au/travelling\\_together\\_disability\\_inclusive\\_road\\_development\\_in\\_png](http://ni.unimelb.edu.au/travelling_together_disability_inclusive_road_development_in_png)