



Social Impact Analysis on Road Construction Project in Papua New Guinea: A case of Highlands Highway

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Abstract—*Social Impact Analysis is one of the most essential parts of project implementation. Disagreements and change in time, design, and budget of project implementation at the time of construction in Papua New Guinea were mostly occur due to the influence from the past and delay of compensations in the project. This research was carried out in the Highlands Highway of Papua New Guinea to classify and to assess the impact of social and cultural factors on the implementation of road project. In this study local people were participated through in-depth interview. In addition, archival review from the road authority documentation was carried out to support the findings. The analysis result show that history of land acquisition, historical claim for un-purchased land, natural disasters, maintenances, road diversions, encroachment on the road corridor, and land disputes are the main factors influence to the project implementation. To mitigate the delay of project implementation, the sponsors should assist center Government as well as local Government to develop an action plan for dealing with the problems existed at sites.*

Keywords— *Social impact, road project, Papua New Guinea.*

I. INTRODUCTION

In the poor countries like Papua New Guinea (PNG) [9], the project implementation is not similar that of other countries. Progress appeared in almost road construction project, mostly they are not easily resolved and delays behind the schedule are common problems shown in PNG. Most of the challenges comes from social and cultural factors that need to be understood and improved.

In any project, and especially in road construction projects, many different and sometimes discrepant interests must be considered [5]. Participation of local people should also be integrated into the project implementation to strengthen a multidisciplinary perspective of the organization and create cross functional teams [3].

To improve the effectiveness of the project implementation, cultural understanding, social impacts, incorporation of multi-modal considerations and improved

community fit engagement of stakeholders on project is a good solution [2].

Objective

The general objective of the study is to analyze the impact of social factors on the road construction project.

II. RESEARCH AREA

The core 430 km section of Highlands Highway (HH) connects four landlocked provinces of the Highlands region and branches out to nearly 1,800 km of feeder roads, servicing more than 40 percent of the population. On its Eastern side, the Highlands Highway connects to the lowlands of Madang and Morobe provinces and extends to PNG's main port and manufacturing centre in Lae. Mineral and petroleum outputs from the Highlands region account for nearly 80 percent of national exports, especially natural gas, while 85 percent of the people connected by the Highlands Highway derive their

livelihood from agriculture, mainly coffee, a major income earner for the rural population, but also tea, sweet potato, vegetables, and fruit in the Highlands, and cattle, copra, cocoa, bananas, and sugar cane in Morobe [6].

All the communities along the Highlands Highway are indigenous, most living on their own customary land, (apart from those in urban areas or those who married into the local clans), although there is a settlement at Kassam in Eastern Highlands Province (EHP), established during the building of the Yonki dam and power station, where there are migrants from other places such as Simbu, Western Highlands, and other parts of Eastern Highlands. In the lowland area of Morobe, most settlements are clustered, often around a market, church or school, whereas in the highlands settlements may be more dispersed, with houses scattered along the highway, or located near to gardening land. Some of the settlements were developed as a direct result of the highway, with residents gravitating from more distant hinterland to the roadside so that they have better access to services and can conduct business with those travelling. Government services like health centers, aid posts and schools, as well as churches are also commonly located along the highway.



Figure 1 Location of Highlands Highway

The research areas include the following main linguistic and tribal groups (though there are many other smaller groups):

- Western Highlands Province: Melpa (Mt Hagen), Kuman (Hagen and Wahgi); Nii (Wahgi)
- Jiwaka Province: Wahgi (Minj and Kerowagi)
- Simbu Province: Dom (Kundiawa), Gimi (border of EHP), Kuman (Kundiawa, Daulo & Unggai Bena), Kakondo (Kundiawa) Tabari (Gero to Duman), Siane (Magiro, Daulo, Watabung), Sinasina (Sinasina-Yonggamugl)
- Eastern Highlands Province: Gahuku-Asaro (Goroka), Dano (Goroka), Yagaria (Goroka), Benabena (Goroka), Kamano (Henganofi and

Kainantu), Keyagana (Henganofi), Agarabi (Kainantu)

- Morobe Province: Gadsup (EHP and Markham), Adzera (Markham Valley)

Following the UN definition of Indigenous People [8] as those with a social and cultural identity distinct from the dominant or mainstream society which makes them vulnerable to being disadvantaged in the processes of development, these local tribal and clan groups are all considered part of the mainstream society living in highland areas. PNG is made up of over 800 language and ethnic groups [6], all with a similar status. Assessment and field visits confirm that the people in the area experience the same social problems and opportunities as other tribes and linguistic groups in PNG. Social divides are more pronounced between those living in urban or rural areas, between those along the main highway and other groups in more remote locations, and in some cases between the two genders, rather than being particularly socially disadvantaged because of their tribal identity or linguistic group.

III. FINDING AND DISCUSSION

3.1. A history of land acquisition for road building

PNG has a long and complex history of dealing with the land needed for provincial and national roads and related social problems. Difficulties in acquiring land from customary owners for public purposes arise for many reasons: old or missing records, disputes over ownership or rights, excessive compensation demands, long delays, failure of government agencies to communicate adequately or to understand the attitudes of villagers, local shortages of land for gardening, and corruption in the payment of compensation. Negotiations to acquire land usually involve government officials from several agencies such as Department of Works (DoW), Department of Lands and Physical Planning (DLPP), and Provincial Governments, customary owners from several different groups, and often too, people from the private sector, such as contractors. Even with the best laws and processes in place, such negotiations would be complex.

Many groups in PNG are willing to give up or share rights over parts of their land if it is used for the public good. Even so, when customary owners have been made to feel powerless or exploited they have been known to damage infrastructure being built on their land, or threaten violence that has led to roads being blocked or maintenance activities being stopped. While there is much concern in PNG about those who threaten violence or closure of roads to demand excessive or repeated

compensation [4], it is also possible that in some cases, they are correct when asserting that the land was never purchased, or they were not compensated for its loss. It is common to find that land acquisition records are poorly kept, damaged, lost, or even stolen.

It is also possible that on occasion, individuals have pretended to represent landowners in a dispute to receive the payment supposed to be distributed among the owners. Such tactics can mean that landowners who rightly argue they have not been paid, are not believed. In other cases, the landowners often think the state has unlimited resources that it is unwilling to share fairly. Or they compare their situation to other landowning groups who have received huge compensation payments and royalties from international resource extraction companies, who will be making a profit from the land, which is not the case for roads constructed for the public good.

In the colonial past, the Australian administration required customary landowners to give their land and labor freely for road building, on the grounds that they would benefit from its construction. Some provincial governments still apply this policy of landowners donating land [1], (especially for provincial roads), although they are now paid for their labor. The fact that many roads have been built on land that remains in customary ownership, is not always understood by public servants, trying to upgrade roads, who believe the land was properly acquired and that landowners are simply being obstructive and 'greedy' in demanding compensation. The fact that land records are frequently lost or destroyed, exacerbates the situation.

From the mid-1950s the administration adopted a policy of purchasing in full, the rights of way of national roads, such as the HH. But the process often involved only a cursory investigation of landowning groups, and it is unlikely that it ensured all landowners were recognized and received due compensation. The Land Acts of 1962 and 1996 revised and improved the way the state acquired land, and surveying and marking boundaries became more rigorous. But as a result, the process of acquiring land for roads is now difficult and time consuming, taking several years to complete.

In recent years many roads rehabilitation programs have been funded by international donor agencies and before road works are carried out, the Government is supposed to ensure all the land is acquired and compensation paid in accordance with the Land Act. However, in a few cases, it is difficult to determine with complete certainty, which existing road rights of way have been acquired by the government, and which are still in customary ownership. The land registration records in both

the Department of Lands, and in the Lands and Survey Branch (Operations Division) of DOW are in a poor records. There is no centralized computer-based record of land registration, and often the DLPP has a big back-log of registrations that are not yet entered into their maps or records.

Even where past road improvement projects were confined largely to road easements previously acquired by the government, increasing numbers of demands are being made by landowners, for further payment for land in the rights of way. The claims are usually based on arguments that 'the original price was too low', 'the money was paid to the wrong families', 'the purchase was not made in accordance with customary law', or 'the elders who agreed to the sale had no right to dispose of the birthright of future generations. This situation is especially common with land acquired before the Land Act of 1962 came into force, as was the case for much of the HH.

The government finds itself in a difficult situation, where they state that all land within the HH road corridor belongs to the state, but it cannot always provide documentary evidence of purchase for all sections. There have been large exercises in the last decade to remedy the situation. Many of the on-going issues can be resolved by good research and face-to-face negotiations with landowners, though it is very time consuming. The government departments involved in land acquisition are understaffed and poorly resourced, making it difficult for them to do their jobs. To expedite the process, road projects routinely fund some or all travel, vehicle hire and accommodation costs of DLPP staff, as well as paying fees to non-government mediators, from their budgets. Where projects have employed good resettlement staff, lands officers, and mediators, delays do not become critical because landowners can see that progress is being made and there is someone to whom they can talk. The Highlands Region Road Improvement Investment Program has adopted the strategy of signing Memoranda of Agreement with landowners, without compensation, in recognition of the benefits the provincial feeder roads bring to the communities along it. This approach works in more isolated areas where people are desperate for an all-weather road so they can access services and markets.

3.2. Historical claims for un-purchased land: the problems with records

Before the introduction of the Land Acts, roads built on customary land may not have been paid for (or all landowners may not have received payment), nor properly gazetted as property of the state. Currently, there are two known spots along the highway, with historical claims: at Bena Bridge near Kainantu, and for the Daulo Pass section

of the road by the Daulo Landowners Association. The DLPP in Port Moresby has shifted office several times over the years, and in the process, records have been wrongly filed, mislaid, or lost. Some have decayed in damp conditions or been eaten by insects such as silverfish. Often there is no way of finding the historical records.

3.3. Non-payment of compensation claims

Long delays in completing the process of acquiring land, or in responding to claims for damages, results in much dissatisfaction, anxiety and frustration on the part of landowners, who in some cases have been waiting generations to settle historical claims, or whose crops are being repeatedly and regularly wiped out through some neglected maintenance tasks. This can lead to conflict between the state and landowners. Delays beyond three or four months often result in further compensation demands, as in the case of Duman in Simbu where the relations with DOW deteriorated badly following the flawed Simbu land acquisition process in 2008. The longer the delay in settling these issues, the greater the number of extra demands. Currently, DOW has many outstanding claims for land or damages, but limited resources to pay these, even if they are legitimate.

3.4. Consequences of natural disasters

There is a widespread lack of awareness among communities regarding the causes of natural disasters near the highway. It seems that all landslides, flooding and other natural disasters are always blamed on the road, whether it contributed to the problems or not. There have been recent calls for a campaign to raise awareness of the differences between a natural event “beyond the control of the Government or anyone else” and a man-made one [7]. PNG’s National Disaster Centre, together with its network of 22 Provincial Disaster Centres, is responsible for providing advice to Provincial Councils, making assessment of hazards, preparing plans and preparedness for emergencies, fostering public awareness of natural hazards, and organizing the training of relief workers. It is not clear how much they contribute to emergency works, funding of relief supplies, or identification of areas unfit for building houses.

There are a few steep, unstable areas of land adjacent to the HH where people continue to garden, and build houses and other structures, which generally contributes to further instability, and which may cause some of the disasters. The DOW at present, has no means to prevent people building on this land, but is often expected to pay compensation for the damages when the land collapses. With good engineering design and drainage, some places can be made safe, but there remains a need to deal with the

unregulated occupation and building on unsuitable, unstable, or dangerously flood prone land, to prevent death, injuries and claims on the state.

3.5. Maintenance issues

Many of the problems along the highway are due to lack of regular maintenance, or in some places, to negligence of contractors related to maintenance work. At Ba Creek in Simbu Province, a large culvert has been blocked for a long time, so that during heavy rains the water builds up and floods the adjacent garden land, damaging crops. This has resulted in communities asking for compensation. At Keranga, in Kerowagi district, land instability caused a slip in the past when 20 houses were lost, but community leaders say that the contractor who came to repair the road took gravel from near the Wahgii River leaving huge craters which caused environmental damage and led to further land creep over a 1km stretch near the road. The result of this, compensation claims have been presented to DOW, although if the land was not properly restored.

3.6. Road diversions

Even where the road has been legally acquired and is undisputed, further problems arise if there is a landslide or flood, and the road must be diverted to bypass the disaster area. There are several spots, where the road has been shifted slightly from its original alignment, in order to circumvent the damaged or unstable area. Clan landowners argue that they have lost some customary land, which should have been paid for, but that they only received compensation for damages to their assets. Often the amounts they were paid are very high, and well above standard government valuation, but this does not prevent people from claiming more, if they believe the land has not been purchased properly, and there is no evidence of transfer of title for the deviation. Two examples of this are at Gera and Waingar. It appears that, after a disaster, in its effort to get the road quickly repaired and functional again, DOW has taken short-cuts so the road can be opened, and have paid clans for damages (or not to obstruct the repair work), without initiating the long and cumbersome legal process of acquiring it.

3.7. Encroachment on the road corridor

It is quite common that gardens and buildings such as trade stores, kiosks, stalls, and tire repair shops have gradually encroached onto previously acquired rights of way – to the edge of the road itself and well within the legal 40m limit. If the state has acquired the land through the proper process and compensation has been paid, then people that encroach on the right-of-way (ROW) are squatters. However, there does not appear to be a well-established procedure for addressing this problem along PNG roads, apart from calling in the police to forcibly destroy the

offending structures, which is very bad for community relations. The 40m ROW is neither respected nor properly enforced, and a better method of encouraging compliance needs to be found.

But it should also be noted that if the boundaries of the acquired land are not clearly marked, after some time, people may assume that the state land is represented by the road itself, and not by the wider right of way. (Although it is undoubtedly true that some people deliberately try to extract the maximum possible amount of money from what they view as a wealthy state that does not distribute fairly). In practice, often another round of compensation payments is usually negotiated, which sets a dangerous precedent, fueling further demands in future. The biggest problems with encroachment on the HH appear to be in near Chuave (through a deep gorge) and along the high and steep Dauilo Pass section of the highway where the road is particularly narrow and there is little space for roadside businesses or truck stops.

A further problem relating to encroachment may be the graveyards located within the right of way. A common practice along the Markham Valley is to mark all road accident deaths by erecting monuments next to the scene of the accident (although corpses are actually buried elsewhere). In Simbu, bodies of political and community leaders are sometimes buried on roadsides, where the burial sites are more visible to the public. In the past, people have usually agreed to relocate graveyards if the road rehabilitation requires this, but compensation has to be paid for the removal, and in some cases, an expert archaeologist is required, because it would violate customary restrictions for local people to do this.

3.8. Land disputes

Land boundary disputes between clans or tribal enemies are a common feature in PNG, and disputes occur for many reasons, mostly unrelated to roads. Most disputes are about who are the real customary owners, but they can be triggered by something as small as a pig destroying someone's garden. However, when the possibility of compensation arises, disputes tend to multiply as every clan tries to get a piece of the action, frequently by taking disputes to the courts. Even where the land appears to be empty and unused, people will have rights over it. For example, recently there was a large landslide on Kassam Pass, and two groups disputed ownership of the land, though it was heavily forested with no habitation. The courts eventually decided that both groups had rights in the land, as it was used as common hunting ground by two different clans, one from the Eastern Highlands and one from the Markham Valley.

When compensation has been paid more than once on a single piece of land, whether for purchase, or for loss of assets, this leads to more groups making repeat demands and subsequently, more suspicions of corruption (although the 'mistake' may simply be the result of a loss of records or corporate memory). Lack of records relates not only to historical claims, but also contemporary ones: the disappearance of records for the large compensation exercise that was carried out in Simbu in 2007-2008 is a disturbing case in point. The problem for any road program is how to ensure that negotiations for land have been with the correct landowners, that they are finalized and recorded, so that customary landowners do not dispute the outcomes, or repeatedly seek additional compensation from the government for the same piece of land, or in extreme cases, start a tribal fight over it. Disputes and tribal fights can arise not only around land purchases for the road corridor, but also around sites of gravel extraction, which can be a lucrative form of income for landowners.

IV. CONCLUSION

In PNG generally, provided the land acquisition process is transparent and seen to be fair to all involved, and the officials involved in negotiations are competent, honest, and do not have vested interests, land can be acquired for public purposes in a straightforward way (although it does take time). Many of the disputes and grievances are not about whether the land should be acquired or even about compensation, but about how it was done, or about disputes between local people about who are the real customary owners. However, there is a growing trend where the process of acquiring land as set out under the law has not been properly followed: both officials and landowners are exploiting weaknesses in the system, resulting in more public allegations of corruption and a loss of confidence in the process.

The biggest challenge for safeguards measures in the HH related not to the impacts of the social factors, but to the history of road building and existing grievances or expectations related to past land acquisition (or the lack of it), and/or compensation claims for lost assets. The sponsors should assist DOW to develop an action plan for dealing with the sites where past land acquisition has outstanding issue to ensure that all past issues are satisfactorily resolved. If the acquisition of these sites was not in anticipation of sponsors' assistance, applicable government laws should be followed or any resolution fair and acceptable to the landowners.

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