Transport Infrastructure and Poverty Reduction in Vietnam

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The first part of this two-part paper is a case study of Vietnam that examines the contribution of rural transportation infrastructure improvements to the remarkable success of Vietnam’s Poverty Reduction Strategy. The second part of the paper examines transport infrastructure policy and situates the Vietnamese case in existing transport policy literature. It highlights areas in which lessons learned in Vietnam are generalizable to other parts of the world and concludes that well-designed transport policy has the potential to be a highly effective tool for addressing poverty.

Section 1: Case Study

Introduction

Over the past two decades, Vietnam has worked with international aid organizations to invest in rural roads through the Vietnamese Rural Transport Strategy, one of the main components of Vietnam’s poverty alleviation strategy. The Strategy has been carried out in three overlapping projects that were designed, financed, and supervised mainly by the World Bank: Rural Transport Project I (1996 – 2001), Rural Transport Project II (2000 – 2004), and Rural Transport Project III (2006 – present). This case study is concerned with Rural Transport Projects I & II because Rural Transport Project III is currently in progress and outcomes are not yet available.

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Background

The Socialist Republic of Vietnam was an extremely poor country when it was formed in 1976. Thirty years of war had left the economy in shambles, although social indicators such as life expectancy and adult literacy were high compared to similar countries (World Bank, 2001). Centralized economic planning and woefully inadequate technical infrastructure led to widespread food shortages, currency inflation, and huge trade and fiscal deficits in the 1980s (Ibid). In 1986, the government launched the Doi Moi (renovation) program of economic reforms that promoted private sector development, encouraged foreign direct investment, and decontrolled prices (Nguyen, 2007). By 1989, the major reforms of Doi Moi had all been implemented and Vietnam’s transition to a diversified market economy was essentially complete (World Bank, 2001).

The Doi Moi reforms were successful in growing the economy. GDP growth between 1992 and 1997 averaged 8-9% per year, in contrast to the mid-1980s, when yearly GDP growth was less than 4% (World Bank, 2001 - see figure 1 on page 69 for a graph of Vietnam’s GDP per capita between 1976 and 2011). Despite this macroeconomic success, Vietnam continued to have a high incidence of poverty, particularly in rural areas. A poverty assessment study conducted by the World Bank in 1995 found that more than half of Vietnam’s population of 72 million were living in poverty. The study also found that there was a significant difference in living standards between urban and rural dwellers, with an urban poverty rate of 26% and a rural poverty rate of 57% (World Bank, 1995). Because the most rapid economic growth was occurring in urban centres, the economic development of Vietnam’s impoverished rural regions was critical for significant country-wide poverty reduction. The World Bank (1995) identified insufficient access to markets and support services due to poor rural transport infrastructure as one of the primary reasons for the endurance of poverty in Vietnam. Lack of access is considered a “key dimension of poverty” (DFID, 2002) and Vietnamese rural dwellers faced significant difficulties accessing economic, social, and educational opportunities.

The government of Vietnam requested the World Bank’s assistance with the rehabilitation of its badly deteriorated rural roads and embarked on a campaign to support rural development following the poverty assessment study. The importance of economic growth through rural development is a key message of Vietnam’s 10-Year Socio-Economic Development Strategy (2001-2010) (Vietnam, 2001). The government formally approved a Comprehensive Poverty Reduction Strategy in 2002 and currently tracks the Strategy’s progress through Growth and Reduction of Poverty Annual Progress Reports (Gutman, Takeda, & Plant, 2006).
First Rural Transport Project

In 1997 the World Bank formally launched the First Rural Transport Project (RT1) in partnership with the government of Vietnam. It consisted of three main components: $50.4 million for rural road rehabilitation, mainly of existing alignments, $0.2 million for institutional strengthening and training, and a rural transport development study which was funded separately by the UK Department for International Development (DFID) (World Bank, 2004). The project’s objectives were to improve access to rural communes (the smallest administrative unit of Vietnam’s three-tier subnational governance structure, below provinces and districts, and containing 10-15 villages), to develop local capacity to repair and maintain rural roads, and to encourage the development of local contractors (World Bank, 1996). The provinces that were selected for RT1 were specifically targeted because of their poverty levels, as well as their main source of economic activity. Census data showed that the farming population made up 76% of the poor in Vietnam, so targeting the project to areas with high levels of agricultural production was particularly important because studies had shown that agricultural households that diversified with off-farm activities had significantly higher standards of living than households that farmed exclusively (World Bank, 1995). When the project was completed in 2001, RT1 had rehabilitated a total of 4,403 km of roads in 18 of Vietnam’s 61 provinces (World Bank, 2002).

Post-completion assessments considered the project “satisfactory” in achieving its overall development objectives (World Bank, 2002, pp. 2). However, areas of weakness included a lack of data for assessing the scope of need at the project appraisal stage, and local and provincial capacity issues resulting in inadequate preventative maintenance (Ibid). A study by van de Walle & Cratty (2002) evaluated the poverty impact of RT1 on a sample of roads selected from those rehabilitated through the project. The study reported a 3.3% increase in off-farm diversification in the sampled communes, and a 46 minute decrease in the amount of time needed to reach the nearest medical facility that were directly attributable to RT1. The study found that RT1 had no significant impact on passenger transport, such as bus, three-wheel motorcycle, and horse cart services. Van de Walle & Cratty (2002) noted that the short time period between the completion of the project and the impact evaluation study limited the study’s ability to evaluate long-term impacts.

Second Rural Transport Project

Between May 24, 2000 and June 30, 2004, the World Bank, the DFID, and the government of Vietnam implemented the Second Rural Transport Project (RT2). The overlap with RT1 was intended to ensure continuity. The total project cost at appraisal was $145.3 million. The World Bank funded $ 103.9 million of the total project cost through the
International Development Association, and the remaining $36.2 million was funded by the DFID (World Bank, 2007). RT2 was designed to address the results of the World Bank’s Transport Sector Review (1999) as well as issues that arose during the implementation of the RT1. Both the Transport Sector Review and project assessments of RT1 highlighted the large number of rural communes that remained without adequate road access and the continuing need for capacity building in implementing agencies such as Provincial Project Management Units (PPMUs) (World Bank, 2007). The objectives of RT2 were to “(i) increase the flow of goods and services in rural Vietnam by: improving the access of rural communes in the project provinces to markets, off-farm economic opportunities, and social services; (ii) developing central, provincial and local capacity to improve and sustain the level of service of the rural transport network; and (iii) fostering the development of small-scale private contractors” (World Bank, 2007, pp. 1). To achieve its objectives, RT2 was divided into five components that aimed to provide institutional development to PPMUs for project implementation, strengthen the capacity of the Vietnam Ministry of Transport to develop and carry out rural transport policies, build capacity for sustainable rural road maintenance, rural road rehabilitation for basic road access in all project provinces, and train domestic contractors (World Bank, 2007).

The post-completion World Bank assessment (2007) found that the completion of the capacity building objective was “moderately satisfactory” due to uncertain future funding and implementation of maintenance plans, but RT2 was successful in raising awareness and developing system capacity for the continued management of the rural transport network. Over 14,000 Vietnamese government workers were trained in rural road maintenance, and reports indicate improved road maintenance capacity in 73% of communes (World Bank, 2007). The completion of the primary project objective of improving access was found to be satisfactory. A total of 7,600 km of rural roads and 1,029 bridges were rehabilitated (Ibid). The project successfully improved all-season road access for over 1,000 rural communes and approximately 6 million people, including approximately 1 million people living in poverty, and improved mobility for the 16 million people in the surrounding areas. Approximately 180 rural communes in the target provinces were left without all-season road access at the end of the project due to unforeseen cost overruns and an increase in the number of communes during the project period (Ibid). An empirical analysis by Fan, Huong, & Long (2004) used a simultaneous equation model to calculate the effect that government spending on roads has had on rural poverty in Vietnam. According to the estimated marginal effect of government spending in the model used by Fan et al. (2004), 132 people were lifted out of poverty for every billion dong spent on roads in Vietnam. By that measure, the road investments made through RT2 brought 210,000 people out of poverty.
Case Study Summary

As Vietnam ramped up spending on transport infrastructure, poverty rates fell dramatically and GDP per capita nearly tripled (see Figure 1 on page 69). Government spending on upgrades to Vietnam’s road network grew by 13.5% per year between 1993 and 2000 (Fan et al., 2004). While 58.1% of the total population was living in poverty in 1993, by 2002 the incidence had fallen to 28.9% (Ibid). Over that same period, the incidence of rural poverty fell from 66.4% to 35.6% (Ibid). More recent World Bank data shows that the official poverty rate for the total population continued to decline to 19.5% in 2004 and 14.5% in 2008 (World Bank, 2012). The rural poverty rate also continued to fall to 17.4% in 2010 (Ibid). This data provides promising evidence that rural transport is a viable strategy for poverty reduction.

Section 2: Policy Analysis
International Development Implications of the Vietnam Case Study

Poverty can be conceptualized as the interaction between employment, opportunity, and security. More specifically, Booth, Hanmer, & Lovell (2000) suggest that there are six dimensions of poverty that should be addressed by poverty reduction strategies. These are income/consumption, human capabilities, private and social assets, time, attainment of minimal social participation, and security with respect to risks, shocks, and violence (Figure 2 on page 70).

As shown in Figure 2, poverty is a multi-dimensional issue that must be addressed through multi-dimensional strategies. The case study in Section One demonstrated that a significant reduction in poverty levels occurred following the implementation of Vietnam’s Rural Transport Strategy, which included the Rural Transport I and II projects. The transport improvements that were made as part of Vietnam’s poverty alleviation strategy undoubtedly had an impact on poverty levels, although quantifying the exact extent is difficult. The question that remains is whether or not the Vietnam case is generalizable. Do improvements to transport infrastructure support the millennium development goal of poverty reduction? The idea of a positive relationship between improved transport infrastructure and poverty reduction is supported not only by impact evaluations of the Rural Transport Projects, but also by international development policy literature describing the links between transport infrastructure and the six dimensions of poverty (World Bank, 2002, 2007; Brenneman & Kerf, 2002).
Transport Policy for Poverty Reduction

In Transport Infrastructure and Poverty Reduction (2006), Sununtar Setboonsarng writes that transport infrastructure impacts poverty directly and indirectly at both the macro and microeconomic levels. At the macroeconomic level, transport infrastructure contributes to long-term poverty reduction indirectly by “ensuring sustained growth in output, employment, and income” (Setboonsarng, 2006). There is also evidence that transport infrastructure contributes to poverty reduction directly. A 2005 study cited by Setboonsarng demonstrated that road capital directly decreased the incidence of poverty independent of economic growth channels.

The degree to which transport infrastructure contributes to poverty reduction at the macroeconomic level depends on its microeconomic impacts on the various aspects of poverty. Transport infrastructure impacts the income dimension of poverty by providing greater opportunities for increasing productivity, particularly in rural areas where the majority of the poor reside. It lowers the cost of inputs, provides people with more and better access to financial services and output markets, and promotes the commercialization and diversification of both farm and non-farm activities. Transport infrastructure also impacts the non-income dimension of poverty by lowering the cost and improving access to services needed by the poor, and by complementing other interventions aimed at improving health, education, and social services (Setboonsarng, 2006).

Setboonsarng argued that the distribution of benefits resulting from transport infrastructure investments often mirrors a country’s distribution of income and opportunities, particularly in areas of high income inequality. Although transport infrastructure investments confer benefits to the very poor by improving access to social services, larger landowners and local elites tend to be better situated to capture the cost-saving, productivity, and land-value benefits of improved transport infrastructure. For this reason, transport investment can exacerbate income inequality in the short and medium term, and may even have a negative impact on the welfare of the poorest of the poor. Setboonsarng considered making transport investments more responsive to the needs of the poor, or ‘pro-poor,’ to be a key challenge in reducing poverty through transport infrastructure.

Other ways to frame transport policy include the sustainable livelihoods approach and a rights-based approach (DFID 2002). The sustainable livelihoods approach looks at the various strategies that the poor use to improve their lives, and how these sustainable livelihood strategies interconnect with transport activities. Every community possesses
varying endowments of five categories of livelihood assets: these are natural capital, social capital, human capital, physical capital, and financial capital. Linkages between sustainable livelihood strategies and transport activities can be used to create a framework for identifying opportunities for structural improvements that will strengthen existing assets and ultimately reduce poverty. Transport infrastructure is a physical asset that is critical for communities to build up or better utilize other livelihood assets. It provides physical access to natural resources and services that increase human capital such as health and education. Transport improves social capital by providing physical access that enables participation in social networks and political processes. Transport infrastructure also helps to increase financial capital by creating opportunities for market access and employment.

A rights-based approach frames the link between transport and poverty reduction as part of the debate over the “politics of access” to basic human rights, which include civil, political, economic, social, and cultural rights. Access to transport is not a human right as defined by international law, but this approach views it as a “precondition for securing basic rights” (DFID, 2002). Basic principles such as access to political processes, knowledge, social networks, services, and markets can be distilled from basic human rights and used by development agencies to direct rights-based transport policy. Development interventions in this context are concerned “not only with what rights people are entitled to, but also whether or not people can effectively claim and defend their entitlement to basic resources and services” (ibid).

Viewing transport policy through the lens of the “politics of access” debate brings up the question of whose obligation it is to provide access to basic resources and services. It is not always clear whether transport infrastructure will encourage services to relocate closer to the target population or if the target population will use the improved transport infrastructure to access existing services. Once infrastructure is provided by either the government or development agencies, it is often assumed that the private sector will take responsibility for providing transport services; however, the result of privatization tends to be service cutbacks in the remote areas that need transport services the most (DFID, 2002).

Policy Analysis of the Vietnam Case Study

In conducting a policy analysis of the Vietnam case study, it is important to note the distinction between rural and urban poverty. Globally, rural poverty rates are lower than urban poverty rates, and rural poverty tends to be more deeply entrenched (World Bank, 2013). Although the rural-urban population split is close to 50-50, approximately 80% of the world’s economic activity occurs in urban centres, and this agglomeration provides
urban dwellers with greater access to services and economic opportunities (Ibid). These global trends are reflected in Vietnam’s rural and urban poverty dynamics. In absolute terms, the number of poor people residing in Vietnam’s urban centres is large, but the proportion of the Vietnamese population that is poor is significantly higher in rural areas (World Bank, 1995). The policy analysis given here is specific to rural poverty.

The majority of the quantitative research available for the Vietnam case study is concerned with RT1. This is most likely because, as noted in the RT2 Implementation Completion and Results Report, the evaluation system of RT2 was poorly designed (World Bank, 2007), and thus attributing poverty reduction impacts to RT2 road rehabilitations is highly problematic. Nevertheless, the Vietnam case offers useful insights and confirms many of the linkages between transport infrastructure improvements and poverty reduction that are described by Setboonsarng (2006): the Vietnamese government’s overarching emphasis on developing rural transport at the macroeconomic level, and RT1 at the microeconomic level. At the macroeconomic level, Fan et al. (2004) showed a strong correlation between increased government spending on transport, primarily rural road rehabilitation and maintenance, and Vietnam’s remarkable achievements in reducing poverty rates through economic growth. At the microeconomic level, people living in communes selected for road rehabilitation benefitted from both income and non-income effects of transport infrastructure improvements described by Setboonsarng (2006).

Van de Walle & Cratty (2002) found that RT1 road rehabilitations caused an increase in the proportion of households that engage in non-farm activities. As noted previously, the diversification of agricultural households to off-farm activities is associated with significantly higher standards of living than households in which farming is the sole economic activity (World Bank, 1995). RT1 was also found to have caused an 18% increase in access to credit from the Agricultural Bank of Vietnam for households located in the targeted communes. An emergence of output markets in communes that were previously lacking was also reported as one of the achievements of RT1 (World Bank, 2004).

The Vietnam case study demonstrates that it is possible to address one of the key challenges of poverty reduction through transport infrastructure. As noted by Setboonsarng (2006), a distribution of benefits that aggravate existing patterns of inequity is a common problem with transport improvement projects. In designing RT1, the World Bank (2004) placed a strong emphasis on using road selection criteria that would ensure that the project targeted the poorest regions of Vietnam. In addition to identifying the poorest provinces, RT1’s road selection criteria targeted road rehabilitations specifically to communes with the highest percentages of residents living below the poverty line.
A 2002 impact evaluation study of RT1 by Van de Walle & Cratty described the project as “pro-poor,” meaning that it succeeded in reaching more poor households than it would have if the rehabilitation was distributed evenly among rural communities in the selected provinces. The study also reported other pro-poor indicators: the strongest impacts on living standards occurred in the poorest households, and the poorest 40% of households benefited the most from travel time savings. RT1 was successful in producing benefits that were skewed in favour of the poorest people, not against them. This may be attributable to the fact that a pro-poor focus is evident in the supporting documents throughout all stages of the project, from the Staff Appraisal Report at the project’s outset, to the post-completion Project Performance Assessment Report (World Bank, 1996, 2004). However, it is important to note that the locations of the communes in Vietnam were discrete and remote, and the extent to which RT1 was able to target the poorest people may not be possible in locations with a more dispersed poor population.

Changes in access to services were observed as a result of the RT1 project. Van de Walle & Cratty (2002) reported a 46 minute decrease in the amount of time required to reach the nearest hospital that was directly attributable to the road rehabilitation project, as well as a 14% increase in the number of pharmacies located in RT1 communes. The RT1 project performance assessment report also attributed the building of several new schools to the road rehabilitations, although no quantitative data is provided to support this claim (World Bank, 2004). Regardless, the changes in access to services due to RT1 demonstrate that the “politics of access” question of whether transport infrastructure will encourage services to relocate closer to people or whether people will use the improved transport infrastructure to access services is not necessarily an either/or question. In the Vietnam case, some services relocated to the communes as a result of the road rehabilitations, and people travelling to services located outside of the communes benefited from decreased travel times and improved access. There was, however, one impact on services that Van de Walle & Cratty (2002) called “puzzling.” They reported a significant increase in the time required to reach the nearest shop selling food or consumer goods. The authors postulate that small food stalls may have moved away or been driven out of business when road rehabilitations made it faster and easier for people to travel longer distances to shop at stores with better selection or prices. This potential negative impact on small business owners should be an important consideration for the issue of transport infrastructure and poverty reduction because it is likely generalizable to other locations.

Van de Walle & Cratty (2002) also reported an effect that is not well-documented in the transport policy literature. They observed that the RT1 project communes they sampled were the recipients of more government infrastructure development programs following the completion of RT1 than comparison communes. There are several possible explanations for this. Van de Walle & Cratty theorize that the improved road access made
it easier for the government to access these communes to implement other infrastructure investments and programs. It is also possible that the increased local government capacity reported by the World Bank (2004) made these communes more attractive for further intervention. The national government could reasonably expect greater efficiency and responsiveness from the local officials in communes that had already participated in an infrastructure project.

A third explanation—improved political access—can be found in the transit policy literature. Both the sustainable livelihoods approach and the rights-based approach highlight the idea that physical access is crucial for participation in political processes (DFID, 2002). Rural road rehabilitations provided a physical access that improved feedback channels and enabled people to hold local officials to account (World Bank, 2007; Leisher, 2003). It follows that this may have improved the ability of the people in the project communes to advocate for additional government-funded infrastructure projects. A case study by Leisher (2003) examining donor impact on political change in the Vu Quang District in Ha Tinh Province in Vietnam, found that the most significant gains in transparency, accountability, and equity could be attributed to the road rehabilitations made through the Rural Transport projects (both RT1 and RT2). Interestingly, the World Bank was not one of the four regional donors that were the focus of the Leisher study, but RT1’s rural road rehabilitations emerged as one of the main causes of positive political change in the region in the course of conducting research. Better roads brought people into more frequent contact with both local and regional government officials, which significantly improved people’s confidence in asking for information and giving feedback (Leisher, 2003).

Recommendations

The Vietnam case highlighted several areas in which the transport infrastructure projects could more effectively reduce poverty. Maintaining a pro-poor focus throughout the design and implementation of transport projects is recommended to ensure that improved transport infrastructure actually reduces poverty and does not reinforce existing patterns of inequity. Many of the limitations described above could be overcome through improved project design. The potential for negative impacts should be acknowledged and addressed as early as possible.

The various assessments and reports concerning both Rural Transport projects are filled with technical details such as procurement issues, approaches to drainage, and evaluations of specific road patching techniques, but they only briefly touch on the macro and microeconomic poverty impacts described here. As noted by the World Bank (2007), this is mainly due to an ineffective evaluation system. Projects should ensure that an
adequate monitoring & evaluation system is implemented and utilized in order to quantify the contribution of rural transport investments to poverty reduction and build knowledge for future projects.

It is striking that major political change, one of the most significant effects of the RT1 & RT2 rural road rehabilitations, was essentially discovered by accident in a third party case study unrelated to the projects. Leisher (2003) notes that World Bank project documents neither anticipated nor perceived political impacts due to the Rural Transport projects. As discussed previously, the World Bank’s commitment to targeting the poorest people at the design stage of RT1 resulted in a distinctly pro-poor outcome (van de Walle & Cratty, 2002). If development agencies implementing transport infrastructure improvement projects recognize their role as political actors at the design stage, it is likely that the potential positive political impacts of these projects could be enhanced and post-project evaluations could be made more robust.

Conclusion

Improvements to transport infrastructure have the potential to support poverty reduction in rural areas by addressing the different dimensions of poverty as outlined in Figure 2 (Booth et al., 2000). The Vietnam case highlights the ways in which transport infrastructure investment directly and indirectly contributes to the accumulation of social assets, higher incomes, time efficiency, greater social participation, and increased human capital. However, care must be taken to mitigate the potential negative impacts of transport infrastructure investment. The Vietnam case shows that, despite certain limitations and gaps in knowledge, improving transport infrastructure has the potential to be an extremely effective tool for international development.

Works Cited


Figure 1. Per Capita GDP of Vietnam between 1976 and 2011 (Source: UNdata).
Figure 2. The six dimensions of poverty and their interactions (Booth et al., 2000).