

**PIARC (World Road Association)
World Congress, Durban, South Africa, 19-25 October 2003**

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Title of Committee:

Technical Committee C20 on Appropriate Development

Sub-theme of the subject: Effective Maintenance

Title of the paper:

Private-Public Partnership For Low Volume Roads: The Swedish
Private Roads Associations

Key words:

low volume roads, rural roads, road management, road financing

Abstract: Private-Public Partnership for low volume roads: the Swedish Private Roads Associations

Many governments struggle with the management and financing of the vast network of local roads which serve communities. This is a particularly large problem in rural areas of developing countries. Private ownership and management of low volume roads is often assumed to be an unviable option. The experience of Sweden, where sixty thousand private road associations own and manage 140,000 kilometers of road (one third of the country's network) contradicts this assumption.

In Sweden the government has opted to provide incentives for private road ownership of low volume roads. The result is a private-public partnership where government subsidizes road costs with grants from the budget. The Swedish model shows that a well-structured institutional framework, including a law on private roads, and financial and technical incentives for private ownership of low-volume roads, can bring impressive results.

Most developing countries, however, do not have anything close to an institutional or legal framework for low volume or community roads. An adaptation of the Swedish model of private or community ownership of roads to local contexts could improve physical access in a constrained budget environment also in developing countries. A private-public partnership for road management and financing is particularly relevant for countries whose most numerous private sector group are small-scale farmers. The interest of this group in good roads and value for money constitutes a significant source of development potential.

Private-Public Partnership for low volume roads: the Swedish Private Roads Associations¹

Private road associations (PRAs) manage two thirds of the road network in Sweden. They manage the roads at less cost and with better results than the Government road agencies. In fact, the PRAs perform so well that some urban municipalities request the associations to manage also the municipal/local government roads which connect to the private roads.

The Swedish model for managing low volume roads is simple and efficient and can easily be adapted to a variety of circumstances in both rich and poor countries.

The low volume road challenge

Unit costs for low volume road construction and maintenance are low compared to those for higher level roads. The problem is that in many countries this network is vast, and the total cost requirements to ensure minimum access, particularly for rural residents, are enormous. In addition, it is difficult to ensure that the “right” amount of roads is provided if roads are locally used but provided by higher level governments. Another challenge comes when locals are not the predominant users of the roads. One alternative to raise revenues is toll collection. It has obvious problems: when traffic is low, cost of collection may render tolling unprofitable. In addition, it can be difficult to ensure that the collector does not pocket part of the revenues. Another alternative has been employed in Sweden, where government has opted to provide incentives for private road ownership (and squeeze the most they can get out of the local user pays principle). The result is a private-public partnership where government subsidizes road costs with grants from the budget.

This partnership for low volume roads is highly efficient—a recent government commissioned evaluation confirmed that the cost of operating and maintaining private roads of equal standards and use as local government roads is lower even when the opportunity cost of in-kind voluntary contributions of goods and labor are costed (SOU: 2001:67 2001). In fact, the evaluation confirmed that the cost is often less than half the cost of publicly managed roads.² The reason for this, as explained by Swedish road administration officials, is mainly “a stitch in time,” i.e., prompt intervention and preventive actions in response to road deterioration, coupled with an uncontested aspect of private ownership—it is the same owners who will face the financial and physical consequences of any delayed intervention.

¹ This paper has been prepared by Sven Ivarsson, vice chairman of the Board of the National Federation for Private Road Associations in Sweden, and Christina Malmberg Calvo, lead economist, the World Bank. Review and advice were provided by Professor Ian Heggie (University of Birmingham), Daniel Klein, Gabriel Roth, and Alexander Tabarrok, and Stephen Brushett and Antti Talvitie of the World Bank.

² The evaluation estimated the annual average cost of operation and maintenance of a private road to be about US\$1.20 per meter compared to US\$2.40 per meter for the upkeep of an equivalent public road.

Sweden's roads

The Swedish road network measures 419,000 kilometers (Table 1). The Swedish National Road Administration (SNRA) manages one quarter of the network (98,000 kilometers), and the municipalities 10 percent (38,000 kilometers). The remaining two-thirds (283,000 kilometers) are privately owned and managed roads. The SNRA roads carry 70 percent of the traffic, the municipal roads 26 percent of the traffic, and the private roads the remaining 4 percent of the traffic. While the private roads arguably constitute a low volume network, some serve vacation home areas and about 50 percent are forest roads mainly opened for commercial purposes³, about one sixth (more than 40,000 kilometers) of the private road network carries more than 100 vehicles per day, including some up to a 1,000 vehicles per day throughout the year. This paper focuses on the 50 percent of the private road network which is owned and managed by communities, half of which receive state subsidies. Most private roads are narrow—about 3 to 4 meters wide and of simple construction.

Table 1: Lengths of road in the Swedish road network

	Length (km)
National roads	98 000
Municipal roads and streets	38 000
Private roads with state subsidies	73 000
Private roads without state subsidies	210 000
Total	419 000

Private Road Associations

In Sweden there are approximately sixty thousand PRAs owning about 140,000 kilometers road. They are responsible for the operation and maintenance of the roads.

The Swedish Government strongly supports the establishment of PRAs because they contribute to a number of political goals including:

- encourage and make it easier to live and settle in remote and sparsely populated areas,
- facilitate quality road transport in areas where the cost for providing such services is high but promotes trade and industrial development,
- provide access to areas of public recreation and leisure,
- secure the road capital investment, and
- ensure general traffic safety and environmental interests.

³ Forest roads are classified as private roads because there are legally only three classes of roads in Sweden—state, municipal and private. Forest roads are generally referred to separately from the community managed private roads.

SNRA determines whether a road should be government owned or private. What constitutes a private roads is defined in regulations which change from time to time. If the property owners along a road disagree with SNRA's decision, they can make a court appeal. Past verdicts indicate that a road is considered the responsibility of government when:

- the through-traffic exceeds 100 vehicles per day,
- the locally generated traffic exceeds 130 vehicles per day,
- more than 200 people live along the road, and
- the road is used for traffic between a number of places and alternatives are detours of more than 20 kilometers or a 20 minutes drive.

Conversely, a road is considered private when:

- a new road has been built to replace it but the old road is still serving people living along it,
- a public service institution served by the road is closed down,
- vehicular through-traffic is less than 50 vehicles per day,
- locally generated traffic is less than 70 vehicles per day, and
- the number of residents along the road is less than 40 people.

The sizes of PRAs vary widely. Most have just a few kilometers of road and have three to four single family homes as members. But some have 70 kilometers of road and include up to 3,500 properties. Most PRAs manage just one small road; others manage a whole development and roads on behalf of the local government.

The Private Roads Act governing the PRAs provides the framework for private roads. This framework has three main components: i) legal ownership and survey, ii) the PRA Board and by-laws, and iii) cost-sharing arrangements. An important actor in representing the interest of PRAs is the National Federation of PRAs (NFPRA). Each framework component and the NFPRA are presented below.

Legal ownership and survey

In Sweden, the legal framework, the Private Roads Act, is considered the most important part of the institutional framework for private roads. The first modern private roads act dates from 1939. It was most recently revised in 1998. The Private Roads Act outlines how property owners can form themselves into PRAs and how these organizations should be organized and run. When a road is designated, this is published as a notice in the government gazette used to record official acts of the government (Malmberg Calvo 1998).

A PRA is usually established by means of a legal survey. The initiative for the survey can come from one or several of the private property owners along the road by means of application to the County Cadastral Authority. The Cadastral or Land Survey Office appoints an impartial government or municipal officer to carry out the survey. A fee will be imposed on each member according to the shares determined by the survey. The determination of individual "shares" serves to allot the maintenance and other road costs

to the members according to the size of their property and the traffic they generate (benefit and use). Key determinants include length of road from the property to the state road, and extent of any commercial activities or public services such as a milk-producing farm, local shop, or post-office. The Private Roads Act specifies how a property owner can challenge her/his allocation.

The proposed size of individual PRA member shares is presented at a meeting organized by the surveyor and to which all association members are invited. At this meeting property owners will be asked to elect a Board for the association. Membership of the PRA is mandatory; the survey is legally binding and if a member fails to pay his/her share, the association can request that the local tax authority collect the payment.

The PRA Board and by-laws

Most community managed private roads are administered by PRAs. An elected Board administers each PRA and is governed by a set of by-laws. Board members are not necessarily technical persons but good organizers and well-trusted members of the community.

The Board is responsible for ratifying the association's rules and drawing up a plan of operations. This plan is used to estimate the association's annual budget and expenditures. The Board has to call all PRA members to a general meeting at least once a year to present the auditors report, elect PRA officers, decide on the next year's plan, and respond to the observations of the members.

Cost-sharing arrangements

The financial responsibility for the construction, upgrading, operation, and maintenance of private roads rests with the PRA members, i.e., the concerned property owners. This includes responsibility for any bridges on the roads as well as the drainage, any road furniture, and traffic lights. The PRA can request grants to offset some of these costs from three main sources: the central government, the local government/municipality, and close-by property owners which use and benefit from the road but who are not directly located on the road. The latter two are in most cases insignificant.

The Swedish government subsidizes private roads that satisfy the following conditions stipulated by the SNRA:

- have a minimum length of 1 kilometer,
- are technically and functionally sound,
- have reasonable operation and maintenance costs,
- have formed a PRA to manage and operate the road,⁴ and
- are open for public use.

⁴ Some PRAs receive state grants even though they are not legally constituted provided their roads qualify and they have a Board, an annual meeting, a budget, and carry out independent audits.

The SNRA provides a grant of between 40 to 80 percent of road maintenance costs depending on the type of settlements along the road (permanent or temporary), the road type, and the availability of public services. The highest priority is assigned to through roads which in 1999 received the maximum grant of 80 percent (Table 2); the second priority (grants covering 70 percent of costs) was given to roads that provide access to permanent residences in rural areas and roads which had commercial activities.

Road maintenance costs are based on an estimation of “reasonable local costs.” Cost estimates include the road surface, the traffic type and volume, and local costs for inputs such as gravel. This means that a PRA that is located next to a gravel pit receives a smaller grant than a PRA which is further from the gravel pit, all other things equal.

The central government expends about US\$70 million per annum on grants. The lion’s share of the grants is for operation and maintenance—about 10 percent is dedicated to upgrading and 8 percent for new construction. Few households in any PRA contribute more than US\$100 per year. Local contractors generally undertake the upkeep and maintenance works. Rural PRA members often have tractors, scrapers and other tools, and accept to do work at a low cost. Many association members are also willing to clean verges and culverts, and clear brushwood to keep down membership fees.

About 50 percent of all private roads managed by communities receive grants. Most roads receive the same per kilometer cost (about US\$800). The remainder of the private road network either does not qualify or property owners do not request grants, likely because they do not wish to abide by the rules set out in the private roads acts for roads which receive grants, e.g., that the roads have to be open to the public.

Table 2: Statistics relating to the private road network which receives grant (1999)

	Length of road in each category (km)	Size of grant received (percentage of cost)	Annual costs of upkeep (SEK million)
Through roads	7 000	80	55
Roads giving access to permanent residences in rural areas	53 000	70	375
Roads giving access for commercial activities	5 000	70	37
Recreational roads	3 000	50	11
Roads giving access to permanent residences in urban areas	2 000	40	7
Roads giving access to recreational properties	3 000	40	15

The National Federation of Private Road Associations

PRAs are non-governmental organizations. They can be thought of as cooperatives of people who live or have a property in an area with a road or several roads of common interest. With the steadily increasing level of motorization in the 1950s and 1960s, many

PRAs found that they needed to join together to lobby for compensation for the public traffic on their roads. As a result, in the 1960s, Board members of a number of PRAs came together and established the National Federation of Private Roads Associations (NFPRA). NFPRA represents the interest of PRAs at the national level and in political discussion.

In 2000, more than 6,000 PRAs had joined the NFPRA, i.e., about 10 percent of all PRAs. Together they account for 25,000 kilometers of private roads and represent 350,000 properties all over Sweden. Most PRAs that join NFPRA are large—the average NFPRA member has 4.2 kilometers of road and 58 properties, which is substantially larger than most PRAs.

The NFPRA annual membership fee per PRA is about US\$50 plus US\$5 per kilometer. The fee includes a comprehensive package of insurance. NFPRA, together with SNRA and the Country Cadastral Survey Offices, also offers training courses for PRA Boards and interested members.

Conclusions

The Swedish private roads model is a true win-win in the sense that communities and road users get the roads they are willing to pay for while the government gets a better road network at lower cost. It is based on a public-private partnership structured by an institutional framework for private ownership of low-volume roads.

There is no reason why developing countries could not adapt to local circumstances the Swedish model of private or community ownership of roads as an integral part of their efforts to improve road access in a constrained budget environment and in partnership with the private sector. Indeed, private-public partnerships for road management and financing are particularly relevant for countries whose most numerous private sector group are small-scale farmers. The interest of this group in good roads and value for money remains an untapped significant source of development potential.

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